

ATTACHMENT 4

Response to Comments

City of Grover Beach Stormwater Management Plan September 2008

May 8, 2009

Introduction

This document includes the Central Coast Regional Water Quality Control Board (Water Board) staff responses to the comment letters (Attachment 3 to the Staff Report) received during the Water Board's 60-day public comment period (October 17 – December 16, 2008) for the City of Grover Beach's (City) Stormwater Management Plan (SWMP) and Water Board staff's Draft Table of Required Revisions. Water Board staff received comments from the following parties:

November 18, 2008: City of Grover Beach

December 16, 2008: City of Grover Beach

February 25, 2009: City of Grover Beach

December 16, 2008: San Luis Obispo Coastkeeper

December 12, 2008: Home Builders Association of the Central Coast

(also included by reference was the California Stormwater Quality Association's (CASQA) June 27, 2008 letter to the Water Board)

Comments from the City of Grover Beach

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November 18, 2008 letter:

First, I would like to take the opportunity to thank you for the time you and your staff afforded the City managers from agencies within San Luis Obispo County last week. I found the dialogue increased my understanding of the SWMP review process. As was discussed at our meeting, we are beginning to work with other jurisdictions in order to identify the SWMP areas where we can work correlatively. I am expecting that cost efficiencies will result from this cooperative effort while increasing the overall quality of required program implementation. Today, annual cost estimates for the implementation of the draft SWMP are estimated at \$130,000 should we take on the implementation of the programs independent of any joint cooperation. Consequently, I am requesting a four – (4) month extension of the SWMP review process time frame in order to permit the cooperative efforts to bear fruit. This request takes into account the potential lost time due to the approaching holiday season and the estimated time to complete this process.

December 16, 2008 letter:

During the Council meeting held on December 15, 2008, the Grover Beach City Council authorized me to send this letter requesting a hearing and commenting on the Draft SWMP. This letter is being issued within the 60-day comment period as prescribed by your office. The request for a hearing is based on the following comments on the Draft Plan:

1. The schedule for implementing the Best Management Practices (BMPs) over the five-year period covered by the plan is overly aggressive and expensive. Many of the BMPs that are scheduled to be completed within the first few years of the plan are related to public information, education and the legislating of local ordinances. The costs associated with implementing these BMPs are

Item No. 13 Attachment No. 4
May 8, 2009 Meeting
City of Grover Beach SWMP

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1. The schedule for implementing the Best Management Practices (BMPs) over the five-year period covered by the plan is overly aggressive and expensive. Many of the BMPs that are scheduled to be completed within the first few years of the plan are related to public information, education and the legislating of local ordinances. The costs associated with implementing these BMPs are

between \$100,000 and \$150,000 annually. More time is needed to work with other jurisdictions to ensure that these programs are being implemented in a cost-effective and efficient manner.

2. Costs associated with portions of the hydromodification program are unknown at this time. We recognize that the City of Grover Beach will be required to test the quality of water in Meadow Creek from time to time to ensure that the creek is not being further degraded as a result of development. Additionally it should be noted that the quality of the water in Meadow Creek is to a certain extent beyond the control of the City in that it is influenced by a variety of conditions, including runoff from Highway 101, and water flowing in the creek from Arroyo Grande, City of Pismo Beach, and County of San Luis Obispo areas. We remain uncertain as to the financial impact of providing such tests. We are also concerned that the testing of sites post-development may also be burdensome and the actual science to perform such tests is not readily available.
3. We understand that the law provides the Water Board the authority to require agencies to implement BMPs that will enable the agency to comply with federal regulations to the maximum extent practicable (MEP) standard. It is our concern that required implementation of the BMPs as listed in the Draft SWMP for the City of Grover Beach are costly and overly burdensome and therefore exceed the test of MEP. Consequently the City reserves the right to further comment on the Program during the hearing process and further reserves any and all rights to challenge mandates of the Program and the process by which it is imposed.

It is for the reasons outlined above that we *request a hearing before the Regional Water Quality Control Board*. We understand your authority to regulate stormwater to ensure the waters of the State are protected, but, as a recipient of that regulation, we desire that the implementation be conducted in a manner that is fair, equitable, and practical to all stakeholders.

Staff Response: In a letter dated December 19, 2008, Water Board staff granted the time extension request by agreeing to delay Water Board consideration of the City's SWMP and enrollment of the City under the General Permit until the May 8, 2009 Water Board hearing. The public hearing is scheduled for the May 8, 2009 Water Board Meeting at the Central Coast Water Board office, 895 Aerovista Place, Suite 101, San Luis Obispo, California. Water Board staff requested the City submit any further written comments by March 1, 2008, to provide Water Board staff adequate time to incorporate comments prior to the Water Board hearing. On February 25, 2009, the City submitted a letter with comments on its SWMP.

The General Permit requires the City to submit a SWMP that meets the MEP standard. The State Water Resource Control Board states, "To achieve the MEP standard, municipalities must employ whatever BMPs are technically feasible (i.e., are likely to be effective) and are not cost prohibitive. The major emphasis is on technical feasibility."¹ The City's concern that the costs are too burdensome lacks context. For example, the water quality and aquatic habitat impacts from stormwater and urbanization are currently far more serious than the impacts from point source discharges such as wastewater treatment plants, and municipalities such as Grover Beach spend millions to control wastewater treatment plant discharges. The current effort and cost associated with SWMPs are minor in comparison. Also, the available evidence indicates that the costs are reasonable and necessary considering the threat to water quality and the magnitude of impacts. Also, other comparable municipalities are developing and implementing SWMPs very similar to this one.

The proposed Resolution requires the City to track the effectiveness of individual BMPs and to revise the SWMP throughout the enrollment period to reflect lessons learned during the effectiveness assessments. See final Table of Required Revisions, Item 10. The General Permit

¹ SWRCB. 1993. Memorandum: Definition of Maximum Extent Practicable.

does not require enrollees to take water samples from waterbodies connected to an enrollee's MS4. However, the proposed Resolution requires the City to develop an understanding of specific water quality and watershed issues in their area, such as pollutant loading, aquatic habitat degradation, types of land uses and their impacts, trends, and the cumulative effects from multiple municipalities in a watershed. The draft Resolution also requires the City to develop methods for measuring overall SWMP effectiveness and individual BMP effectiveness. Water sampling is a fundamental and necessary tool to determine the effectiveness of the SWMP. It is also essential that the City coordinate with other land users in the City's watershed, as part of the long-term watershed planning effort to identify significant sources of pollution and impacts to the watershed. All municipalities are responsible for the pollution entering their jurisdiction, so this coordination is even more critical. Upstream dischargers are also responsible. Coordination and sampling will help determine the relative loading from different sources and how we, the municipalities, and upstream dischargers will respond.

Comment:

February 25, 2009 letter:

In December, the City requested an extension to the 60-day comment period on the City's draft SWMP. The original comment period was to end in December, and the City's enrollment process was to come to a close during the first quarter of 2009. Subsequently, the City also requested a hearing before the Board on the Program. In late December, you responded affirmatively to the request for a time extension with the comment period closing on March 1, 2009, and you informed the City that the hearing for the draft Program by the Regional Water Quality Control Board would be held on May 8, 2009. The purpose of this letter is to provide you with the City's comments on the draft Plan prior to the March 1st deadline. The Council considered the draft SWMP during the meeting held on February 16, 2009. While the Council is supportive of the Board's mission to require small municipalities to reduce pollutants in their stormwater discharges to the MEP, the Council has expressed certain concerns with the draft Program and has directed that these concerns be forwarded to you as comments:

1. The interim requirements to maximize infiltration and minimize runoff as stated in the Plan are overly restrictive and, in some cases, difficult to achieve.

In your February 15th letter to each jurisdiction outlining the municipal enrollment process, you identified the following acceptable control standards for hydromodification: 1) for new and redevelopment projects, Effective Impervious Area (as you define) shall be maintained at less than five percent (5%) of total project area, and 2) for new and redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface, the post construction hydrographs shall match within (1%) of the preconstruction runoff hydrographs for a range of events with return periods from 1 year to 10 years.

The interim requirements are the basis for the BMPs for Post Construction noted on pages 51-57 of the draft SWMP. As you may be aware, the City has required new development generated stormwater to be retained onsite in parts of the City for a number of years. This policy was recognition by the City of the need to return water to the aquifer while limiting the increase of stormwater flow from development. In June of 2006, this requirement to retain water on-site was extended throughout the City and included redevelopment projects. The City now has the benefit of at least two years experience with the current policies. Our experience with water retention policies is that it works well in some cases but becomes absolutely impractical in others. This is particularly true of redevelopment and infill projects. According to property owners and project proponents, too often the requirement to retain stormwater on-site becomes cost prohibitive for an infill or redevelopment project. Additionally, in some cases the requirement to retain on-site also is in conflict

with other regulatory agencies. Finally, natural constraints of the land often dictate that water retention cannot be done. Consequently, the Council has directed that staff prepare a review of the City's current requirements with an eye towards creating practical flexibility to address these issues. Thus, the enrollment process should be further delayed until the issues of water retention and hydromodification can be finalized at the local level.

2. The Draft SWMP as drafted exceeds the MEP rule and is thus an unfunded mandate of the State.

In its deliberations on the draft Program, the Council was deeply concerned that the Program is not financially feasible for the City of Grover Beach to implement. At present and in the foreseeable future, we have no source of revenue for the implementation of the SWMP. As cited in your letter of February 15, 2009, "The federal Clean Water Act (CWA) provides that National Pollutant Discharge Elimination System (NPDES) permits for MS4s must require municipalities to reduce pollutants in their stormwater discharges to the MEP ..." The City has estimated that the annual cost to implement all of the BMPs contained in the Draft SWMP will exceed \$150,000. For a small City, this amount is excessive and unreasonable. Additionally, the requirements contained in your February 15th letter and further expressed in the Post Construction BMPs of the City's Draft SWMP seem to exceed EPA and Clean Water Act requirements. According to our understanding of the Act, the regulation of stormwater generated by development is tied to development that exceeds a minimum of one acre. The requirements noted in your letter would extend water retention and hydromodification to virtually all development and are the basis for the BMPs. Based on the facts noted above, it is the City's position that the draft SWMP in its present form creates an excessive financial burden on the City and exceeds federal requirements. The implementation of the Program is impracticable and cannot be undertaken by the City without a guarantee of full reimbursement of costs by the State for Program implementation. As I have noted, it is the City's intent to work collaboratively with the State in developing a SWMP that will meet the requirements of federal policy, result in limiting future discharges of pollutants into the stormwater system, and is cost effective and responsible to implement. While I recognize the time remaining before the Board hearing on this matter is short, my staff and I are ready and available to discuss these issues with Water Board staff members.

Staff Response: In response to comments from other municipalities regarding our February 2008 letter, Water Board staff revised its approach, as reflected in the proposed Resolution. The draft Resolution requires the City to either modify the applicability criteria in the City's Standards and Specifications so the onsite retention standards capture more projects or develop interim hydromodification control standards following one of the methodologies presented in the Resolution. If the City complies with one of these options, the City is not required to implement the numeric hydromodification control measures outlined in the Water Board February 15, 2008 letter. See final Table of Required Revisions, Item 6.

Water Board staff recommends against delaying the City's enrollment under the General Permit. The City must start implementing BMPs in its SWMP. Post-construction measures are just one component of the SWMP implementation. After the City is enrolled under the General Permit, Water Board staff plans to work closely with City staff as they refine their hydromodification controls. The revision of the City's existing onsite retention standards and the development of the long-term hydromodification standards will be an iterative process. Water Board staff agrees that in order to promote healthy growth and good development decisions within the City, it is appropriate and necessary to develop applicability criteria for the onsite retention standards, to address infill and redevelopment projects. However, Water Board staff expects the City to establish a tiered applicability approach for implementing hydromodification control standards and still require some degree of low impact development for infill and redevelopment site designs and include more stringent controls for sites that have the potential to cause adverse effects downstream.

See previous Water Board staff's response regarding the submittal of a SWMP that the City believes exceeds MEP.

The SWMP and Resolution do not constitute an unfunded state mandate. The contention that NPDES permits and their requirements are unfunded state mandates has been repeatedly heard and denied by the State Water Board (see State Water Board Order Nos. WQ 90-3 and WQ 91-08). The unfunded state mandate argument relative to stormwater was also heard by the State Water Board when it considered the appeal of the Regional Water Quality Control Board, Los Angeles Region's (Los Angeles Water Board) Standard Urban Stormwater Mitigation Plan (SUSMP) requirements. The Los Angeles Water Board's SUSMP requirements are municipal stormwater permit requirements for new development and redevelopment that are similar to many of the required revisions. The unfunded state mandate argument was summarily rejected by the State Water Board in that instance (State Water Board Order WQ 2000-11).

The SWMP and Resolution are not an unfunded state mandate for several reasons. First, the SWMP, with the proposed revisions in the Resolution, does not exceed the requirements of federal law. All of the required revisions are necessary to comply with federal law mandates. The Clean Water Act requires that MS4s reduce the discharge of pollutants to the MEP. The Phase II municipal stormwater regulations require development of SWMPs that will reduce the discharge of pollutants to the MEP and protect water quality. All the required revisions are necessary to achieve the MEP standard and protect water quality, and therefore do not exceed federal law.

Any discretion exercised by the Water Board in implementing federal law in the required revisions is in accordance with federal law and guidance. For example, required revisions regarding hydromodification are consistent with the Preamble to the Phase II federal NPDES storm water regulations, which states: "Consideration of the increased flow rate, velocity, and energy of storm water discharges following development unavoidably must be taken into consideration in order to reduce the discharge of pollutants, to meet water quality standards, and to prevent the degradation of receiving streams. EPA recommends that municipalities consider these factors when developing their post-construction stormwater management program".² The required revisions, issued to implement a federal program, do not become an unfunded state mandate simply because the Water Board appropriately exercised its discretion in defining the particulars. The Water Board's implementation of a federal program according to federal law and guidance does not constitute an unfunded state mandate.

Second, the SWMP, with the proposed revisions in the Resolution, is not an unfunded state mandate because the City has the authority to levy service charges, fees, or assessments to fund their efforts to comply with the required revisions. Government Code section 17556(d) provides that an unfunded state mandate will not be considered in such instances. Municipalities have ample governmental authority to levy service charges, fees, or assessments to pay for stormwater management programs that reduce pollutants to the MEP. Municipalities also have the authority to levy taxes to provide adequate funding for storm water management programs. Lack of political determination to impose taxes or fees for storm water management does not constitute lack of authority.

Third, the SWMP, with the proposed revisions in the Resolution, is not an unfunded state mandate because it implements a federal program, rather than a state program. State subvention is not required when the federal government imposes the costs of a new program or a higher level of service. (Cal. Const. Art XIII B).

² 64 FR 68761

Finally, a central purpose of the principle of state subvention is to prevent the state from shifting the cost of government from itself to local agencies. (Hayes v. Commission on State Mandates, 11 Cal. App. 4th 1564, 1581 (1992)). In this instance, no such shifting of the cost of government has occurred. The responsibility and cost of complying with the Clean Water Act and Phase II NPDES municipal storm water regulations lies squarely with the local agencies which own and operate MS4s, not with the State. The State cannot shift responsibilities and costs to local agencies when the responsibilities and costs lie with the local agencies in the first place.

As exhibited, the City's claim that their draft SWMP is an unfunded state mandate fails on many fronts. The SWMP, with the proposed revisions in the Resolution, do not necessitate subvention to the City by the State.

Comments from San Luis Obispo Coastkeeper

Comment: Thank you for the opportunity to review and comment on the proposed Stormwater Management Plan of the City of Grover Beach. San Luis Obispo Coastkeeper, a program of Environment in the Public Interest, is organized for the purpose of ensuring that the public has a voice with agencies and officials responsible for enforcing water quality, watershed and coastal planning regulations on the California Central Coast. As such, the SLO Coastkeeper and our 800 central coast supporters are concerned that the proposed SWMP:

1. Is impermissibly vague for many components.
2. Does not clearly identify the proposed programs and the financial resources available to implement the proposed program.
3. Fails to identify specific effectiveness measurements to meet the MEP standards.

Staff Response: 1) The City's SWMP is meant to establish a framework to outline how the City will manage stormwater runoff. It contains a full suite of minimum control measures (MCMs) to protect water quality from urban runoff. Water Board staff finds that the program, with the specified required revisions, provides adequate and appropriate detail and focus. Water Board staff expects SWMPs to evolve over the permit life and respond to new information and evolving conditions on the ground. The annual reports will convey programmatic details and allow the Water Board to determine if additional detail or additional control measures are necessary to achieve water quality protection to the MEP standard. 2) The General Permit requires the City to submit a SWMP that meets the MEP standard and therefore include BMPs that are technically feasible and are not cost prohibitive. The General Permit contains no explicit requirement to demonstrate ability to pay. 3) See final Table of Required Revisions, Item 10. The proposed Resolution requires the City to commit to developing an effectiveness assessment plan to assess effectiveness of individual BMPs and overall program effectiveness. The City must commit to developing effectiveness measures for each BMP by the end of Year 1.

MCM #1: PUBLIC EDUCATION AND OUTREACH

Comment:

1. [The City] must provide a mechanism to adapt its educational program in the future. This is to assure a definitive commitment to implement this program for all five years of the permit.
2. We urge that the permit include mechanisms facilitating the update of the educational programs.

Staff Response: The City commits to implementing the majority of its public education BMPs every year of the five year enrollment period. Water Board staff has required the City add a BMP committing to incorporating community-based social marketing principles into its public education program. Once the City evaluates opportunities to incorporate community-based social marketing into its education program, this may result in modifications to the education program. Water Board

staff anticipates the incorporation of community-based social marketing strategies into the City's program will be an iterative process. Community-based social marketing focuses on education programs that really raise awareness of the community and change their behavior; therefore, the City must evaluate its education programs throughout the entire enrollment period, and modify the programs if they are not effective. See final Table of Required Revisions, Item 2.

Comment:

1. [The City] must identify the general public specifically.
2. [The City] must be more specific to determine how documentation of presentation will show public outreach and education.
3. [The City] must be more specific to what kind of presentation it will be (Workshop, Seminar, or Informational).
4. [The City] must be more specific to show how the presentation will be effectiveness in public outreach and education and how measures will support the effectiveness.
5. [The City] must specify number/percentage of attendee to presentation as goals for each SWMP targeted audience per year.
6. [The City] must broaden its education plan and programs. For the proposed BMP to be effective it must demonstrate that it achieves education of the community about specific pollutant sources and includes follow-up measures demonstrating that urban runoff pollution has been reduced to the MEP.

Staff Response: 1) The SWMP includes multiple public education BMPs that specifically target the general public. For example, BMP PE1C commits the City to conducting stormwater-related presentations for the general public. BMP PE1L commits the City to using resources available through collaborative regional partnerships to educate the general public on stormwater-related topics. BMP PE3I commits the City to providing the public with access to stormwater information in a library. 2) The draft Resolution requires that the City develop effectiveness measures for every applicable BMP by the end of Year 1; therefore, the City will develop measures to track the effectiveness of its stormwater-related presentations. See final Table of Required Revisions, Item 10. 3) Water Board staff does not expect this level of detail in the SWMP at this time. When the City notifies the public of these presentation opportunities, they will specify the presentation type. The City must update Water Board staff of these presentations in the annual reports. 4, 5, 6) See previous responses.

Comment:

1. [Coastkeeper] recommends additional documentation, such as effectiveness of each participation event, may help enhancing public outreach and education in the future.
2. [The City] must determine how the effectiveness of public displays will be measured to determine success.
3. [The City] must also foster participation through outreach events to measurably increase the knowledge of the target audience regarding municipal storm sewers, impact of urban runoff on receiving waters, and potential BMP solutions for the target constituencies.
4. [Coastkeeper] recommends including activities that specifically target the specified audience. For the educational MCM, the draft must include activities that tailor to address specific problems associated with that audience and can communicate these messages more effectively than programs that adhere to the General Public.
5. [The City] must identify an outreach event under the Storm Drain marking Education and Outreach Events. The intent and the measurable goals and outcomes of the BMP currently do not appear to comply with the BMP. There is no indication of actually holding the outreach event proposed.
6. Measuring the success of public education and outreach is very unclear and hard to determine.
7. [The City] must identify how clogging of sanitary sewers will be managed.
8. [The City] must identify how complaints will be gathered and recorded.

Staff Response: See final Table of Required Revisions, Items 2 and 10 for required revisions relating to the development of an effectiveness assessment program and incorporation of community-based social marketing principles into the SWMP. The City has committed to conducting a storm drain marking event involving the public. See BMP PP3D for details about the Inlet Stenciling Days. Additionally, the City has committed in BMP PP3F to developing an Adopt a Storm Drain Program to further involve the local community in the stormwater management program. BMP PE1M commits the City to educating restaurant owners on proper grease disposal to prevent grease clogs in the sanitary sewer system. The South San Luis Obispo County Sanitary District is responsible for responding to complaints relating to failed sanitary sewer lines, and has an effective sewer system management plan. Water Board staff has required the City commit to informing the public about its stormwater reporting hotline. Additionally, Water Board staff has required the City commit to responding to 100% of the reported complaints. See final Table of Required Revisions, Item 11.

Comment: [The City] must identify and be more specific about how they plan to record the public service announcements and how they plan to measure if they have reached 20% of the local community. [The City] must identify what data will be gathered to show effective public outreach and education.

Staff Response: See final Table of Required Revisions, Item 10. Water Board staff anticipates the City will find a mechanism for tracking the number of television viewers exposed to the stormwater-related public service announcements. For example, the City may contact the local television channel to get statistics on number of viewers that had their televisions powered on when the stormwater public service announcements aired. The City will report on this measure in its annual reports.

Comment:

1. [The City] must be more specific about "all groups". It is too vague to say General Public or all groups. It is recommended to list all the potential audiences to reach a broader range of scope.
2. Online post does not show how public education and outreach will be determined. What will be recorded to determine effectiveness? How is it relevant or necessary?
3. [The City] must be more specific about the printed materials in terms of what types of brochure and what topics will be covered in each brochure and what target audience the brochures will be pertaining to. Each type of brochure must get the message out and raise public awareness about urban runoff pollution and its impact on the City's water resources to meet the MEP.
4. [The City] must be more specific on what will be measured and recorded to demonstrate the effectiveness of implementing this BMP. The draft must specify how measures and records will identify improvement in water quality of the City. The draft must include measures that demonstrate changes in the behavior of target communities and thereby reduces pollutants released to the municipal storm drain system and the environment.
5. [The City] should identify topics covered in educational materials to be broader in scope. We urge the inclusion of the following topics to provide a broader range of additional relevant topics that support the proposed BMP. The topics currently covered are:
 - impacts of urban runoff
 - distinction between municipal storm sewer and sanitary sewer systems
 - proper lawn and garden care
 - sustainable landscaping
 - proper household hazardous waste storage and disposal including used motor oil
 - proper pot waste disposal
 - water conservation
 - integrated pest management and use of less toxic household products
 - illegal dumping and illicit discharge prohibition
 - public hotline reporting mechanisms

- State and Federal water quality laws
- Requirements of local municipal permits and ordinances
- traffic reduction, alternative fuel use
- BMP maintenance
- Topics for restaurants: mat washing, cleaning up spills, water and energy conservation, waste reduction, and recycling

All of the topics listed above are critical for consideration to develop a complete understanding of how everyday activities impact stormwater pollution as well as meet MEP and protect water quality. The draft Morro Bay Proposal (sic) must demonstrate a commitment of budget and staff to implement BMPs for each of the listed topics by the end of the permit term. Messages could be easily conveyed through already proposed mechanisms by the draft Morro Bay Proposal (sic): radio and television broadcast, brochures, and events.

Staff Response: 1) Water Board staff agrees that BMP PE3G is vague; however, it is purposely vague. The City is committing to occasionally distribute printed materials that are relevant to all discharges to the MS4 within the City and not just targeted towards a specified group. 2) With such a large portion of the population relying on the world-wide-web as their source of information, it is important for the City to post information online. See final Table of Required Revisions, Item 10. 3) Water Board staff finds the SWMP has sufficient detail, at this time, on the City's methods for developing and distributing stormwater-related brochures. Water Board staff expects to comment, during annual report reviews, on the adequacy of the City's brochures in informing brochure recipients on stormwater-related issues. 4) See final Table of Required Revisions, Items 2 and 10. 5) The City has included specific examples of public education topics they plan to incorporate into their education programs. The City's current commitments, with the required revisions, are adequate to meet the MEP standard. Water Board staff plans to work closely with the City during the five-year enrollment period to determine the adequacy of their education program coverage.

Comment:

1. [The City] must identify how the general public will be informed about the availability of the new hotline or information line.
2. [The City] must identify how complaints will be followed up.
3. [The City] must be more specific about how the use of library materials will be documented.
4. Effectiveness measure must have a numerical value to determine who is using it and how it is being used. Does not provide factual evidence of its success.

Staff Response: 1) The draft Resolution requires the City to modify the SWMP to commit to informing the public about the stormwater hotline and commit to responding to 100% of the complaints. See final Table of Required Revisions, Item 11. 2) See previous response. 3) BMP PE3I provides sufficient detail for the stormwater library. 4) See final Table of Required Revisions, Item 10.

Comment:

1. [The City] must identify what will be reported annually for markings on storm drain inlets.
2. [The City] must be more specific how annual reports of BMPs show effectiveness of public outreach and education.

Staff Response: 1) See previous responses. 2) See final Table of Required Revisions, Item 10.

Comment: SLO Coastkeeper urges that the SWMP include activities that specifically target the specified audience. For the Public Education and Outreach MCM, the draft SWMP must include activities that tailor to address specific problems associated with that audience and can communicate these messages more effectively than programs that adhere to the general public. We also urge that the SWMP specifically identify an outreach event under the storm drain marking

education and outreach events. The intent and the measurable goals and outcomes of the BMP currently do not appear to comply with the BMP. There is no indication of actually holding the outreach event proposed.

Staff Response: See final Table of Required Revisions, Items 2 and 10. See previous responses regarding Water Board staff's response to Coastkeeper's request that the City develop a storm drain marking program.

MCM #2: PUBLIC PARTICIPATION AND INVOLVEMENT

Comment:

1. [The Public Participation and involvement] MCM lacks in providing BMPs for public involvement and participation. [The Public Participation and involvement MCM] includes programs but lacks implementation measures.
2. [The City] must include a detailed Public Participation and Outreach Program that covers all five years in order to assure a definitive commitment to implement the programs.
3. The objective of the Public Participation and Involvement MCM is to include the public in developing, implementing, and reviewing the SWMP. The BMP intent must be more specific with program development and implementation to raise public awareness about urban runoff through involvement and involving the public in the development and implementation process. This public involvement provides the opportunity to generate support of the SWMP to protect water quality.

Staff Response: The City has developed an extensive public participation and involvement program to implement during their first five-year permit cycle. The City has included BMPs to conduct appropriate public noticing for outreach events, facilitate public input on the SWMP, and include the public in stormwater pollution prevention related events.

Comment:

1. [The City] must find methods to encourage more public participation in SWMP-related public meetings.
2. [The City] must include mechanisms for engaging the general public in activities by providing advertising and incentives for public participation to increase public participation. The current BMP is too vague and lacks a clear explanation of how the specific objective of the [The Public Participation and involvement] MCM will be achieved.

Staff Response: Water Board staff has required the City incorporate community-based social marketing into its SWMP BMPs. These strategies should help the City find ways to further involve the public in its SWMP participation events. See final Table of Required Revisions, Item 2.

Comment: All data must be recorded in the annual report.

Staff Response: The City must report on the individual public participation and involvement BMPs in its annual reports and include sufficient data to show evidence of BMP implementation, to demonstrate compliance with SWMP commitments to the Water Board staff reviewers.

Comment:

1. [The City] must provide opportunity for the public to provide input on the status of the program and the effectiveness of BMPs through workshops and meetings. The draft must state when the meetings and workshops will be held during the year. The purpose of these workshops should be to gather public input regarding the status of the program and effectiveness of BMPs. Such workshops should be formatted as roundtable discussions and opportunities for the gathering of measurable information by the City for use in the annual report to RWQCB.

2. [The SWMP] does not specify how the program is conducted and what is being done.
3. [The City] must include at least two meetings annually. One informational and other comments.
4. [The City] needs to specify when 1005 inlet stenciling will be completed. It is unclear if stenciling will be completed by Year 1 or by Year 2.

Staff Response: The SWMP's level of detail regarding public meetings and noticing for the meetings is sufficient. In BMP PP2A, the City commits to holding two meetings annually to facilitate people and groups responsible for implementing the public education and outreach activities. BMPs PP3A and PP3B commit the City to holding one annual meeting to solicit public input on the SWMP and to posting the SWMP annual reports on the City website for public review. Water Board staff finds these commitments sufficient for the current state of the program. In BMP PP3D, the City commits to conducting Inlet Stenciling Days annually. Water Board staff is not adding a required revision that the City commit to completing stenciling all storm drains by a certain date. In BMP PP3F, the City has committed to a goal of adopting all storm drains into the Adopt-a-Storm Drain program by the end of the five-year General Permit enrollment.

Comment: Each involvement day should proceed with an education/information station so all participants are aware of the cause.

Staff Response: Water Board staff is not recommending the City be required to add a BMP to commit to achieving this.

MCM #3: ILLICIT DISCHARGE DETECTION AND ELIMINATION

Comment:

1. [The Illicit Discharge Detection and Elimination MCM] provides who will detect the illicit discharges; however, it lacks in providing how plans or programs will eliminate discharges.
2. The objective of this MCM is to adopt and enforce ordinances and to implement a program to detect and eliminate illicit discharge. The document includes these objectives but lacks the mechanisms to assure Water Board staff or the public that eliminating illicit connection/discharge will result.
3. [The City] must adopt a temporary ordinance to enforce BMP measures while [the City] develops a new ordinance or revises existing ordinances.

Staff Response: 1) BMP IL4E details a training program for City staff on illicit discharge and elimination; however, the City does not commit to taking appropriate measures to eliminate illicit discharges. In response to this comment, Water Board staff has added a required revision for the City to take appropriate measures to eliminate known illicit discharges. 2) The City's current commitments, combined with the required revisions, provide a sufficient illicit discharge and elimination program, especially considering this program is just getting started. Water Board staff plans to closely track the progress of the City's SWMP through audits and annual report reviews to ensure the City is implementing its proposed BMPs. 3) Adoption of temporary ordinances for illicit discharge and elimination is unnecessary. The City has committed to adopting an ordinance, by the end of Year 1, to regulate illicit discharges and non-stormwater discharges. Additionally, in BMP IL6C, the City commits to adopting a pet waste ordinance before the end of the first five-year enrollment period.

Comment:

1. The document is vague and unclear regarding how enforcement will be carried out given current staffing levels and budget allocations. The absence of a commitment to funding this element clearly does not provide enough information to determine if illicit discharges will actually be detected or, in fact eliminated.
2. [The City] must have a program to implement the program continuously.

Staff Response: 1) The General Permit requires the City to submit a SWMP that meets the MEP standard and therefore include BMPs that are technically feasible and are not cost prohibitive. The City has committed to developing adequate enforcement provisions to eliminate illicit connections and discharges. 2) The current implementation schedule is adequate, given the commitments made for implementation of the entire SWMP.

Comment: Effectiveness measures must show that illicit discharges are being detected and eliminated.

Staff Response: See final Table of Required Revisions, Item 10.

Comment:

1. [The City] must immediately develop a policy outlining what discharges are permitted into the storm sewer system and what discharges will be considered illicit. The municipality needs to establish a policy specifying the flows or discharges that it will allow to be discharged to the storm drain system and those that it will control via its illicit connection/discharge program. As currently proposed, the City is committed to just determining what stormwater discharges are a significant source of stormwater pollution.
2. It is unclear how the ordinance will detect and prohibit illicit discharges.
3. [Coastkeeper] urges [the City] to include more specific enforcement and penalty provisions to eliminate illicit discharge. Typically, an ordinance outlining a progressive enforcement regime is appropriate. Administrative and/or legal action against an entity that continues illicit activity past the deadline for compliance must result in escalating enforcement until compliance is achieved. A program of escalating enforcement that includes educational efforts with mechanisms to facilitate a proper disposal to meet MEP and water quality standards will aid efforts to prevent improper disposal of wastes. Ultimately however, the ordinance must explicitly provide for fines for violators.

Staff Response: Water Board staff expects the City to further define permitted and non-permitted discharges in the illicit discharge ordinance provisions. The City will notify Water Board staff and the public during the ordinance development process to solicit input. The narrative portion at the beginning of the Illicit Discharge and Detection MCM describes the most common illicit discharge sources found in the City and describes how the City currently addresses these discharges. Also, the SWMP states the ordinances addressing illicit discharges will include provisions and penalties for illicit dischargers. Staff does not recommend any SWMP revision as a result of this comment.

Comment: When will training begin? How will training be done?

Staff Response: BMPs IL4D and IL4E specify the City will train restaurant health inspectors and City inspectors in illicit discharge detection and elimination in Year 1 and the City will train all new inspectors annually thereafter.

Comment: We urge language in the draft Morro Bay Proposal (sic) that contains commitments by the city to respond to all sewage spills from all sources, and prevent the entry of sewage into the storm drain system. It must include a program for monitoring the entire storm drain system identified on the proposed map of the system.

Staff Response: Water Board staff assumes this comment was accidentally included in the Grover Beach comment letter. The narrative portion at the beginning of the Illicit Discharge and Detection MCM describes the City's response procedures for sanitary sewer spills.

MCM #4: CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

Comment:

1. [The City] must develop a construction and grading review/approval process of construction plans to ensure that pollutant discharges be reduced to the MEP and assure compliance with water quality standards. The review process must specify ordinances, construction and grading project requirements, and verification of permits and plans.
2. [Coastkeeper] recommends [the City] specify predicted effective measurements that meet BMP and MCM requirements.

Staff Response: 1) BMPs CON1A and CON1D commit the City to developing an ordinance to address construction runoff control and incorporating the ordinance provisions into the site plan review process by the end of Year 1. BMPs CON1G and CON1H commit the City to implementing the ordinances and reviewing project applications based upon the ordinance criteria for Years 2 – 5 of the enrollment period. BMPs CON2A, CON2B, CON2C, and CON2D commit the City to revising the existing grading ordinance to incorporate runoff control measures that align with the General Permit. Water Board staff has required the City to clarify what measures the ordinance will cover by revising the SWMP. See final Table of Required Revisions, Item 4. 2) See final Table of Required Revisions, Item 10.

Comment: [The City] must specify a stronger development and implementation of a construction site inspection program that meets the MEP standard and assures compliance with water quality standards.

Staff Response: The current SWMP commitments, with required revisions, are adequate to meet the MEP standard. Water Board staff plans to work closely with the City during the five year enrollment period to determine adequacy of the construction site stormwater runoff control BMPs.

Comment: All activities must be recorded to be reported in the annual report to assure commitment for the permit years.

Staff Response: The City must report on the individual construction site stormwater runoff control BMPs in its annual reports and include sufficient data, evidence of BMP implementation, in its annual reports to demonstrate compliance to the Water Board staff reviewers.

Comment: [The City] must develop construction a site BMP policy and procedures guidance manual within the first year of the draft SWMP's adoption. [The City] must inventory existing construction projects, require specific construction site BMPs, and designate additional BMPs based on review Environmental Protection Agency's (EPA) menu of BMPs that meet the MEP standard and assure compliance with water quality standard. This must be completed within the first year of the adoption of the SWMP.

Staff Response: BMP CON3G commits the City to developing and disseminating a construction site BMP policy and procedures manual. The City will post the manual on the City's website and provide hard copies at the City Hall. The manual will be available all five years of the permit term.

Comment: Coastkeeper urges the inclusion of language to specify mechanisms that will be used to ensure commitment of the program by:

- Beginning construction site inspections immediately.
- Providing training for specific types of staff and rank criteria, frequency of inspections, and mode of enforcement.
- Identifying prioritized sites and conduct inspections of all constructions sites on a weekly basis which includes a checklist that provide enforcement requirements for compliant and non-compliant sites.

Staff Response: The City plans to address enforcement of construction site stormwater runoff-related violations in the construction site runoff control ordinance during Year 1. Before the ordinance is adopted, the City commits to continue its current construction site inspection program (BMP CON2F). After the ordinance is adopted, the City plans to inspect project sites to ensure compliance with the ordinance (BMP CON2D). The City plans to educate developers and municipal site inspectors on the ordinance and stormwater runoff control measures throughout the entire enrollment period. In BMP CON1I, the City commits to conducting construction site inspections and enforcing requirements and penalties pursuant to the construction ordinance for Years 2 – 5. Water Board staff has added a required revision that the City commit to a frequency for construction site inspections and develop a prioritization method. See final Table of Required Revisions, Item 15. Staff encourages the City to develop a checklist for site inspectors, but is not requiring a revision to the SWMP.

MCM #5: POST-CONSTRUCTION RUNOFF

Comment: We applaud the inclusion of requirements for low impact development (LID). Many of the LID techniques incorporate greater use of permeable surfaces and have become accepted as BMPs. However, the lack of a budgetary commitment to this element may render this measure impotent and ultimately fail to meet the federally mandated MEP standard. The proposed BMP's intent fails to show that the BMPs meet the objective of the MCM.

Staff Response: The General Permit requires the City to submit a SWMP that meets the MEP standard and therefore include BMPs that are technically feasible and are not cost prohibitive. The General Permit contains no explicit requirement to demonstrate ability to pay; therefore, the SWMP need not include a "budgetary commitment."

Comment: [The City] must provide specific procedures for review of post-construction management in the development review process. It must adopt a plan for review of construction projects to ensure that pollutants and runoff from the development will be reduced to the MEP and will not cause or contribute to exceedance of water quality standards. It must ensure that all development will be in compliance with applicable stormwater ordinances, local permits, other applicable ordinances and requirements.

Staff Response: BMP PC4A commits the City to only deeming development applications complete if they include post-construction BMP selection, sizing, and siting starting in Year 2. Additionally, Water Board staff has required the City commit to educating its plan reviewers and site inspectors on LID strategies and hydromodification control measures, starting in Year 1, so that municipal staff are prepared to ensure new development and significant redevelopment projects meet the City's hydromodification control criteria. See final Table of Required Revisions, Item 7.

Comment: In order to obtain City approval, each construction plan must ensure that pollutant discharges and runoff flows from development are reduced to the MEP and that receiving water quality standards are not violated throughout the life of the project. To assure the City's authority to enforce this BMP, the SWMP must require applicants to provide verification of maintenance provisions, including a signed statement from developers.

Staff Response: Water Board staff has required the City commit to revising its existing Standards and Specifications to expand the category of projects to which its onsite retention requirement applies, or commit to developing interim hydromodification control criteria to align with Water Board expectations. See final Table of Required Revisions, Item 6. In BMP PC1D, the City commits to inspecting projects, which meet specific applicability criteria, to ensure they comply with the post-construction stormwater management controls as outlined in the revised City Land Use Ordinance.

Most often, measures used to control hydromodification also treat stormwater runoff. Controlling hydromodification incorporates slowing down the flows off the site and encouraging infiltration on the site. Both of these strategies have water quality benefits. The City's post-construction inspection program will monitor and regulate how site owners are managing post-construction BMPs on their property. BMP PC4C details that the City will include long-term maintenance and operation requirements upon property owners as conditions of approval on development permits.

Comment: [The City] must provide for inspection commencing immediately upon the implementation of revision or adoption of new standards. Procedure and guidance document development should occur simultaneously with the revision.

Staff Response: The City has committed to conducting post-construction inspections to ensure long-term maintenance of post-construction BMPs. The draft Resolution requires that the City commit to establishing a timeframe after construction termination for verifying that post-construction BMPs are working properly. See final Table of Required Revisions, Item 8.

Comment: While in the process of revision, we urge the City to adopt a temporary ordinance for all development to meet the MEP standard.

Staff Response: Requiring the City to adopt temporary ordinances for post-construction measures is unnecessary. The City has committed to adopting a set of ordinances, by the end of Year 1, that will require on-site retention and provide a strategy for incorporating post-construction structural BMPs into new development and significant redevelopment. The City should encourage project applicants who submit site plans prior to interim hydromodification control criteria adoption, to incorporate LID strategies into their site designs.

Comment: All revisions [to the City's long-term operation and maintenance BMPs] must be completed in Year 1 of the permit year.

Staff Response: BMP PC4C details that the City will include long-term maintenance and operation requirements upon property owners as conditions of approval on development permits starting in Year 2. This implementation schedule aligns with Water Board staff's proposed revision for the City to develop acceptable means for controlling hydromodification by the end of Year 1.

Comment: [Long-term maintenance and operations] reports must be accessible by public and other stakeholders to increase easy access to information and to gain future public input and involvement.

Staff Response: Water Board staff supports the commenter's recommendation that making individual home owner's long-term maintenance and operations reports accessible to the public could provide beneficial to the community, but Water Board staff is not requiring the City add a BMP to commit to achieving this.

Comment: [The City] must indicate when and how the [LID and HM] education program will be conducted and reported to consistently carry out the program to assure commitment.

Staff Response: In BMP PP1A, the City commits to complying with all State and local notice requirements when implementing an event. Additionally, the City will update Water Board staff in its annual reports of education programs implemented by the City.

MCM #6: GOOD HOUSEKEEPING & POLLUTION FOR MUNICIPAL OPERATION

Comment:

1. The Pollution Prevention/Good Housekeeping program is vague and fails to meet the federally mandated MEP standard. SLO Coastkeeper urges that specific pollution prevention programs that meet the MEP standard be identified.
2. The BMP intent must identify, develop, and implement BMPs/good housekeeping procedures to address urban runoff pollution associated with municipal operations.

Staff Response: The current commitments in the Good Housekeeping and Municipal Operations MCM, including the required revisions, and the commitments outlined in SWMP Appendix C, meet the MEP standard. Appendix C includes the City's Corporation Yard Plan and Municipal Operations Program, which both include BMPs to align with the municipal operations BMPs. BMPs MO1B and MO1C commit the City to updating the Corporation Yard Plan in Year 1 and implementing the plan for the entire five-year General Permit enrollment period. BMPs MO1E and MO1F commit the City to updating the Municipal Operations Program in Year 1 and implementing the program for the entire five-year General Permit enrollment period.

Comment:

1. [The City] must provide specific hazardous material storage BMPs and require that these be incorporated into an ordinance to be adopted in Year 1 of the program. Guidance documents and inspection procedures should be developed simultaneously with the ordinance no later than Year 2 of the program.
2. [The City] must develop a program to implement procedures to prevent stormwater runoff pollution from City vehicle fuel dispensing and maintenance facilities, City vehicle and equipment washing, and City landscaping and lawn care. This program must provide mechanisms to show commitment through the entire permit period.

Staff Response: 1) Chapter one, in the Corporation Yard Plan and Municipal Operations Program manual (SWMP Appendix C), includes the City's hazardous material storage specifications. An ordinance is not necessary for City staff to implement their own municipal housekeeping BMPs. 2) The Corporation Yard Plan addresses vehicle fueling procedures vehicle and equipment cleaning and maintenance procedures. The Municipal Operations Program addresses municipal landscape procedures and BMPs IL5F and IL5H address landscape issues related to the State's public golf course located in Grover Beach. The City commits to implementing BMPs in both of these manuals throughout the entire five-year General Permit enrollment.

Comment: [The City] must be more specific of inspection time and schedule to assure commitment of meeting BMP MO1G.

Staff Response: BMP MO1G specifies the City will implement inspections and cleaning procedures, twice annually, for storm drain catch basins and other components of the MS4 that require cleaning. The SWMP specifies the City will strive to schedule one of the cleanings prior to the wet season. The City commits to re-inspecting problem areas of debris accumulation during the wet season. These time commitments are adequate and appropriate.

Comment:

1. [The City] must identify the categories of employees to be trained and provide mechanisms to commit in training specific categories of employees.
2. [The City] must record all activities in annual reports to assure commitment of programs and education of employee training.

Staff Response: The combination of BMPs MO2A and MO2B and the municipal staff training commitments in the other MCMs will provide sufficient training of municipal staff to implement the SWMP. BMPs MO2A and MO2B detail municipal training topics and detail a commitment to conduct

annual training. The effectiveness assessment program, see final Table of Required Revisions, Item 10, will help the City and Water Board staff determine the success of the municipal staff training programs.

Comments from Homebuilders Association of the Central Coast

Comment: The Home Builders Association appreciates the opportunity to comment on the City of Grover Beach's SWMP published on your web site, with public comment due by December 16, 2008. Our goal remains to advocate for SWMPs that achieve the MEP for handling rainfall cleanly in a practical, achievable, and fiscally and technically feasible manner. We support solid science and the flexibility necessary to make sure each situation is treated based on local conditions and realities.

City's Efforts to Comply Underestimate Complexity and Workload: The Home Builders Association is concerned that Grover Beach, like other local cities, is sincerely interested in meeting the Water Board's deadlines and goals. Unfortunately, that has led Grover Beach to overestimate what it can do in a short time period and to underestimate the complex nature of the scientific assessments needed to manage stormwater effectively.

Request Withdrawal of the Interim Hydromodification Criteria Proposed in the February 15 Letter because the Proposed Interim Criteria will Negatively Impact Redevelopment/Infill/Smart Growth Projects: Current land planning philosophies, being encouraged and mandated on municipalities and counties, are designed to encourage infill development in order to limit the negative environmental impacts of sprawl. The full application of the proposed interim hydromodification criteria will make "Smart Growth" and infill strategies infeasible. We are concerned that Grover Beach is following the February 15 letter by addressing redevelopment of 5,000 square feet and requiring the post-construction hydrograph to match the pre-development hydrograph. We believe this is contrary to federal guidelines in the EPA's Stormwater Phase II Final Rule. We have not found where the authority is granted to go down to this level and believe that one acre is the minimum standard. Where is the authority delineated to regulate down to 5,000 square feet?

Our smart growth concern has been documented in the EPA publication "Using Smart Growth Techniques as Stormwater Best Management Practices". A table with the heading "Language *Hindering* Creation of Joint Smart Growth and Stormwater Policies" (emphasis added) lists among those hindrances:

- "Language specifying that post-development hydrology match the pre-development hydrology";
- "Language requiring that BMPs replicate natural systems or non-structural natural BMPs"; and
- "Impervious coverage limitations"

Additionally, the EPA publication sites the Wisconsin Department of Natural Resources as an example of incorporating infill into Stormwater Regulations. Those regulations state (emphasis added):

- "For the infiltration standards, redevelopment sites *are exempt*" and
- "The peak discharge standards *do not apply to*: Sites classified as redevelopment and infill development less than 5 acres".

The interim hydromodification criteria proposed by the Water Board in the February 15 letter appear to run counter to the above EPA's publication. Grover Beach and other cities trying to implement the February 15 standards will be in conflict with the EPA and smart growth and will prevent local governments from creating the "Sustainable Community Strategies" required by state Senate Bill 375, designed to implement Assembly Bill 32, reduce green house gas emissions, and address climate change. We recommend that the application of the proposed interim hydromodification

criteria be withdrawn for the small MS4s in the Central Coast until the issues relating to hydromodification have been resolved by the larger Phase I MS4s and to the satisfaction of all of the Central Coast stakeholders involved.

Staff Response: Water Board staff agrees that these are significant issues, and we have spent considerable time working through these issues with municipalities over the last several months. To address these issues, we modified our approach regarding hydromodification control (relative to our February 2008 letter) in more recently approved SWMPs. The proposed Resolution does not dictate specific applicability requirements, and instead provides the opportunity for MS4s to develop applicability criteria that strike an appropriate balance of social, economic, and environmental goals. Water Board staff acknowledges that in determining compliance with the MEP standard, we and the municipalities must take into account a range of issues potentially constraining local governments' choices about land use development. Water Board staff also recognizes that cities are influenced by State and Federal requirements for affordable housing as well as State mandates and policies affecting, among other things, transportation infrastructure, greenhouse gas emissions, water supply, and public safety. Water Board staff understands these requirements affect development patterns. For this reason, the Water Board is now requiring SWMPs to include BMPs to engage municipalities in long-term watershed planning, to provide a context for weighing the multiple objectives affecting development patterns.

The Table at the end of these responses to comments presents examples of applicability criteria that might achieve this balance. These examples include a range of well-defined criteria by which a city could determine applicability of hydromodification control and/or water quality treatment requirements. These examples begin by defining project categories, then identify size thresholds and specific information required to exempt a project from hydromodification and/or water quality treatment requirements.

Water Board staff acknowledges that no stormwater management strategy, or suite of approaches, has been identified that can achieve full hydrologic mitigation for the impacts of urbanization. While recognizing the challenges of applying LID in certain circumstances, for example in poorly drained soils, staff nonetheless considers LID to represent a more comprehensive effort at mitigating the hydrologic impacts of urbanization.

Water Board staff subscribes to the following "Hydrologic Philosophy of Smart Growth," as presented by Richard McCuen.³ As this philosophy and its associated seven principles directly parallel the guiding principle of LID, to mimic the natural hydrograph, Water Board staff finds that LID and hydromodification control are fundamentally consistent with smart growth strategies.

Hydrologic Philosophy of Smart Growth:

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

Principle 1: Control Runoff at Microwatershed Level

Principle 2: Consider Hydrologic Processes in Microwatershed Layout

Principle 3: Maintain First-Order Receiving Streams

Principle 4: Maintain Vegetated Buffer Zones

Principle 5: Control Spatial Pattern of Hydrologic Storage

Principle 6: Control Upland Flow Velocities

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

Principle 7: Control Temporal Characteristics of Runoff

Water Board staff has provided the City the following two options for meeting the requirement for incorporating interim hydromodification control criteria, into their development review process, to protect their watershed during the development of long-term hydromodification control criteria: 1) the City can revise its existing Standards and Specifications so the standards capture more projects, 2) the City can develop interim hydromodification control criteria, within one year of SWMP adoption, to meet the Water Board's expectations. If the City modifies its Standards and Specifications to meet Water Board expectations or if the City develops acceptable interim hydromodification control criteria, the Water Board will not require the City to use the numeric hydromodification control criteria presented in the Water Board February 15, 2008 letter. See final Table of Required Revisions, Item 6. To clarify, the numeric hydromodification control criteria in the Water Board February 15, 2008 letter that specifies a pre-development and post-construction hydrograph match, is only triggered for projects creating or replacing 5,000 square feet or more of impervious surface; therefore, a 5,000 square foot project might not trigger this control measure.

Comment: Request that Water Board Staff Provide the Public Record with Supportive Documentation: We request that the Central Coast Board introduce into the public record for Grover Beach's SWMP the economic and technical information and research that the Regional Board publicly referenced regarding post-construction stormwater management on Page 3, Item 12, in the October 17, Lompoc Resolution R-3 2008-0071. We assume Grover Beach's resolution will substantially resemble Lompoc's, where the Water Board stated that it:

- A. "... has been evaluating, as demonstrated in the administrative record, the various options for control of water quality conditions affected by post-construction stormwater discharges and has concluded that controlling hydromodification typically associated with urbanization is reasonably achievable."
- B. "... considered economics and found that the best information available indicated that controlling hydromodification through, among other approaches, implementation of low impact development principles, is technically feasible, practicable, and cost-effective"; and
- C. "... found that the required revisions would not affect regional housing supply. Hydromodification controls have been applied in this and neighboring regions with no demonstrated affect on housing availability."

We request that the public record specifically include (a) the methodology and standards used to determine what is "reasonably achievable" in item A above, (b) what "best information available" was used to determine what is "technically feasible, practicable and cost-effective" and how it was determined to be the best information available in item B above, and (c) what data and methodology were used to decide that hydromodification controls will not impact housing supply or availability and which communities are referenced "in this and neighboring regions" in item C above.

Staff Response: See the Executive Officer's July 10, 2008 letter (and its Attachment: An Example Approach for Including Quantitative Measures of Healthy Watersheds in Stormwater Management Programs), which includes 31 citations addressing the technical basis of hydromodification requirements. A modified version of the July 2008 list, along with additional references that the staff uses, is included at the end of these responses to comments. This list is not all-encompassing, but provides a representation of references Water Board staff uses and has used. Throughout the City's development of interim and long-term hydromodification control criteria, Water Board staff intends to provide the City with technical information, direction, and support.

Comment: Request for a Written, Detailed Comparison between State and Regional Stormwater Criteria and Standards: The association requests a clear, step-by-step description of the differences between the criteria established in the General Permit, including Attachment 4, and the criteria

identified in the February 15 Water Board letter, and what technical findings support the Water Board differences.

Staff Response: See previous response. The citations listed at the end of this document support the proposed Resolution. Also, the Homebuilders Association frequently notes that municipalities are different, and that these differences should be taken into account in the various SWMPs, and that a single approach for all municipalities is not appropriate. The State Board's General Permit is designed to allow municipalities to develop locally relevant and effective SWMPs. Going further, the Central Coast Water Board's approach allows municipalities to choose among options that take into account highly local conditions, such as water quality priorities, watershed conditions, economics, degree of build out, future development plans, the interaction of multiple municipalities and other land uses in a watershed, etc.

Comment: Request Elaboration of the Interim Criteria Language "as effective as": The City of Lompoc SWMP approval resolution, and apparently other SWMP comments, stated that "The proposed criteria must be effective as ..." We would like specific, detailed, quantifiable clarification as to what "as effective as" means. Additionally, we request that the Water Board assist in this analysis by providing the "technical findings" that demonstrate how effective the Water Board proposed interim criteria are. In order to compare effectiveness, we believe that the Water Board should provide it's analysis of the effectiveness of the criteria it is proposing.

Staff Response: The comment seems to be based on a premise that the Water Board is responsible for analyzing the effectiveness of hydromodification control criteria. Actually, this is the discharger's responsibility. The Water Board is responsible for protecting water quality and beneficial uses through its regulatory processes—the municipality is responsible for demonstrating compliance by demonstrating the effectiveness of its SWMP and its component parts. Like all dischargers, the municipality must demonstrate that it is not discharging pollutants above certain limits, that it is meeting narrative requirements, and that it is not degrading beneficial uses. For example, municipalities must demonstrate compliance with their wastewater treatment plant discharge permit—if a municipality decides to use a certain wastewater treatment methodology, it must demonstrate its effectiveness at achieving compliance. This responsibility cannot be shifted to the Water Board. Regarding SWMPs, the discharger is free to use different approaches to achieve compliance, and must demonstrate effectiveness and compliance. Municipalities can use Water Board staff's hydromodification control criteria as a way to prevent degradation of beneficial uses, or it can choose a different approach—in either case the municipality must demonstrate effectiveness and compliance.

At the October 17, 2008 Water Board public hearing for approval of the City of Lompoc's SWMP, the Water Board directed Water Board staff to ensure that any interim hydromodification control criteria developed by the City of Lompoc be as effective as the interim hydromodification control criteria we presented in staff's February 15, 2008 letter. Those criteria are as follows:

- For new and re-development projects, Effective Impervious Area shall be maintained at less than five percent (5%) of total project area.
- For new and redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface, the post-construction runoff hydrographs shall match within one percent (1%) the pre-construction runoff hydrographs, for a range of events with return periods from 1-year to 10-years.
- For projects whose disturbed project area exceeds two acres, preserve the pre-construction drainage density (miles of stream length per square mile of watershed) for all drainage areas serving a first order stream or larger, and ensure that post-project time of concentration is equal or greater than pre-project time of concentration.

Water Board staff expects that implementation of these criteria, together with other planning efforts that contribute to long-term watershed protection, will promote the following desired conditions of healthy watersheds:

- 1) Rainfall surface runoff at pre-development levels,
- 2) Watershed storage of runoff, through infiltration, recharge, baseflow, and interflow, at pre-development levels,
- 3) Watercourse geomorphic regimes within natural ranges (stream banks are stable within natural range; sediment supply and transport within natural ranges), and
- 4) Optimal riparian and aquatic habitats.

Interim hydromodification control criteria primarily focus on items 1 and 2 above. Therefore, Water Board staff will review the City's interim hydromodification control criteria to ensure that they:

- 1) Provide numeric thresholds that demonstrate optimization of infiltration in order to approximate natural infiltration levels (such as would be achieved by implementation of appropriate low-impact development practices), and
- 2) Achieve post-project runoff discharge rates and durations that do not exceed estimated pre-project levels, where increased discharge rates and durations will result in increased potential for erosion or other significant adverse impacts to beneficial uses.

On January 5, 2009, the Water Board Executive Officer approved the City of Santa Maria's enrollment under the General Permit. In Santa Maria's Final Table of Required Revisions, Water Board staff presented Santa Maria with options for methods of developing interim hydromodification that are as effective as the interim hydromodification control criteria presented in its February 15, 2008 letter. Based on the Water Board's direction regarding the City of Lompoc's SWMP and the City of Santa Maria's SWMP, Water Board staff has determined it appropriate to propose similar language in other municipalities' SWMPs.

Water Board staff has requested the City of Grover Beach modify its SWMP to clarify the City will modify its Standards and Specifications or that they will develop interim hydromodification control criteria that follows the methodology of one of the three options included in the final Table of Required Changes, Item 6.

Comment: Request Public Hearing: For these reasons, for those cited below specific to the plan and to the Water Board staff's response, and for a thorough public analysis and understanding of the city's proposed SWMP, the association believes that there are sufficient issues and concerns raised to warrant a public hearing on Grover Beach's plan before the Water Board. We are so requesting such a hearing as an official appellant with adequate time to present our position at the public hearing.

Staff Response: The Water Board has granted the commenter a hearing. The Water Board will be holding a public hearing on May 8, 2009, to consider approval of the City of Grover Beach's SWMP.

Comment: The application of the Interim Hydromodification Criteria should be withdrawn (see above) or the time to complete developing the Interim Hydromodification Criteria should be 2 years: If the application of the criteria is not withdrawn as requested above, it would be more realistic for Grover Beach to have two (2) years to create its interim hydromodification criteria, rather than the one (1) year proposed in the city plan. Our association members experience in Southern California found that a one-year deadline to properly develop interim criteria is unachievable. In one year, Grover Beach cannot adequately research and understand the economic, technical, geological, and hydrological features that such criteria must address in order to achieve a scientifically sound method for cleaning stormwater to the MEP.

It is obviously critical to protect public safety by insuring that the interim criteria are thoroughly researched before being applied. Criteria should not be “hurried” into practice either to meet an artificial deadline at the risk of unintended consequences that could jeopardize public safety or to implement criteria that does not have “technical findings” that demonstrate their feasibility and effectiveness. Grover Beach, like most Central Coast jurisdictions, has a small, hardworking staff and lacks the human and financial resources to realistically comply with a one (1) year deadline, guarantee public safety, and demonstrate feasibility and effectiveness.

For the Grover Beach public record, we are attaching the June 27, 2008 California Stormwater Quality Association (CASQA) letter to the Water Board’s Executive Officer Roger Briggs. CASQA, which provides stormwater quality management services to more than 26 million Californians, noted that it is a sequencing error to implement the criteria before determining what is technically possible and that it will take more than a year to do the appropriate, scientifically valid research. CASQA also noted that larger cities “have been expending significant effort on the technical challenge of developing appropriate hydromodification criteria for a number of years. Since 2001, the San Francisco Bay Area Phase 1 permittees have been working to address this issue, yet there is still no accepted common approach.” It would seem wisest to let the larger metropolitan communities, with more human and fiscal resources, conduct thorough technical and financial analysis of how hydromodification/LID can work and then let the smaller, fiscally and staff-challenged Central Coast communities use these models and tailor them to their stormwater plans to meet local conditions. We recommend that the city be given two years to develop interim hydro modification criteria.

Staff Response: The City has proposed to use its existing development standards in place of developing and implementing new interim hydromodification control criteria. Water Board staff supports this approach as long as the City commits to modifying the applicability criteria for developments that must adhere to the existing stormwater retention requirements. If the City does not want to modify its existing development requirements, then Water Board staff has included other options in the Required Revisions for the City to use, such as the same approach as other local municipalities for developing and implementing interim hydromodification control criteria, by the end of Year 1. See final Table of Required Revisions, Item 6.

Water Board staff realizes that hydromodification control criteria development is an iterative process. The proposed Resolution requires the City to modify its existing standards or develop interim criteria, before developing long-term criteria, to allow the City time to work through the hurdles of implementing hydromodification control criteria and set the stage for the long-term criteria. Additionally, if the City postpones adoption of hydromodification control criteria until after conducting watershed analyses and developing long-term hydromodification control criteria, new projects have potential to degrade the City’s watershed. Like all areas of scientific research, LID/hydromodification research will never be complete, so waiting for the research to be complete to implement controls would likely result in no control.

Comment: Continued Enforcement of Existing Requirements: The Water Board staff required revision to Grover Beach’s BMP PC1A is unrealistic. Requiring the city to implement quantifiable, numeric criteria within one year of enrollment or eliminate exceptions to onsite retention is fiscally and technically unachievable for a city with Grover Beach’s staff and fiscal resources for the reasons stated in item number one above. It is not good planning or good science to force communities to hurriedly create rules without having time to measure their technical applicability or to anticipate potential unintended consequences. We recommend that Grover Beach be given two years to revise its existing procedures.

Staff Response: Because the City has existing onsite retention requirements for new developments, Water Board staff finds it reasonable to allow the City to modify these requirements to meet Water Board expectations, in the place of developing a new set of requirements for interim

hydromodification control criteria. The City may decide which approach (modifying existing standards or establishing new interim hydromodification control criteria) to take, in order to meet Water Board expectations for the City to begin controlling hydromodification in one year, prior to adoption of long-term hydromodification control criteria. See final Table of Required Revisions, Item 6. Please also see previous responses.

Comment: LID Application and Manual: For essentially the reasons articulated above in item number one, Grover Beach cannot prepare and adopt an LID manual in year one as it proposes to do in BMP PC1B. The city is technically unready to accomplish this task. Its plan does not address if it has high ground water issues due to its proximity to the Pacific Ocean. High ground water will impact the feasibility of low impact development and hydromodification and must be analyzed at the beginning of stormwater management planning, before drafting and implement an LID manual.

In BMP PC1B2, Grover states that it can or may use the City of Santa Barbara's stormwater guidelines as a model for developing Grover's LID manual. That is premature and inapplicable to the local situation. Santa Barbara's plan, while praised by the Water Board staff, has not been approved as an LID manual or a stormwater plan. Santa Barbara's plan is for a city with far more fiscal and human resources than Grover and radically different building conditions, land values, and land uses.

BMPs PC1C and PC1D also need to revise their phased implementation schedule. It will not be possible to draft and implement an LID manual in year two, educate City staff, and begin inspecting construction sites for compliance in Year 2. Grover will need at least two years to create an LID manual that is thoroughly researched and publicly reviewed and to train staff.

The association agrees with the Water Board staff response in BMP PC4E that city staff "must understand the requirements and principles of LID/hydromodification control prior to implementation," but the Water Board staff required modification will make it even harder for the City staff to achieve that level of knowledge by forcing Grover Beach to develop the standards, draft a manual and educate the staff in the unrealistically short time frame of one year.

We recommend that the City be given two years to develop and implement an LID manual and educate city staff and that the manual focus on local soils and climatic conditions. If that is impossible, it should rely on a more comparable city for a model than the City of Santa Barbara.

Staff Response: Water Board staff has not proposed that the City be required to develop and implement a LID manual within one year of enrollment under the General Permit. The proposed Resolution requires that the City develop interim hydromodification control standards within one year of enrollment under the General Permit and develop long-term hydromodification control standards by the end of the five-year enrollment period. The City must conduct long-term watershed planning to develop the long-term hydromodification control standards and develop a means to convey this information to project applicants by the end of the five-year enrollment period. Water Board staff has not required the City develop an LID manual; however, Water Board staff finds an LID manual may be an effective way of conveying strategies to project applicants for meeting hydromodification control standards. Water Board staff finds the Santa Barbara draft LID manual a good reference, but agrees with the commenter that the City must cater its LID manual to conditions unique to the City of Grover Beach. The General Permit requires the City to submit a SWMP that meets the MEP standard and therefore include BMPs that are technically feasible and are not cost prohibitive.

Comment: SWMP Post-Construction Application Cut-Off Point should be at "Deemed Complete": The most effective time to implement hydromodification/LID methods is at the start of a project's design phase. The later in the process a government tries to apply post-construction stormwater methods to a project, the greater the cost and timing burdens that are placed on the jurisdiction and the project and the less likely that a technically effective, cost-efficient solution will be achieved...A

better cut-off point is at the “deemed complete” stage of the project entitlement process. Projects that have not been “deemed complete” would be best able to implement new LID solutions without undue hardship on the jurisdiction or applicant. An application that has been accepted by a jurisdiction (“deemed complete”) as ready for processing and a public hearings should not have to be re-designed to meet new standards. By deemed complete, both the jurisdiction and applicant have expended significant time and funds on the project. During the transition process, projects should be encouraged in their pre-application stage to voluntarily use LID methods in development design...We recommend that projects whose application has been “deemed complete” by the City of Grover Beach before post-construction standards are adopted be exempt from them, but should be encouraged to comply with the regulations on a voluntary basis. Obviously, all projects in later stages of the entitlement, design, or construction process would be exempt from the application of the regulations as well.

Staff Response: Water Board staff understands that, as a small city, Grover Beach has relatively few projects that may be potentially affected by the “deemed complete” cut-off point proposed by the commenter. For these projects, and others for which applications are submitted during the first year of SWMP implementation, the City can voluntarily notify applicants that they should consider LID and address hydromodification in designing their projects. (Central Coast Low Impact Development Center assistance may also be available to consult applicants on ways to integrate LID into project design.)

Water Board staff agrees with the commenter that the “deemed complete” milestone is an appropriate cut-off point in the entitlement process, after which projects would not be subject to new hydromodification requirements. Water Board staff requested in the August 2008 Draft Table of Required Revisions that the City clarify what projects, in the City’s review process ‘pipe-line,’ the City will require to meet the interim hydromodification control criteria. The City modified BMP PC4A in its September 2008 Draft SWMP to specify that starting in Year 2, development applications will only be deemed complete if they include post-construction BMP selection, sizing, and siting.

Comment: Clarify Project Phase-In Period to recognize “Deemed Complete” approach: Although it is does not seem spelled out in the current plan, we recommend that the plan should clarify that the application of the new post-construction regulations to projects in the entitlement process would begin at the adoption of the City’s interim hydromodification criteria (proposed at two (2) years in item 1 above) and be applied to all projects not “deemed complete” at that time.

In addition, Grover BMP PC4A states: “The City must insure that development applications are only deemed complete if they include post-construction BMP selection, sizing, and siting.” It is impossible for a project to select its BMPs and the related sizing and siting until it has actually been approved. Requiring it to be done before “deemed complete” means the project will never be able to proceed since the entire development could be redesigned and changed during the approval process. This level of detail requested by BMP PC4A requires extensive and costly time and effort, such as detailed grading, engineering and construction drawings necessary to determine the exact size, type and location of a BMP such as a bioswales, rain garden swale, underground cistern, stormwater filter, etc., which is not practicable prior to the “deemed complete” stage. We recommend that BMP PC4A be rewritten as follows: The City will insure that applications, received after completion of the Hydromodification Standards and LID Manual, are only deemed complete if they include a Preliminary BMP Plan indicating conceptual post-construction BMP selection, and siting. The Preliminary BMP Plan may be included in the Project Site Plan or as a separate document.

Staff Response: Project applications must include enough detail to ensure City plan checkers that the project will meet hydromodification control requirements. The plan checkers are responsible for determining if the post-construction BMPs are sized and sited appropriately for a site before deeming the project complete. A plan checker cannot simply approve a project based on a

commitment that a project applicant will construct the project adequately to control hydromodification. To successfully control hydromodification, project applicants must consider an approach to control hydromodification during the initial stages of project development. If a developer waits to determine the setting and sizing of post-construction stormwater BMPs until a site has already been laid out, the project applicant may be faced with an end-of-pipe expensive solution that may not effectively treat stormwater runoff or effectively meet the City's hydromodification control requirements.

Comment: Incorporating assessments from project geotechnical and soils consultants is imperative: All sites throughout the Central Coast do not have the same soils/site conditions. Specific site conditions may preclude applying the new standards due to low infiltration capability of soils or the potential for damage to other infrastructure. Applying the standards in those conditions can result in a public safety hazard or simply be impossible. We suggest following the City of San Diego's Land Development Manual – Stormwater Standards in which a Geological Investigation Report is required by a registered geologist or certified engineering geologist to indicate where infiltration is feasible or infeasible, what it can achieve, and how to mitigate impacts where it is feasible. We recommend that the city's stormwater plan include a community-wide analysis by a geotechnical engineer to determine which areas within the urban boundary are suitable for the application of BMPs. We also recommend that the City's SWMP state that it will rely on the applicant's professional geotechnical/soils consultant's analysis to determine if and where infiltration/low impact development BMPs are practical, how much is achievable, and what BMPs should be used when infiltration is infeasible or limited.

Staff Response: Water Board staff expects geotechnical/soils information to continue to inform site design for projects in Grover Beach. However, Water Board staff does not expect such information to necessarily preclude those sites from using LID BMPs or to necessarily be the basis for exemptions from requirements to mimic the natural hydrograph in post-development runoff events. The Water Board will review the City's hydromodification controls, stormwater treatment BMPs, and applicability criteria (where and when specific numeric criteria are to be met through post-construction BMPs for new development and significant redevelopment) to determine if the City is achieving water quality protection from these pollution sources to the MEP standard. Should the City propose to exempt certain developments from infiltration or LID BMPs, the City would need to demonstrate that alternative or conventional BMPs result in the desired conditions of healthy watersheds, including the conditions of rainfall runoff, groundwater recharge, sediment transport and supply, and riparian and aquatic habitat. To achieve the appropriate balance of environmental and societal goals, the City should consider and select BMPs and applicability criteria from a watershed perspective.

Comment: Normal maintenance of existing infrastructure by public agencies, project developers, and home owners associations be exempted from the new standards: When maintaining existing infrastructure, existing site conditions may preclude applying the new standards. For example, when resurfacing an existing roadway that has no "extra" land available, it will not be possible to provide additional land for filtration purposes. We recommend that normal maintenance of existing infrastructure by home owner associations, public agencies, and developers should not be considered new development and should be exempt from the new standards.

Staff Response: The proposed Resolution requires the City to modify its existing development specifications or commit to developing new requirements for hydromodification control for new development and significant redevelopment. Maintenance activities for existing public infrastructure are subject to multiple BMPs to reduce their potential contribution to stormwater pollution (see the Pollution Prevention/Good Housekeeping for Municipal Operations and Appendix C). Through other management measures in the SWMP, private developments and homeowners associations would be subject to education as well as potential enforcement on source control, pollution prevention, and

illicit discharges, but would not be subject to hydromodification controls for maintenance activities. Water Board staff anticipates the City will develop and refine clear and effective applicability criteria for their hydromodification control criteria. See Final Table of Required Revisions, Item 6.

Comment: The “pre-development” definition must be “immediate pre-project”: How pre-development is defined is critical as the baseline for determining the increase in stormwater volumes and rates for new development on a site. Defining pre-development as the original natural condition, regardless of current usage, will make many urban infill, smart growth projects fiscally and technically infeasible. Defining pre-development as before anything has been changed on a site is counterproductive to the current sustainability and new urbanism planning concepts and will promote sprawl, long-distance commuting, and increased air pollution.

In addition, a “pre-development” standard harkening to when the land was vacant presents a liability issue that will hamper urban infill by making insurers refuse to support a project because adding more water to an area than has been the standard for a lengthy time period will threaten to undermine nearby buildings constructed to withstand less groundwater. Insurers will not take that risk. Projects will not get built. There will be no improvement in stormwater management.

The EPA publication, mentioned in the General Comment Section above, also states with respect to the definition of pre-development that (emphasis added): “When you write your ordinance, however, you may want to avoid confusion by specifying that the pre-development condition *refers to the site immediately prior to redevelopment.*”

In Attachment C – Definitions, the San Diego Region California Regional Water Quality Control Board in order No. R9-2007-0001 for the incorporated cities of San Diego County, the San Diego Unified Port District, and San Diego County Regional Airport Authority defines: “Pre-Project or Pre-Development Runoff Conditions (Discharge Rates, Durations, Etc.) – Runoff conditions that exist onsite immediately before the planned development activities occur. This definition is not intended to be interpreted as that period before any human-induced land activities occurred. This definition pertains to redevelopment as well as initial development.”

The requirement that post-construction must meet pre-construction conditions (defined as undeveloped soil type and vegetation) is unwarranted. Under the U.S. Green Building Council, which administers the LEED AP program and certifies buildings, a building site that achieves the highest level, Platinum, does not have to meet this stringent requirement. We recommend defining pre-development as “the immediate pre-project condition” just as the San Diego Regional Water Quality Control Board has done.

Staff Response: Water Board staff views changing the definition of pre-development condition as described in the comment as lowering the standard for post-construction runoff control. Water Board staff agrees that hydrologic performance should not outweigh other important environmental goals such as infill, redevelopment priorities, and regional growth patterns that can also affect watershed health. Effective implementation that balances these goals requires well-crafted applicability criteria, which define what types of projects and under what circumstances controls and quantifiable measures apply.

Water Board staff will consider applicability criteria, including baseline conditions defining “pre-development,” when the City prepares its interim and long-term hydromodification criteria. The options for developing interim hydromodification control criteria, presented in the final Table of Required Revisions, Item 6, provide flexibility for defining the pre-development conditions. Specifically, the Water Board Executive Officer has approved the City of Santa Maria’s methodology for developing interim hydromodification criteria, including the City’s selection of pre-construction conditions as a baseline for hydrologic conditions in significant redevelopment projects.

Comment: Economic balance: As previously mentioned, most Central Coast municipalities have small staffs and very limited financial resources. They and the construction industry face numerous regulations and requirements from a wide variety of government agencies, all with important and legitimate public benefit goals. Neither the governments nor the development community can resolve the often conflicting demands local, state and federal agencies impose. San Luis Obispo County is preparing to adopt “smart” or “strategic” growth goals into its General Plan, pushing more intense residential development into urban areas at the same time as the stormwater plans over-reliance on hydromodification/LID seems likely to make such development prohibitively expensive in places like Grover Beach. Similarly, making urban infill harder to achieve by over-emphasizing increased urban infiltration will leave cities like Grover Beach and San Luis Obispo County unable to meet green house gas reduction goals mandated by AB 32 and part of the efforts to address global climate change. We recommend that Grover Beach’s plan include a clearly worded BMP that recognizes that maximizing stormwater management improvement must be balanced against community need for affordable housing, reduced air pollution, market-place economics, municipal economics, and local public acceptance.

Staff Response: Please see Water Board staff’s response to the comment regarding redevelopment/infill/smart growth projects.

Water Board staff supports the commenter’s recommendation that the City should strive for a balanced community outcome when developing hydromodification control and applicability criteria, but Water Board staff is not requiring the City add a BMP to commit to achieving this.

Comment: Additional Specific Comments: Requirement BMP PC4C also needs to be rewritten to clarify that the long-term maintenance and operation requirements imposed as a condition of approval on the development permit will be enforced against the developer “until the time the property is transferred” and then against the property owner or home owners association as appropriate. In requirement BMP PC4G, the City plans to ensure that other nearby governments involved in watershed management adhere to an Effective Impervious Area (EIA) of 3 to 10 % of their jurisdiction. Grover Beach has no control over other nearby governments. Additionally, the CASQA letter referenced above notes that using EIA as a driver for “LID approaches is currently the subject of intense controversy within the stormwater quality management/science community as well as among planners and practicing landscape architects.” The letter specifically notes that the controversy includes if “it (EIA) is compatible with smart growth, and possibly increase urban sprawl.”

Staff Response: Water Board staff concurs with the commenter’s recommendation for BMP PC4C that the long-term maintenance and operation requirements should be the responsibility of the developer until the time the property is transferred to the property owner; however, Water Board staff is not recommending a revision to the SWMP. Water Board staff recommends the City consider incorporating this protocol into its SWMP.

BMP PC4G reads, “The City will ensure they plan to limit EIA to no more than 3-10 percent of their jurisdictional area.” Even in the context of the rest of this BMP, Water Board staff interprets the BMP language to mean the City is setting an EIA goal for its jurisdiction, not areas outside its City boundaries. In BMP PC4G, the City commits to coordinating with bordering communities to better protect its watersheds. The City will determine when they develop their approach for long-term watershed planning if EIA is an appropriate metric to measure watershed health.

Comment: Continued Collaboration with Stakeholders such as the Home Builders Association: Grover Beach’s plan requires continued development/modification of various items such as a CEQA Checklist, LID Standards, and Hydromodification Criteria and Plans, throughout the five-year cycle. It

is important that these items receive the same public scrutiny as the plan itself. We recommend that the plan include a BMP stating that the City will continue to provide stakeholder consultation opportunities for all of the items to be developed during the five-year cycle.

Staff Response: The City has committed to complying with public notice requirements when implementing SWMP public involvement activities and participation programs. Water Board staff will provide an opportunity to stakeholders to comment on interim hydromodification control criteria prior to implementation. The Water Board will provide interested persons the opportunity for comment on the City's proposed interim hydromodification control criteria and a hearing before the Water Board if any party is aggrieved by the Water Board staff's determination, prior to Water Board action being final. See final Table of Required Revisions, Item 16.

Comment: Countywide Technical Advisory Committee Needed: As we have mentioned previously, and now believe the Water Board concurred with on Oct. 17, the Water Board should encourage and assist the various jurisdictions of San Luis Obispo County in the formation of a Technical Advisory Committee to share information and advice on preparing stormwater management plans, hydromodification criteria and plans, and LID BMPs. San Diego County is successfully using such an approach. The result should be hydromodification criteria, plans, and BMPs that are feasible, practical, and usable, and achieve the intended objectives of the MS4 Order. We recommend specifying in Grover Beach's plan that the Water Board staff will assist in creating and will participate in a Countywide Technical Advisory Committee.

Staff Response: The City of Grover Beach, along with several other local communities, is part of the San Luis Obispo County Partners for Water Quality. This group has formed a technical advisory committee to support development of hydromodification control criteria. Water Board staff will be involved in this effort. Water Board staff encourages the Homebuilder's Association to get involved in this committee and help local communities work through its perceived challenges to developing hydromodification control criteria. The members of this committee are also getting involved with a consortium of municipalities throughout the Central Coast region, who plan to retain the Central Coast Low Impact Development Center and a team of true LID/hydromodification experts to assist them with development of effective hydromodification controls. The proposed Resolution requires that the City commit to coordinating with other municipalities and land users that share the City of Grover Beach's watershed, as part of the City's long-term watershed planning efforts. See final Table of Required Revisions, Item 13.

Table: Examples of Applicability Criteria for Stormwater Requirements⁴**Regulated Projects are Defined in the Following Categories:**Special Land Use Categories

(a) New Development or redevelopment projects that fall into one of the categories listed below and that create and/or replace 10,000 square feet or more of impervious surface (collectively over the entire project site). This category includes development projects on public or private land, which fall under the planning and building authority of the Permittees:

- (i) Auto service facilities, described by the following Standard Industrial Classification (SIC) Codes: 5013, 5014, 5541, 7532-7534, and 7536-7539;
- (ii) Retail gasoline outlets;
- (iii) Restaurants (SIC Code 5812); or
- (iv) Parking lots that are stand-alone or part of any other development project.

(b) For redevelopment projects, specific exclusions to this category are:

- Interior remodels;
- Routine maintenance or repair such as:
 - roof or exterior wall surface replacement,
 - pavement resurfacing within the existing footprint.

Other Development Projects

New development projects that create 10,000 square feet or more of impervious surface (collectively over the entire project site) including commercial, industrial, residential housing subdivisions (i.e., detached single-family home subdivisions, multi-family attached subdivisions (town homes), condominiums, and apartments), mixed-use, and public projects. This category includes development projects on public or private land, which fall under the planning and building authority of the Permittees.

Other Redevelopment Projects

Redevelopment projects that create and/or replace 10,000 square feet or more of impervious surface (collectively over the entire project site) including commercial, industrial, residential housing subdivisions (i.e., detached single-family home subdivisions, multi-family attached subdivisions (town homes), condominiums, and apartments), mixed-use, and public projects. Redevelopment is any land-disturbing activity that results in the creation, addition, or replacement of exterior impervious surface area on a previously developed site. This category includes redevelopment projects on public or private land, which fall under the planning and building authority of the Permittees. Specific exclusions to this category are:

- Interior remodels;
- Routine maintenance or repair such as:
 - roof or exterior wall surface replacement,

⁴ This information is provided for purposes of example only and are derived from the San Francisco Bay Regional Water Quality Control Board Draft Municipal Regional Stormwater NPDES Permit, Tentative Order R2-2008-XXXX. <http://www.waterboards.ca.gov/sanfranciscobay/mrp.shtml>

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- pavement resurfacing within the existing footprint

New Road Projects

Any of the following that create 10,000 square feet or more of newly constructed contiguous impervious surface: streets, roads, or highways; contiguous paved surfaces installed as part of a street, road or highway project (including contiguous sidewalks and bicycle lanes); or impervious trails that are greater than 10 feet wide or are creek-side (within 50 feet of the top of bank). This category includes new road projects that fall under the building and planning authority of the Permittees and excludes Caltrans new road projects.

Road Expansion or Rehabilitation Projects

Arterial streets or roads that are:

(a) Rehabilitated down to the gravel base (i.e., roads or pavement that are demolished and rebuilt from the gravel base up); (b) Widened with additional lanes, sidewalks, or medians; or (c) Replaced, and that create and/or replace 10,000 square feet or more of contiguous impervious surface.

Exemption from Installing Hydraulically Sized Stormwater Treatment Systems:

The following Regulated New Infill or Redevelopment Projects may provide alternative compliance with the permit by Maximizing Site Design Treatment Controls⁵ to provide as much on-site stormwater treatment as possible:

- a Projects that meet USEPA’s Brownfield Sites definition found in Public Law 107-118 (H.R. 2869) – “Small Business Liability Relief and Brownfields Revitalization Act” signed into law January 11, 2002, and that receive subsidy or similar benefits under a program designed to redevelop such sites;
- b Low-income housing as defined under Government Code section 65589.5(h)(3), but limited to, the actual low-income portion, or low income impervious area percentage, of the project;
- c Senior citizen housing development, as defined under California Civil Code section 51.11(b)(4); or
- d Transit-Oriented Development⁶ projects.

⁵ Maximizing Site Design Treatment Controls is defined as including a minimum of one of the following specific site design and/or treatment measures:

- Diverting roof runoff to vegetated areas before discharge to storm drain;
- Directing surface runoff to vegetated areas before discharge to storm drain;
- Installing landscaped-based stormwater treatment measures (non-hydraulically-sized) such as tree wells or bioretention gardens; or
- Installing prefabricated/proprietary stormwater treatment controls (non-hydraulically-sized).

⁶ Transit-Oriented Development — Any development project that will be located within ½ mile of a transit station and will meet one of the criteria listed below. A transit station is defined as a rail or light-rail station, ferry terminal, bus hub, or bus transfer station. A bus hub or bus transfer station is required to have an intersection of three or more bus routes that are in service 16 hours a day, with a minimum route frequency of 15 minutes during the peak hours of 7 am to 10 am (inclusive) and 3 pm to 7 pm (inclusive).

- i. A housing or mixed-use development project with a minimum density of 30 residential units per acre and that provides no more than one parking space per residential unit; or

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<p>All other Regulated New Infill or Redevelopment Projects may provide alternative compliance by satisfying one or more of the following requirements after minimizing the new and/or replaced impervious surface on-site:</p> <ul style="list-style-type: none"> a. Installing, operating and maintaining Equivalent Offsite Treatment⁷ at an off-site project in the same watershed; b. Contributing Equivalent Funds⁸ to a Regional Project.⁹
<p>Applicability of Hydromodification Management Standard:</p> <p>The Hydromodification Management (HM) Standard shall apply in all areas except where a project:</p> <ul style="list-style-type: none"> • discharges stormwater runoff into creeks or storm drains that are concrete-lined or significantly hardened (e.g., with rip-rap, sackrete) downstream to their outfall in San Francisco Bay; • discharges to an underground storm drain discharging to the Bay; or • is located in a highly developed watershed.¹⁰ <p>However, plans to restore a creek reach may reintroduce the applicability of HM controls, and would need to be addressed in the HM Plan.</p>
<p>Impracticability Provision:</p> <p>Where conditions (e.g., extreme space limitations) prevent a project from meeting the HM Standard for a reasonable cost, <i>and</i> where the project's runoff cannot be directed to a regional HM control within a reasonable time frame, <i>and</i> where an in-stream measure is not</p>

- ii. A commercial development project with a minimum floor area ratio (FAR) of three and that provides:
 - (a) For restaurants, no more than 3 parking spaces per 1000 square feet;
 - (b) For offices, no more than 1.25 parking spaces per 1000 square feet;
 - (c) For retail, no more than 2.0 parking spaces for 1000 square feet. Sharing of parking between uses within these maximums is allowed. Carshare and bicycle parking spaces are not subject to these maximums.

⁷ Equivalent Offsite Treatment—Hydraulically-sized treatment (in accordance with the permit) and associated operation and maintenance of:

- 1. An equal area of new and/or replaced impervious surface of similar land uses as that created by the Regulated Project;
- 2. An equivalent amount of pollutant loading as that created by the Regulated Project; or
- 3. An equivalent quantity of runoff from similar land uses as that created by the Regulated Project.

⁸ Equivalent Funds—Monetary amount necessary to provide both:

- 1. Hydraulically-sized treatment (in accordance with the Permit) of:
 - a. An equal area of new and/or replaced impervious surface of similar land uses as that created by the Regulated Project;
 - b. An equivalent amount of pollutant loading as that created by the Regulated Project; or
 - c. An equivalent quantity of runoff from similar land uses as that created by the Regulated Project; and,
- 2. A proportional share of the operation and maintenance costs of the Regional Project.

⁹ Regional Project—A regional or municipal stormwater treatment facility that discharges into the same watershed as does the Regulated Project.

¹⁰ Within the context of these requirements, “highly developed watersheds” refers to catchments or subcatchments that are 65% impervious or more.

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practicable, the project shall use (1) site design for hydrologic source control, *and* (2) stormwater treatment measures that collectively minimize, slow, and detain runoff to the maximum extent practicable.

In addition, if the cost of providing site design for hydrologic source control and treatment measures to the maximum extent practicable does not exceed 2% of the project cost (as defined in "a." below), the project proponent shall provide for or contribute financially to an alternative HM project as set forth below:

- a. *Reasonable cost.* To show that the HM Standard cannot be met at a reasonable cost, the project proponent must demonstrate that the total cost to comply with both the HM Standard and the permit's treatment requirement exceeds 2 percent of the project construction cost, excluding land costs. Costs of HM and treatment control measures shall not include land costs, soil disposal fees, hauling, contaminated soil testing, mitigation, disposal, or other normal site enhancement costs such as landscaping or grading that are required for other development purposes.
- b. *Regional HM controls.* A regional HM control shall be considered available if there is a planned location for the regional HM control and if an appropriate funding mechanism for a regional HM control is in place by the time of project construction.
- c. *In-stream measures practicability.* In-stream measures shall be considered practicable when an in-stream measure for the project's watershed is planned and an appropriate funding mechanism for an in-stream measure is in place by the time of project construction.
- d. *Financial contribution to an alternative HM project.* The difference between 2 percent of the project construction costs and the cost of the treatment measures at the site (both costs as described in Section 2.a of this Attachment) shall be contributed to an alternative HM project, such as a stormwater treatment retrofit, HM retrofit, regional HM control, or in-stream measure. Preference shall be given to projects discharging, in this order, to the same tributary, mainstem, watershed, then in the same municipality or county.

References

1. "America's Living Oceans: Charting a Course for Sea Change." The Pews Oceans Commission. (2 June 2003): 16, 58.
2. <http://www.pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Reports/Protecting_ocean_life/env_pew_oceans_final_report.pdf>. pp. 166.
3. "California State Constitution." California State Government. (September 8, 1994): Article 10, Sec. 2. <http://www.leginfo.ca.gov/const/article_10>
4. "Code of Federal Regulations" United States of America. Title 40. Sec. 122.34 <<http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&tpl=%2Findex.tpl>>
5. "Draft NPDES General Permit for Stormwater Discharges Associated Construction and Land Disturbance Activities." California State Water Resources Control Board. <http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/constpermits/draft/draftconst_permit_031808.doc>. pp.27
6. "Draft Tentative Order Orange County Municipal Separate Storm Sewer System Permit." San Diego Regional Water Quality Control Board. (12 December 2007): 38. <http://www.waterboards.ca.gov/sandiego/water_issues/programs/stormwater/docs/oc_permit/r92007_0002/2007_0002rev_att070607.pdf> pp. 34
7. "Draft Tentative Order San Francisco Bay Region Municipal Regional Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit: Urban Runoff Quality Mgmt, Provision C.3." San Francisco Bay Regional Water Quality Control Board. (4 December 2007—Updated 14 December 2007): 21-22.
8. <http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/muni/mrp/mrptentativeorder121407updated.pdf>.
9. "Draft Tentative Order Ventura County Municipal Separate Storm Sewer System Permit." Los Angeles Regional Water Quality Control Board.
10. <http://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/ventura_ms4/08_0429/draft_Tentative_Ventura_County_MS4_Permit.pdf>. pp. 115
11. "Dynamics of Urban Stream Channel Enlargement." The Practice of Watershed Protection. Article 19 (2000): 99-104.
12. "Impacts of Impervious Cover on Aquatic Systems, Watershed Protection Research Monograph No. 1." Center for Watershed Protection, Ellicott City, Md., March 2003.
13. <http://www.cwp.org/Resource_Library/Center_Docs/IC/Impacts_IC_Aq_Systems.pdf> pp. 158.
14. "Impervious Cover Method." ENSR International. (October 2005). 11 June 2008
15. <http://www.epa.gov/ne/eco/tmdl/assets/pdfs/ensr_pilot/Section2.pdf>. pp. 11.
16. "Methods for Evaluating Wetland Condition: Developing Metrics and Indexes of Biological Integrity." U.S. Environmental Protection Agency. (2002)
17. <<http://www.epa.gov/waterscience/criteria/wetlands/6Metrics.pdf>> pp. 45.
18. "Recycled Water Policy." State Water Resources Control Board. (February 3, 2009): 1, 5, 6. <http://www.waterboards.ca.gov/water_issues/programs/water_recycling_policy/docs/final_policy_021109.pdf>. pp. 14.
19. "State Water Resources Control Board Resolution No. 2008-0300: Requiring Sustainable Water Resources Management." State Water Resources Control Board. (May 6, 2008). <http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2008/rs2008_0030.pdf>.
20. "Stormwater C.3 Guidebook." Contra Costa Clean Water Program. Third Edition (2006) <<http://www.cccleanwater.org/new-developmentc3/>>. pp. 147.
21. "Strategic Plan Update: 2008-2012." State Water Resources Control Board. (September 2, 2008): 7, 24, 27. <http://www.waterboards.ca.gov/water_issues/hot_topics/strategic_plan/docs/final_draft_strategic_plan_update_090208.pdf>. pp. 45.

23. "Urban Stormwater Management in the United States: Report in Brief." National Research Council. (October 2008).
24. <http://www.nctcog.org/envir/SEEClean/stormwater/nrc_stormwaterreport_fs.pdf>. pp. 4
25. "Water Quality Control Plan: Central Coast Basin, Region 3" Central Coast Regional Water Quality Control Board. (September 8, 1994): Chap. 4.
26. <http://www.waterboards.ca.gov/centralcoast/publications_forms/publications/basin_plan/bp_pdfversion/ch4.pdf>.
27. Beach, Dana. "Coastal Sprawl: The Effects of Urban Design on Aquatic Ecosystems in the United States." The Pews Oceans Commission. (8 April 2002).
28. <http://www.pewtrusts.org/our_work_report_detail.aspx?id=30037> pp. 40
29. Booth, Derek, and Rhett Jackson. "Urbanization of Aquatic Systems – Degradation Thresholds, Stormwater Detention, and the Limits of Mitigation." American Water Resources Association. 22.5 (1997).
30. <http://kvue.iewatershed.com/kvue/urban_hydro_boothwrb.pdf>. pp. 19
31. California State University, Sacramento. NPDES Stormwater Cost Survey. January 2005. pp. 296
32. Central Coast Water Board. Phase 4: Project Analysis, Preliminary Project Report, Total Maximum Daily Load for Sediment in Aptos Creek and Valencia Creek, Santa Cruz County, CA. September 2004.
33. <http://www.waterboards.ca.gov/centralcoast/water_issues/programs/tmdl/docs/aptos/preliminary_project_report.pdf> pp. 66
34. Coleman, Derrick, et al. "Effect of Increases in Peak Flows and Imperviousness on the Morphology of Southern California Streams." Southern California Coastal Water Research Project. Technical Report 450 (2005).
35. <ftp://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/450_peak_flow.pdf> pp. 70
36. ECONorthwest. The Economics of Low-Impact Development: A Literature Review. November 2007. http://www.econw.com/reports/ECONorthwest_Low-Impact-Development-Economics-Literature-Review.pdf . pp. 40.
37. Federico, Felicia. "Hydromodification: Science, Regulations and Management Strategies." Powerpoint presentation slide handout by Geosyntec Consultants. June 15, 2007. pp. 19.
38. GeoSyntec Consultants for Santa Clara Valley Urban Runoff Pollution Prevention Program. "Hydromodification Management Plan Literature Review." September, 2002.
39. Hecht, Barry, and Mark R. Woyshner, 1984. Storm Hydrology and Definition of Sand-Hill Recharge Areas, Pajaro Basin. In Hecht, B., Esmaili, H., and Johnson, N.M., 1984, Pajaro Basin Groundwater Management Study, prepared by HEA for the Association of Monterey Bay Area Governments. pp. 34.
40. Horner, Richard. "Investigation of the Feasibility and Benefits of Low-Impact Site Design Practices (LID) for Ventura County."
41. <http://www.arb.ca.gov/cc/scopingplan/submittals/other/nrdc_low_impact_development_final_attachment_rpercent_20horner_percent_20report_final.pdf>pp.4.
42. Moglen, Glenn, and Sunghee Kim. "Limiting Imperviousness." Journal of the American Planning Association 73.3 (2007): 161-171. pp 10.
43. National Resources Defense Council. Memo Re: Revised Tentative Order No. r9-2008-0001, NPDES Order No. CAS0108740, To: Executive Officer and Members of the Board RWQCB, San Diego. January 24, 2008. pp. 12
44. Ode, Peter R., Andrew C. Rehn, and Jason T. May. "A Quantitative Tool for Assessing the Integrity of Southern Coastal California Streams." Environmental Management. 35.4 (2005): 493-504. <<http://www.ccamp.org/ccamp/documents/SoCallBI.pdf>>.
45. Prince George's County, Maryland Department of Environmental Resources. "Low-Impact Development Design Strategies: An Integrated Design Approach." June, 1999. <<http://www.epa.gov/nps/lidnatl.pdf>> pp.150.

46. San Bernadino County Stormwater Program. "Model Water Quality Management Plan Guidance."
<http://www.waterboards.ca.gov/santaana/water_issues/programs/stormwater/docs/sbpermit/wqmpguide60905.pdf> pp. 51.
47. Sutherland, R.C. "Impervious Area Assumptions Used in Hydrologic Modeling of CWS Watersheds." Pacific Water Resources, Inc. (30 August 2005). 5 June, 2008.
<<http://www.cleanwaterservices.org/content/SWMP/Technical%20Memo%208-30-05.pdf>> pp. 9
48. Sutherland, R.C. "Methods for Estimating the Effective Impervious Area of Urban Watersheds." The Practice of Watershed Protection. Article 32 (2000): 193-195.
49. Swanson Hydrology & Geomorphology, 2003. Geomorphology & Sediment Source Assessment Technical Memorandum for the Aptos Creek Watershed Assessment. March.
<http://www.waterboards.ca.gov/centralcoast/water_issues/programs/tmdl/docs/aptos/appendix_d_000.pdf> pp.66.
50. SWRCB, 2007. Fact Sheet for General Permit for Storm Water Discharges Associated with Construction Activity (General Permit).
51. <http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/constpermits/factsheet070302.pdf> pp. 40.
52. USEPA. Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices. December 2007.
53. <<http://www.epa.gov/owow/nps/lid/costs07/documents/reducingstormwatercosts.pdf>>pp. 37.