



SECTION 8

NEW AND REDEVELOPMENT CONTROL MEASURES

8. NEW AND REDEVELOPMENT CONTROL MEASURES

INTRODUCTION

This section describes the Program's efforts during FY 03-04 to assist Co-permittees to control the impacts of development on stormwater quality and flow through the development project planning, review and approval process. Tasks related to construction inspection are described under Section 2, Co-permittee Guidance, and Section 2, Performance Standards. Please note that developing this information has been a significant challenge. As the Program moves forward, Regional Board involvement may be necessary to ensure that the host of BMPs does not end up becoming impracticable and burdensome to implement.

BACKGROUND

On October 17, 2001, the Regional Board adopted Order 01-119 that amended the Program's Permit Provision C.3 (New and Redevelopment Requirements) to contain significant new requirements. These requirements include:

- Numeric design standards for sizing stormwater treatment controls;
- Limits on increases in peak stormwater discharge rates and/or durations from new or redevelopment sites that may result in increased potential for erosion or other adverse impacts in creeks;
- Requirements for operation and maintenance of stormwater controls;
- Requirements for site design and source control measures;
- Definition of a minimum project size, based on amount of impervious surface created, for which the design standards, control measures, peak flow limitations, and maintenance requirements apply;
- Requirements for changes to General Plans and environmental review processes to provide authority to implement the requirements;
- Reporting requirements; and
- Schedule for implementation.

In addition, Permit Provision C.3 requires the Program and Co-permittees to submit specific work plans for: 1) modifications to the development project review process (C.3.b.); 2) implementation of Group 1 requirements (C.3.c.); and 3) site design standards review and revision (C.3.j.). In response, the Program and Co-permittees submitted work plans for implementing all C.3 requirements to the Regional Board on March 1, 2002 (as part of the Program's *FY 02-03 Work Plan*, Volume II). To guide this effort, Program staff prepared a separate document entitled *Guidance for Work Plan Tasks Related to Implementation of Permit Provision C.3 (New and Redevelopment Requirements), FY 01-02 and 02-03* (referred to herein as C.3 Work Plan Guidance). This guidance identifies proposed actions to meet the requirements of Provision C.3 and whether the actions will be implemented at the Program level, Co-permittee level or both. The Program and Co-permittee tasks for FY 03-04 (listed in the C.3. Work Plan Guidance) are the basis of this Annual Report section.

In February 2003, the Regional Board adopted and/or amended the stormwater permits for the Contra Costa, Alameda, and San Mateo countywide stormwater programs with different requirements than those in the Program's permit. The Regional Board Executive Officer stated

the Board's intention to make all of the permits consistent, and as a result, extended the deadlines for implementation of certain C.3 provisions¹. In addition, the Program submitted a letter to the Regional Board on September 22, 2003 proposing an alternative Group 1 and Group 2 project definition consistent with the other stormwater programs' permits², which was accepted by the Regional Board in a letter dated January 29, 2004³.

On October 15, 2003, Co-permittees were required to begin implementing the C.3 requirements for Group 1 projects (i.e., those projects that included creation or replacement of one acre or more of impervious surface). Thus, Program efforts in FY 03-04 were focused on completion of implementation tools, training and assistance to Co-permittees.

IMPLEMENTATION OF FY 03-04 C.3 TASKS

Table 8-1 presents the status of the Program's new and redevelopment (C.3.) tasks scheduled for completion in FY 03-04. The table includes tasks assigned to the Program in the C.3. Work Plan Guidance submitted March 1, 2002, as outlined in the FY 03-04 Work Plan.

Highlights of accomplishments and evaluation of effectiveness of some of the key elements of the C.3 Work Plan are provided below.

Ad Hoc Task Group and Work Group Participation

In FY 01-02, the Program formed the C.3. Provision Oversight Ad Hoc Task Group (C3PO AHTG) to oversee, coordinate and discuss Program guidance on implementation of C.3 tasks. The C3PO AHTG, which continued to meet in FY 03-04 on an as needed basis, provided valuable assistance to Program staff in development of the C.3 implementation tools. It continues to be a useful forum for discussion of development review processes used by the various Co-permittees and sharing of ideas for implementing changes to meet C.3 requirements.

A number of work groups were formed to work on specific issues under C.3. The list of AHTG and work group members, and the missions of each group, is provided in Section 2, Table 2-2. During FY 03-04, four work groups were active: the Infiltration, BMP O&M Verification and HMP (Onsite Management Measures and Exempt Areas) Work Groups.

C.3. Implementation Tools

In FY 03-04, Program staff, with the assistance of the C3PO AHTG and Work Groups and its consultants, developed the following guidance documents to help Co-permittees implement the C.3 requirements⁴:

- The Program's *C.3. Stormwater Handbook: Guidance for Implementing Stormwater Requirements for New and Redevelopment Projects* (May 2004), a compilation and update

¹ Letter to Beau Goldie, SCVURPPP Management Committee Chair, from Loretta K. Barsamian, Executive Officer, California Regional Water Quality Control Board, San Francisco Bay Region, Re: Extension of Specified Deadlines in Order 01-119, May 12, 2003.

² Letter to Loretta Barsamian, Executive Officer, California Regional Water Quality Control Board, San Francisco Bay Region, from Beau Goldie, Chair, SCVURPPP Management Committee, Re: Revised Request for Regional Board Approval of an Alternative "Group 2 Project" Definition, September 22, 2003.

³ Letter to Beau Goldie, SCVURPPP Management Committee Chair, from Bruce Wolfe, Executive Officer, California Regional Water Quality Control Board, San Francisco Bay Region, Re: Approval of the Proposed Alternate Group 2 Project Definition, January 29, 2004.

⁴ Program guidance is developed to assist Co-permittees with compliance with Provision C.3. and does not restrict a Co-permittee's ability to customize implementation of C.3. to local needs and processes.

of the documents in the draft C.3. Handbook (May 2003) into a concise and comprehensive guidance manual for Co-permittee use. Examples of tools provided in the Handbook include:

- Typical Development Review Process Incorporating Provision C.3 Stormwater Requirements, and Summary of Major Changes to the Development Project Review Process to Implement C.3.
 - Provision C.3 Applicability Flow Charts
 - Stormwater Requirement Checklists for Municipal Staff and Project Proponents Ensuring Project Compliance with Provision C.3 Requirements
 - Fact Sheets on “New Stormwater Requirements: What Developers, Builders and Project Applicants Need to Know” and “Construction Erosion and Sediment Controls- Resources for Developers, Builders and Project Proponents”
 - Guidance for Project Applicants in Addressing Stormwater Quality Concerns during CEQA Review⁵
 - Model Conditions of Approval for Site Design, Source Controls, Treatment Measures, and Pesticide Reduction Measures
 - Selection Matrix for Source Control and Treatment Measures
 - Numeric Sizing Criteria Worksheets and Example Applications
 - Maps of Soil Texture and Mean Annual Precipitation Depths for the Santa Clara Basin and Depth to First Groundwater for the Santa Clara Basin
 - SCVURPPP Draft Guidelines for Infiltration Devices
 - Provision C.3 Summary Data Form
 - Guidance for Managing Data for Provision C.3.e Reporting Requirements
- *Developments Protecting Water Quality – A Guidebook of Site Design Examples* (April 2004), a compilation of good examples of site design practices implemented in Santa Clara County and the Bay Area.

The *C.3 Stormwater Handbook* (May 2004), *Site Design Guidebook* and two BASMAA documents (*Start at the Source*, and *Using Site Design Techniques to Meet Development Standards for Stormwater Quality*) were distributed on compact disks to Co-permittees, Regional Board staff and the public at the Program’s June 3, 2004 C.3 Workshop. These documents are all available on the Program’s website (www.scvurppp.org).

Guidance for Site Design Standards Review

Provision C.3.j. requires Co-permittees to review their local design standards and guidance for opportunities to revise site design measures to reduce impacts to water quality. In accordance with this Provision, a draft review and analysis of local standards and guidance, opportunities for revisions, and proposed revised standards and guidance, must be submitted by September 15, 2003 and implementation begin by September 15, 2004. Program staff developed guidance for conducting the site design standards review based on the work completed for the Development Policies Comparison Project (see *FY 02-03 Annual Report*). The Co-permittees’ completed reports, indicating the results of their site design standards review, the departments involved in

⁵ This guidance was based on the memorandum “Guidance for Addressing Provision C.3.m., Water Quality Review Processes”, by Laura Prickett, Program Staff, December 15, 2003, developed in cooperation with City of San Jose and other Co-permittee staff.

the analysis, and the proposed improvements and schedules, were submitted to the Regional Board on September 15, 2003.

C.3. Workshops

During FY 03-04, the Program conducted a series of dialogues and two workshops to assist Co-permittees with implementation of Provision C.3:

- Site Design Dialogue Series, October – December 2003;
- Site Design Workshop, *Overcoming Hurdles to Using Better Site Designs - Real World Experience towards Resolving Conflicts*, January 29, 2004; and
- C.3. Workshop, *Implementing Stormwater Regulations for Development Projects – Selecting and Designing Stormwater Controls*, June 3, 2004.

Site Design Dialogues

The Program, in conjunction with the WMI Land Use Subgroup, hosted four dialogues (October 8, October 29, November 12 and December 10, 2003) of the underlying issues that may lead to potential conflicts when incorporating better site designs from a water quality perspective. Each meeting involved identifying potential conflicts; a better understanding of the underlying issues surrounding the conflicts, brainstorming possible solutions that could help resolve the underlying issues; and discussing stakeholders that should be involved in the discussion. In developing these meetings, Program staff and LUS members recognized that each municipality would need to develop solutions to these conflicts appropriate for their specific situation. The objective of each meeting was to provide a better understanding of the issues they may need to address, and some ideas on how they may best address the conflicts as they work to meet the requirements of their stormwater NPDES permit provision C.3.j.

The dialogues addressed street, building, parking, and landscape designs. Topics included: public safety and emergency access on narrow streets; permeable pavement load requirements; fire safety/access concerns with covered trash/recycling bins; foundation protection and vector control issues with drainage to landscaping; consumer demand and aesthetic concerns related to building design; pedestrian and disabled persons access issues; and developer concerns with fiscal lending constraints, liability and insurance requirements. In addition to providing a panel of experts, the dialogues stimulated avid participation from an audience consisting of municipal staff, developers, regulatory personnel and other stakeholders.

Program staff prepared a table summarizing the results of the dialogues. The summary provides useful information on underlying issues and potential solutions that may help direct future study (see Appendix D-5). Program staff (Wendy Edde and Jill Bicknell) also prepared a paper entitled *Understanding Potential Barriers to Better Site Design for Water Quality Protection* that was accepted for presentation at a national Low Impact Development Conference on September 21, 2004⁶ (see Appendix G-1).

Site Design Workshop

On January 29, 2004, the site design dialogue series culminated in a workshop entitled *Overcoming Hurdles to Using Better Site Designs - Real World Experience towards Resolving Conflicts*, which focused on example development projects where better site designs have been successfully implemented and hurdles have been overcome. Approximately 105 people

⁶ "Putting the LID on Stormwater Management", College Park, MD, September 21-23, 2004.
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attended the workshop. Topics presented at the workshop included: the Village Homes (Davis, CA) experience with better site design; better site design at commercial, infill, and residential sites; lessons learned and examples from Livermore, CA; using structural soils in landscaping; and the green roof installation at the Ford Motor Company plant. Presentations and related workshop information is provided on the Program's website (www.scvurppp.org). The agenda and evaluation summary for this workshop is presented in Appendix A-6.

C.3. Implementation Workshop

On June 3, 2004, the Program conducted the third of a series of workshops to educate Co-permittee staff and the public about the C.3 requirements and the tools developed by the Program. This workshop focused on selecting and designing stormwater controls. The workshop attracted 134 participants and also featured exhibits for eight stormwater control measure vendors. The workshop covered use of the *C.3. Stormwater Handbook* (May 2004), selecting and designing effective stormwater controls for development projects, incorporating BMPs into infill designs and two case studies on selecting stormwater controls for local development projects. The second case study involved audience participation in groups to discuss alternative designs and controls and to calculate numeric sizing criteria using the C.3 Handbook worksheets. The agenda and evaluation summary for this workshop is presented in Appendix A-7.

Infiltration and Groundwater Protection

Permit Provision C.3.i describes limitations on the use of infiltration treatment measures for groundwater protection and provides conditions for use of "BMPs that function primarily as infiltration devices". The Santa Clara Valley Water District (SCVWD) also has concerns about "infiltration devices", but has criteria for siting and design that are slightly different from those described in Provision C.3.i.

To address these issues, an Infiltration Work Group of the C3PO AHTG was formed to develop guidance for use of infiltration measures and devices in Santa Clara Valley. The group consists of Program staff and representatives from the following jurisdictions: Los Altos, Sunnyvale, San Jose and the SCVWD. Regional Board staff have also attended by phone and provided input to work products. The work group has completed the following guidance:

- Definition of infiltration device;
- List of stormwater best management practices (BMPs) that meet the definition, and thus may potentially pose more risk to groundwater quality if not sited or designed properly;
- List of stormwater best management practices (BMPs) that are not defined as "infiltration devices" because they treat stormwater prior to infiltration into the subsurface, including all landscape measures that utilize infiltration through surface soils;
- Draft numeric and narrative guidelines for siting of infiltration devices to protect groundwater quality.

A revised draft of these guidelines (dated 9/11/03) was included in the *C.3. Stormwater Handbook* (May 2004). During FY 04-05, the work group will complete the infiltration device guidelines and develop specific designs for certain infiltration devices (i.e., dry wells and small-scale infiltration trenches) that would minimize the potential for groundwater contamination.

Guidance for Operation and Maintenance of Treatment BMPs

Provision C.3.e of the Program's NPDES permit requires each Co-permittee to implement a stormwater treatment BMP Operation and Maintenance (O&M) Verification Program. To address Provision C.3.e, the BMP O & M Verification Work Group was formed (by the C3PO AHTG) to develop guidance for implementing an O&M verification program. The Work Group consists of Program staff and representatives from the following jurisdictions: Cupertino, Los Gatos, Mountain View, Milpitas, Palo Alto, San Jose, Santa Clara Valley Water District and Sunnyvale.

Program staff developed (and the Work Group reviewed) a total of eight guidance documents to assist Co-permittees in implementing a BMP O&M verification program. In FY 02-03, the following documents were completed:

- *Guidance for BMP Operation and Maintenance Verification Programs (Permit Provision C.3.e)* - This memorandum provides information and suggestions for implementing an Operation and Maintenance (O&M) Verification Program for stormwater treatment BMPs.
- *Guidance for Implementing Permit Provision C.3.e (Operation and Maintenance of Treatment BMPs), Part 2- Ordinance or Policy Language Relating to Inspection and Maintenance of Stormwater Management Systems-* This memorandum provides example ordinance or policy language for establishing a long-term inspection and maintenance program of stormwater management systems. Example ordinance language, inspection and maintenance agreements and maintenance easement agreements were attached to the memorandum.
- *Treatment Control Best Management Practice Fact Sheets-* This memorandum provides and discusses the use of BMP fact sheets for the inspection and maintenance of treatment control BMPs. Sixteen of the fact sheets were compiled from the California Stormwater Quality Association (CASQA) Municipal BMP Handbook. Program staff developed fact sheets for an additional six stormwater treatment controls.

The remaining documents were completed in FY 03-04:

- *Guidance on Prioritization and Frequency of Stormwater Treatment Best Management Practice Inspections-* This memorandum provides guidance on prioritizing treatment measures for inspection, determining inspection frequencies, and identifying specific stormwater treatment BMPS to be included in annual inspection programs.
- *Stormwater Treatment BMP Inspection Program Elements-* This memorandum identifies the important elements of a municipal inspection program for stormwater treatment BMPs.
- *Utility of Existing Stormwater BMP Cost Estimates-* The memorandum provides and evaluates existing cost information for the O & M of selected stormwater BMPs owned and/or operated by public and/or private owners.
- *Information Regarding the Disposal of BMP Residuals at County Landfills-* This memorandum provides relevant information regarding the disposal of BMP residuals at landfills within Santa Clara County.
- *Guidance for Managing Data Relevant to Permit Provision C.3.e Reporting Requirements-* This memorandum provide guidance on the overall strategy to manage data relevant to the reporting requirements described in Permit Provision C.3.e.

Information from these documents was included in Chapter VI of the *C.3. Stormwater Handbook* (May 2004). The memoranda and the Handbook are available at www.scvurppp.org.

During FY 03-04, BMP O & M Verification Work Group members decided that it was not necessary to develop a relational database for Provision C.3.e reporting since most Co-permittees have existing databases that could be modified to track BMP O & M verification information. In addition, the number of Group 1 projects anticipated for many of the smaller cities is small. As a result, there would be very few projects to track, making a database unnecessary. The Work Group suggested revisiting the need for a database once Group 1 and Group 2 requirements are implemented.

Hydromodification Management Plan

Provision C.3.f. requires the Co-permittees to manage increases in runoff peak flows and volumes from Group 1 development projects through the implementation of a Hydromodification Management Plan (HMP). The HMP Draft Work Plan was developed by the Program's consultant, Geosyntec, in consultation with Program staff and the SCVWD, and submitted to the Regional Board on March 1, 2002. A response to Regional Board staff comments received May 14, 2002. A revised HMP Work Plan was submitted to the Regional Board on September 13, 2002 (see www.scvurppp.org).

In FY 02-03, the GeoSyntec consultant team was expanded to include Philip Williams & Associates and Balance Hydrologics, Inc. The addition of these consultants brought expanded expertise in geomorphology, stream function, hydrologic/hydraulic modeling and local knowledge to the team. The consultant team also recruited a panel of experts to provide outside technical review of HMP Work Plan products. They include Brian Bledsoe of Colorado State University, Thomas Dunne of University of California at Santa Barbara and Matt Kondolf of University of California at Berkeley. The Program formed an HMP Work Group to start reviewing products developed as part of the Plan. The consultant team developed a watershed assessment methodology and applied it to the first test watershed.

During FY 03-04, several HMP tasks were completed. They included the assessment of two additional watersheds, numerous technical analyses needed to complete the HMP, several interim report submittals and a draft HMP Report for public and peer review. In addition, a pilot project for application of the HMP was also identified; and planning efforts have begun. A description of each accomplishment is provided below.

Watershed Assessments

The Lower Silver-Thompson Creek Subwatershed studied in FY 02-03 represents the eastern Coyote Creek region of the Santa Clara Basin. The consultant team, with the help of the HMP Work Group, selected two additional watersheds for application of the HMP assessment methodology. The Ross Creek Subwatershed was selected to represent the Guadalupe River region and the San Tomas Aquino Creek Subwatershed was chosen to represent the characteristics of the western watersheds.

The assessment methodology consists of four elements: 1) problem area and reach characterization; 2) geomorphic assessment; 3) hydrologic modeling; and 4) stability assessment. These elements were conducted for the Ross Creek and San Tomas Aquino Creek subwatersheds by the consultant team. The results indicated that the methodology works in watersheds with different characteristics and that the watersheds studied are not significantly different to warrant separate hydromodification standards, criteria, and thresholds. Differences between watersheds are accounted for in the assessment methodology.

Technical Analyses

The Program and its consultant team completed five technical memoranda describing the technical analyses performed to address key issues which include the range of storm events to be considered for HMP criteria; effectiveness of volume control, discrete storm hydrograph matching, and flow duration control techniques for mitigating hydromodification techniques; and examples of flow duration basin sizing for local projects. Two other draft memoranda on guidelines for exempt areas and development of hydromodification standards were not finalized but instead incorporated into Chapter 4 of the HMP Report (Public Review Draft).

The Work Group formed two subgroups (Exempt Areas Subgroup and the Onsite Management Measures Subgroup) to focus on specific technical analyses. The technical memoranda were discussed, reviewed and approved by the HMP subgroups.

The list of technical memoranda completed to date includes:

- TM #1 — HMP Assessment Methodology (completed in October 2002)
- TM #2 — Exempt Areas (draft incorporated into Chapter 4 of HMP Report)
- TM #3 — HMP Standards and Criteria (draft incorporated into Chapter 4 of HMP Report)
- TM #4 — Evaluation of the Range of Storms for HMP Performance Criteria
- TM #5 — Evaluation of Volume Control Effectiveness
- TM #6 — Volume Control Sizing Example and Cost Analysis
- TM #7 — Flow Duration Control Example
- TM #8 — Sizing Flow-Duration Controls for a Small Development Project in San Jose

A summary of the technical memoranda and their findings is presented in Table 8-2. Copies of the technical memoranda are available in Appendix C of the HMP Report (Public Review Draft) provided on the Program's website (www.scvurppp.org).

HMP Products

During FY 03-04, the Program completed four HMP interim and draft reports:

- *HMP Draft Interim Report, Assessment of the Lower Silver-Thompson Creek Subwatershed*, permit provision C.3.f.iv.2 and vi.1 and 2, submitted July 30, 2003. The report, which was prepared by GeoSyntec Consultants and approved by the HMP Work Group and Management Committee focuses on the application of a field investigation and assessment methodology for understanding the impacts of hydromodification on one watershed in the Santa Clara Valley
- *Hydromodification Management Plan (Update)*, permit provision C.3.f., submitted January 15, 2004.⁷ The updated Plan presented a progress report on the HMP, including a description of the products completed which constituted substantial compliance with Provision C.3.f.iv., and a plan and schedule for completion of the HMP Report.
- *Interim Progress Report on SCVURPPP HMP*, permit provision C.3.f., submitted April 1, 2004. A compilation of five technical memoranda on analyses needed for completion of the HMP was submitted to the RWQCB Executive Officer.
- *Hydromodification Management Plan (Public Review Draft)*, permit provision C.3.f, released for public and peer review on July 9, 2004.

⁷Letter to Bruce Wolfe, Executive Officer, California Regional Water Quality Control Board, San Francisco Bay Region, from David Chesterman and Randolph Shipes, Chair and Vice Chair, SCVURPPP Management Committee, Re: Hydromodification Management Plan, January 15, 2004.

Four public meetings to present and receive input on the HMP Report will be held in July and August 2004. The report was also sent to the Expert Panel for review. Following incorporation of public comments, the Program will seek Management Committee approval and submit the Final HMP Report to the Regional Board in October 2004 consistent with the January 15, 2004 Plan.

Revision of Planning Procedures Performance Standards

Provision C.3.k. requires Co-permittees to submit enhanced Planning Procedures Performance Standards (PPPS), which include source control requirements for new and redevelopment projects. In addition, the Program's C.3 Work Plan calls for updating the 1997 PPPS to be consistent with all C.3 requirements.

Program staff worked with the C3PO AHTG to revise the PPPS to incorporate C.3 requirements and include model source control conditions of approval. The revised PPPS was approved by the Management Committee and submitted to the Regional Board on March 1, 2003, as part of the Program's *FY 03-04 Work Plan*. Regional Board staff provided comments via electronic mail on June 10 and October 22, 2003. The PPPS were again revised to address the comments. These final revisions were approved by the C3PO AHTG on November 17, 2003 and Management Committee on December 18, 2003. The final revised PPPS were submitted to the Regional Board on January 26, 2004 and included within the *FY 04-05 Work Plan* submittal.

Other Tasks

Other tasks that Program staff accomplished during FY 03-04 include the following:

- Program staff gave the following presentations on the permit requirements for new and redevelopment projects and other Program elements:
 - "New Stormwater Pollution Prevention Requirements for Construction Projects", Santa Clara Valley Chapter of the Construction Specifications Institute, October 2, 2003;
 - "Everything You Wanted to Know About Stormwater but Were Afraid to Ask: The Santa Clara Valley Urban Runoff Pollution Prevention Program", California Water and Environment Association, Santa Clara Valley Section, June 17, 2004.
- Program staff reported on the Program's C.3 implementation progress at BASMAA New Development Committee meetings. Program staff also participated in the review of the new BASMAA video on the document "Using Site Design Techniques to Meet Development Standards for Stormwater Quality" (completed May 2004).

Evaluation of Effectiveness

The process for working with the Co-permittees to prepare for C.3 has worked well. As mentioned above, the C3PO AHTG and its work groups have provided valuable assistance to Program staff in the development of the C.3 implementation tools. In addition, the C3PO AHTG has also been a useful forum for discussion of development review processes used by the various Co-permittees and sharing of ideas for implementing changes to meet C.3 requirements.

The draft C.3 Handbook (May 2003), which was a compilation of various documents, was revised and reformatted to be a more concise, comprehensive manual that would be easier for

the Co-permittees (and the development industry) to understand and use. The effectiveness of the manual will be determined as Co-permittees apply the tools during their review of development projects. Annual updates to the C.3 Handbook are planned--based on feedback from Co-permittees during the implementation of the C.3 requirements and as knowledge is gained to improve the guidance in the Handbook.

The evaluation summaries from the two workshops are provided in Appendices A-6 and A-7, respectively. Based on these evaluations, the workshops were successful in meeting the expectations of the attendees. Comments provided on the evaluation forms will be used in planning subsequent workshops.

Program staff will continue to work with the Co-permittees and Regional Board staff to evaluate the C.3 planning process and products during future C3PO AHTG meetings and C.3 workshops.

**Table 8-1
Status of FY 03-04 C.3. Implementation Tasks**

<u>Task</u>	<u>Updated Schedule</u>	<u>Status</u>
<u>C.3.b. Development Project Approval Process</u>		
b.2. Assist Co-permittees to develop new or modify existing review policies, procedures, and/or conditions of approval to incorporate Group 1 requirements (based on results of tasks under C.3.c. through C.3.m.)	Completed 5/04	<p>Completed – Finalized <i>C.3. Stormwater Handbook</i> (May 2004), which contains guidance on: 1) changes to the review process to incorporate C.3 requirements; 2) data collection; and 3) model conditions of approval for site design measures, source control measures and pesticide reduction measures.</p> <p><i>Guidance assisted Co-permittee compliance with regulatory requirements to modify development approval process (C.3.b., C.3.j., C.3.k., and C.3.m.) and report on implementation of C.3. (C.3.n.).</i></p>
b.3. Train Co-permittee staff in planning, building, and engineering departments on the C.3. provisions and goals, the required changes in the approval process, and the use of appropriate tools.	Completed 6/04	<p>Completed/Ongoing – On June 3, 2004, a third workshop was held for Co-permittee staff on C.3 requirements, the <i>C.3 Stormwater Handbook</i> and selection and design of BMPs.</p>
<u>C.3.c. Requirements for Group 1 and Group 2 Projects</u>		
c.4. Compile guidance being developed under other elements (i.e., project review procedures, site design measures, source control measures, numeric design criteria, O&M verification, etc.) into one guidance manual for implementation of Group 1 project requirements.	Completed 5/04	<p>Completed – The draft <i>C.3. Stormwater Handbook</i> (May 2003) was revised and rewritten as a concise, comprehensive document for Co-permittee guidance and distributed in May 2004.</p> <p><i>Guidance assisted Co-permittee compliance with regulatory requirements to prepare to implement C.3. Group 1 requirements and report on incremental progress (C.3.c.i.).</i></p>

**Table 8-1, continued
Status of FY 03-04 C.3. Implementation Tasks**

<u>Task</u>	<u>Updated Schedule</u>	<u>Status</u>
<p>c.5. Revise portions of the model Planning Procedures Performance Standard to incorporate the Group 1 requirements and other C.3. requirements.</p>	<p>Completed 3/1/03; Revised 9/03; Final 12/03</p>	<p>Completed – Program staff worked with the C3 Provision Oversight (C3PO) Ad Hoc Task Group (AHTG) to revise the Planning Procedures Performance Standard (PPPS) to incorporate C.3 requirements and include model source control conditions of approval. The revised PPPS was approved by the Management Committee and submitted to the Regional Board on March 1, 2003 (as part of the Program's <i>FY 03-04 Work Plan</i>). Regional Board staff provided comments via electronic mail on June 10 and October 22, 2003. The PPPS were again revised to address the comments. These final revisions were approved by the C3PO AHTG on November 17, 2003 and Management Committee on December 18, 2003. The final revised PPPS were submitted to the Regional Board on January 26, 2004 and included within the <i>FY 04-05 Work Plan</i>.</p> <p><i>The updated performance standards assisted Co-permittee compliance with regulatory requirements to modify development approval process (C.3.b., C.3.j., C.3.k., and C.3.m.) and report on implementation of C.3. (C.3.n.).</i></p>
<p>c.8. Conduct analysis of alternative minimum project size and prepare proposal for submittal to Regional Board.</p>	<p>1/05</p>	<p>In Progress – On September 22, 2003, the Program submitted a letter to the Regional Board proposing an alternative Group 1 and Group 2 project definition consistent with the other stormwater programs' permits. This request was accepted by the Regional Board in a letter dated January 29, 2004. The Program is considering submitting a second proposal for an alternative Group 2 minimum size prior to the revised Group 2 implementation date (April 15, 2005). Program staff have collected impervious surface data from Co-permittees and conducted an analysis of data trends. The Program has also formed an Alternative Minimum Size Work Group to discuss the data and develop the proposal.</p>
<p>c.9. Update guidance manual and performance standards for Group 2 projects as needed.</p>	<p>6/05</p>	<p>Completed/Ongoing – The <i>C.3. Stormwater Handbook</i> and performance standard currently cover Group 1 and 2 projects. The documents will be updated as needed to address any changes resulting from the Alternative Minimum Size Proposal.</p>

**Table 8-1, continued
Status of FY 03-04 C.3. Implementation Tasks**

<u>Task</u>	<u>Updated Schedule</u>	<u>Status</u>
C.3.d. Numeric Sizing Criteria		
d.1. Analyze local rainfall data and develop area-specific volume and flow based design criteria.	Completed 5/04	<p>Completed – The Program’s consultant, GeoSyntec, completed the analysis of local rainfall data and developed volume and flow design criteria. The draft report entitled <i>Sizing Criteria for Stormwater Treatment</i> was included in the May 2003 C.3. Handbook. The methodology and results were presented at both Program C.3 Workshops in 2003 and to the C3PO AHTG. Final edits to the report and sizing worksheets were completed in May 2004 as part of finalizing the C.3. <i>Stormwater Handbook</i>.</p> <p><i>Analysis of local rainfall data was performed to assist Co-permittee compliance with regulatory requirements in C.3.d. and C.3.f.</i></p>
d.2. Develop guidance on appropriate criteria to use for each BMP type.	Completed 5/04	<p>Completed – Guidance on appropriate criteria to use for each BMP type (volume or flow-based) was developed as part of the Program/BASMAA product entitled <i>Using Site Design Techniques to Meet Development Standards for Stormwater Quality</i> (May 2003). Additional guidance on this topic was developed and provided in the Treatment Measures section of the final C.3. <i>Stormwater Handbook</i> (May 2004), particularly Attachment III-2, BMP Selection Matrices for Site Design and Treatment Control Measures.</p> <p><i>BMP selection criteria were developed to assist Co-permittee compliance with regulatory requirements in C.3.d. and C.3.j.</i></p>
C.3.e. Operation and Maintenance of Treatment BMPs		
e.1. Develop and implement a procedure for logging information about treatment BMPs installed at approved Group 1 projects, and for maintaining a list or database of properties, treatment BMPs, and responsible operators.	3/04	<p>Completed -- Program staff worked with the BMP O&M Work Group to develop guidance on data management for tracking BMP installations and inspections. Final guidance is provided in Chapter VII of the C.3. <i>Stormwater Handbook</i>.</p> <p><i>Guidance on data management will assist Co-permittee compliance with regulatory requirements in C.3.e. and C.3.n.</i></p>

**Table 8-1, continued
Status of FY 03-04 C.3. Implementation Tasks**

<u>Task</u>	<u>Updated Schedule</u>	<u>Status</u>
<p>e.5. Develop local programs for inspection of a subset of prioritized treatment BMPs to verify that proper O&M is being performed by the responsible party (Program to assist in defining which BMPs are priorities for inspection.)</p>	<p>Completed 3/04</p>	<p>Completed – Program staff worked with the BMP O&M Work Group to complete the following documents:</p> <ul style="list-style-type: none"> • <i>Guidance on Prioritization and Frequency of Stormwater Treatment Best Management Practice Inspections</i> • <i>Stormwater Treatment BMP Inspection Program Elements</i> • <i>Utility of Existing Stormwater BMP Cost Estimates</i> • <i>Information Regarding the Disposal of BMP Residuals at County Landfills</i> • <i>Guidance for Managing Data Relevant to Permit Provision C.3.e Reporting Requirements</i> <p>Information from these documents was included in Chapter VI of the C.3. <i>Stormwater Handbook</i> (May 2004).</p> <p><i>Guidance will assist Co-permittee compliance with regulatory requirements in C.3.e.</i></p>
<p>e.6. Report on the Co-permittee's treatment BMPs O&M verification program in each annual report, including organizational structure, evaluation of effectiveness, and planned improvement to the program. Include a list or summary of treatment BMPs inspected during the year, inspection results, and any required follow-up and correction.</p>	<p>Begin with FY 03-04 Annual Report</p>	<p>To Be Done – Co-permittees will report on their progress within the <i>FY 03-04 Annual Report</i>. Since the C.3 implementation start date was moved to October 15, 2003, Co-permittees will not have any BMP verification inspections to report because any Group 1 projects proposed in FY 03-04 have most likely not been constructed yet. Program staff will assist in the future with annual report guidance and compilation of data.</p>
<p><u>C.3.f. Hydromodification Management Plan</u></p>		
<p>f.1. Complete the HMP and required interim products</p>		<p>See next page</p>

**Table 8-1, continued
Status of FY 03-04 C.3. Implementation Tasks**

<u>Task</u>	<u>Updated Schedule</u>	<u>Status</u>
f.1. Complete the HMP and required interim products (cont'd): -- Draft HMP (Interim Submittal) -- HMP Update -- HMP Interim Progress Submittal -- HMP Report (Public Review Draft) -- Final HMP Report	7/30/03 1/15/04 4/1/04 6/29/04 (released for public review 7/9/04) 10/04	<p>Completed – The <i>HMP Draft Interim Report, Assessment of the Lower Silver-Thompson Creek Subwatershed</i>, prepared by GeoSyntec Consultants and approved by the HMP Work Group and Management Committee, was submitted to the Regional Board on July 30, 2003.</p> <p>Completed – On January 15, 2004, the Program submitted a progress report on the HMP, including a description of the products completed which constituted substantial compliance with Provision C.3.f.iv., and a plan and schedule for completion of the HMP Report.</p> <p>Completed – On April 1, 2004, the Program submitted a compilation of five technical memoranda on analyses needed for completion of the HMP to the RWQCB Executive Officer.</p> <p>Completed – The Program completed the <i>Draft Hydromodification Management Plan Report</i> (June 2004) and released it for public and peer review on July 9, 2004. Four public meetings will be held in July and August 2004.</p> <p>In Progress -- Following incorporation of public comments, the Program will seek Management Committee approval and submit the Final HMP Report to the Regional Board in October 2004.</p>
f.2. Develop guidance to the Co-permittees on implementation of the HMP as part of requirements for Group 1 projects that may cause increased erosion or other related impacts.	10/04	<p>Completed/Ongoing – Guidance on HMP implementation is provided in Chapter 6 of the HMP Report. Currently, additional guidance is being developed for the final HMP Report. Following approval of the HMP Report by the Regional Board, the <i>C.3. Stormwater Handbook</i> will be updated to include the HMP requirements and implementation guidance.</p> <p><i>Guidance on HMP implementation will assist Co-permittee compliance with regulatory requirements in C.3.f.</i></p>

**Table 8-1, continued
Status of FY 03-04 C.3. Implementation Tasks**

<u>Task</u>	<u>Updated Schedule</u>	<u>Status</u>
f.3. Provide assistance and input as needed to District study to evaluate potential regional treatment and/or flow control projects.	As needed	Completed/Ongoing – Program staff have reviewed District products and participated in discussions with District and San Jose staffs and developers regarding requirements for the Evergreen Pilot Project (see description in Section 8).
<u>C.3.g. Waiver and Compensatory Mitigation Program</u>		
g.3 Assist Co-permittees to track and report information on waivers granted, including project name, location, type, percent impervious surface, reasons for and terms of waiver, and the alternative benefit project and completion date.	Each Annual Report	Completed – Program staff developed a reporting form for projects granted a waiver and alternative compliance (see Attachment 6 to the Planning Procedures Performance Standards and Attachment VII-3, Part 3 of the C.3. <i>Stormwater Handbook</i>).
<u>C.3.j. Site Design Measures Guidance and Standards Development</u>		
j.2. Assist Co-permittees to review existing local design standards and guidance, and compare them to the list of areas to address in Provision C.3.j. and other references such as “Start at the Source” and the “Development Policies Comparison” work sheet. Prepare and submit an analysis of local standards, identified opportunities for revision, and proposed revisions. (Program to prepare guidance for Co-permittees on this work product.)	Guidance completed 7/03; Site Design Analyses submitted 9/03; Progress report on revised standards due 9/04 in AR	Completed – Program staff worked with the Site Design Work Group and the C3PO AHTG to define an approach and to prepare guidance using the Development Policies Comparison Project worksheets as a starting point to conduct the analysis of design standards. Co-permittee worksheets were combined into one Program submittal and delivered to the Regional Board on September 15, 2003. During spring 2004, Program prepared guidance on follow-up reporting for the <i>FY 03-04 Annual Report</i> . <i>Guidance on site design standards review assisted Co-permittee compliance with regulatory requirements in C.3.j.</i>
<u>C.3.n. Reporting Requirements</u>		
n.1. Provide information described in Table 1 of Provision C.3. in annual reports (Program to provide guidance for each annual report).	Guidance: 6/04 Begin with FY 01-02 AR; continue annually	Completed/Ongoing – Program staff provided final guidance to Co-permittees on <i>FY 03-04 Annual Report</i> preparation at the June 17, 2004 Management Committee meeting. Reporting requirements were cross-referenced with Table 1 of Provision C.3. <i>Guidance on reporting assisted Co-permittee compliance with regulatory requirements in C.3.n.</i>

**Table 8-1, continued
Status of FY 03-04 C.3. Implementation Tasks**

<u>Task</u>	<u>Updated Schedule</u>	<u>Status</u>
<p>n.2. Assist Co-permittees to collect information and summarize types of pesticide reduction measures required for development projects, and the percentage of projects for which pesticide reduction measures were required.</p>	<p>Guidance: 6/04</p> <p>Begin with FY 01-02 AR; continue annually</p>	<p>Completed/Ongoing – Program staff provided guidance on reporting to Co-permittees on <i>FY 03-04 Annual Report</i> preparation (see Task n.1.) Data can be recorded on C.3. Summary Data Forms and reported using Group 1 and 2 reporting forms (PPPS and Attachment VII-3 of C.3. <i>Stormwater Handbook</i>.)</p> <p><i>Guidance assisted Co-permittee compliance with regulatory requirements in C.3.n. and C.9.d.ii.</i></p>

**TABLE 8-2
SUMMARY OF HMP TECHNICAL MEMORANDA #4 - #8¹**

Topic	Preliminary Conclusions
<p>Evaluation of Range of Storms</p> <p>a) TM #4 – Define the rainfall event below which these standards apply.</p>	<p>Critical low flow, Qc (approx. 10% of 2-year pre-urban peak discharge) to the 10-year pre-urban peak discharge.</p>
<p>Volume Control / Discrete Events</p> <p>a) TM #5 – Volume control effectiveness</p> <p>b) TM #7 – Hydrograph matching</p> <p>c) TM #6 – Example problem (SCS)</p> <p align="center">– Cost analysis</p>	<p>Volume control method is not as effective as flow duration control.</p> <p>Sizing flow control basins to match the pre-project runoff hydrographs for discrete events does not closely reproduce the pre-project flow-duration patterns for other storms.</p> <ul style="list-style-type: none"> • Basins are technically feasible and may be economically feasible for infiltration rates of 0.2 in/hr and greater. • From 7% to 10% of the contributing <u>impervious area</u> (public streets, in this example) is required for volume control facilities sized for the 2-, 5-, and 10-yr storms. • Costs do not vary much for volume control basins designed to control the 2-, 5-, and 10-yr storms. • About \$3-4K per lot for onsite BMP, plus \$1-2K per lot for regional basin (excluding land costs).
<p>Flow Duration Control</p> <p>a) TM #7 – Basin sizing for flow-duration matching</p> <p>b) TM #7 – Example problem (Thompson Creek)</p> <p align="center">– Cost analysis</p> <p align="center">– Example problem (Orange County)</p> <p>c) TM #8 – Small project example in San Jose (3.6 acre, 12-lot subdivision)</p>	<ul style="list-style-type: none"> • Basin and outlet structure can be sized to match pre-project flow-duration curve • About 3-5% of the drainage area (4-6% of impervious area) is required for flow duration control (Infiltration rate = 0.2 in/hr). • About \$600 per lot for regional basin (excluding land costs). • About 1-2% of the drainage area is required for flow duration control (Infiltration = 1 in/hr). • Basin sized using HEC-HMS model, SCS, and Rational Method; HMS model result was smallest. • About 1-2% of drainage area (3-5% of impervious area) required for flow duration control basin (infiltration = 0.2 in/hr), moderately steep slopes; landscape controls on individual lots reduced basin size by about 35%.

¹ TM #1 covers the HMP Assessment Methodology and TM #2 addressed the Exempt Areas Analysis, which is presented in Chapter 4, Section 4.5 of the HMP Report. TM #3 on Hydromodification Control Standards was incorporated into Chapter 4 of the HMP Report.