
I INTRODUCTION & GUIDE TO USING THIS HANDBOOK

The goal of this Handbook is to assist Project proponents and Co-permittee staff to ensure that they meet the Stormwater requirements of Permit Provision C.3 for new and redevelopment projects.

I.1. INTRODUCTION

During urban development two important changes occur. First natural vegetated pervious ground cover is converted to impervious surfaces such as paved highways, streets, rooftops, and parking lots. Natural vegetated soil can both absorb rainwater and remove pollutants providing a very effective natural purification process. Impervious surfaces can neither absorb water nor remove pollutants and the natural purification characteristics of the land are lost. The increased flows and volumes of stormwater discharged from new impervious surfaces can impact beneficial uses of aquatic ecosystems.

Secondly, urban development can create new pollution sources and increase levels of existing sources such as car emissions, car maintenance wastes, municipal sewage, pesticides, household hazardous wastes, pet wastes, trash, etc. As rain becomes runoff, it collects pollutants while passing over impervious surfaces. The runoff typically enters a storm drain system that rapidly conveys it, untreated, to a lake, creek, river, bay, or ocean.

Because of these two changes, the runoff leaving a newly developed or significantly redeveloped urban area may be considerably greater in volume, velocity and/or pollutant load than pre-development runoff from the same area. A comprehensive approach to stormwater management that implements (a) site design measures to minimize impervious area, reduce direct connections between impervious areas and the storm drain system, and mimic natural systems; and employs (b) source control and (c) treatment control measures, can reduce runoff and the entry of pollutants into stormwater and receiving waters.



This Handbook will be updated periodically. Go to the SCVURPPP website to obtain the most recent information: www.scvurppp.org

Background on SCVURPPP

The Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP or Program) is an association of thirteen (13) cities and towns in the Santa Clara Valley, together with Santa Clara County and the Santa Clara Valley Water District.¹ Program participants, referred to as Co-permittees, share a common permit to discharge stormwater from their storm drain systems to South San Francisco Bay. The Program incorporates regulatory, monitoring and outreach measures aimed at reducing pollutants in stormwater runoff and improving the water quality of the streams of the Santa Clara Valley and South San Francisco Bay. The Program's Management Committee, consisting of one designated representative from each Co-permittee, is the official decision making body.

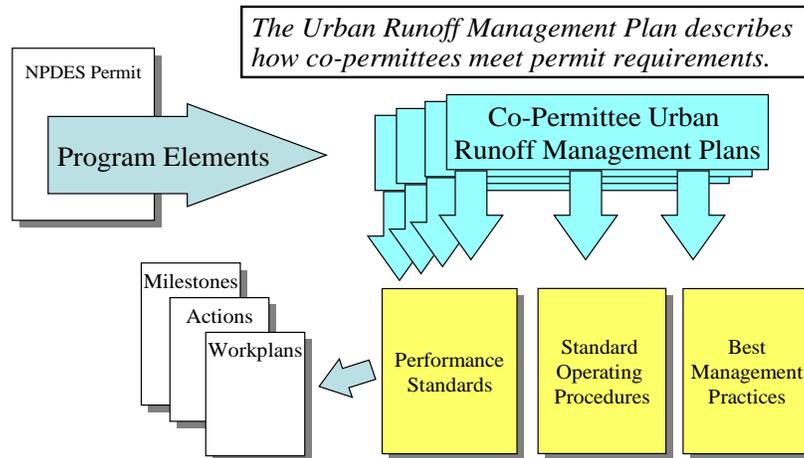
*See Glossary of
Terms for
definitions.*

The Co-permittees formed SCVURPPP in response to the Federal Clean Water Act (CWA) and the Water Quality Control Plan for the San Francisco Bay Region (Basin Plan). The CWA requires municipalities to control discharges from storm drains to reduce pollutants in stormwater to the maximum extent practicable (MEP). The Basin Plan requires regulated agencies to submit plans for identifying and evaluating stormwater pollutant sources, pollutant loading and control measures for South San Francisco Bay. As SCVURPPP, the Co-permittees applied for an area wide National Pollutant Discharge Elimination System (NPDES) municipal stormwater permit. The California Regional Water Quality Control Board, San Francisco Bay Region (Regional Board) issued the Program its first NPDES permit in 1990 (the first in the nation), and reissued the permit in 1995 and again in 2001.

The NPDES permit allows each Co-permittee to discharge stormwater to South San Francisco Bay under one common permit. As part of the NPDES permit requirements, the Program produces and regularly updates an Urban Runoff Management Plan (URMP) that presents the Program's strategy to implement the NPDES permit. Within the URMP, the Planning Procedures Performance Standard defines the level of implementation that the Co-permittees in the Program must attain in order to demonstrate that their land use planning, development plan review and approval processes control storm water quality impacts to the maximum extent practicable. The Program submits annual reports detailing progress towards meeting the URMP and annual work plans detailing the course of action the Co-permittees will follow in the coming year. The Program submits all reports required by the Permit to the Regional Board.

¹ The Co-permittees include: Campbell, Cupertino, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, Sunnyvale, Santa Clara County, Santa Clara Valley Water District

Santa Clara Valley Urban Runoff Pollution Prevention
Program Implementation



Background on Provision C.3

The Program's NPDES permit is comprised of many elements that address the reduction of adverse impacts of stormwater pollutants and increases in peak runoff rate on water quality and beneficial uses. Provision C.3 of the NPDES permit specifically addresses the control of the stormwater impacts associated with new development and redevelopment projects (see Appendix A).

On October 17, 2001, the Board amended the permit's Provision C.3, enhancing the Program's existing requirements for new development and significant redevelopment. It requires a level of implementation of best management practices (BMPs), including treatment measures that reflect the regulatory standard of maximum extent practicable (MEP). Requirements were added that more effectively incorporate source control measures, site design principles, and structural stormwater treatment controls in new development and redevelopment projects to reduce water quality impacts of stormwater runoff for the life of these projects. These requirements apply to both private development projects and municipal capital improvement projects.

Planning Procedures Performance Standards (PPPS)

The Program revised the model Planning Procedures Performance Standard (PPPS) to incorporate the Provision C.3 requirements (see Appendix B). The PPPS defines the level of implementation that the Co-permittees' Urban Runoff Management Plan (URMP) must attain to demonstrate that their land use planning, development plan review and approval processes control stormwater impacts to the maximum extent practicable (MEP). The Co-permittees incorporated the PPPS into their individual Urban Runoff Management Plans (URMPs).

Design standards and requirements for stormwater quality and quantity addressed in Provision C.3 include the following:

- Numeric design standards for sizing stormwater treatment controls;
- Limits on increases in peak stormwater discharges from new or redevelopment sites that may increase erosion in creeks;
- Requirements for operation and maintenance of stormwater treatment controls;
- Requirements for site design and source control measures;
- Definition of a minimum project size, based on the amount of impervious surface created and/or replaced, 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.

Co-permittees implement some components of Provision C.3 individually while other components are implemented jointly through SCVURPPP.

I.2 PURPOSE OF HANDBOOK AND GUIDE TO ITS USE

Implementation of permit Provision C.3 requires that each Co-permittee modify its development project planning and review and approval process to mitigate the potential impacts of new projects and redevelopment projects on stormwater quality and quantity. This Handbook is designed to assist project proponents and Co-permittee staff to efficiently and effectively make these modifications.

This Handbook is the compilation of the various tools and work products that SCVURPPP Program Staff and Co-permittees have developed to facilitate the implementation of Provision C.3. Handbook materials will also be provided on the SCVURPPP website: www.scvurppp.org.

Format of Handbook

This Handbook is organized into seven (7) Chapters, each one focusing on a topic specific to meeting the Provision C.3 stormwater requirements. Pertinent attachments are included at the end of each Chapter. The Technical Appendix includes supporting documents, including permit and regulations language, for each topic.

Contents of Handbook

Chapter I – Introduction. This Chapter provides background on SCVURPPP and its NPDES permit Provision C.3, along with a description of the Handbook contents.

Chapter II – Summary of Major Changes to the Development Project Review Process. To incorporate the new requirements of the NPDES permit's Provision C.3, Co-permittees must modify their development review process. Although each municipality has unique procedures for reviewing projects, the Program has developed flow charts and tables that may be useful to help determine when C.3 provisions apply to specific projects, define how Provision C.3 requirements will influence the necessary steps in the project review process, and identify changes to the project that may be necessary to incorporate Provision C.3-related measures. This Chapter also describes how to address Provision C.3 requirements during the California Environmental Quality Act (CEQA) initial study process.

Chapter III – Selecting Stormwater BMPs and Treatment Controls. Chapter III is divided into five (5) subsections pertaining to site design measures, source control measures, stormwater treatment Best Management Practices (BMPs), vector control issues, and pesticide reduction measures.

Site Design Measures. Co-permittees are required to recommend site design measures that minimize land disturbance, impervious surface area, and changes in the volume, flow, rate, timing and duration of runoff on all projects. Recommended site design concepts for the Santa Clara Valley and model conditions of approval are provided.

Source Control Measures. Guidance on incorporating requirements for source controls and the model source control measures list are provided.

Stormwater Treatment Measures. Applicable projects must incorporate stormwater treatment BMPs designed with the capability of treating a specified volume or rate of flow. This subsection guides and assists the Co-permittees and project proponents in the selection of appropriate stormwater treatment BMPs and infiltration measures. A selection matrix for treatment controls is included.

Vector Control Issues. Proper BMP selection, design and maintenance are discussed in relation to reducing habitat for mosquito production.

Pesticide Reduction Measures. Co-permittees are required to discourage the use of pesticides at new and redevelopment sites and to report on the types of pesticide reduction measures employed. To help educate applicants, the Program has developed model conditions of approval and a fact sheet on landscape maintenance techniques for pest reduction.

Chapter IV – Treatment Control Sizing Criteria. Guidance is provided to help Co-permittees and project proponents meet stormwater treatment hydraulic sizing criteria based on local rainfall data. Worksheets are provided that guide the calculation of stormwater storage requirements for volume-based BMP controls and of flow requirements for flow-based BMP controls. Example applications are included.

Chapter V – Peak Flow and Volume Control Measures (Hydromodification Management Plan Guidance). Some projects may be subject to the NPDES permit's Provision C.3.f, which limits increases in runoff peak flow, duration and volume where such increases may cause increased erosion of creek beds and

banks, silt pollutant generation, or other impacts to beneficial uses. The Program is developing a Hydromodification Management Plan (HMP) that delineates areas where such increases will be detrimental to channel health and water quality and proposes means of managing such situations to maintain the pre-project discharge rates and/or durations after development. Projects where discharges present minimal potential for erosion or other impacts to beneficial uses are exempt from the requirements of the HMP. (THIS CHAPTER WILL BE PROVIDED AT A LATER DATE.)

Chapter VI – Operation and Maintenance. Co-permittees must develop and implement a program that verifies the proper operation and maintenance of the stormwater treatment BMPs required of projects over the life of the project. Items covered include inspection program elements, vector control issues, and twenty-two (22) BMP Fact Sheets.

Chapter VII – Data Management and Reporting. This Chapter provides information on data that need to be collected to show compliance with the NPDES permit. This Chapter includes a data collection form and Planning Procedures Performance Standard (PPPS) reporting tables for use by Co-permittees. Data collected include the name, type, site area and area of new impervious surfaces for each project subject to the requirements of Provision C.3; the stormwater treatment BMPs used; the numeric sizing criteria employed; the site design and source control measures used; the types of pesticide reduction measures used and the percentage of applicable projects for which they were required.

Technical Appendices. Supporting documents and technical documentation are included in the separately bound Technical Appendix. Additional supporting materials are available electronically on SCVURPPP's website at: www.scvurppp.org.



**Santa Clara Valley
Urban Runoff
Pollution Prevention Program**

C.3 Stormwater Handbook

ATTACHMENT I-1

New Stormwater Requirements What Developers, Builders and Project Applicants Need to Know



New Stormwater Requirements

What Developers, Builders and Project Applicants Need to Know

It's Federal Law

Urban stormwater runoff is a significant source of pollution to the nation's waters. In 1987 Congress began to address this problem by requiring municipalities with storm drain systems to obtain National Pollutant Discharge Elimination System (NPDES) permits. This resulted in local requirements for control of runoff from development projects.

The Countywide Urban Runoff Program

In the Santa Clara Valley, development projects must comply with the NPDES permit issued to the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) by the Regional Water Quality Control Board in 2001. SCVURPPP is an association of 13 cities in Santa Clara Valley, Santa Clara County, and the Santa Clara Valley Water District that share these permit requirements.

How It Works Locally

Local agencies are required to address protection of stormwater quality during development review. Projects must use best management practices (BMPs) during construction, and long-term water quality impacts must be reduced using site design and source control measures to help keep pollutants out of stormwater. In some cases, projects must also include stormwater treatment measures.

Site Design for Water Quality

Some of the many ways to reduce water quality impacts through site design include:

- Reduce impervious surface area;
- Drain rooftop downspouts to lawns or other landscaping; and
- Use landscaping as a storm drainage and treatment feature for paved surfaces.



Parking lot runoff drains to a detention basin in Palo Alto.

What is Source Control?

Source control is all about keeping sources of pollution away from stormwater. Some source control measures include:

- Roofs over trash enclosures and loading docks;
- Sanitary sewer drains in covered parking structures and vehicle washing areas; and
- Indoor wash racks for mats and equipment

What's Required During Construction?

Many contractors are familiar with BMPs that are required at project sites, including:

- Prepare and implement sediment and erosion control plans;
- Control exposed soil by stabilizing slopes; and
- Control sediment in runoff using sand bag barriers or straw wattles.

Projects that disturb one acre or more of land are subject to an NPDES General Construction Activity Permit and must submit a Notice of Intent to the State Water Resources Control Board.

What Is Changing?

SCVURPPP's permit requires municipalities to enhance their site design and source control standards. It also includes specific requirements for projects that meet "Group 1" and "Group 2" criteria (see description below).

What about My Projects?

Regardless of Group 1, Group 2, or other status, all construction projects will have to use construction BMPs and implement appropriate site design and source control measures.

Is My Project in “Group 1”?

Group 1 projects include new development and redevelopment projects that create or replace one acre or more of impervious surface (e.g., roof area, streets, sidewalks, parking lots)¹. As of October 15, 2003, all new requirements apply to Group 1 projects.

So I’m in Group 1, Now What?

In addition to construction BMPs, site design, and source controls, Group 1 projects will need to include stormwater treatment measures. And, in areas where increased runoff flow and volume may cause increased creek erosion, projects will need to control the quantity of stormwater runoff. Contact your local planning or engineering department to see if your project area is subject to stormwater quantity controls.

Stormwater Treatment Measures

Stormwater treatment measures are facilities designed to remove pollutants from stormwater before it reaches the storm drain system, and ultimately the Bay. Examples include:

- Vegetated swales,
- Detention basins, and
- Infiltration basins.

Treatment measures must be hydraulically sized to treat a specified amount of runoff. And they need ongoing maintenance to continue working properly. During development review, applicants must identify and record the responsible party and funding mechanism for long-term maintenance and assure access to the treatment system to verify maintenance.

SCVURPPP would like to thank the Alameda Countywide Clean Water Program and the Regional Water Quality Control Board for development of the original design and content of this document.

¹ See permit Provision C.3 for details of Group 1 and 2 definitions and exemptions. The 10,000 s. f. threshold for Group 2 may be modified prior to April 15, 2005. Please check with your local representative.

Stormwater Quantity Controls

Creek beds and banks can become damaged when the rate and volume of runoff increase, as often occurs when land is developed. In the past, these effects have caused excessive erosion, sedimentation, and destruction of habitat. To help prevent this, projects in some areas will be required to retain, detain or infiltrate excess runoff, or to help fund in-stream or regional solutions.

What about Group 2?

The Group 2 definition is the same as the Group 1 definition, except that the size threshold is reduced from one acre to 10,000 square feet of impervious surface.¹ Group 2 thresholds take effect April 15, 2005.

Projects that may Be Exempt¹

- One single family home that includes appropriate stormwater control measures.
- Sidewalks, bicycle lanes, trails, bridge accessories, guardrails, and landscape features that are part of street, road, highway, and freeway projects under the Dischargers’ jurisdiction. These are not exempt in commercial, industrial, or residential developments.
- Interior remodels and routine maintenance or repair, and any other reconstruction work within a public street or road right-of-way are excluded.

Contacts for More Information:

- Your local stormwater program, at _____
- SCVURPPP, at (408) 720-8833, or <http://www.scvurppp.org>
- San Francisco Bay Regional Water Quality Control Board at 510-622-2300. Ask for staff responsible for Santa Clara Valley stormwater program.