

Operation and Maintenance Associated with Permanent Best Management Practices

SQUIMP WORKSHOP

June 8, 2005

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Operation & Maintenance Requirements

- What are the Requirements?
- What is the Best Way to Meet the Requirements?

Requirements

- Verification of Maintenance – Legal Documents
- O & M Plan
- Proof of Ongoing BMP Maintenance

Best Way to Meet Requirements

- Plan
- Condition
- Get Appropriate Documents
- Review, Check, Revise
- Track

Best Way to Meet Requirements

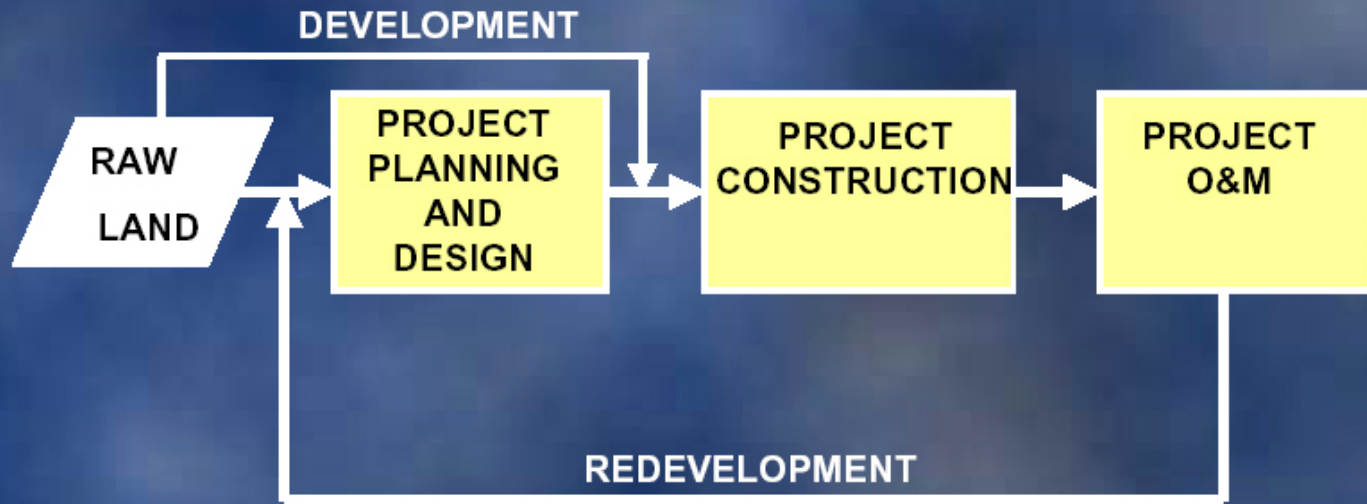
- Plan

O&M – First & Last in the Project Design Cycle

BMP Handbook Overview ~

New Development and Redevelopment BMP Handbook

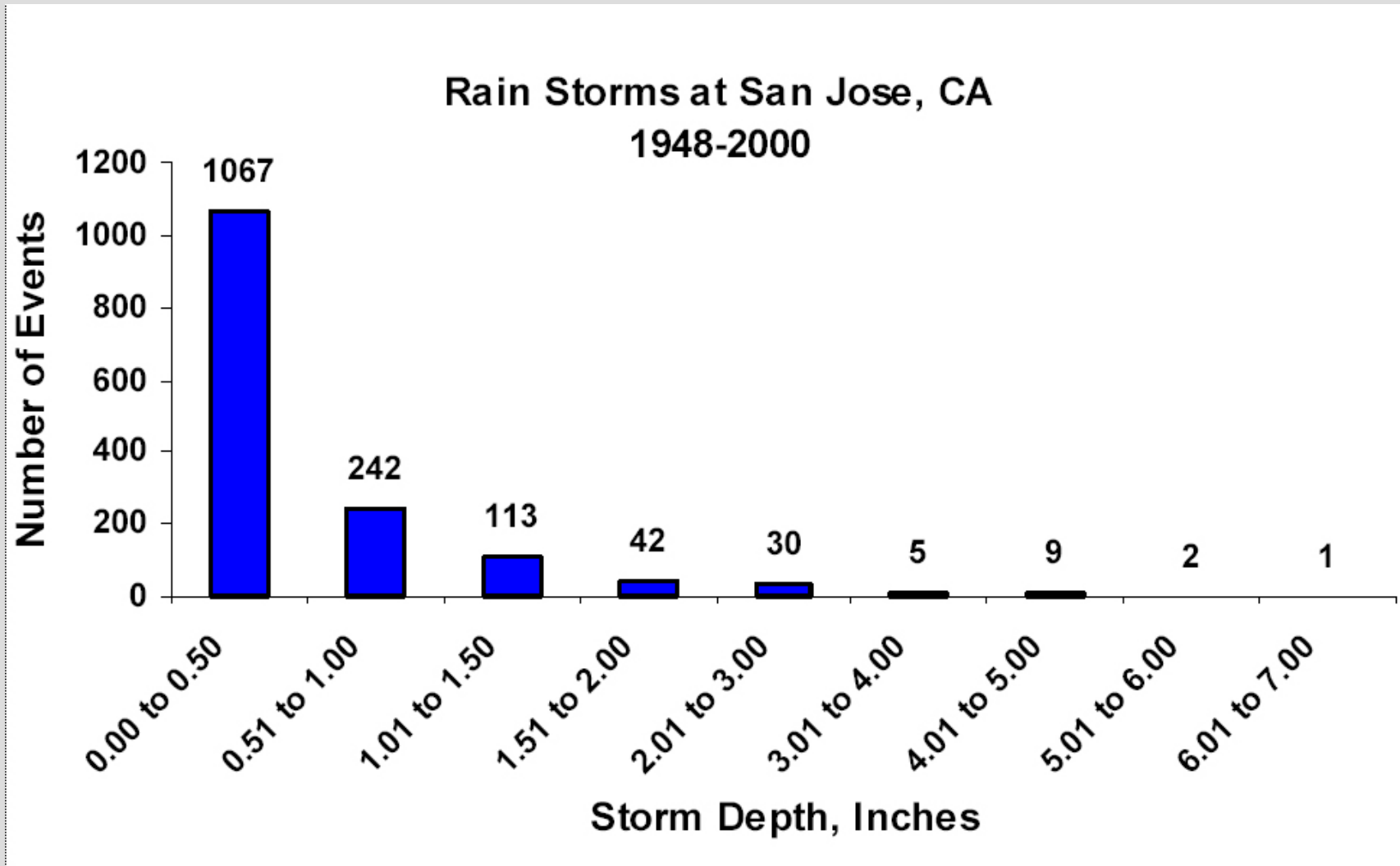
Project Life Cycle



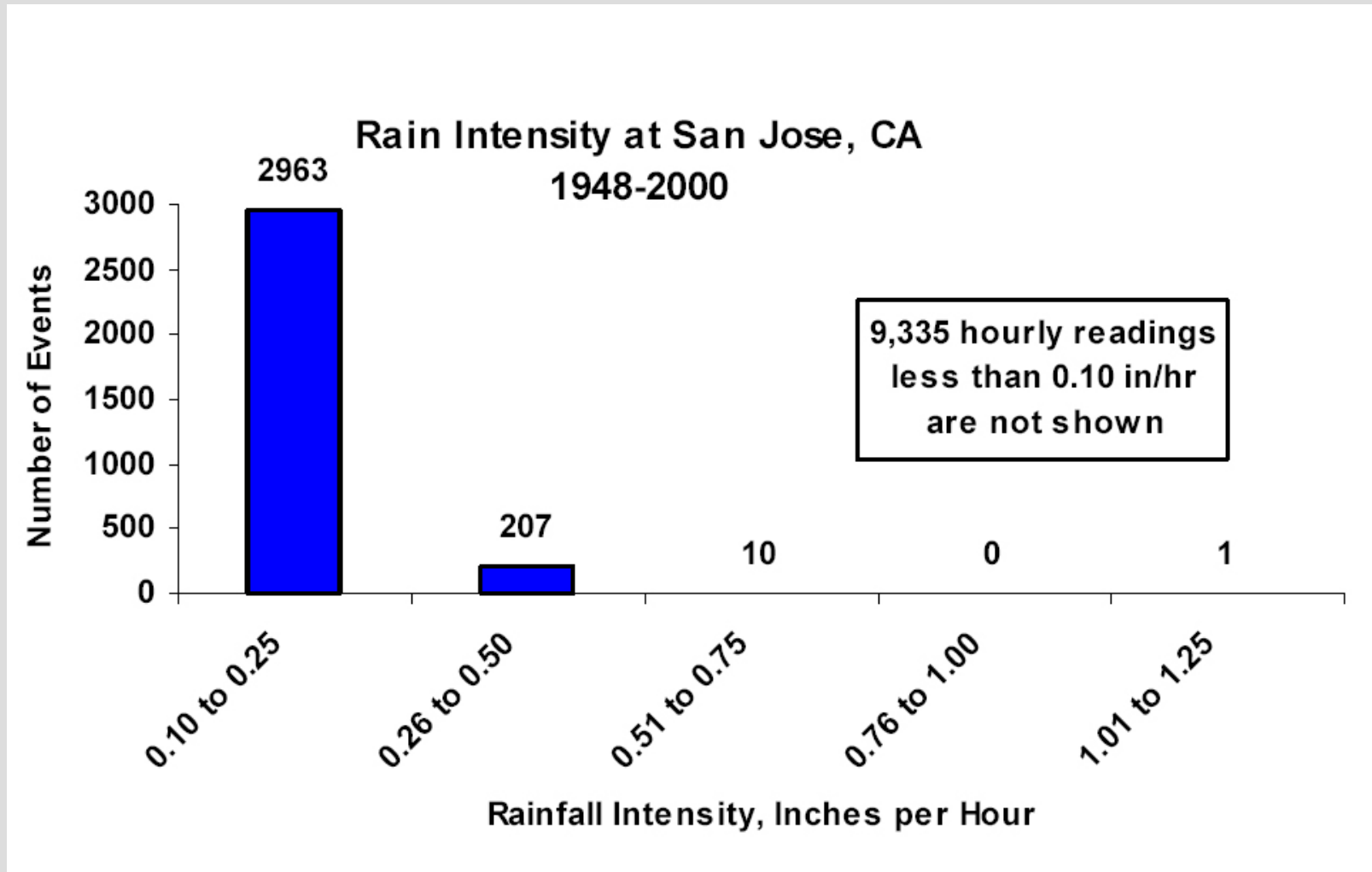
Plan – Maintenance Must be Considered During Design

- Rainfall and Climate

Rainfall Events vs. Storm Depth



Rainfall Events vs. Rain-Fall Intensity



Plan – Maintenance Must be Considered During Design

- ✓ Rainfall and Climate
- Site Specific Factors

Large Media Filtration 90 gpm; Wet Weather; Pacific View Mall - Ventura





Weston Apartments

Plan – Maintenance Must be Considered During Design

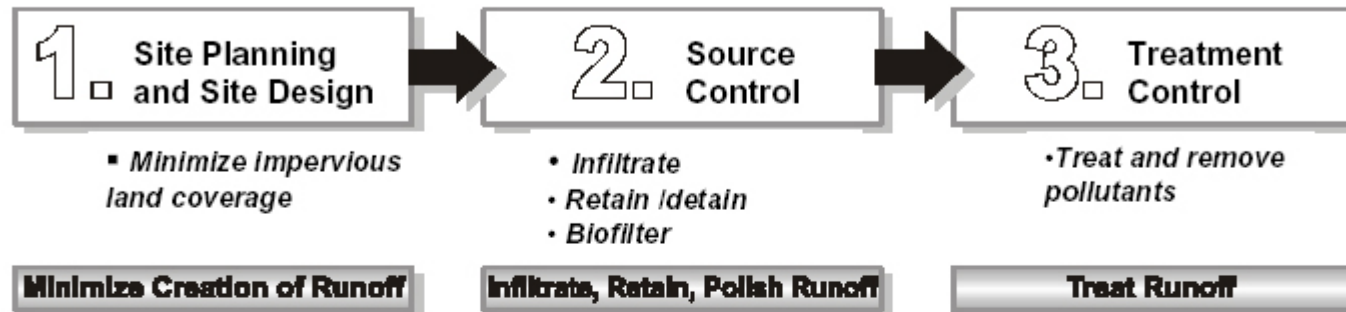
- ✓ Rainfall and Climate
- ✓ Site Specific Factors
- Inspection

Plan – Maintenance Must be Considered During Design

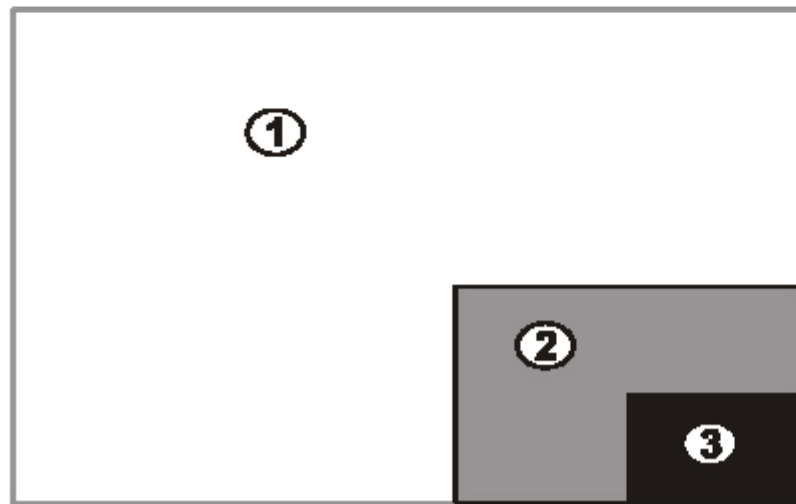
- ✓ Rainfall and Climate
- ✓ Site Specific Factors
- ✓ Inspection
- Life Cycle Maintenance & Replacement Costs

Emphasis on integration of water quality controls into site design

DESIGN PROCESS



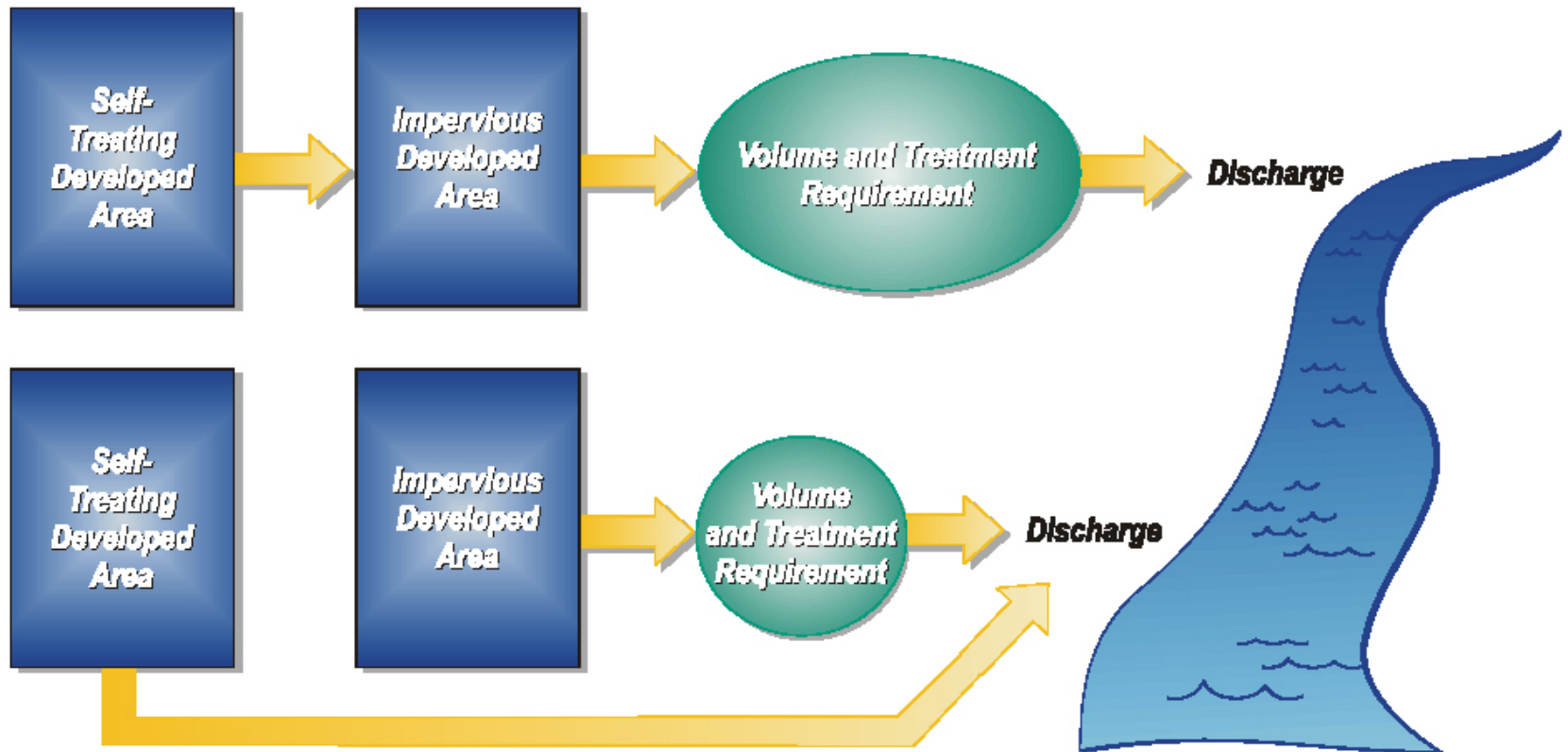
RELATIVE EFFECTIVENESS



- ① Site Design
- ② Source Control
- ③ Treatment Center

Reduction of Site Runoff Reduces Treatment Requirements

Stormwater Quality Planning





Best Way to Meet Requirements

- ✓ Planning
- **Conditioning**

O&M Maintenance Condition (Example)

The Applicant will also be responsible for developing and implementing a long-term operation and maintenance plan for stormwater quality protection BMP's included in the project. The operation and maintenance plan shall include the following:

- Operation procedures;
- Procedures for routine maintenance (e.g. debris removal, vegetation clearing);
- Procedures for corrective maintenance (e.g., parts replacement);
- Maintenance performance levels;
- Identification of the party responsible for operation and maintenance; and
- Inspection and reporting requirements.

The Applicant shall submit deed restrictions, CC&R's or other documents satisfactory to the City Engineer and City Attorney to insure maintenance of all water quality BMP's included in the project prior to final Parcel Map approval.

Best Way to Meet Requirements

- ✓ Planning
- ✓ Conditioning
- Get Appropriate Documents

Get Appropriate Documents

Private

- Recorded Agreement on Deed
- Developer Transfer to Owner
- O & M Plan

Recorded at the request of:

When recorded, mail to:
City of San Buenaventura, Land Development
501 Poli Street, Room 125
Ventura, CA 93002-0099

Declaration of Covenant Regarding
Stormwater Treatment Device Maintenance
APN XXX-0-XXX-XXX

The undersigned <insert landowners name> hereby certify that we are the owners of the following described real property located in the City of San Buenaventura, County of Ventura, State of California.

Legal Description: <Insert description of property> in the City of San Buenaventura, County of Ventura, State of California as recorded in Book xx, Pages xx, xx & xx, <Insert Miscellaneous Records or Parcel Maps or Official Records> of Ventura County, which property is located and known as <Insert street address>.

Grading Permit Number: <Insert grading permit number>

And in consideration of the City of San Buenaventura allowing construction of site improvements including grading, drainage, utilities, paving, buildings and landscaping on said property, we do hereby covenant, consistent with Stormwater Quality Urban Impact Mitigation Plan ("SQUIIMP") to maintain according to the Maintenance Plan (on file with the City of San Buenaventura Public Works Department, Maintenance Division), all structural stormwater treatment including the following: <Insert description of the devices enumerated in the Maintenance Plan>.

This Covenant shall run with the above described land and shall be binding upon ourselves, and future owners, encumbrances, their successors, heirs, or assignees and shall continue in effect until released by the authority of the City upon submittal of a request, applicable fees, and evidence this Covenant is no longer required.

<Insert Company Name>

<Insert Name, Title, and notarize all signatures>.

<Insert Name, Title, and notarize all signatures>.

Agreement for BMP Monitoring and Reporting

Facility or BMP Changes

- BMPs may not be changed or removed without prior consent from the approval authority.
- If there is a significant change in the character or quantity of pollutants discharged into the BMPs, modifications or additional BMPs may be necessary.

Get Appropriate Documents

Private

- ✓ Recorded Agreement on Deed
- ✓ Developer Transfer to Owner
- ✓ Owner to Owner
- ✓ O & M Plan

Public

- Maintenance Assessment District Agreement

Get Appropriate Documents

Private

- ✓ Recorded Agreement on Deed
- ✓ Developer Transfer to Owner
- ✓ Owner to Owner
- ✓ O & M Plan

Public

- ✓ Maintenance Assessment District Agreement
 - O & M Plan

Elements of a Good O&M Plan

- Site Map
- Baseline Maintenance Descriptions
- Spill Plan
- Training Plan
- Monitoring and Reporting Plan

Baseline Maintenance Descriptions

- Property Owners / Responsible Parties
- List General Housekeeping Measures
- List of Permanent Stormwater Controls
- Written Description and Checklist of Maintenance to be Performed for Each Control Measure, with Frequency
- Annual Budget

Best Way to Meet Requirements

- ✓ Plan
- ✓ Condition
- ✓ Get Appropriate Documents
- Review, Check, Revise

Best Way to Meet Requirements

- ✓ Plan
- ✓ Condition
- ✓ Get Appropriate Documents
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- Track

Track

- Inception
- Planning
- Design
- Plan Check
- Construction
- Post-Construction

Environmental Control Database - COMPANIES

Business Name: Gold Coast Recycling Center, Inc. Project Name: Gold Coast Recycling Center, Inc. Project Desc: Gold Coast Recycling Center, Inc.
 SID Yes: SID 0046 Company Or Location: Company Project ID: 8308
 Location: Colt Street at Knoll Dr LEGACY_id: 0046

- Planning
- NAICS
- Contacts
- Permits
- SiteFacts
- Construction
- Inspections
- Violations
- Laboratory
- SMR
- Stormwater
- Industrial
- Staff Training

Pollution Sources	
PollutionSubcategory	SourceDesc
Outdoor Storage Waste	Recycle facility
Parking Lot > One Acre	
Automotive	Truck repair
*	

Record: 1 of 3

Stormwater Mitigation Measures and BMP's	
TmtMeasureTypeID	TmtMeasureDesc
Maintenance Controls: Administration - Bonds	Holding on Cond. Use Permit 2002
Maintenance Controls: Administration - SW Permit	
Maintenance Controls: Administration - Monitoring Rep.	
Prevention Devices: Sewer Diversion	
Prevention Devices: Shelters	Trash Enclosures & truck maint
Treatment Devices: Geotechnical - Detention Facilities	
Prevention Devices: Sewer Diversion	
Treatment Devices: Geotechnical - Swales	
Treatment Devices: Mechanical - Inline Filters - Media/S	
Treatment Devices: Mechanical - Inlet Screens	
Treatment Devices: Mechanical - Inline Filters - Fabric	
Maintenance Controls: HouseKeeping - Parking Lot Sw	
Maintenance Controls: Administration - Monitoring Reports	
Maintenance Controls: Administration - SW Permit	
Maintenance Controls: HouseKeeping - Parking Lot Sweeping	
Maintenance Controls: HouseKeeping - Shop Vacuum	
Prevention Devices: Maintenance - General	
Prevention Devices: Parking Grid	
Prevention Devices: Sewer Diversion	
Prevention Devices: Shelters	
Prevention Devices: Shelters - Temporary Tarp covering	
Treatment Devices: General	
Treatment Devices: Geotechnical - Detention Facilities	
Treatment Devices: Geotechnical - Filter Strips	
Treatment Devices: Geotechnical - Swales	
Treatment Devices: Mechanical - ab/ad - Sorbent Feature	
Treatment Devices: Mechanical - Clarifiers	

Date

EXAMPLE

Company
Contact
Address
City, State, Zip

Dear Mr. :

**RE: State of California and City of Ventura - Mandated Stormwater Pollution Controls
Operation and Maintenance Plan (O&M Plan)**

Our records indicate that you have permanent stormwater pollution control devices on your property. As the responsible party for the maintenance of these devices, you are required to choose one of the following options:

Option 1: Report the status of your pollution control devices using the attached "Record of Inspection & Maintenance" form. Submit the completed Record of Inspections and Maintenance to the City by **September 27, 2005**. Keep copies of all records of inspections and maintenance on file at your place of business. *If service date falls after you have mailed the form, please indicate any scheduled maintenance and keep service records in your files.*

Option 2: If the report is not received by September 27th 2005, City staff will perform an inspection of the stormwater controls on your property. You will be responsible for all costs incurred by the City for carrying out inspections on private stormwater pollution control devices that you may find on your site.

ADDITIONAL INFORMATION:

The State of California mandates that the City ensure that these pollution controls devices are installed as a condition of development and maintained on a regular basis.

These controls decrease the amount of pollutants leaving your site and entering the storm drain system. Here are a few examples of pollution controls:

- Media filters
- Grassy Swales
- Parking lot sweeping
- Extended Detention Basins
- Drain filter inserts
- Trash enclosure covers
- Drainage Sump(s) in delivery area
- Irrigation Controls (under or over watering)

Record of Inspection & Maintenance for Stormwater Pollution Controls

Property Name: MAX Realty Inspected by: _____ Date: _____

Company: MAX Realty	EXAMPLE
Contact: Max Peters	
Address: 101 Main Street, City, State 90000	
Phone: (999) 101-10101	

Type of Device: GRASSY SWALE	
Manufacturer: NA	Model #: NA
Location of Device: SW Corner along Main St.	
Current Condition: Needs irrigation, sediment/debris removal small portion need re-seeding	Dates Serviced (if applicable): 2/6/05, 6/26/05, 9/6/05, Scheduled 11/20/05

Type of Device: PARKING LOT SWEEPING	
Manufacturer: NA	Model #: NA
Location of Device: South & West parking lots and drive entrance.	
Current Condition: Trash (plastic bags & leaves) and sediment on site	Dates Serviced (if applicable): 2/13/05, 6/1/05, 9/8/05, Scheduled 12/30/05

Specific BMPs – City of Ventura

- Grassy Swales





Goodyear/McGrath Ventura

Five Years Later

Specific BMPs – City of Ventura

- ✓ Grassy Swales
- Detention Basins

Chapel Lane - Ventura





Specific BMPs – City of Ventura

- ✓ Grassy Swales
- ✓ Detention Basins
- ✓ Underground Devices
 - Media



Large Industrial Media Filtration Unit



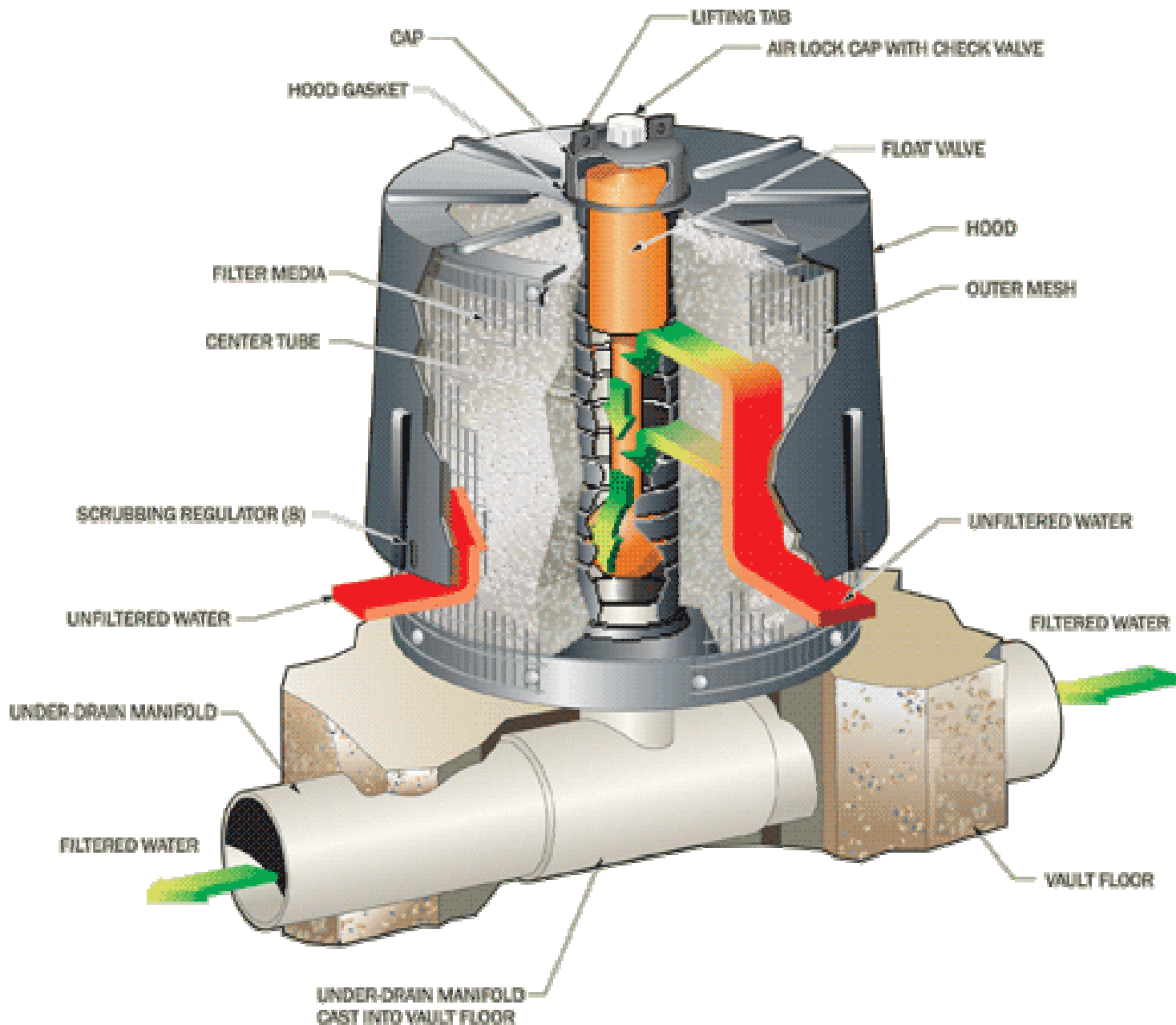
CLEAN WATER STARTS HERE

D&L FDNY


STORMWATER MANAGEMENT™ INC.

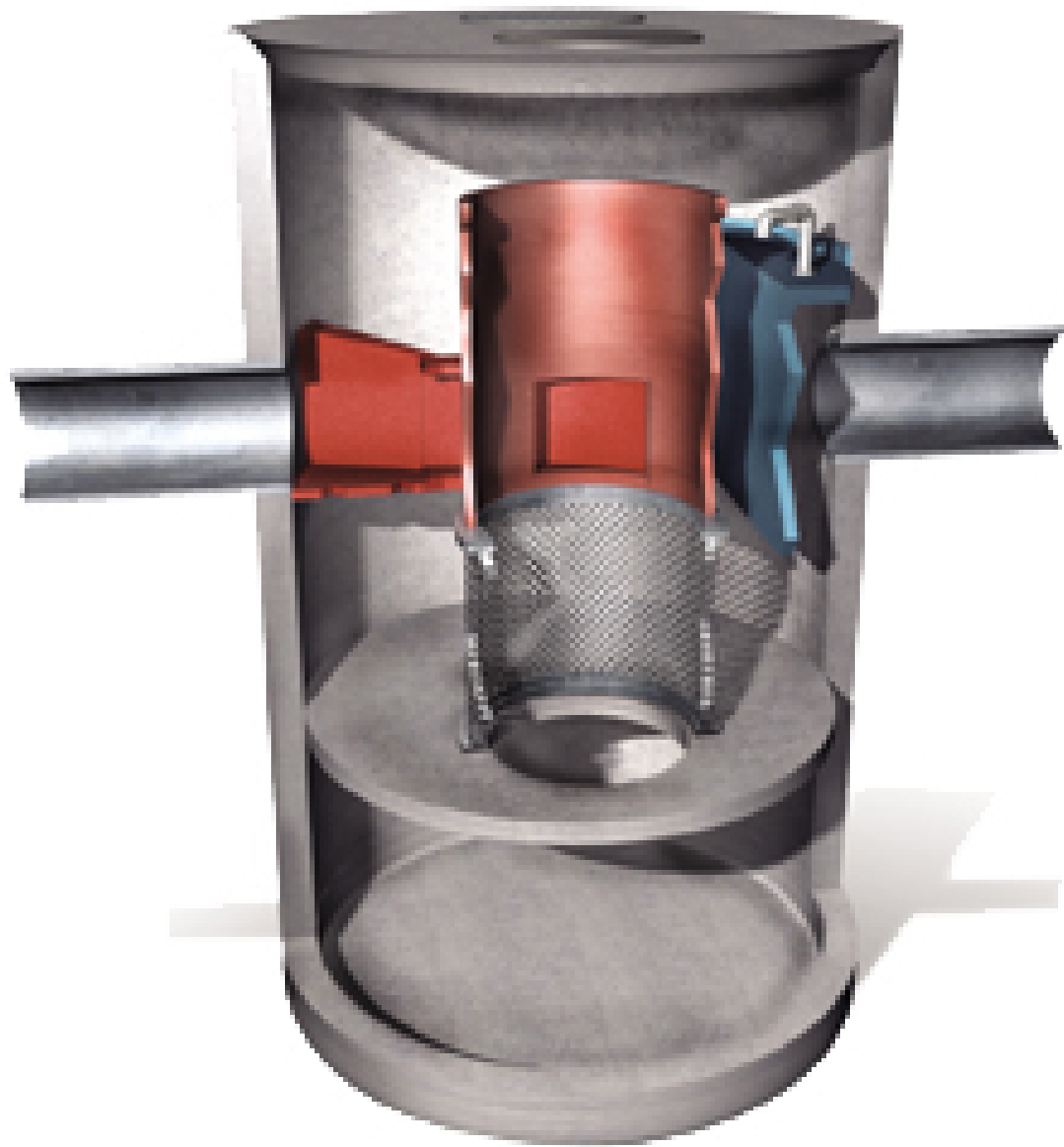
USA
800-548-4667





Specific BMPs – City of Ventura

- ✓ Grassy Swales
- ✓ Detention Basins
- Underground Devices
 - ✓ Media Filters
 - Separators



Specific BMPs – City of Ventura

- ✓ Grassy Swales
- ✓ Detention Basins
- ✓ Underground Devices
 - ✓ Media Filters
 - ✓ Separators
- **Inlet Filters**



Weston Homes



ProGard
PLUS

800-572-8815
888-950-8828

Could Somebody Else
Please Maintain These?

QUESTIONS?