

Regional Board Meeting  
June 21, 2006

Item 3

Supporting Document # 11

**Updated Preliminary Responses to Questions on  
Tentative Order No. R9-2006-0011 from the  
Building Industry Association of San Diego  
County**

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN DIEGO REGION**

**UPDATED PRELIMINARY RESPONSES TO QUESTIONS  
ON  
TENTATIVE ORDER NO. R9-2006-0011  
FROM THE  
BUILDING INDUSTRY ASSOCIATION OF SAN DIEGO COUNTY  
JUNE 14, 2006**

This document contains the California Regional Water Quality Control Board, San Diego Region's (Regional Board) updated preliminary responses to questions raised by the Building Industry Association of San Diego County (BIA) in their April 26, 2006 letter. New responses previously not included in the May 22, 2006 version of this document are highlighted. All responses included in this document are considered preliminary because the public comment period on Tentative Order No. R9-2006-0011 is not yet closed, and issues may evolve as they continue to be discussed. As such, the purpose of these preliminary responses is to generate further discussion on the Tentative Order's requirements. The preliminary responses should not be considered the Regional Board's final position on the issues discussed. Final Regional Board responses will be provided after close of the public comment period to all final written comments received. The public comment period is scheduled to close following the public hearing to be held at 9:00 AM on June 21, 2006 at the Regional Board offices.

The responses below are organized according to the format of BIA's letter. Numbered responses are provided according to BIA's numbered questions. Where numerals are repeated, it is for the purpose of matching the BIA letter format. Every effort has been taken to answer all of BIA's 125 questions prior to the public hearing. However, since the responses are preliminary, it is likely that more detailed responses will be developed for some of the issues discussed. In particular, more detailed responses may be developed to address cost considerations, legal issues, and other highly technical issues. Any more detailed responses will be developed during the formal comment and response process following close of the public hearing.

To help track the questions and preliminary responses, BIA's April 26, 2006 letter is attached. BIA's questions can be identified using that document. Regional Board preliminary responses to BIA questions are as follows:

## **San Diego County BIA Stormwater Legal Sub-Committee Questions**

### **Stream Habitat**

1. “Other impacts to beneficial uses” refers to negative impacts to beneficial uses associated with increased erosion of stream beds and banks and sediment/silt pollution generation. Examples include changes in bed material, turbidity conditions, or vegetation conditions resulting from increased erosion and sediment/silt pollution generation. Such changes can negatively impact the Warm Freshwater Habitat, Cold Freshwater Habitat, and Wildlife Habitat beneficial uses.
1. “Protect stream habitat” refers to prevention of negative impacts to the Warm Freshwater Habitat, Cold Freshwater Habitat, and Wildlife Habitat beneficial uses resulting from increased erosion and sediment/silt pollution generation.

### **Enforcement Responsibilities**

1. As stated in section D.2.c.(1)(b) of the draft Order, a storm water management plan is a plan that when implemented correctly will ensure that pollutants in construction site runoff are reduced to the maximum extent practicable (MEP) and will not cause or contribute to a violation of water quality standards. A storm water management plan does not need to be a storm water pollution prevention plan (SWPPP) as required under the State Water Resources Control Board (SWRCB) Water Quality Order No. 99-08-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity (General Construction Permit), but should describe all BMPs that will be implemented to control pollutant discharges during the construction phase.
2. A SWPPP exhibits how compliance will be achieved with the General Construction Permit. A storm water management plan exhibits how compliance will be achieved with each Copermittee’s construction and grading ordinances and other requirements. Depending on each Copermittee’s unique ordinances and policies, a storm water management plan may be similar to a SWPPP.

A Copermittee may determine for an individual site that the construction site’s SWPPP will be satisfactory as a storm water management plan, since the SWPPP complies with the Copermittee’s local grading ordinances, other ordinances, and the draft Order. For some construction sites, the Copermittee may determine that the site’s SWPPP is partially satisfactory as a storm water management plan that complies with their local grading ordinances, other ordinances, and the draft Order. In such a circumstance, additional plans may be needed in addition to the SWPPP to ensure

compliance with their grading ordinance, other ordinances, and the draft Order. In rare circumstances, the Copermittee may determine that the site's SWPPP is not satisfactory as a storm water management plan in compliance with their grading ordinance, other ordinances, and the draft Order. The Copermittee would then require that a separate storm water management plan be developed and reviewed to ensure compliance with their grading ordinance, other ordinances, and the draft Order. Sites that do not have a SWPPP will need to develop and implement a storm water management plan that exhibits compliance with applicable Copermittee ordinances and requirements.

3. Although enforcement of an order is a responsibility of the Regional Board, compliance with the Tentative Order is the responsibility of the Copermittees. It is in the best interest of the Copermittees to ensure compliance with the Tentative Order so as to prevent enforcement actions by the Regional Board and more importantly to protect water quality.

### Phase II Jurisdictions

1. It is expected that the Copermittees will coordinate between themselves to control discharges of pollutants from one municipal separate storm sewer system (MS4) to another. For example, the Copermittees could utilize a Memorandum of Understanding or other agreement to address this issue. However, the decision on how to control discharges between MS4s is ultimately made by the Copermittees. It is worth noting that the language stating that the Copermittees "cannot passively receive and discharge pollutants from third parties" quotes the Phase II NPDES federal regulations.<sup>1</sup> Moreover, the same language can be found in the current San Diego County Municipal Storm Water Permit, Order No. 2001-01.
2. This question was addressed at the April 26, 2006 workshop.
3. It is anticipated that small MS4s will be integrated into the overall MS4 program based on their threat to water quality. Small MS4s with a relatively high threat to water quality will be designated before small MS4s with lower threats to water quality. Threat to water quality will be determined based on size, activities conducted, pollutants generated, etc.

### Definition of Priority Development

1. The definition of Priority Development Projects at section D.1.d.(1) that includes "all new Development Projects" is modified by the rest of section D.1.d.(1), which states that such projects must "fall under the project

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<sup>1</sup> Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68766.

categories or locations listed in section D.1.d.(2).” The Regional Board will reassess this section to see if it can be clarified.

1. The phrase “but are not limited to” means that identification of environmentally sensitive areas is not limited to only those types of areas listed in the Tentative Order. Other types of areas can be characterized as environmentally sensitive areas by the Copermitees.

#### Tributary To

1. A tributary waterbody is one which contributes to a larger waterbody. “Tributary to” in the Tentative Order means one that contributes discharges. In the context of construction sites, if the discharge of stormwater contributes water to an impaired waterbody, then that site is “tributary to” the impaired waterbody. Construction sites tributary to Clean Water Act (CWA) section 303(d) waterbodies have definite potential to further degrade the waterbodies. Construction sites and activities tributary to impaired water bodies, therefore, must have additional controls to ensure that they are not discharging the pollutants that are causing or contributing to the impairment of the waterbodies.

#### Advanced Treatment

For clarification, the Tentative Order does not require Copermitees to require “advanced treatment” for all unstabilized slopes at any time of year. Section D.2.c.(1)(f) of the Tentative Order does require slope stabilization on all active slopes during rain events regardless of the season, unless advanced treatment is being implemented downstream of the slope.

1. Section D.2.c.(1)(k) of the Tentative Order states that implementation of advanced treatment is required for sediment at construction sites that are determined by the Copermitee to be a significant threat to water quality. Factors such as the slope’s length, height, grade, and soil types would all be determined by the Copermitees within reason when evaluating the site’s threat to water quality.
2. An un-stabilized slope is the opposite of a stabilized slope. An un-stabilized slope poses a threat to water quality due to the threat of erosion and sediment discharges resulting from lack of adequate best management practice (BMP) implementation. The Tentative Order does not prescribe specific BMPs for slope stabilization. As each site’s slopes differ, the stabilization effectiveness of BMPs will differ. However, the slope stabilization BMPs required to be implemented by the Copermitees need to be effective to comply with the Tentative Order requirements that the discharge of pollutants from construction sites are reduced to the MEP and that urban runoff discharges from construction sites do not cause or

contribute to a violation of water quality standards. BMPs that might be considered in determining whether a slope is stabilized or un-stabilized would be site specific and found in each construction site's storm water management plan.

3. Significant threat to water quality varies at each construction site with regards to the eight factors listed in section D.2.c.(1)(k): (1) soil erosion potential; (2) the site's slopes; (3) project size and type; (4) sensitivity of receiving water bodies; (5) proximity to receiving water bodies; (6) non-storm water discharges; (7) ineffectiveness of other BMPs; and (8) any other relevant factors. A site poses a significant threat to water quality when the site threatens or fails to reduce the discharge of pollutants to the MEP and discharges from the construction site threaten to cause or contribute to a violation of water quality standards.
1. The types or characteristics of coagulants that are permissible as part of an "advanced treatment system" are those that will reduce the discharge of pollutants from construction sites to the MEP and ensure that discharges from construction sites do not cause or contribute to a violation of water quality standards, including toxicity. It is ultimately the site operator's responsibility to identify appropriate measures to be implemented. Chitosan, modified starches, alum, electro-coagulation, carbonic acid, ferric chloride, polyacrylamides, and other organic or inorganic polymers are some of the coagulants and flocculants that may be able to meet this standard with proper implementation and subsequent filtration or post-treatment depending on each construction site's unique characteristics.
2. The types or characteristics of sedimentation devices that are permissible are those that will reduce the discharge of pollutants from construction sites to the MEP and ensure that discharges from construction sites do not cause or contribute to a violation of water quality standards. It is ultimately the site operator's responsibility to identify appropriate measures to be implemented. Settling basins, ponds, baker tanks, weir tanks, tube settlers, and centrifuges are some of the sedimentation devices that may be able to meet this standard with proper implementation and subsequent filtration or post-treatment depending on each construction site's unique characteristics.
3. The types or characteristics of polishing filter devices that are permissible are those that will reduce the discharge of pollutants from construction sites to the MEP and ensure that discharges from construction sites do not cause or contribute to a violation of water quality standards. It is ultimately the site operator's responsibility to identify appropriate measures to be implemented. Sand, media, membrane, and hydrocarbon are some of the filter types that may be able to meet this standard with proper implementation and subsequent filtration or post-treatment depending on

each construction site's unique characteristics.

1. Advancement treatment systems are not a specific BMP but rather a specific class of BMPs. As noted in the responses above, there are a multitude of BMPs that can be considered "advanced treatment." In the United States Environmental Protection Agency's (USEPA) August 26, 1996 policy statement titled "Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits", USEPA states that "the interim permitting approach uses best management practices (BMPs) in first-round storm water permits, and expanded or better-tailored BMPs in subsequent permits, where necessary, to provide for the attainment of water quality standards." In the San Diego County Municipal Copermittee's 2004-2005 Urban Runoff Monitoring Final Report, turbidity and total suspended solids are frequently and consistently in excess of the water quality standard.

### Grading Limitations

1. Disturbed area is the total surface area of exposed erodible earth material, before either temporary or permanent erosion control measures are implemented.
  2. The Regional Board would determine that a disturbed area is no longer subject to this provision when grading is finished and adequate erosion control is in place.
  3. Copermittees may consider several factors in calculating the disturbed area limit, including the size of the disturbed area, the capability to implement adequate erosion and sediment controls on the disturbed area, the staging of equipment necessary to grade, the scheduling of grading while complying with storm water regulations, other jurisdiction's experience with a maximum disturbed grading area, soil type, historical rainfall patterns, season of the grading activities, and past compliance history with storm water regulations.
1. "Compliance with applicable storm water regulations" means compliance with the local jurisdiction's ordinances including grading and stormwater ordinances. It could also mean compliance with the General Construction Permit, where the local ordinance requirements overlap with the General Construction Stormwater Permit or local ordinances require compliance with applicable state and federal regulations.
  2. "Adequate control practices implemented to prevent storm water pollution" is the proper implementation and maintenance of the site's storm water management plan so that the site does not discharge or threaten to discharge pollutants to the MEP and discharges from the construction sites do not cause or contribute or threaten to cause or contribute to a violation of water quality standards.

## Public Involvement and Due Process

1. The Tentative Order is essentially an individual permit which contains sufficient detailed requirements to ensure that compliance with discharge prohibitions, receiving water limits, and the narrative standard of MEP are achieved. It is not a non-specific general permit under which the development of plans plays a critical role in ensuring compliance with applicable water quality standards. Therefore, rather than being substantive components of the Tentative Order itself, the Copermitees' urban runoff management plans are simply descriptions of their urban runoff management programs required under the Tentative Order. These plans serve as procedural correspondence which guides program implementation and aids the Copermitees and Regional Board in tracking implementation of the programs. In this manner, the plans are not functional equivalents of the Tentative Order.

Additional information in response to this question may be further developed as part of the formal comment and response process following close of the public hearing.

2. The court case cited addresses Notices of Intent (NOIs) developed under a general permit, where the NOIs contain the information needed to determine whether or not the maximum extent practicable standard is met. Without knowledge of what is contained in the NOIs, achievement of the maximum extent practicable standard is not known. This differs from the scheme utilized in the Tentative Order. As discussed above, the Tentative Order itself contains sufficient detailed requirements to ensure that compliance with discharge prohibitions, receiving water limits, and the narrative standard of MEP are achieved. The urban runoff management plans merely serve as procedural correspondence which guides program implementation and aids the Copermitees and Regional Board in tracking implementation of the programs. In this manner, the plans are not functional equivalents of the Tentative Order, as opposed to the NOIs discussed in the court case cited. Because of this difference between the NOIs and the urban runoff management programs, the court case cited does not directly apply to the urban runoff management programs.

Additional information in response to this question may be further developed as part of the formal comment and response process following close of the public hearing.

## **San Diego County BIA Stormwater Technical Sub-Committee Questions**

1. This question was addressed at the April 26, 2006 workshop.



2. This question was addressed at the April 26, 2006 workshop.
3. Example Hydromodification Management Plans (HMPs) are available for the Copermittees to use during the development of a San Diego Region HMP that should reduce costs. A more detailed preliminary response to this question is being developed and will be provided prior to the June 21, 2006 public hearing.
4. The infiltration restrictions in the Tentative Order only apply to treatment control BMPs that function primarily as infiltration devices and direct large amounts of water into an area. Many of the measures used to address HMP requirements should not need these restrictions. Moreover, infiltration devices can be engineered (i.e. self contained) for areas that have slope, hydrogeology, or other concerns. Infiltration restrictions can be determined on site by site basis and the Copermittees are given the flexibility to develop alternative restrictions that are more appropriate for their jurisdictions. It is also worth noting that other strategies, such as retention, can be utilized in conjunction with infiltration for those areas where infiltration is problematic.
5. Section D.1.g.(2) allows the Copermittees to include in-stream measures to meet HMP requirements in place of on-site measures. The Tentative Order requires that these in-stream measures be natural and preserve or enhance the natural watershed hydrologic processes. In addition, most in-stream measures would require a 401 Water Quality Certification and 404 U.S. Army Corps of Engineer permit.
6. If in-stream measures are not available for a Priority Development Project, on-site measures will be required to meet HMP requirements.
7. This question was addressed at the April 26, 2006 workshop.
8. This question was addressed at the April 26, 2006 workshop.
9. The HMP is not expected to impact the natural replenishment of beach sand. The entire purpose of the HMP is to maintain natural sediment transport within streams. The HMP does not require halting all in-stream erosion; it requires maintaining downstream erosion to pre-project conditions.

Regarding potential erosion occurring within development project footprints, this type of erosion is typically halted by the development process itself. Erodible surfaces at development projects are covered with impervious surfaces or compacted during development, preventing erosion from occurring. If natural erosion of such areas for the purpose of beach replenishment is an overriding concern, perhaps development should not occur in these areas in the first place.

The HMP only addresses developed areas; once an area has been developed it is no longer a significant source of beach sand. Significant loss of beach sand replenishment is more likely caused by the trapping of eroded sand from undeveloped areas, such as areas behind dams and debris basins. In addition, recent studies have shown that on many San Diego beaches, cliff erosion can be the source of more than 50% of beach sand.<sup>2</sup>

10. The Erosion Potential equation can be used in the San Diego region by inputting local rainfall and stream data.
11. This question was addressed at the April 26, 2006 workshop.
12. In developing the Tentative Order's hydromodification language, the Regional Board considered hydromodification programs in Santa Clara County, Contra Costa County, Alameda County, Ventura County, Los Angeles County, Western Washington, and Maryland. Santa Clara County uses the Erosion Potential approach included in the Tentative Order. Ventura County and Los Angeles County are also expected to use the Erosion Potential approach.
13. Only one HMP, applicable to those portions of San Diego County located within the San Diego region, is required to be developed. It is not known how many San Diego firms have the experience necessary to develop the HMP. However, it is not necessary for a firm to be located in San Diego County in order to develop the HMP. Moreover, several firms which operate in California have worked on HMP development elsewhere in the state.
14. Regional Board registered civil engineers Eric Becker, Bob Morris, and Mike McCann reviewed and commented on the Tentative Order. Comments were not tracked because they were internal. By releasing the Tentative Order to the public, the Regional Board has made the Tentative Order available for review and comment by any registered civil engineer who is interested.
15. By releasing the Tentative Order to the public, the Regional Board has made the Tentative Order available for review and comment by any geotechnical engineer who is interested.
16. A soil classification map reflecting the location of soil types A-D throughout San Diego County was reviewed. The Soil Conservation Service's General Soil Map for the San Diego Area<sup>3</sup> and its Soil Survey<sup>4</sup> were also reviewed.

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<sup>2</sup> San Diego Union Tribune, October 13, 2005. Sifting County's Shifting Sands.

<sup>3</sup> U.S. Department of Agriculture Soil Conservation Service, 1971. General Soil Map – San Diego Area, California.

It should be noted that the Tentative Order's requirements are not reliant upon implementation of infiltration; other methods for control of flows and pollutants, such as retention, can also be used.

17. It is difficult to estimate the costs incurred by the Copermitees for HMP development because of variable factors such as consultant costs and number of watersheds to be studied. However, some cost estimates are available that provide a general idea of the approximate cost for HMP development. The consulting firm which developed the Santa Clara HMP estimates that conducting the necessary field work, developing an Erosion Potential ratio standard, developing flow rate and duration control criteria, and writing a supporting technical report would cost approximately \$200,000-300,000 for the first watershed studied, and \$70,000-100,000 for each watershed studied thereafter. Based on a cursory review of the area covered under the Tentative Order, the consulting firm estimates that the area can possibly be divided into approximately five representative areas or watersheds for study. Such a scenario would result in costs estimated to be \$480,000-700,000. Additional costs for converting the technical report into a final HMP would also be incurred, but would be a small fraction of the costs discussed above.

Costs of HMP development in other areas is also useful in estimating potential costs in San Diego County. According to the consulting firm that developed the HMP in Santa Clara County, approximately \$1 million was spent on the Santa Clara HMP. However, it is important to note that this was the first HMP developed, and costs included conducting several feasibility analyses and developing the process that was ultimately used. Since it is unlikely that these efforts would need to be repeated, costs should currently be lower than those incurred in Santa Clara County. For example, the same consulting firm reports that it developed a technical report containing the necessary information for an HMP in the Sulist/Valle area for approximately \$100,000.

While the above discussion is based on cost estimates from one consulting firm, the Copermitees should consider all qualified consulting firms for assistance in developing the HMP.

18. Copermitee costs to review plans for compliance with the HMP are not expected to be significantly more than current costs. The Model Standard Urban Storm Water Mitigation Plan (SUSMP) currently requires the control of flows to prevent hydromodification. However, the Model SUSMP does not provide specific criteria to assess compliance with this requirement. This lack of specific criteria makes compliance review difficult for the Copermitees. The HMP, on the other hand, will provide specific criteria to

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<sup>4</sup> U.S. Department of Agriculture Soil Conservation Service, 1973. Soil Survey – San Diego Area, California.

be used by the Copermittees to assess compliance during plan review. The provision for specific criteria should streamline plan review, limiting and possibly reducing the Copermittees' review costs.

19. This question was addressed at the April 26, 2006 workshop.
20. The current San Diego County Municipal Storm Water Permit, Order No. 2001-01, contained requirements that could result in construction of detention and retention ponds. The State Department of Health Services commented on Order No. 2001-01, and that Order reflects those comments. The Tentative Order likewise reflects the previous comments made by the State Department of Health Services. For example, Finding 2.e of the Tentative Order discusses vector control. In addition, the Copermittees are required to develop treatment BMP design standards (section D.1.d.(8)), which are expected to address vector issues. Moreover, by releasing the Tentative Order to the public, the Regional Board has made the Tentative Order available for review and comment by any environmental health agency which is interested.
21. This question was addressed at the April 26, 2006 workshop.
22. Section D.1.g.(2) allows the Copermittees to include in-stream measures to meet HMP requirements in place of on-site measures. The Tentative Order requires that these in-stream measures to be natural so that they preserve or enhance the natural watershed hydrologic processes and beneficial uses. Use of non-natural hardscape materials like riprap, concrete, and gabions in-stream is not allowed under the Tentative Order to meet the HMP requirements since they can disrupt the natural process and impact beneficial uses. However, the Tentative Order does not preclude the use of these hardscape materials in-stream to meet other type of requirements (i.e. flood control), provided appropriate permits are obtained.
23. The Tentative Order allows certain types of in-stream measures to be implemented as an option to meet the HMP requirements. The in-stream measures are required to protect beneficial uses. If these types of in-stream measures pose an unacceptable risk, then on-site measures should be implemented to meet the HMP requirements. It is worth noting that hardscape materials can still be used in-stream to achieve other purposes if proper permits are obtained.
24. The Regional Board estimate for implementation of treatment control BMPs in compliance with Order No. 2001-01 requirements was less than 1% of total project costs. This estimate was corroborated by the SWRCB which cited in Order WO 2000-11 the Los Angeles Regional Water Quality Control Board's (LARWQCB) estimate that treatment control BMPs would constitute 1-2% of total development costs. USEPA's findings that detention basins

cost \$0.50-1.00 per cubic foot of runoff treated<sup>5</sup> also correspond with the Regional Board's, SWRCB's, and LARWQCB's findings that compliance with treatment control BMP requirements constitute 1-2% of total project costs. CASQA estimates for detention basin construction costs (<\$1.00 per cubic foot treated) are also consistent with the 1-2% of total project cost estimate.<sup>8</sup>

Most costs associated with the Tentative Order's SUSMP requirements are expected to be similar to costs incurred under the Order No. 2001-01 SUSMP requirements. This is because many of the requirements are similar. Where SUSMP requirements have changed in the Tentative Order, it is often for the purpose of providing more specificity to the requirements so that it is more clear what is required. For example, the Model SUSMP developed under Order No. 2001-01 requires implementation of site design BMPs where "applicable and feasible". Tentative Order No. R9-2006-0011, on the other hand, requires implementation of at least two site design BMPs at each Priority Development Project, chosen from lists included in the Tentative Order. Since site design BMPs are required in both Order No. 2001-01 and Tentative Order No. R9-2006-0011, costs are not expected to increase significantly. Other changes to SUSMP requirements are expected to have similar cost impacts.

Cost estimates associated with implementation of HMP requirements can be found in the Santa Clara County HMP. Costs associated with construction of a regional flow duration control (FDC) basin for a 716-acre residential development (with moderate infiltration rates (0.2 in/hr) and no site design BMP implementation) was estimated to cost approximately \$600 per lot, assuming four houses per acre. This cost estimate did not include design, environmental documents, or land costs. However, implementation of site design BMPs can be expected to reduce FDC basin costs, and FDC basins can be located in conjunction with areas such as neighborhood parks.

Costs associated with construction of a FDC basin for a small 12-lot residential subdivision (with low infiltration rates (0.06-0.20 in/hr) and site design BMP implementation) was estimated to cost approximately \$5,000 per lot. This cost estimate did not include design, environmental documents, or land costs.

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<sup>5</sup> USEPA, 1999. Preliminary Data Summary of Urban Storm Water Best Management Practices. P. 6-3.

<sup>6</sup> CASQA, 2003. Stormwater Best Management Practice Handbook – New Development and Redevelopment. P. TC-22, 7 of 10.

<sup>7</sup> Santa Clara Valley Urban Runoff Pollution Prevention Program, 2005. Hydromodification Management Plan. P. 6-14.

<sup>8</sup> Santa Clara Valley Urban Runoff Pollution Prevention Program, 2005. Hydromodification Management Plan. P. 6-17.

Costs associated with construction of a FDC basin for a 12-acre commercial project (with a high infiltration rate (0.5 in/hr)) was estimated to cost approximately \$115,000.<sup>9</sup> This cost estimate did not include design, environmental documents, or land costs.

25. This question was addressed at the April 26, 2006 workshop.
26. Feasibility of implementing treatment control best management practices will be determined by each Copermittee during its review of project specific post-construction stormwater management plans. The Regional Board will be available to provide technical assistance to Copermittees. The Regional Board will also continue to perform audits or program evaluations during which the Copermittee's process to evaluate feasibility analyses will be reviewed.
27. Projects subject to HMP requirements with limitations of space could consider alternatives like underground detention or in-stream natural measures.
28. The Site Design BMP Substitution Program is a program option which must be developed by the Copermittees. It was included as an option in the Tentative Order at the request of the Copermittees in their Report of Waste Discharge. Since the program has not yet been developed, it is difficult to estimate the percentage of Priority Development Projects that will be able to participate in the program. However, any Priority Development Projects with a low potential to develop high levels of pollutants could be eligible for the program. It is expected that criteria for identifying such projects will be developed as part of the program.
29. The Regional Board is not aware of other Site Design BMP Substitution Programs that have been developed. The program was included in the Tentative Order as an option at the request of the Copermittees in their Report of Waste Discharge. However, the Model SUSMP approved by the Regional Board in June 2002 included a related option for a Site Design Storm Water Treatment Credit System, which was not taken advantage of by the Copermittees. A similar credit system exists in the State of Maryland. It is important to note that the Site Design BMP Substitution Program is included as an option in the Tentative Order which provides incentive for site design BMP implementation at Priority Development Projects. These projects do not need to participate in the program if they so choose.
30. As discussed in response to question # 29, the Regional Board is not aware of other Site Design BMP Substitution Programs that have been developed. However, participation in the program is an option. If a Priority

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<sup>9</sup> Santa Clara Valley Urban Runoff Pollution Prevention Program, 2005. Hydromodification Management Plan. P. 6-20.



Development Project determines that the percentage of land required to participate in the program is excessive, it does not need to participate.

31. As discussed in response to question # 29. the Regional Board is not aware of other Site Design BMP Substitution Programs that have been developed. However, participation in the program is an option. If a Priority Development Project determines that the percentage of land required to participate in the program is excessive, it does not need to participate.
32. As discussed in response to question # 29. the Regional Board is not aware of other Site Design BMP Substitution Programs that have been developed. However, participation in the program is an option. If a Priority Development Project determines that the percentage of total project costs required to participate in the program is excessive, it does not need to participate.
33. As discussed in response to question # 29. the Regional Board is not aware of other Site Design BMP Substitution Programs that have been developed. However, participation in the program is an option. If a Priority Development Project determines that the percentage of total project costs required to participate in the program is excessive, it does not need to participate.
34. The Copermittees are required to evaluate the effectiveness of activities and BMPs in compliance with section I of the Tentative Order. These requirements apply to BMPs implemented under the waiver provision.
35. This question was addressed at the April 26, 2006 workshop.
36. This question was addressed at the April 26, 2006 workshop.
37. This question was addressed at the April 26, 2006 workshop.
38. This question was addressed at the April 26, 2006 workshop.
39. *The Cost Analysis – Washington Department of Ecology Year 2001 Minimum Requirements for Stormwater Management in Western Washington*<sup>10</sup> has been reviewed. This study provides cost estimates for constructing BMPs which meet Western Washington's permanent storm water BMP requirements. Western Washington's permanent storm water BMP requirements are similar to those in the Tentative Order, though oftentimes they are more stringent. For example, BMPs implemented for flow control are often sized to control the 100 year 24-hour storm event. Likewise, Western Washington requires enhanced treatment under certain

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<sup>10</sup> Washington State Department of Ecology, 2001. Cost Analysis – Washington Department of Ecology Year 2001 Minimum Requirements for Stormwater Management in Western Washington.

development situations, which can involve implementation of treatment trains incorporating more than one treatment BMP. Since these requirements exceed those of the Tentative Order, cost estimates from Western Washington likely exceed costs that will be incurred in San Diego County from implementing the Tentative Order's SUSMP and HMP requirements.

Some cost estimates for meeting Western Washington's permanent storm water BMP requirements are as follows: (1) A 10-acre residential development with 5.5 units per acre would spend approximately \$181,200 for runoff treatment and flow control (without infiltration) for a total of approximately \$3295 per unit; (2) A 1-acre commercial development with 90% impervious cover would spend approximately \$273,100 for runoff treatment and flow control (with infiltration);<sup>12</sup> and (3) A 10-acre commercial development with 85% impervious cover would spend approximately \$263,800 for runoff treatment and flow control (with infiltration).<sup>13</sup>

The above estimates include cost considerations for materials, construction, permitting fees, and contingencies (25%).

40. *Review of the Cost Analysis – Washington Department of Ecology Year 2001 Minimum Requirements for Stormwater Management in Western Washington* did not reveal information supporting this assertion.
41. This question was addressed at the April 26, 2006 workshop.
42. Each watershed is held to the same standard of treatment for the specific pollutants of concern identified for the watershed. Pollutants of concern must be treated with treatment control BMPs that have high or medium removal efficiencies for the pollutants of concern, unless implementation of such BMPs can be exhibited to be infeasible. However, because different watersheds have different pollutants of concern, treatment control BMPs in different watersheds may target different pollutants of concern.
43. PCBs are only required to be treated if the Priority Development Project has the potential to discharge PCBs.

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<sup>11</sup> Washington State Department of Ecology, 2001. Cost Analysis – Washington Department of Ecology Year 2001 Minimum Requirements for Stormwater Management in Western Washington. Table 6. Cost estimate cited does not include construction storm water BMP costs.

<sup>12</sup> Washington State Department of Ecology, 2001. Cost Analysis – Washington Department of Ecology Year 2001 Minimum Requirements for Stormwater Management in Western Washington. Table 10. Cost estimate cited does not include construction storm water BMP costs.

<sup>13</sup> Washington State Department of Ecology, 2001. Cost Analysis – Washington Department of Ecology Year 2001 Minimum Requirements for Stormwater Management in Western Washington. Table 16. Cost estimate cited does not include construction storm water BMP costs.



44. Operators of agricultural operations are not Copermittees to the Tentative Order. Return flows from irrigated agriculture and agricultural storm water runoff are not subject to NPDES requirements. Conversely, the Tentative Order does not restrict Copermittees from regulating those types of discharges through local codes and ordinances. Where other agricultural activities contribute discharges of pollutants to municipal separate storm sewer systems, the municipal Copermittees to the Tentative Order are expected to determine the extent to which the agricultural operations are regulated by the Copermittees and to act accordingly to prevent the discharges of pollutants. In situations where agricultural activities contribute pollutants identified as priority pollutants in the watershed, the Copermittees are expected to engage the operators in the development of watershed urban runoff management programs.
45. This question was addressed at the April 26, 2006 workshop.
46. The Model SUSMP identifies several structural BMPs that can be effective in reducing metals, including biofilters, detention basins, and filtration.
47. If diazinon is identified as the pollutant of concern generated by a Priority Development Project (unlikely), it the responsibility of the project proponent to identify the source control, site design, and treatment control BMPs that will be implemented to meet the SUSMP requirements and reduce discharge of these pollutants to the MEP.
48. If chlordane is identified as the pollutant of concern generated by a Priority Development Project (unlikely), it the responsibility of the project proponent to identify the source control, site design, and treatment control BMPs that will be implemented to meet the SUSMP requirements and reduce discharge of these pollutants to the MEP.
49. If lindane is identified as the pollutant of concern generated by a Priority Development Project (unlikely), it the responsibility of the project proponent to identify the source control, site design, and treatment control BMPs that will be implemented to meet the SUSMP requirements and reduce discharge of these pollutants to the MEP.
50. If PAHs are identified as the pollutant of concern generated by a Priority Development Project, it the responsibility of the project proponent to identify the source control, site design, and treatment control BMPs that will be implemented to meet the SUSMP requirements and reduce discharge of these pollutants to the MEP.
51. Only development projects which generate chloride, metals, diazinon, chlordane, Lindane, PCBs, and PAHs will be required to treat runoff for those pollutants. Therefore, treatment for most of the pollutants listed in the

question will not be required for most cases. Costs of treatment depend on the pollutant at issue and the BMP chosen for treatment. BMP size is also an issue. The CASQA BMP Handbook includes examples of BMPs which can be effectively used for different pollutants, and provides cost information on those BMPs. For example, CASQA finds constructed wetlands to be effective for treating metals and organics, and estimates the cost of these systems to be approximately \$57,100 for a 1 acre-foot facility.

52. The Tentative Order does not require the use of natural materials for treatment. It does, however, require the use of natural materials if a channel is going to be modified in order to meet hydromodification requirements. Natural materials (those naturally found in channels) will maintain the channels' habitat characteristics, thereby protecting the Warm Freshwater Habitat beneficial use. Non-natural materials, by definition, will alter channel habitat and other channel characteristics. This alteration will impact beneficial uses such as Warm Freshwater Habitat (WARM) and Non-contact Water Recreation (REC-2). Hardscape bank stabilization creates an aesthetic transformation of a diverse natural environment to an environment of concrete and riprap (REC-2). Such projects remove vegetation and riparian cover, which result in loss of wildlife habitat and stream temperature changes, impacting aquatic life (WARM).<sup>14</sup>
53. *The Effect of Increases in Peak Flows and Imperviousness on the Morphology of Southern California Streams* study addresses Ventura, Los Angeles, and Orange Counties. The principal findings of the study apply to all three counties studied. Moreover, the study found that "the data for southern California streams forms a relationship very similar in shape to the enlargement curves developed for other North American streams." In other words, the general findings of the study are observed to some degree throughout southern California, as well as in other areas of North America that have been studied. For these reasons, it is reasonable to assume the principal findings of the study apply to San Diego County as well. This assumption is supported by frequent field observations of incised streams in San Diego County. Therefore, it is not necessary for a similar study to specifically be conducted in San Diego County.
54. As part of the HMP, the Copermittees will identify the range of rainfall events for which the rates and durations will have to be controlled.
55. Section D.1.g.(1) requires that pre-development rates and durations for a range of storms that discharge from the project not to be exceeded. Control of rates and durations is expected to result in sufficient control of velocities for hydromodification purposes.

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<sup>14</sup> Riley, 1998. Restoring Streams in Cities.

56. Development causes increases in the volume of runoff due to the increase in the amount of impervious area. The HMP will set criteria, standards, and requirements for Priority Development Projects to ensure that the discharge of this increased volume of runoff is at appropriate rates/durations that will not increase downstream erosion.
57. Flow duration criteria will be developed as part of the HMP. However, flow durations can be increased for discharge rates below the minimum critical flow rate established in the HMP.
58. Flow duration can be increased for discharges rates below the minimum critical flow rate established in the HMP.
59. Both peak flow rates and durations will need to be controlled for a range of storms established in the HMP. Section D.1.g.(1)(l) requires monitoring and other program evaluations to be conducted to assess the effectiveness of implementation of the HMP. The Santa Clara Valley Urban Runoff Pollution Prevention Program used the U.S. Army Corp of Engineers Engineering Center- Hydrologic Modeling System (HEC-HMS) in the development of their HMP. Contra Costa utilized USEPA's Hydrologic Simulation Program-Fortran for development of their HMP. These are a few examples, but other hydromodification studies typically list the modeling programs that were used.
60. The HMP does not require that stream erosion be eliminated. It simply requires that the accelerated erosion, downcutting, and channel widening resulting from development be controlled. Modeling of pre-urban, existing, and future conditions is used to establish what rates and durations will need to be controlled to maintain downstream erosion. See response to comment # 59 for examples of modeling that have been used.
61. How far downstream an analysis will have to be completed will be determined on a project-by-project basis. The project will have conduct its evaluation to a point far enough downstream to demonstrate that increases in downstream erosion will not result from the project. If the HMP provides criteria that are appropriate for regionwide application, this analysis should be simplified.
62. The effective work index can be used to characterize erosive force. The Tentative Order requires the Copermitees to develop an Erosion Potential ratio standard which compares pre- and post-project effective work indices for downstream channel segments. The Erosion Potential ratio standard identified by the Copermitees will dictate acceptable increases in the effective work index (or erosive force) of a channel segment resulting from runoff from a Priority Development Project. The Copermitees are also required to develop criteria for a range of rainfall events from which runoff

flow rates and durations must be controlled. Compliance with the Erosion Potential ratio standard and the rainfall event criteria will constitute compliance with the requirement that increases in erosive force be addressed.

63. When development of a piece of land is completed, two physical parameters generally change causing downstream erosion. Peak flow rates and flow durations of runoff increase, while coarse sediment supply in runoff is reduced. These two physical parameters are additive in their effect on downstream erosion conditions. The HMP will address the changes in peak flow rates and flow durations; however, the Tentative Order does not require the HMP to address reduction of coarse sediment supply.

Runoff leaving a completed project is generally low in coarse sediment content because coarse sediment sources have been largely paved over. Therefore, coarse sediment levels in runoff from completed development projects are typically already low, whether basins are used to control runoff or not. Any further reduction in coarse sediment content due to the use of basins at a completed development project is expected to be outweighed by the considerable benefits of controlling runoff peak flow rates and durations.

It should be noted that if runoff low in coarse sediment is a significant concern to the Copermitees and other interested parties (such as BIA), additional requirements to address coarse sediment deficiency can be included in the HMP. For example, requirements preventing development of areas which are a good source of natural coarse sediment can be developed. Another option would be to ensure that runoff from non-developed natural areas does not pass through basins. In addition, the stringency of runoff peak flow rate and duration criteria can be increased, to the point where post-project runoff peak flow rates and durations are required to be lower than pre-project levels. This could help compensate for runoff with reduced amounts of coarse sediment.

64. The longest rainfall record available should be used in calculating the effective work index.
65. Development of the HMP is not based on the having hydrologic data from every stream in the entire San Diego Region. The criteria and standards established in HMP will be from representative watersheds and applied on a regional, watershed, or subwatershed basis. A project would meet the criteria/standards for its watershed or from a watershed with similar conditions. Although conditions in watersheds may vary, it is expected that the range of storm events that will need to be controlled will be consistent between many watersheds.

66. The coefficient  $C$  is included in the effective work index equation in order to convert the equation from dimensionless units of work to dimensional units of work. The coefficient incorporates consideration of gravity, particle size, and density. Because the coefficient is a constant, it cancels itself out in the Erosion Potential ratio.
67. The stream power exponent for the effective work index is within a range of 1 to 2.5. During the development of the Santa Clara Valley Urban Runoff Pollution Prevention Program HMP, an average value was estimated for all watersheds based on stream flow measurement. This does not preclude the selection of exponent specific to distinct watersheds.
68. Stream channels under pre-urban conditions are used as a baseline for comparison with existing and future conditions and are assumed to be stable. Stable channels are loosely defined as channels that neither aggrade or degrade, but instead maintain average cross-sections, planforms, and profile features over time and within a range of variance. If pre-urban stream channels used for the stability assessment analysis are found to be unstable, it could affect the standard and criteria to be developed for control of runoff peak flow rates and durations. In such a case, the resulting standard and criteria may be less stringent than if stable pre-urban stream channels were used for the stability assessment analysis.
69. Development of the HMP is not based on the having hydrologic data from every stream in the entire San Diego Region. The criteria and standards established in HMP will be from representative watersheds and applied on a regional, watershed, or subwatershed basis. A project would meet the criteria/standards for its watershed or from a watershed with similar conditions. Although conditions in watersheds may vary, it is expected that the range of storm events that will need to be controlled will be consistent between many watersheds.
70. The Copermittees should review available rainfall records to identify the most appropriate rainfall records for use in development of the HMP. The Western Washington Hydrology Manual requires a minimum rainfall record of 20 years, though a rainfall record of 40-50 years is preferred.
71. Different soil conditions are considered in the effective work index. The critical shear value and velocity that selected based on the weakest stream boundary soil material to determine when bed and bank erosion will occur.
72. Restrictions on BMPs primarily designed to infiltrate large amounts of storm water can be found at section D.1.d.(12) of the Tentative Order. However, the Copermittees have discretion to develop alternative restrictions for these types of BMPs.

73. The Tentative Order does not require any specific BMP be used for a given situation. Copermittees will consider the potential effect on vectors of disease during evaluation of BMPs. Copermittees are required to ensure that BMPs are designed and implemented to be effective, and vectors are one of the factors involved in that consideration. If a proposed BMP is likely to produce unmitigated and unacceptable vector threats, then it should be redesigned or replaced.
74. Required treatment control BMP inspection frequencies are found at section D.1.e of the tentative Order.
75. Runoff from all developed areas at Priority Development Projects (including landscaped areas) is required to be treated. This requirements currently exists under Order No. 2001-01 and the Model SUSMP. The amount of runoff which must be treated from these areas is identified at section D.1.d.(6)(c) of the Tentative Order. They type of treatment which is required is identified at section D.1.d.(6)(d).
76. The amount of impervious footprint that can be minimized will be determined by the Copermittees on a project-by-project basis. Since each project is different, this requirement gives the Copermittees needed flexibility to determine what site conditions/constraints will allow.
77. The requirement for implementation of all site design BMPs where determined to be applicable and feasible by the Copermittees mirrors the current requirements under the Model SUSMP. The requirement was included in the Tentative Order to ensure current levels of site design BMP implementation continue. While implementation of some of the listed site design BMPs could control low flows, implementation of additional site design BMPs is required to control large flows where possible. Large flows also exert erosive force on streams; therefore site design BMPs which can help control large flows should be implemented where applicable and feasible.
78. Municipalities downstream of a given project are not expected to have review authority on upstream projects outside of their jurisdiction. The Copermittees may wish to set up such a review process, however. The Tentative Order does not preclude this type of review, if pursued by the Copermittees. In addition, the Copermittees can utilize the California Environmental Quality Act (CEQA) review process for these purposes if they wish.
79. Water quality objectives are the limits or levels of water quality constituents established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area (California Water Code section 13050(n)). Some water quality objectives are narrative and others are



numerical values. They are designated in the Water Quality Control Plan for the San Diego Basin (Basin Plan).

80. Minimum measurable outcomes for Watershed Water Quality Activities can include inspection of a certain number of facilities, implementation of a certain number of treatment control BMPs, or abatement of a certain number of identified pollutant sources.
81. The Fact Sheet/Technical Report for the Tentative Order discusses the concept of free and open access to the MS4s in the context of third party dischargers as described by USEPA.<sup>15</sup> The general context for the USEPA discussion is with dischargers to which NPDES permits have not been issued. Nonetheless, the primary responsibility for eliminating illicit discharges lies with the owner and operator of the MS4 to which the discharge occurs. Each municipality has the responsibility of identifying the source of pollutants identified in its MS4 and receiving waters. When downstream municipalities conclude that the source of pollution (also contamination and nuisance) is discharges from upstream municipalities, those downstream municipalities have the responsibility to identify whether its own MS4 discharges are causing or contributing to the impairment and to expeditiously notify the upstream municipality to get the problem corrected.
82. Polynuclear aromatic hydrocarbons (PNAs), also referred to as polycyclic aromatic hydrocarbons (PAHs), are base/neutral organic compounds that have a fused ring structure of two or more benzene rings in various structural configurations. They are formed as a result of incomplete combustion of organic materials. PNAs with two to five benzene rings can have serious environmental and human health effects. They have high potential for biomagnification and are often acutely toxic, mutagenic, teratogenic, and/or carcinogenic. Examples of sources of PNAs in urban stormwater runoff include hydrocarbon spills, leaching of asphalt roads, wearing of tires, deposition from automobile exhaust, oiling of roadsides and unpaved roadways, and industrial and domestic waste. Examples of PNAs include acenaphthylene, anthracene, Benzo-pyrene, benzo-perylene, chrysene, fluoranthene, fluorine, indeno-pyrene, naphthalene, phenanthrene, and pyrene.
83. The Tentative Order identifies pesticides, herbicides, and polychlorinated biphenyls (PCBs) as examples of synthetic organics. Specific examples of pesticides and herbicides include atrazine, chlordane, endrin, and simazine. PCBs are mixtures of different congeners of chlorobiphenyl. USEPA banned most uses of PCBs in 1979. PCBs were used in industries developing transistors and capacitors. Other uses included as hydraulic

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<sup>15</sup> Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68765-68766.

fluids, plasticizers, adhesives, fire retardants, dedusting agents, pesticide extenders, inks, and lubricants.

84. Identification of treatment control BMPs to address persistent toxicity is dependent on identification of the constituents causing the toxicity. Toxicity Identification Evaluations should be conducted where the causes of toxicity are not known. It should be noted that if a Priority Development Project is not a potential source of the constituent causing the toxicity, the Priority Development Project does not need to treat for the constituent.
85. Tecolote Creek has significant increasing trends of arsenic concentrations. Chollas Creek has significant increasing trends of nitrate and lead concentrations. Sweetwater River does not have an identified significant increasing trend for any constituent.
86. A word search of the Tentative Order for the phrase "sensitive to persistent toxicity" resulted in no matches. Please identify the Tentative Order section of concern so that we may better answer the question.
87. Pollution prevention and source reduction practices are favored over treatment practices because conducting education practices and incorporating pollution prevention practices into project planning and design activities are generally more effective, require less maintenance, and are more cost-effective in the long term than treatment strategies. There are countless opportunities for pollution prevention practices in residential, commercial, and industrial development. The options for pollution prevention are generally dictated by the specific land-use activity. The State Water Resources Control Board and California Coastal Commission have developed a broad overview of practices in The California Nonpoint Source Encyclopedia, which is available on-line at <http://www.waterboards.ca.gov/nps/encyclopedia.html>. A general example is the substitution of products or procedures that generate or expose pollutants for alternative products and procedures. For example, landscaping that requires substantial use of fertilizers, herbicides, and pesticides can be replaced by more tolerant landscaping choices that require less supplements. Another common example in urbanized areas includes eliminating the practice of hosing-down driveways and sidewalks into the street with other cleaning practices to remove trash and debris.
88. The 1972 amendments to the CWA provide the statutory basis for the NPDES permit program and the basic structure for regulating the discharge of pollutants from point sources to waters of the United States. The discharge of urban runoff from a MS4 is a discharge of pollutants from a point source into waters of the United States, as defined in the Clean Water Act. The Stormwater Phase I Rule (55 FR 47990; November 16, 1990) requires all operators of medium and large MS4s to obtain an NPDES



permit and to develop a stormwater management program designed to prevent harmful pollutants from being washed by stormwater runoff into the MS4 (or from being dumped directly into the MS4), then discharged from the MS4 into local waterbodies.

89. "Maximum extent practicable" is a technology-based effluent limit, as opposed to a numerical effluent limit, established by the CWA. The CWA requires that NPDES permits for discharges from MS4s shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants. Because practicability is a function of several dynamic factors that are both internal and external to a given municipality, including technology and economics, the definition of MEP provided in the Tentative Order is appropriate. Moreover, the definition is based on guidance provided by the SWRCB.
90. The modeling and equations used in the development of the Santa Clara Valley Urban Runoff Pollution Prevention Program HMP are appropriate for use in other areas like the San Diego Region. The methodology used in Santa Clara Valley can be used if it is calibrated using local conditions, hydrologic data, and physical processes to establish the criteria/standards for the San Diego Region.
91. Please see response to question # 90.
92. Please see response to question # 90.
93. Data from all natural watercourses in San Diego County is not needed. As discussed in response to question 17, data from representative regions or watersheds may be used to develop the HMP. It is estimated that data will need to be collected over 1-2 winters. Estimated costs are discussed in response to question 17.
94. The limits on the potential for downstream erosion will vary based on project and watershed conditions. Analysis should be conducted far enough downstream to exhibit downstream erosion will not occur.
95. Stable channels are those channels that neither aggrade or degrade, but instead maintain average cross-sections, planforms, and profile features over time and within a range of variance. Runoff discharges to stable channels will need to meet peak flow rate and duration criteria in order to ensure that such channels remain stable. Channels can become unstable when stream discharge rates and durations are significantly altered.

96. Please see response to question # 63.
97. Cost for development of the HMP is discussed in response to question # 17. Additional costs can be expected to be incurred by the Copermitees for plan review and training of plan reviewers. However, costs for these activities can be reduced or negated by incorporating the activities into already existing programs. For example, the Copermitees are currently required to train their planning and development review staffs on how impacts to receiving water quality resulting from development can be minimized (Order No. 2001-01 section F.1.d.(1)(c)). Training regarding the HMP can be incorporated into this existing training program, minimizing costs incurred by the Copermitees. In addition, the Copermitees are currently required to review Priority Development Project plans to ensure that discharges from new development and significant redevelopment maintain or reduce pre-development downstream erosion and protect stream habitat (Order No. 2001-01 section F.1.b.(2)(i)). Because the Copermitees do not currently have specific numeric criteria to guide their plan reviews for this issue, the reviews include uncertainty, which can lead to increased time and costs for the reviews. The HMP, on the other hand, will include specific criteria to be used by plan review staff during their reviews. This specific criteria will clarify what is required, making plan reviews more efficient. This increased efficiency should minimize or negate increased costs associated with plan review for compliance with the HMP.
98. It is assumed that this question's reference to "impacts to coastal regions" addresses the issue of beach sand replenishment. This issue is addressed in response to question # 9. In addition, the Copermitees are required to assess the effectiveness of the HMP through pre and post project monitoring (Tentative Order, section D.1.g.(1)(i)). This monitoring will help assess long-term impacts of HMP implementation.
99. Implementation of the HMP does not necessarily require construction of land consumptive basins. The requirements of the HMP can also be met through the implementation of numerous small bioretention units which can be incorporated into landscaping on each lot. Parks and ball fields can also serve dual purposes as detention facilities. In addition, detention can be achieved through the use of underground systems when land costs are high. Moreover, if basins are necessary for a particular project, their size can be minimized through extensive use of site design and low impact development concepts throughout the project. Implementation of these concepts reduces the amount of runoff from a project, reducing basin size.

It is also worth noting that basins designed to meet HMP requirements can also be used to meet current requirements for treatment of the 85<sup>th</sup> percentile storm event. Flood control requirements can also be met through the use of basins. Basins used for water quality, flood control, and

hydromodification control purposes can reduce the overall amount of land needed for basins.

If basins are determined to be necessary for a particular project, the Santa Clara HMP estimates that 1-5% of the contributing catchment area is needed for flow duration basins, depending on factors such as basin depth, soil infiltration rates, impervious surface area, and implementation of low-impact design strategies.<sup>16</sup> As stated previously, such basins can be incorporated into landscaping, parkland, or ball fields.

100. The full extent of water quality impairments of surface and ground waters within the San Diego region is unknown because of incomplete water quality monitoring data. Urban runoff, including stormwater discharges, is a suspected source of pollutants for nearly all the waterbodies currently identified as impaired in the San Diego region pursuant to Section 303(d) of the CWA.

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<sup>16</sup> Santa Clara Valley Urban Runoff Pollution Prevention Program, 2005. Hydromodification Management Plan. Appendix C, Technical Memorandum 7.

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April 26, 2006

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Re: *California Regional Water Quality Control Board San Diego Region  
Tentative Order NO. R9-2006-0011 NPDES NO. CAS0108758 Waste  
Discharge Requirements for Discharges of Urban Runoff From the  
Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds  
of the County of San Diego, the Incorporated Cities of San Diego County,  
the San Diego Unified Port District, and the San Diego County Regional  
Airport Authority*

**CHIEF EXECUTIVE OFFICER**

Paul A. Tryon

Dear Chairman Minan,

**AFFILIATES**

California Building  
Industry Association

National Association  
of Home Builders

National Association  
of Industrial and  
Office Properties

On behalf of the Building Industry Association of San Diego County  
("BIA") and its 1450 member companies we request that Regional Board  
staff provide written clarification of the attached questions.

BIA has reviewed the *California Regional Water Quality Control Board San  
Diego Region Tentative Order NO. R9-2006-0011 NPDES NO. CAS0108758  
Waste Discharge Requirements for Discharges of Urban Runoff From the  
Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds  
of the County of San Diego, the Incorporated Cities of San Diego County,  
the San Diego Unified Port District, and the San Diego County Regional  
Airport Authority* ("MS4 permit".)

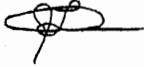
At previous Regional Board hearings you have expressed a desire for input  
from the BIA on the impacts of the renewal of the MS4 permit on the  
construction industry. In preparing to address your request we believe it  
important to clarify a number of technical and legal issues that have arisen  
from our review of the draft MS4 permit. We further believe that it is  
important to have a dialogue with the Regional Board regarding staff's reply  
to our questions prior to the beginning of the public hearing process.

In order to have sufficient time to address the specifics of the MS4 permit  
we respectfully request that staff be directed to answer these questions so as  
to allow adequate time to provide written comment to the Regional Board  
prior to the May 31<sup>st</sup> deadline to submit comments that will be provided to  
the Regional in advance of the June 14<sup>th</sup> Public Hearing.



The BIA looks forward to a productive dialogue with the Regional Board and its staff on the impacts of the adoption of this permit as you prepare to begin hearings on the renewal of this permit.

Sincerely,

A handwritten signature in black ink, appearing to be "Jerry Livingston", written over a horizontal line.

Jerry Livingston  
Government Affairs  
Staff Counsel

**San Diego County BIA Stormwater Legal Sub-Committee Questions Regarding  
Tentative Order No. R9-2006-0011  
NPDES No. CAS0108758**

**(DRAFT MUNICIPAL DISCHARGE PERMIT)**

**Stream Habitat**

The Draft Order requires co-permittees to modify their development planning process to control for increased erosion of streambeds, and banks, silt pollutant generation or other impacts to beneficial uses and stream habitat due to increased erosive force. (Section D.1.)

1. Please explain what the RWQCB means by the term “other impacts to beneficial uses”.

Section D.1.d(10) requires co-permittees to modify their SUSMP to ensure that runoff discharge rates, durations and velocities from Priority Development Projects are controlled to maintain or reduce downstream erosion conditions and protect stream habitat.

1. Please explain what the RWQCB means by the term “protect stream habitat”.

**Enforcement Responsibilities**

The Technical Report supporting the Draft Order makes clear that the Regional Board is responsible for enforcing the General Construction Activities Permit (Finding D.3.a) The General Municipal Storm water Permit requires the preparation of a Storm Water Pollution Prevention Plan (SWPPP) as a Best Management Practice (BMP).

Prior to the issuance of local construction and grading permits Section D.2.(a)(2)(b) requires co-permittees to require and review the project proponent’s storm water management plan to ensure compliance with their grading ordinance, other ordinances, and the Draft Order.

1. Please explain what the RWQCB means by the undefined term “storm water management plan”.
2. Please describe how a “storm water management plan” differs from a SWPPP.
3. Please explain how co-permittees are to determine compliance with the Draft Order if enforcement of the draft order is the sole responsibility of the Regional Board.

**PHASE II JURISDICTIONS**

The Draft Order Finding D.3.d. declares the co-permittees responsible for all discharges into their systems. Many of these discharges come from large and small MS4s outside of each co-permittee’s jurisdiction and therefore are not subject to local ordinances.

Moreover, Finding D.4.a. Declares that watershed management of urban runoff does not require co-permittees to expend resources outside of their jurisdictions.

While the Draft Order requires that the co-permittees work cooperatively to solve these problem, this requirement do not reach the small MS4s in the county such as school districts, water districts, sewer districts, and transit districts who operate their own MS4s and discharge into the MS4s of the co-permittees. Unfortunately, without the participation of the small MS4s, it is not possible for the Co-permittees to avoid discharges into their MS4s by small MS4s.

1. If the RWQCB does not require Co-permittees to spend money outside of their jurisdictions to avoid the receipt of pollutants from other co-permittees, please describe the mechanisms the RWQCB expects Co-permittees to employ to prevent “passively receiving pollutants from other Co-permittees.
2. If the RWQCB does not require Co-permittees to spend money outside of their jurisdictions to avoid the receipt of pollutants from small MS4s, please describe the mechanisms the RWQCB expects Co-permittees to employ to prevent “passively receiving pollutants” from these unregulated entities. (Small MS4s)
3. Please describe how the RWQCB intends to integrate the small MS4s into overall MS4 program for San Diego County in compliance with Water Quality Order 2003-005-DWQ.

### DEFINITION OF PRIORITY DEVELOPMENT

Section D.1.d.(1) defines Priority Developments projects as “all new Development Projects. Attachment C defines Priority Development as new development and redevelopment projects categories listed in D.1.d.2.

1. Please clarify these conflicting definitions.

Section D.1.d.2.(f) includes as Priority Development projects, projects that discharge to an Environmentally Sensitive Area. Attachment C defines Environmental Sensitive Areas as “areas that include, **but are not limited to**, all Clean Water Act Section 303(d) impaired water bodies . . .” The inclusion of the phrase “but are not limited to” leaves the definition vague and ambiguous, thereby, making compliance with the Draft Order impossible.

1. Please explain what is meant by “but are not limited to” for the purposes of compliance with the draft order.

### TRIBUTARY TO

The permit uses the phrase “tributary to” in several places. For example, additional inspections are required for all sites, one acre or more, and tributary to a CWA Section 303(d) water body (Section D.2.d.(1)(b), page 28). Each co-permittee shall implement or require implementation of additional controls for construction sites tributary to CWA Section 303(d)

water bodies. (Section D.2.c.(3), page 28.). The undefined phrase “tributary to” makes these provisions vague and ambiguous, thereby, making compliance with the draft order impossible.

1. Please provide a definition for the phrase “tributary to”.

### ADVANCED TREATMENT

The draft order requires co-permittees to require “advanced treatment” for all un-stabilized slopes at any time of year. The Permit makes no distinction concerning the size of the slope, the grade of the slope, the location of the slope or the point at which the slope discharges. (See, D.2.c.(1)(f), page 27). Moreover, the draft order requires co-permittees to require construction sites to implement “advance treatment” when the co-permittee determines there is a significant threat to water quality. (See, D.2.c.(1)(k), page 27).

The draft order fails to provide any definition for the terms “slope” or “significant threat to water quality”. Giving these terms meaning will be essential in order to avoid ambiguities in interpretation and enforcement.

1. Please define what is meant by the term “slopes” with regard to such factors as length, height, grade and soil types as it pertains to the requirement to employ advanced treatment.
2. Please define what is meant by the phrase “un-stabilized slope” and how it differs from a “stabilized slope. For example, what BMPs will be considered in determining whether a slope is stabilized or un-stabilized?
3. Please define what is meant by the phrase “significant threat to water quality”.

Advanced treatment is defined at Attachment C as “using mechanical or chemical means to flocculate and remove suspended sediment from runoff from construction sites prior to discharge. The definition of advanced treatment is further expanded in the Technical Report at page 63, which states “advanced treatment consists of a three part treatment of coagulation, sedimentation, and polishing filtration.”

1. Please define the types or characteristics of coagulants the RWQCB believes are permissible as part of an “advanced treatment system”.
2. Please identify the types or characteristics of sedimentation devices that RWQCB believes are permissible as part of an “advanced treatment system”.
3. Please identify the types or characteristics of polishing filter devices that RWQCB believes are permissible as part of an “advanced treatment system”.

Finally, the draft order appears to require that a specific BMP be deployed whenever there are “un-stabilized slopes” or a significant threat to water quality.

1. Please identify the RWQCB authority under either the CWA or Porter Cologne to specify specific BMPs such as “advanced treatment systems”.



## GRADING LIMITATIONS

The draft permit requires the co-permittees to limit grading to a maximum disturbed area as determined by each co-permittee. (*See*, D.2.c(1)(j), page 27). The Technical Report references the Cal-Trans permit, which specifies that no more than 17 acres be exposed unless otherwise approved by the Cal-Trans engineer in writing. (Technical Report page 63).

1. Please define what the RWQCB means by a disturbed area.
2. Please explain when how the RWQCB determines that a disturbed area is no longer subject to this provision.
3. Please identify the factors that RWQCB expects the co-permittees to consider in determining how much to limit the size of disturbed areas.

Section D.2.c(1)(j) goes on to provide that the co-permittee has the option of temporarily increasing the size of disturbed soil areas by a set amount beyond the maximum, if the individual site is in compliance with applicable storm water regulations and the site has adequate control practices implemented to prevent storm water pollution.

1. Please define “compliance with applicable storm water regulations”. For example, does this mean compliance with local ordinances or does it include compliance with the General Construction Stormwater Permit?
2. Please define “adequate control practices implemented to prevent storm water pollution”. For example, does this mean that the individual site has implemented SWPPP and M&RP in compliance with the General Construction Storm Water Permit, or is there something more?

## PUBLIC INVOLVEMENT AND DUE PROCESS

Section D of the draft order requires each permittee to develop and implement an updated Jurisdictional Urban Runoff Management Program. Section E requires each co-permittee to collaborate with other co-permittees within its watershed to develop and implement an updated Watershed Urban Runoff Management Program. Section F requires that each co-permittee shall collaborate with other co-permittees to develop, implement, and update as necessary a Regional Urban Runoff Management Program.

In *Environmental Defense Center, Inc. v. U.S. EPA* (9<sup>th</sup> Cir. 2003), the court held that NOI’s are the functional equivalent of permit applications and, thus, are subject to the CWA’s public availability and hearing requirements. In *Waterkeeper Alliance, Inc v. U.S. EPA* (2<sup>nd</sup> Cir. 2005) the court held that a permitting scheme that allows permits to be issued without review of Nutrient Management Plans violates the CWA’s public participation requirements.

1. Please explain how the Runoff Management Programs described in the draft order are functionally different from the NOI’s and Nutrient Management Plans described in the above referenced cases.

2. Please explain how the development and implementation of Runoff Management Plans as described in the draft order complies with the CWA's public participation requirements as enunciated by the 9<sup>th</sup> Circuit in *Environmental Defense Center, Inc. v. U.S. EPA* (9<sup>th</sup> Cir. 2003).

**San Diego County BIA Stormwater Technical Sub-Committee Questions  
Regarding  
Tentative Order No. R9-2006-0011  
NPDES No. CAS0108758  
(Draft Municipal Discharge Permit)**

1. The schedule for preparation of the Hydromodification Management Plan (HMP) appears very fast (approximately 23 months). Is this practical, for the size and number of watersheds in San Diego County? In setting the schedule, did you consider the schedule of the Santa Clara Valley Urban Runoff Pollution Prevention Program HMP development? [It appears the SCVURPP HMP was developed over more than 3 years].
2. Will the HMP be required to include an inventory of stream characteristics throughout San Diego County? What would be the minimum drainage area? Have you estimated the time this would take based on the number of streams in the County that would have to be visited?
3. The HMP will essentially be an engineering design manual. This must be prepared by a registered engineer. Does the economic analysis consider the costs for preparation of the HMP?
4. The report prepared by Southern California Coastal Water Research Project on the subject of hydromodification, "Effect of Increases in Peak Flows and Imperviousness on the Morphology of Southern California Streams," includes discussion of maximizing infiltration. Is this practical, given the guidelines on infiltration for groundwater protection that are listed in the permit, and given concerns about hydrogeology / slope stability for developments with slopes?
5. The report prepared by Southern California Coastal Water Research Project on the subject of hydromodification, "Effect of Increases in Peak Flows and Imperviousness on the Morphology of Southern California Streams," includes discussion of in-stream stabilization measures. Would in-stream stabilization measures be allowed?
6. For a development that ultimately discharges to an erodible downstream system after mixing with runoff from other area, how would HMP requirements apply if the development has no access to the stream to provide recommended protection measures, such as a buffer zone around the stream?
7. Where in San Diego County do you expect infiltration could be practically applied, given the guidelines on infiltration for groundwater protection that are listed in the permit, and given concerns about hydrogeology / slope stability for developments with slopes?

8. Porous pavement, roadside swales, and disconnected roof drains have been difficult to apply due to concerns about shrinking and swelling soils, in addition to concerns about slope stability. Have you had input from a geotechnical engineer regarding applicability of the site design concepts that increase infiltration?
9. How will the implementation of the Hydromodification Management Plans impact the natural replenishment of sand on the beaches?
10. How much calibration of the equation given in the definition of "Erosion Potential" has been done in San Diego County?
11. Where has the equation given in the definition of "Erosion Potential" previously been applied and to what degree and duration?
12. What other fluvial geomorphologic equations and/or programs were evaluated for use in preparing the HMPs?
13. How many firms in San Diego have the experience necessary to prepare the HMPs for the copermittees?
14. Which registered Civil Engineers have been consulted and/or have reviewed and commented on the draft permit during its preparation (prior to release to the general public)? Please make public all such comments.
15. Which registered Geotechnical Engineers have been consulted and/or have reviewed and commented on the draft permit during its preparation (prior to release to the general public)? Please make public all such comments.
16. What consideration did the RWQCB give to the substrata and subsurface drainage characteristics of much of San Diego County in the preparation of the draft permit and more specifically the HMP?
17. What is the estimated cost for the copermittees to develop the HMPs?
18. What is the estimated cost for the copermittees to review plans that will need to comply with the HMPs?
19. How far downstream will copermittees need to require analysis of potential project impacts to comply with the permit?
20. It is generally assumed that the number and size of detention and retention ponds will greatly multiply with the implementation of the HMPs. It is also assumed that there will be a very large cost of maintenance for such facilities, or that the maintenance will be severely lacking. What environmental health agencies have reviewed and commented on the draft permit during its preparation (prior to release to the general public)?
21. What reason(s) does the RWQCB have for excluding generally accepted and proven hardscape materials from stabilizing stream channels in an urban environment?

22. What proven hardscape materials does the RWQCB envision for substituting materials that are proposed to be excluded from use within the stream channels in an urban setting?
23. What risk analyses have been prepared to support the proposed exclusion of most proven hardscape materials in favor of (presumably) bioengineered structures, which are generally less reliable and durable?
24. In 2000, the RWQCB presented Tentative Order No. 2001-01 in workshops as most likely having an average cost to implement of generally less than one percent of total project costs. Actual costs have proven to be generally between 5 and 10 percent of total project costs. What does the RWQCB currently estimate the cost to be to implement the requirements of Tentative Order No. R9-2006-0011?
25. How does the RWQCB envision all dry weather flows containing significant pollutant loads being diverted from infiltration devices, and where does the RWQCB anticipate the dry flows being diverted to?
26. Under the section entitled "Waiver Provision," who will define "infeasible," and if it is the copermittees that will be required to define this term, what guidance or check from the RWQCB will be given?
27. What considerations are provided for or anticipated for projects that do not have land available to comply with the HMPs (such as road widening projects where sufficient additional right-of-way does not exist)?
28. What percentage of developments does the RWQCB envision will be able to take advantage of the Site Design BMP Substitution Program?
29. Which Site Design BMP Substitution Programs (or similar programs) has the RWQCB evaluated?
30. From the RWQCBs evaluation of other Site Design BMP Substitution Programs (or similar programs), what percentage of land did these programs typically require?
31. What percentage of land does the RWQCB estimate will typically be required for projects that participate in the Site Design BMP Substitution Program?
32. From the RWQCBs evaluation of other Site Design BMP Substitution Programs (or similar programs), what percentage of total project costs did these programs typically require?
33. What percentage of total project costs does the RWQCB estimate will typically be required for projects that participate in the Site Design BMP Substitution Program?
34. Projects that qualify under the "Waiver Provision" will most often cause an increase in pollutant loading adjacent to the project site. Even though funds will be collected to improve water quality within the same watershed, how will the effectiveness of BMPs from other adjacent or nearby projects be evaluated?

35. Landscaped areas, which are very often utilized for treating storm water runoff on new projects, will be themselves required to be treated, according to the draft permit. What is the RWQCB's rationale for this, considering that biofiltration is becoming increasingly relied upon by the copermittees as a result of input from the RWQCB?
36. In stating that the landscaped areas must be treated, does the RWQCB consider that landscaped areas will produce runoff from an 85<sup>th</sup> percentile (first flush) storm, and if so, what basis does the RWQCB use to arrive at this?
37. It appears that the RWQCB has defined all new Development Projects as Priority Development Projects. Is this correct, or does the wording need to change to indicate that only Development Projects falling under the project categories listed in section D.1.d.(2) are priority projects?
38. The RWQCB references HMPs from Alameda County and Santa Clara Valley. These programs were adopted less than a year ago (as of the date of this question). Has the RWQCB evaluated the effectiveness of HMPs from areas where the program has been implemented for a number of years? If so, please state which HMPs the RWQCB has evaluated the effectiveness, and how effectiveness was measured,
39. Has the RWQCB evaluated the cost of implementing HMPs from areas where the program has been implemented for a number of years? If so, please state which HMPs the RWQCB has evaluated the cost, and how cost was measured.
40. Is the RWQCB aware of the extent of the economic impact, especially to the people in the lowest income bracket, in Western Washington State, due to several years of implementing an HMP similar to the one described in the draft permit?
41. Why doesn't Tentative Order R9-2006-0011 reference the equations found in a recent study of Southern California Streams? The study, *Effect of Increases in Peak Flows and imperviousness on the Morphology of Southern California Streams*, was completed by Southern California Coastal Water Research Project in April 2005 by Derrick Coleman, Craig MacRae and Eric Stein.
42. Tentative Order R9-2006-0011 (Table 2, Page3) indicates that that some watersheds are impaired for specific 303(d) Pollutants of Concern or Water Quality Effect, such as pesticides, however others are not. Are all watersheds held to the same standard of chemical treatment for pesticides and the other pollutants of concern?
43. PCBs have not been manufactured in the United States since 1977. Why are new development projects within San Diego Bay required to treat the stormwater for PCBs?
44. The following pesticides are widely used on agricultural fields: Diazinon, Chlordane and Lindane. Will agricultural operations in San Diego County also be held to Tentative Order R9-2006-0011?
45. What methods are available for stormwater treatment of chloride?

46. What methods are available for stormwater treatment of metals?
47. What methods are available for stormwater treatment of Diazinon?
48. What methods are available for stormwater treatment of Chlordane?
49. What methods are available for stormwater treatment of Lindane?
50. What methods are available for stormwater treatment of PAHs?
51. What are the expected costs associated with implementation of treatment methods for chloride, metals, Diazinon, Chlordane, Lindane, PCBs and PAHs?
52. Why does the permit only allow natural materials for treatment? Why is rock considered an unnatural or manmade material? Have environmental studies been conducted to show that rock or man made materials would be more detrimental to a water body, than natural materials? If yes, where can this material be reviewed?
53. Please consider our request to delay implementation of the permit until the watershed copermittee's are able to study the San Diego County Watersheds in a similar manner as the study completed in April 2005 – *Effect of Increases in Peak Flows and Imperviousness on the Morphology of Southern California Streams*, Southern California Coastal Water Research Project, Derrick Coleman, Craig MacRae and Eric Stein.
54. For which specific design rainfall events must developed condition peak flows be mitigated as compared to pre-developed conditions?
55. When mitigating developed condition downstream velocities below pre-developed levels, should the same design rainfall events detailed in the item above be used? Define alternate design rainfall event criteria for velocity comparison if applicable.
56. Define the specific criteria and requirements with regard to increases in runoff volume as a result of development.
57. Regarding increases to flow duration, what is the allowable increase and how should such increases be quantified? Should the increases be quantified as a percentage or maximum variance of the pre-developed hydrograph ordinate values?
58. On the receding limb of the developed condition hydrograph, would flow duration increases be allowed provided that the increased flow duration would not exceed the critical flow in the receiving drainage course?
59. Provided that peak flow rates are mitigated, how should the long-term erosive effects of increased runoff volume and duration be quantified? What specific formula, methodology or computer software should be used to generate such calculations?
60. Since fluvial hydraulics is a dynamic process, how should the perpetually-changing processes of channel erosion and downstream sediment deposition be modeled?

61. Please describe and quantify the distance downstream of a proposed project for which a downstream fluvial hydraulics analysis should be prepared?
62. Please describe and quantify and quantify the new permit's definition of increased erosive force. Is any increase to erosive force a violation? What are the limits?
63. If basins are required on developed project sites to detain peak flows and velocities, describe how the increased erosion potential of the sediment-free runoff should be quantified.
64. When calculating the effective work index for a channel, what is the total time over which the formula should be integrated?
65. For channels without stream or rainfall gage records, how should the analysis be prepared? What is the procedure if no stream gages are located in proximity to the subject site? What is the procedure if stream gages in proximity reflect radically different watershed conditions to the subject site?
66. How is the coefficient C, used to convert the equation to units of work, determined?
67. How should the coefficient e, which measures the exponential rise in stream power with flow, be selected? Will this coefficient be constant for the region or will the coefficient be variable with the location of the subject site?
68. How does the Board define a stable stream channel under pre-urban conditions? What if the baseline (pre-urbanized) channel conditions are unstable? How would this condition affect the analysis?
69. In the absence of rainfall or stream gage data, what procedures can be used to generate the continuous simulation model required for the work index analysis?
70. What is the minimum rainfall record period for the continuous simulation to be considered statistically relevant?
71. How is the existing soil condition of the existing channel quantified in the work index formula? It would seem that a distinction should be made between sandy and clay soil classifications.
72. Please define the restrictions limiting the use of infiltration basins to treat storm water. Specifically, detail the scenarios for which the permit would discourage the implementation of such BMPs.
73. Please define the permit's stance on allowable ponding times in BMPs – specifically with regard to the avoidance of vector issues.
74. What are the permit's recommendations and requirements regarding BMP inspection frequency?
75. The revised permit appears to require treatment for all landscaped areas. What level of treatment would be required for landscaped slopes containing no impervious area and to which no developed site runoff would drain?



76. How is the phrase "minimize the impervious footprint of the project" defined? For instance, if a 20-acre site is zoned for single-family residential, what impervious footprint would satisfy this requirement?
77. Permit includes a provision that municipalities can require "implementation of all site design BMPs from the lists as determined to be applicable." Define or provide examples of situations where all site design BMPs would be required for implementation and detail why all site design BMPs would be required when a portion of site design BMPs could replicate the natural runoff response for low flows.
78. Will all municipalities downstream of a given project have review authority on a proposed project's impact to the receiving watershed?
79. Define how the phrase "water quality objectives", as mentioned in the text of the permit, can be defined and quantified.
80. Describe an example of a "minimum measurable outcome", as mentioned in the text of the permit, in reference to receiving watersheds.
81. Permit states that MS4 operators accept responsibility for discharges into the MS4 by providing free and open access to the MS4. Does that mean that a downstream municipality could be held responsible for illicit discharges from an upstream municipality?
82. Define and list examples of the new pollutant category named "polynuclear aromatic hydrocarbons."
83. Define and list examples of the new pollutant category named "synthetic organics."
84. What additional treatment control options should be considered to address the "persistent toxicity" situations as defined by the revised permit in reference to the Chollas Creek and Tijuana River watersheds?
85. The permit listed "significant upward trends in pollutant concentrations" at Tecolote Creek, Sweetwater River, and Chollas Creek. Which specific pollutants have exhibited the significant upward trends in pollutant concentrations at the aforementioned water bodies?
86. The permit lists the Sweetwater River as "sensitive to persistent toxicity." How is the phrase "sensitive to persistent toxicity" defined?
87. The permit lists pollution prevention, defined as "implementation of practices that use or promote pollution free alternatives", as part of the non-point source management. What are examples of pollution prevention practices with regard to residential, commercial and industrial development?

88. New permit defines urban runoff at a storm drain or channel outfall as a "discharge of pollutants from a point source" into waters of the United States. Has this definition been created by the Regional Board? If so, what is the basis for the definition? If not, please provide legal support for the definition.
89. Permit defines "Maximum Extent Practicable" as an "ever-evolving, flexible, and advancing concept that considers technical and economic feasibility." Given the wide variance in interpretation amongst the various governing municipalities, wouldn't it seem that a more specific definition would be required.
90. The hydromodification plan discussed in the draft permit is based upon one adopted by Santa Clara County. What technical back up was used to conclude that watersheds within San Diego County possess the same soil characteristics and tendencies for erosion that exist in Santa Clara County?
91. How were the extensive differences in site topography and rainfall characteristics of Santa Clara County versus San Diego County resolved when a recommendation was formulated to follow the Santa Clara hydromodification plan?
92. The methodology described for calculation of erosion potential and channel work was developed originally for use in Canada. What geotechnical and environmental review has been done to substantiate the suitability of its use in San Diego County?
93. How much time and money does the Board estimate will be necessary to compile the necessary data-base of critical shear stress values and soils types of all the natural watercourses within County of San Diego?
94. Why does the draft permit not contain specific criteria for clearly defining the limits of downstream analysis of erosion potential?
95. Is there data that identifies which, if any, natural watercourses are "stable" or less susceptible to erosion? Will discharge to these watercourses require the same level of velocity and durational mitigation measures?
96. What technical study was done to analyze the effects of reduction of sediment load to less than pre-development conditions to downstream areas of a development project and to coastal resources? Does sediment starved water possess an equal or increased risk to erosion compared to development point discharges?
97. What economical analysis has been done to quantify the cost to implement the proposed hydromodification plan to San Diego County and the surrounding 18 local cities. Is this economical analysis available for review and comment?
98. The long term effects of the proposed hydromodification program cannot be predicted with any degree of certainty. If there are adverse impacts to coastal regions, has the Board done any economical study to quantify predicted results and the effect on San Diego County. If so, is this analysis available for review and comment?
99. We assume that compliance with the currently proposed hydromodification plan will result in dramatically increased local requirements to construct land consumptive

retention, infiltration, and detention basins. Given the disproportionate cost of housing in San Diego County compared to other parts of California, has the Board estimated what impact will result to the overall amount of developable land and the extent to which that cost will ultimately be born by residents, taxpayer and voters.

100. What percentage of the overall water quality problems within San Diego County is the current draft municipal discharge permit predicted to address?