



# **Review of the Model SUSMP**

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## **Outline**

- Goals, Sources of Innovation
- Changes from the 2001 SUSMP
- What's in the SUSMP

## Goals for SUSMP Revision ('07)

- Make it easier for applicants to prepare submittals
- Make it easier for municipal staff to review submittals for compliance
- Promote consistent and fair implementation countywide
- Integrate LID, treatment, and hydrograph modification management requirements

## Sources of Innovation

- Experience from Contra Costa
  - Development Review Staff
  - Designers and Builders
- Participation in Contra Costa
  - Design charrette
  - Stormwater Staff Work Group
  - City Attorneys Work Group
- Revisions by Land Development Work Group
- Comments on SUSMP drafts from the public and Regional Board staff



## **Changes from 2001 SUSMP**

- Clearer and simpler procedures
- More prescriptive as to design
- Options and flexibility
- Low Impact Development emphasis
- Chapter 4 — LID Design Guide
  - Design Sheets for 4 types of facilities

## **How to Use the SUSMP**

Page 1

1. Policies and Procedures
  - Applicability
2. Concepts and Criteria
  - Analysis and Background
3. Preparing Your Submittal
4. LID Design Guide
5. Operation and Maintenance Plans

## 3 most common mistakes

1. Didn't start early enough.
2. Planned to use less effective treatment facilities.
3. Postponed LID and maintenance of existing facilities



## Chapter 1: Policies & Procedures

- Requirements for all developments
- “Priority Development Project” table
- Use LID Procedure **OR** demonstrate compliance with treatment, hydrograph modification, and LID requirements
- The “50% rule”
- Phased Projects
- Compliance for Subdivisions

## Chapter 1: Policies & Procedures

Page 7

- Compliance Process at a Glance
  1. Discuss with municipal staff
  2. Review instructions in the SUSMP
  3. Prepare a Project Submittal
  4. Create a detailed project design
  5. List features in a table on construction plans
  6. Draft a Stormwater Facility O&M Plan
  7. Maintain facilities during construction
  8. Transfer maintenance responsibility
  9. Continue maintenance in perpetuity

## Chapter 1: Policies & Procedures

Page 9

- Flow Control
  - Projects smaller than 50 acres can comply by using the LID criteria and design procedures in Chapter 4
  - Projects 50 acres or larger must meet the interim hydromodification standard
  - Three options to demonstrate compliance
    1. Model pre- and post-project runoff
    2. Use LID design and IMPs
    3. Demonstrate no increase in impervious area
    4. Show there are no downstream impacts
      - All downstream waterways are hardened
      - Highly impervious watersheds

## **SUSMP Table of Contents**

1. Policies and Procedures
2. Concepts and Criteria
3. Preparing Your Submittal
4. LID Design Guide
5. Operation and Maintenance Plans

## **Chapter 2: Concepts & Criteria**

- Pollutants of Concern
  - Discussion of POCs by Type Page 16
  - Organization by Land Use Type Page 19
  - Grouping by fate during stormwater treatment
  - Grouping and relative effectiveness of stormwater treatment facilities

# Fate during treatment

Pollutant	Coarse Sediment and Trash	Pollutants that associate with fine particles	Pollutants that remain dissolved
Sediment	X	X	
Nutrients		X	X
Heavy Metals		X	
Organic Compounds		X	
Trash & Debris	X		
Oxygen Demanding		X	
Bacteria		X	
Oil & Grease		X	
Pesticides		X	

# Relative effectiveness

Pollutants of Concern	Bioretention Facilities (LID)	Settling Basins (Dry Ponds)	Wet Ponds and Constructed Wetlands	Infiltration Facilities or Practices (LID)	Media Filters	Higher-rate biofilters*	Higher-rate media filters*	Trash Racks & Hydro-dynamic Devices
Coarse Sediment and Trash	High	High	High	High	High	High	High	High
Pollutants that tend to associate with fine particles during treatment	High	High	High	High	High	Medium	Medium	Low
Pollutants that tend to be dissolved following treatment	Medium	Low	Medium	High	Low	Low	Low	Low

## Treatment Facilities

### ■ Appropriate facilities:

#### ■ Infiltration

- 85<sup>th</sup> percentile, 24-hour event

#### ■ Bioretention and media filters

- Surface  $\geq$  4% of tributary impervious area

#### ■ Extended detention basins and wetlands

- 85<sup>th</sup> percentile, 24-hour event

Page  
22

## Special Situations

- Redevelopment sites subject to the 50% rule
- Sites smaller than one acre intended for pedestrian-oriented “smart growth” type of urban design
- Roadway widening projects

Page  
23

## **Selection for Special Situations**

1. Bioretention facilities fed by gravity
2. Capture of design flow and pumping to bioretention facilities
3. Subsurface media filter with maximum design surface loading rate  $\leq 5$  inches per hour
4. Higher rate surface biofilter
5. Higher rate vault-based filtration unit

## **Also in Chapter 2**

- Hydrology for NPDES compliance
- Low Impact Development Requirements
- Treatment Facility Sizing Requirements
- Restrictions on Infiltration Devices
  - Most LID facilities not considered to be infiltration devices
- Environmental and Economic Perspective

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## **Chapter 3: Project Submittal**

- Step-by-Step
  1. Assemble needed information
  2. Identify constraints and opportunities
  3. Prepare and document LID Design
  4. Specify Source Controls (Appendix)
  5. Plan maintenance of facilities
  6. Complete the submittal

## Project Submittal Checklist

### ■ Exhibit

- Natural hydrologic features
- Soil types and depth to groundwater
- Existing and proposed drainage
- Entire site divided into separate drainage areas, and types designated
- Impervious areas proposed
- Locations and sizes of treatment and flow-control facilities
- Pollutant source areas

Page  
32

## Project Submittal Checklist

### ■ Report

- Narrative describing constraints and opportunities
- Natural resource protection measures in site design
- Tabulation of pervious and impervious areas
- Preliminary designs and calculations
- Pollutant sources and source control table
- General maintenance requirements
- Financing and responsibility for maintenance
- Construction Plan SUSMP Checklist
- Certification

## **Constraints and Opportunities**

- Establish “maximum extent practicable” for the site
- Ways to reduce impervious areas
- Potential locations for treatment and flow-control facilities
- Significant sources of pollutants

Page  
34

## **Documentation of LID Design**

- Refer to Chapter 4

# Source Control Checklist

Appendix

IF THESE SOURCES WILL BE ON THE PROJECT SITE...	THEN YOUR PROJECT SUBMITTAL SHOULD INCLUDE THESE SOURCE CONTROL BMPs		
Potential Sources of Runoff Pollutants	Permanent Controls—Show on Submittal Drawings	Permanent Controls—List in Submittal Table and Narrative	Operational BMPs—Include in Table and Narrative
G. Refuse Areas	<input type="checkbox"/> Show where site refuse and recycled materials will be handled and stored for pickup. <input type="checkbox"/> If dumpsters or other receptacles are outdoors, show how the area will be covered.	<input type="checkbox"/> State how site refuse will be handled and provide supporting detail. <input type="checkbox"/> State that signs will be posted “Do not dump hazardous materials”	<input type="checkbox"/> Provide adequate receptacles. <input type="checkbox"/> Inspect regularly.

# Source Control Table

Page 37

Potential Source of Runoff Pollutants	Permanent Source Control BMPs	Operational Source Control BMPs
Refuse Area	Refuse area will be roofed, bermed, and drained to sanitary sewer.	Refuse area will be inspected twice daily and swept as needed.

Add “...a narrative that explains any special features, materials, or methods of construction that will be used to implement these permanent, structural BMPs.”

## Facility Maintenance

Page  
38

- Municipality *may* require in Project Submittal:
  - Means to finance and implement facility maintenance in perpetuity
  - Acceptance of responsibility from construction until legal transfer
  - Outline of maintenance requirements

## Completing Project Submittal

Page  
39

- Coordinate with site plan and landscaping plans
  - Curb locations, elevations, grade breaks consistent with delineation of discrete drainage management areas
  - Rims of bioretention facilities are level
  - Vaults and utility boxes do not conflict
  - Facilities are shown in renderings
  - Facilities shown on landscaping plans

# Completing Project Submittal

Page  
40

## ■ Construction Plan SUSMP Checklist

Project Submittal Page #	Description of Feature or Facility	Plan Sheet #s

# Completing Project Submittal

- Certification
- Four ways submittal requirements are explained:
  - Step-by-step instructions
  - Checklist
  - Example submittal outline and contents
  - Example submittals

Page  
41

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## **Rewind: From Chapter 1**

- **Compliance Process at a Glance**
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## Operation and Maintenance

Stage	Description	Schedule
1	Determine facility ownership and maintenance responsibility	Discuss with planning staff at pre-application meeting
2	Identify typical maintenance requirements	In initial submittal, coordinate with planning & zoning application
3	Develop detailed operation and maintenance plan	As required by municipality
4	Interim operation and maintenance of facilities	During and following construction including warranty period
5	Formal transfer of operation & maintenance responsibility	On sale and transfer of property or permanent occupancy
6	Ongoing maintenance and compliance with inspection & reporting requirements	In perpetuity

## O&M Plan – Step by Step

1. Designate Responsible Individuals
2. Summarize Drainage & BMPs
3. Document Facilities “As Built”
4. Prepare Maintenance Plans for each Facility
5. Compile Maintenance Plan
6. Updates

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