2010 Technical Guidance Manual for Stormwater Quality Control Measures
Ventura Countywide Stormwater Quality Management Program
Draft Outline

Section 1 – Background and Goals

1.1 Goals

Goals of the 2010 Ventura Technical Guidance Manual (TGM) (as stated in the 2002 TGM):

- Ensure that new development and redevelopment projects reduce urban runoff pollution to the "maximum extent practicable;"
- Ensure the implementation of measures in this manual are consistent with the May 7, 2009 Ventura County MS4 Permit and other State requirements;
- Provide guidance to developers, design engineers, agency engineers, and planners on the selection and implementation of appropriate stormwater site design, low impact development, source control, and treatment control measures; and
- Provide maintenance procedures to ensure that the selected control measures will be maintained to provide effective, long-term pollution control.

1.2 Regulatory Background

Provide a short discussion on MS4 Permit (Program History and 2009 Permit)

1.3 Stormwater Management Principals

Provide a short discussion on each of the following topics:

- Stormwater Management and LID Concepts
- Integrated Water Resource Management Guiding Principles
- Relationships Between LID and Source Control, Treatment Control, and Hydromodification Control

1.4 Applicability

List the type of projects and triggers from Section 4.E.II of the MS4 Permit:

- New Development
- Redevelopment

1.5 Use and Organization of the Manual

The content of the TGM is divided into eight sections and appendices. Goal is to be user friendly.

Section 2 – Stormwater Management Standards

2.1 Introduction

This chapter will address the performance standards from Section 4.E.III of the MS4 Permit and will include the flow charts and accompanying illustrations.

2.2 Performance Criteria

This section will define and list the performance standard from the permit for each of the following:

- Effective Impervious Area
- Design Volume/Flow
- Hydromodification

2.3 Calculating Effective Imperviousness and Design Volume/Flow

This section will demonstrate how each of the following are calculated:

- Effective Impervious Area (EIA) Demonstration (include example calculations)
- Stormwater Quality Design Volume Calculation
  - The 85th percentile 24-hour runoff event determined as the maximized capture storm water volume for the area using a 48 to 72-hour draw down time, from the formula recommended in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87, (1998)
  - The volume of annual runoff based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment
  - The volume of runoff produced from a 0.75 inch storm event
- Stormwater Quality Design Flow Calculation
  - The flow of runoff produced from a rain event equal to at least 0.2 inches per hour intensity
  - The flow of runoff produced from a rain event equal to at least 2 times the 85th percentile hourly rainfall intensity as determined from local rainfall records
  - Eight percent of the 50-year storm design flow rate

2.4 Alternative Compliance

This section will discuss the performance standards for each of the following:

- Smart Growth, Infill, and Redevelopment
- Minimum Onsite Requirements/Technical Feasibility Criteria
- Offsite Mitigation Volume, Location, and Timing
- Watershed Equivalence
- Redevelopment Project Area Master Plans

2.5 Single Family Hillside Homes

This section will outline the specific requirements that are applicable to single family hillside homes.

- Conserve natural areas
- Protect slopes and channels
- Provide storm drain system stenciling and signage
- Divert roof runoff to vegetated areas
- Direct surface flow to vegetated areas

2.6 Roadway Projects

This section will outline the specific requirements that are applicable to different categories of roadway projects based on USEPA guidance "Managing Wet Weather with Green Infrastructure: Green Streets."

Section 3 – Site Assessment and BMP Selection

3.1 Assessing Site Conditions and Other Constraints

This section will discuss the following site and design conditions, opportunities, and constraints related to BMP selection:

- Site Conditions/Feasibility Criteria
- Groundwater (depth, distance to wells, contamination)
- Geotechnical Constraints (including infiltration and liquefaction considerations)
- Topography
- Environmentally Sensitive Areas
- Managing Off-Site Drainage
- Existing Utilities

3.2 Addressing Pollutants of Concern

This section will present the concept of what pollutants are of concern by land use and for different watersheds using a set of simple maps and tables.

- Pollutants of Concern (PoCs) based on land use activities
- Pollutants of Concern based on 303(d)/TMDLs which will be identified using:
  - Watershed Delineation Maps (text will refer to maps in Appendix B)
  - Tables of PoCs by Watershed

3.3 BMP Selection Process and Technical Feasibility Criteria

This section will provide a process for selecting BMPs based on BMP priority, site conditions/constraints, pollutants of concern, and cost considerations. The section will first present an introduction to the types of BMPs that are included in the manual and will provide reference to their respective chapters (Chapters 4, 5, and 6). The section will conclude with a simple BMP selection process using checklists, simple flow charts, maps, and/or menus.

- Infiltration
- Rainwater Harvesting
- Evapotranspiration
- Bioretention/Biofiltration
- Approved Proprietary LID BMPs
- Other Treatment

Section 4 – Site Design Principles and Techniques

This section will provide simple one to two page fact sheets with photos/schematics for each site design principle and technique with cross references to other documents (similar to 2002 TGM Section 3).

4.1 Introduction
4.2 Site Planning and Layout (techniques to minimize impervious cover)
4.3 Vegetative Protection, Revegetation, and Maintenance
4.4 Slopes and Channel Buffers
4.5 Techniques to Minimize Land Disturbance
4.6 LID Measures at Scales from Single Parcels to Watershed
4.7 Integrated Water Resource Management Practices (including coordination with flood control measures)

Section 5 – Source Control Measures

This section will be the same as Section 4 of the 2002 TGM.

5.1 Introduction
5.2 Description

S-1: Storm Drain Message and Signage
S-2: Outdoor Material Storage Area Design
S-3: Outdoor Trash Storage Area Design
S-4: Outdoor Loading/Unloading Dock Area Design
S-5: Outdoor Repair/Maintenance Bay Design
S-6: Outdoor Vehicle/Equipment/Accessory Washing Area Design
S-7: Fueling Area Design

Section 6 – LID BMPs and Treatment Control Measure Design

This section will: (1) identify LID and treatment BMPs that are appropriate for Ventura County, (2) provide simple one page factsheets with pictures that describe each of the LID and treatment BMPs, (3) provide specifications for each LID and treatment BMP type including design criteria and procedures and design drawings, (4) include construction considerations, and (5) include maintenance provisions.

6.1 Introduction
6.2 BMP Effectiveness (see Pollutant Removal Performance Appendix)
6.3 Infiltration BMPs
- Infiltration Basin
- Infiltration Trench
- Bioretention (no underdrain)
- Drywell
- Permeable Pavement (concrete, asphalt, and pavers)

6.4 Rainwater Harvesting
- Cisterns
- Underground Detention
- Irrigation Use
- Domestic Use

6.5 Evapotranspiration BMPs
- Green/Brown/Blue Roof
- Downspout dispersion
- Amended soils
- Street trees, canopy interception

6.6 Bioretention/Biofiltration BMPs
- Bioretention with Underdrain
- Planter Box
- Vegetated Swale
- Vegetated Filter Strip

6.7 Proprietary LID BMPs
- Proprietary Infiltration
- Proprietary Biotreatment

6.8 Other Treatment BMPs
- Sand Filter
- Cartridge Media Filter
- Dry Extended Detention Basin
- Wet Detention Basin
- Constructed Wetland

6.9 Pretreatment/Gross Solids Removal
- Hydrodynamic Device
- Catch Basin Insert

Section 7 – Operation and Maintenance Planning

This section will describe operation and maintenance plan and agreement requirements.

7.1 General Considerations

7.2 Maintenance Plan

7.3 Maintenance Agreement
- Municipal Projects
- Private Projects

Section 8 - References

Appendices

Appendix A	Glossary of Terms
Appendix B	Watershed Delineation Maps (consistent with Basin Plan sub-basins)
Appendix C	Alternative Compliance Form
Appendix D	Site Soil Type and Infiltration Testing
Appendix E	BMP Sizing Worksheets
Appendix F	Design Criteria Checklists for Stormwater Runoff BMPs
Appendix G	Stormwater Control Measure Access and Maintenance Agreements
Appendix H	Stormwater Control Measure Maintenance Plan Guidelines and Checklists