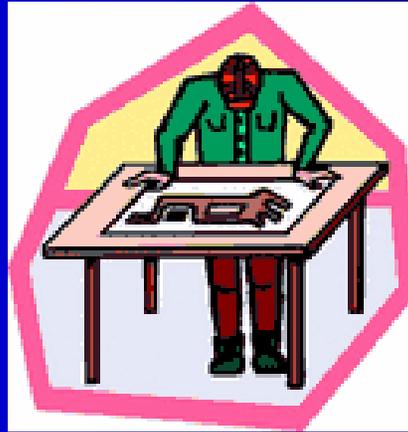




Development Planning Program Requirements





Development Planning

- Includes 4 Program Requirements
 - ❑ Standard Urban Storm Water Mitigation Plan (SUSMP)
 - ❑ Site/Activity-Specific BMPs/Mitigation Measures
 - ❑ Evaluating CEQA Projects for Runoff Pollution
 - ❑ General Updates of Certain Elements



Development Planning

- **Standard Urban Storm Water Mitigation Plans (SUSMP)**
 - ❑ Requires certain level of BMPs depending on project type
 - ❑ Includes development and redevelopment projects
 - ❑ Most complicated municipal NPDES permit program requirement
 - ❑ Impacts Planning & Building/Safety



Development Planning

➤ SUSMP/Planning Priority Projects

- ❑ Single Family Hillside Home under 1 acre
- ❑ Single Family Hillside Home over 1 acre
- ❑ Ten or more unit homes (includes single family homes, multifamily homes, condominiums, and apartments)
- ❑ A 43,560 square feet (1 acre) of impervious surface area industrial or commercial development
- ❑ Automotive service facilities
 - 5013 - Motor vehicle supplies and new parts
 - 5014 - Tires and tubes
 - 5541 - Gasoline Stations (not RGOs)
 - 7532 - Top & body repair & paint shops
 - 7533 - Auto exhaust system repair shops
 - 7534 - Tire re-treading and repair shops
 - 7536 - Automotive glass replacement shops
 - 7537 - Automotive transmission repair shops
 - 7538 - General automotive repair
 - 7539 - Automotive repair shops (all inclusive category for everything not listed above)
- ❑ Retail gasoline outlets
- ❑ Restaurants (SIC 5812) – stand alone
- ❑ Parking lots 5,000 square feet or more of surface area or with 25 or more parking spaces
- ❑ Redevelopment projects in subject categories that meet Redevelopment thresholds
- ❑ Any project within an ESA (environmental sensitive area)



Development Planning -SUSMP

➤ BMPs

❑ Requires 3 types of BMP categories:

- Tier I, most project types (e.g., no dumping catch basin signage, no exceedance of peak flow runoff rate, proper trash area design, slope and channel protection)
- Tier II, use-specific (e.g., RGOs)
- Tier III, mechanical/infiltration controls for some projects to address post-construction runoff pollution (applies to most planning priority categories)



Development Planning – SUSMP

Tier I

- Applies to most SUSMP project categories and requires
 - ❑ No dumping signage on catch basins
 - ❑ No exceedance of pre-con peak flow -- only applies to natural drainage systems
 - ❑ Properly designed trash enclosure (standard)
 - ❑ Slope and channel protection for unlined conveyances (most cities drain into lined flood control channels)

Development Planning Program

Tier II, Use-Specific (RGOs)



Development Planning Program

Tier II, Use-Specific (Industrial/Commercial)



Development Planning Program

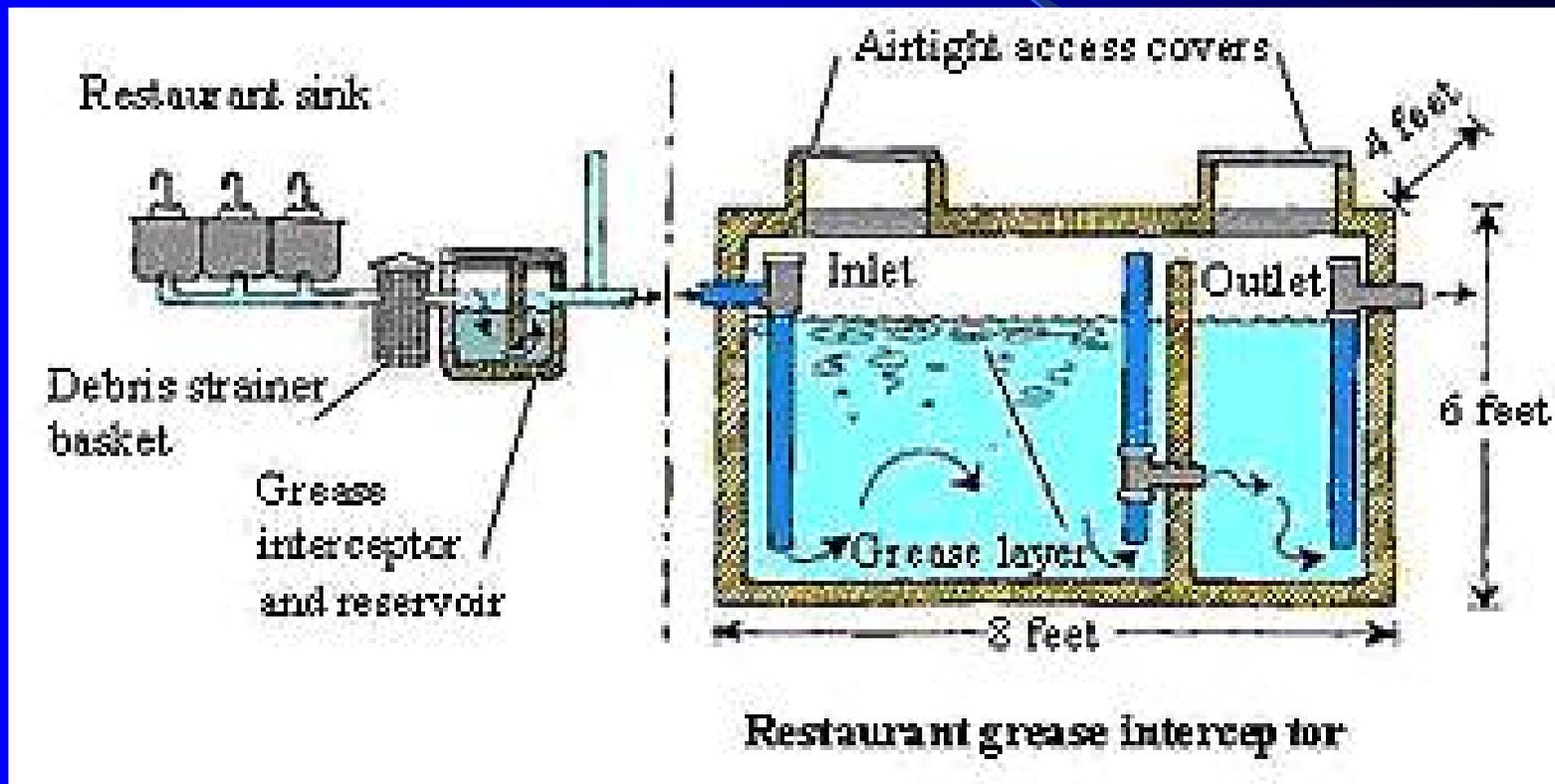
Tier II, Use-Specific (Industrial/Commercial)



Description

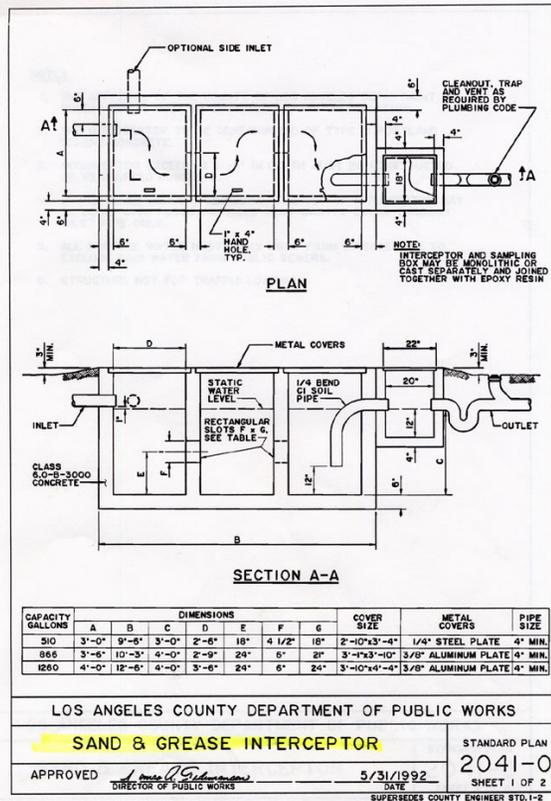
Development Planning Program

Tier II, Use-Specific (Restaurants)



Development Planning Program

Tier II, Use-Specific (Automotive-Related)





Development Planning

TIER III BMPs

(Post-Construction Runoff Pollution Control)

➤ Vortex Separation Systems

- Great for trash, lousy for oil & grease (typically pollutants on hard-scaped surfaces)
- Requires A Lot Maintenance
- Very expensive: \$5,000 to \$100,000
- Requires a Lot of Head to Drive Them





Development Planning

TIER III BMPs

- **Mechanical and Infiltration Controls**
 - ❑ Post-construction runoff pollution reduction
 - ❑ Applies to most but not all SUSMP-projects
 - ❑ Selection of control should be based on cost, performance in addressing the pollutant of concern (e.g., oil and grease) reputation of vendor/product reliability, and feasibility of installation
 - ❑ Controls must be designed (sized) properly in accordance with one of several “numeric criteria”

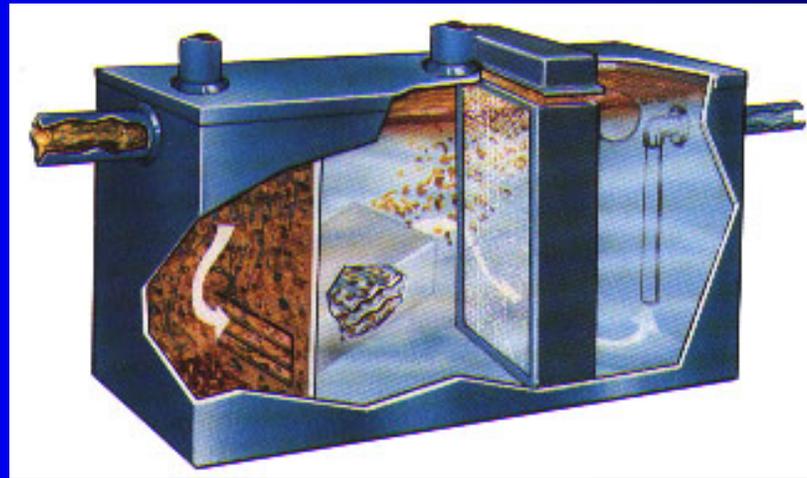


Development Planning

Mechanical BMP Examples

➤ Oil/Water Separators

- ❑ Great for oil & grease and metal fines (but that's it)
- ❑ Requires Maintenance (chambers must be cleaned-out by a hazardous waste hauler periodically) which can be expensive
- ❑ Can be expensive: \$2,000 to \$50,000



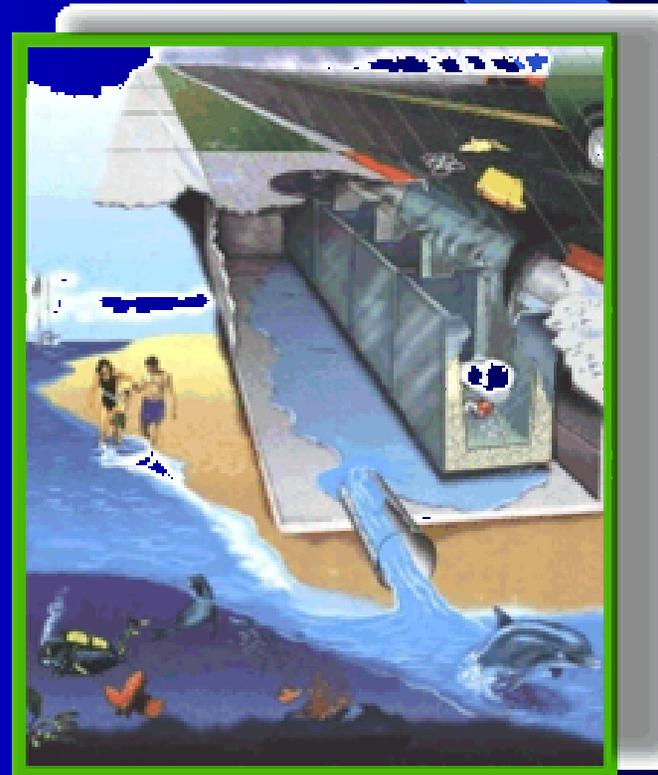
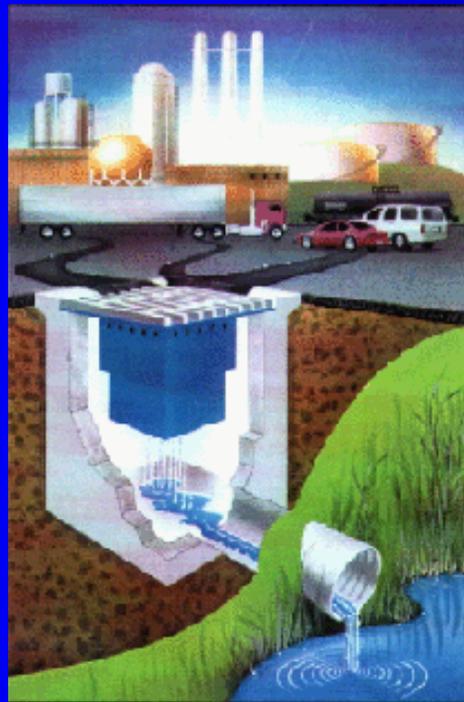


Development Planning

Mechanical BMP Examples

➤ Catch Basin Inserts

- ❑ Okay for oil & grease and metal fines
- ❑ Uses fabric filters
- ❑ High Maintenance (filters must be replaced frequently)
- ❑ Inexpensive: \$1,000 to \$2,000

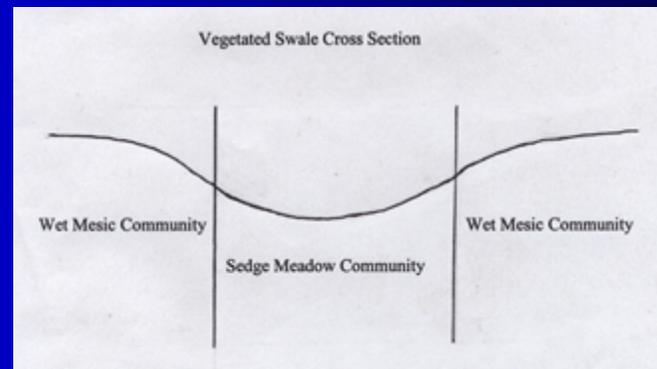




Development Planning

Infiltration BMP Examples

- **Vegetative (Grass) Swales**
 - ❑ Effective against all pollutants
 - ❑ Low to Moderate maintenance (depending on vegetations)
 - ❑ Relatively Inexpensive





Development Planning

Infiltration BMP Examples





Development Planning

Infiltration BMP Examples





Development Planning

Infiltration BMP Examples





Development Planning

Infiltration BMP Examples

- **Detention/Retention Basins**
 - ❑ Effective against all pollutants
 - ❑ Low to Moderate maintenance (depending on vegetations)
 - ❑ High Capital Cost (reduces developable area)





Development Planning

Infiltration BMP Examples

➤ Hard Infiltration Controls

□ Unit Pavers

- Effective against most pollutants
- Low maintenance
- High capital cost



Development Planning

Infiltration BMP Examples

➤ Hard Infiltration Controls

- ❑ Unit Pavers
- ❑ Effective against most pollutants
- ❑ Low maintenance
- ❑ High Capital Cost



Development Planning

Infiltration BMP Examples

➤ Hard Infiltration Controls

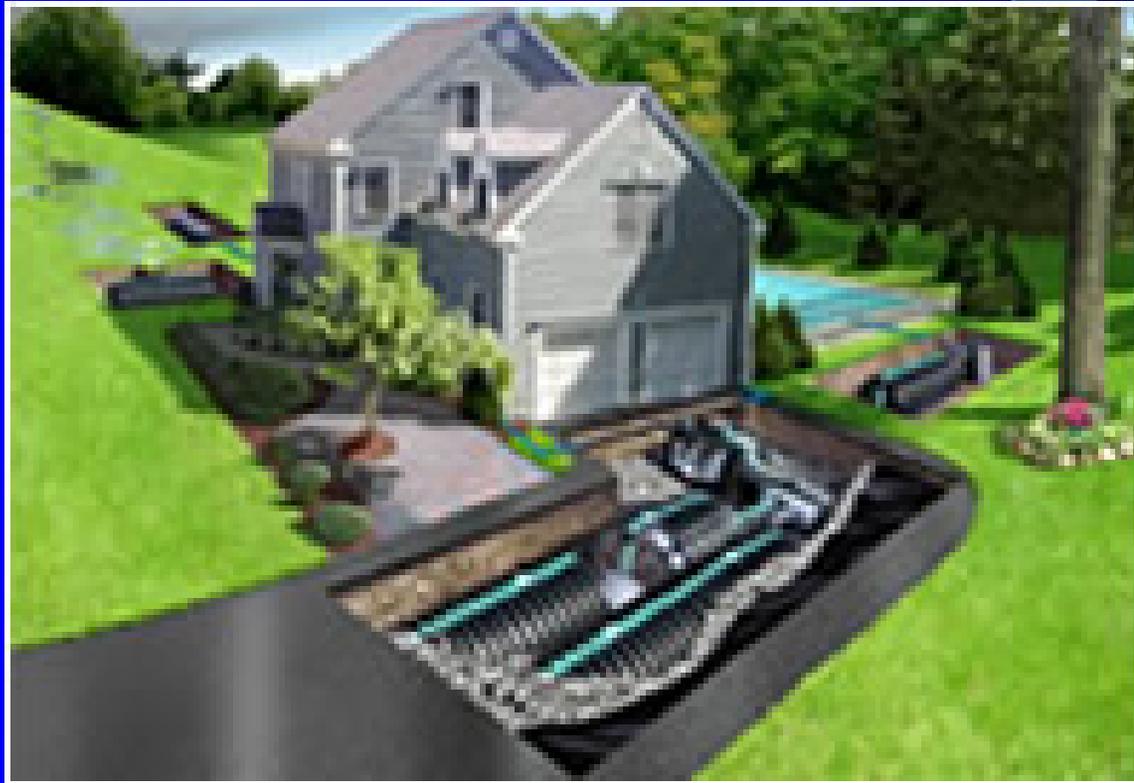
- ❑ Plastic Chambers
- ❑ Effective against most pollutants
- ❑ Low maintenance
- ❑ High Capital Cost



Development Planning

Infiltration BMP Examples

Cul-tec Storm Water Chamber (residential)



Development Planning

Infiltration BMP Examples

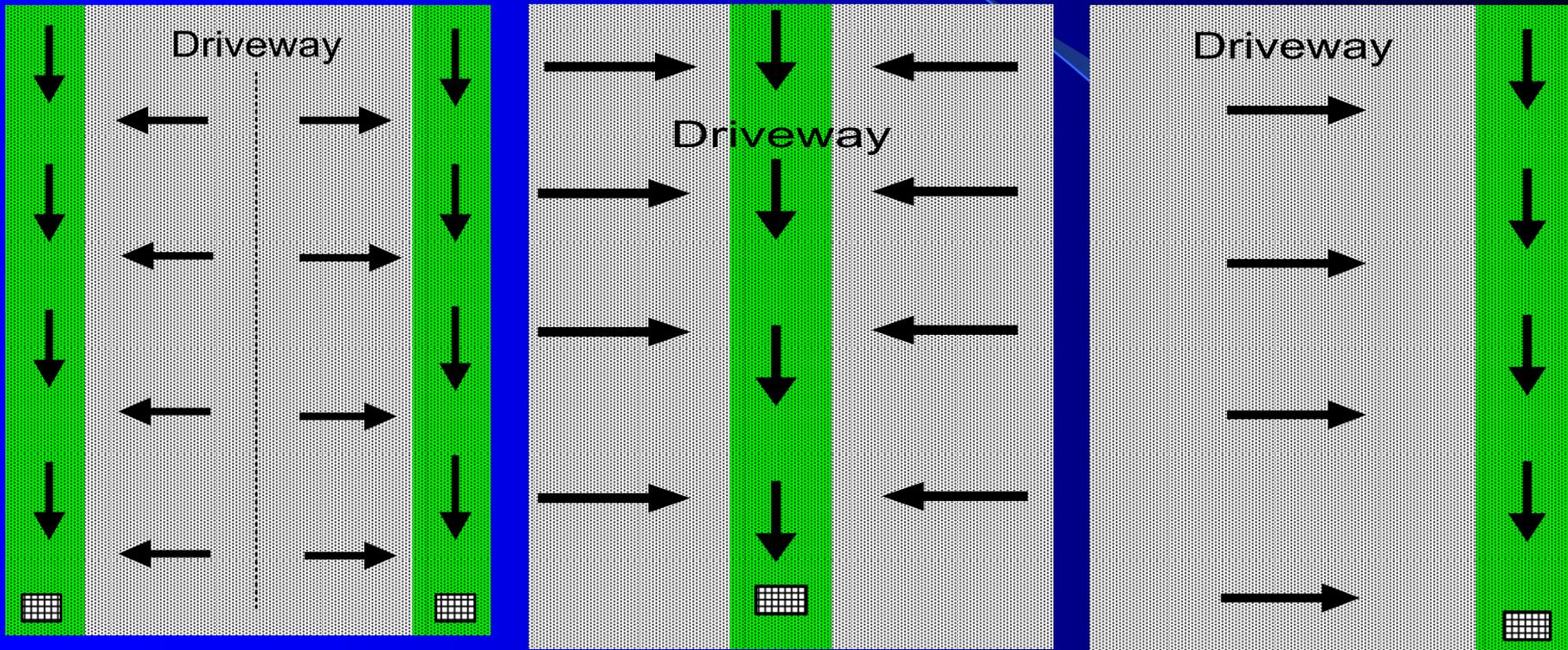
Cul-tec Storm Water Chamber (commercial)



Development Planning

Infiltration BMP Examples

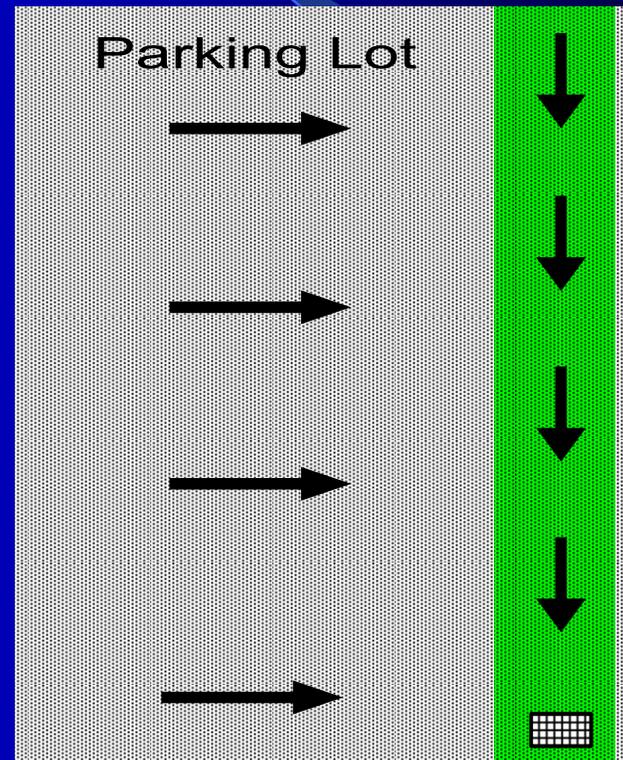
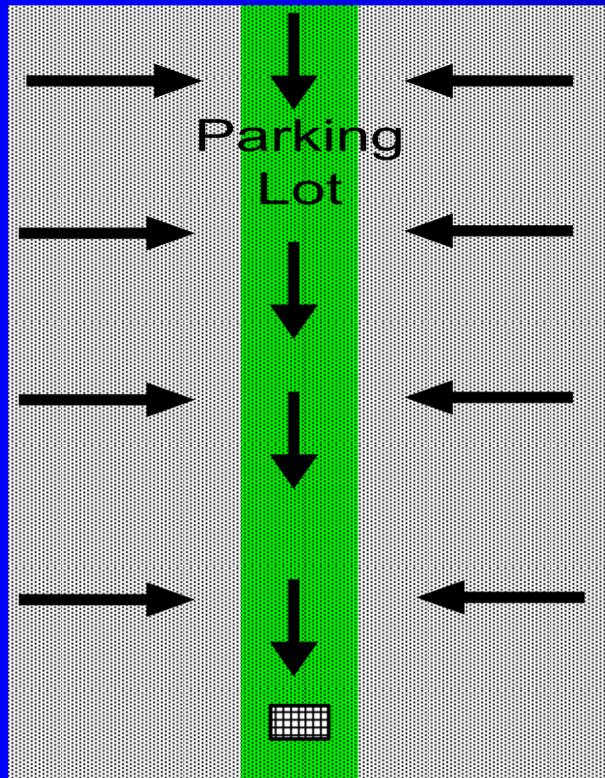
Driveways



Development Planning

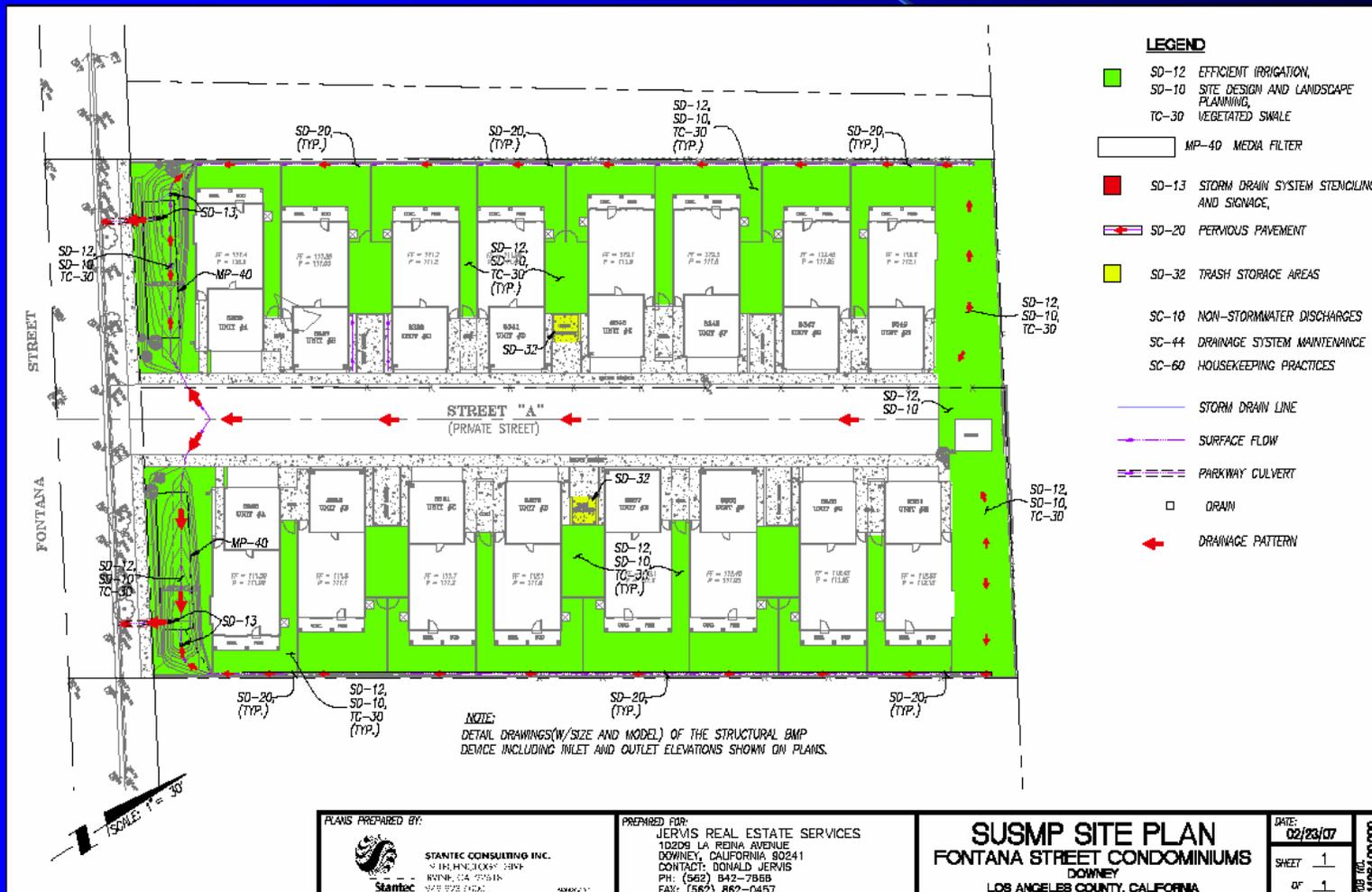
Infiltration BMP Examples

Parking Lots



Development Planning

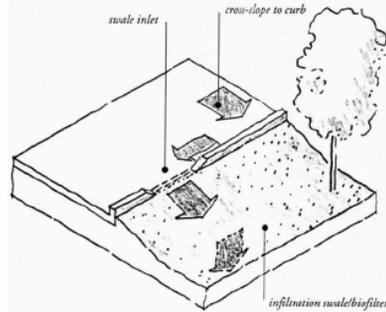
Infiltration BMP Examples (residential development)



Development Planning

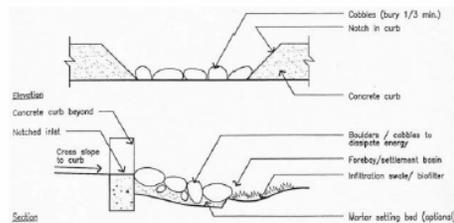
Infiltration BMP Examples (vegetative swales)

Figure 1
Urban Curb/Swale System-Diagram⁽¹⁾



6.2c Urban curb/swale system

Figure 2
Urban Curb/Swale Inlet Design Section⁽¹⁾



b. Surface Vegetated Swale/Bio Filter Design

Vegetated swales used in the urban curb/swale design are vegetated earthen channels that convey and infiltrate water and remove pollutants. A grass swale is planted with turf grass; a vegetated swale is planted with bunch grasses shrubs or trees.⁽¹⁾ A photograph as well as sections of typical vegetated swale are shown in Figures 3 and 4.

Figure 3
Vegetative Swale Design Section⁽¹⁾

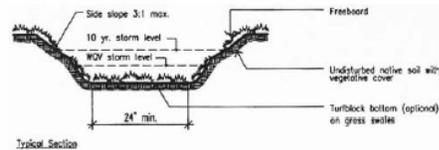


Figure 4
Vegetative Swale – Southbound Interstate 5 near
La Costa Avenue Offramp



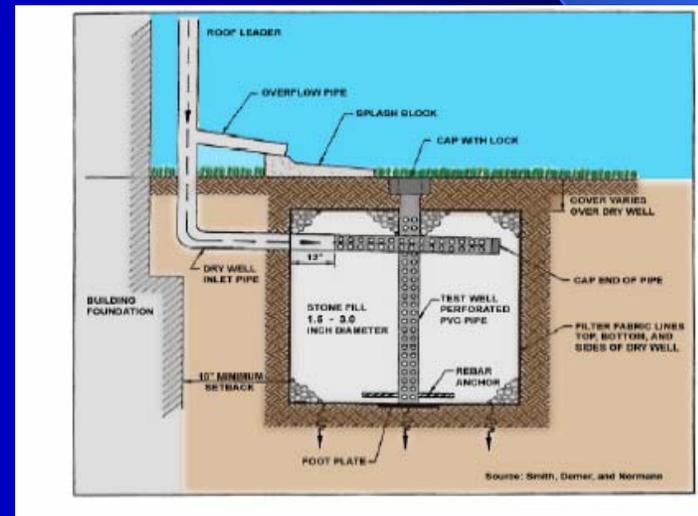
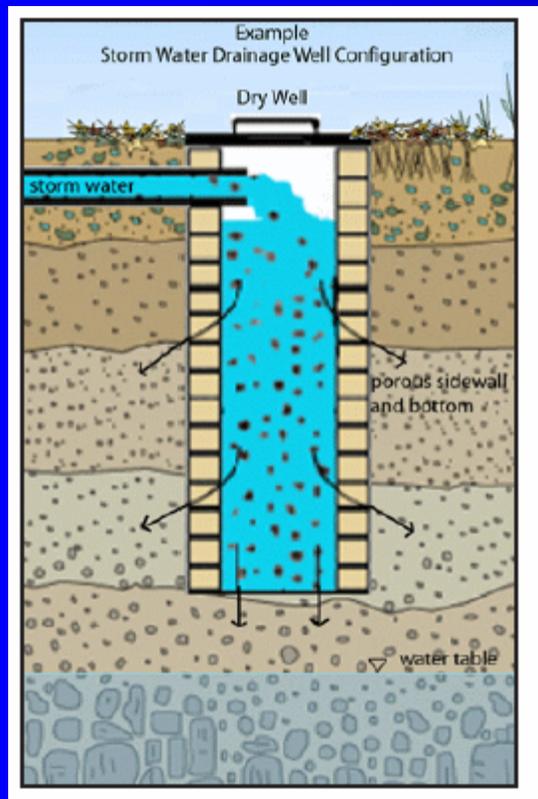
Development Planning

Infiltration BMP Examples (Infiltration Trenches)



Development Planning

Infiltration BMP Examples
(french drains/dry wells and considered category V
injection wells)



Development Planning

Infiltration BMP Examples
(Roof-top Runoff)





Development Planning BMPs

- Mechanical/infiltration controls require sizing according to the following numeric criteria
 - ❑ The volume of annual runoff based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment by the method recommended in *California Stormwater Best Management Practices Handbook – Industrial/ Commercial*, (1993); or
 - ❑ The volume of runoff produced from a 0.75 inch storm event, prior to its discharge to a storm water conveyance system; or



Development Planning

BMPs

- Mechanical/infiltration controls require sizing according to the following numeric criteria
 - ❑ The 85th percentile 24-hour runoff event determined as the maximized capture storm water volume for the area, from the formula recommended in *Urban Runoff Quality Management, WEF Manual of Practice No. 23/ ASCE Manual of Practice No. 87, (1998)*; or
 - ❑ The flow of runoff produced from a rain event equal to at least 0.2 inches per hour intensity; or
 - ❑ The flow of runoff produced from a rain event equal to at least two times the 85th percentile hourly rainfall intensity for Los Angeles County; or
 - ❑ The flow of runoff produced from a rain event that will result in treatment of the same portion of runoff as treated using volumetric standards above.



Development Planning BMPs

➤ Mechanical/Infiltration Control Selection

- ❑ **Permit and SUSMP USED to allow developers to select appropriate mechanical/infiltration controls**
 - Regional Board now wants municipal Permittees to require developers to prefer infiltration over mechanical structural controls
 - Can't legally compel infiltration because the MS4 Permit and SUSMP allow infiltration or treatment (mechanical treatment) – but infiltration should be encouraged
 - No guidance has been provided by the Regional Board (a serious problem)
 - There are infiltration controls and then there are infiltration controls (some are more appropriate than others)
 - Still, infiltration controls are more effective and in many cases less expensive than mechanical structural controls

- ❑ **Municipal Permittees have the right to decide which controls are appropriate instead of deferring to the developer (which should be the case now)**
 - Developers tend to opt for the least expensive and most problematic (e.g., Fossil Filters and other brands of catch basin inserts)



Development Planning

BMPs

- **Mechanical/Infiltration Control Selection (continued)**
 - ❑ Municipal Permittees should require infiltration if feasible
 - ❑ Infeasible situations include
 - hillside developments where there is the threat of slope failure
 - infiltrating runoff from streets (public and private)
 - infiltrating runoff from industrial areas where there is the risk of an accidental release of pollutant materials to the sub-surface
 - infiltrating runoff into in appropriate soils
 - ❑ Municipal Permittees can require mechanical controls if infiltration is not feasible
 - ❑ Municipal Permittees have the right to decide which controls are appropriate instead of deferring to the developer (which should be the case now)
 - Developers tend to opt for the least expensive controls (e.g., Fossil Filters and other brands of catch basin inserts)



Development Planning

BMPs

- **Regional Board Prefers Infiltration Over Mechanical Treatment**
 - ❑ Initially RB required infiltration or treatment
 - ❑ NOVs were sent out to encourage Permittees to infiltrate, even though treatment is an acceptable control for meeting SUSMP post-construction structural BMP control requirement
 - ❑ Infiltration is actually a better way to go but it is not always practical
 - soil conditions must be right
 - cannot be used on slopes
 - shouldn't be used for streets
 - shouldn't be used if there is the potential for contaminating groundwater



Development Planning

BMPs

➤ Maintenance Agreement Requirement

- ❑ The developer's signed statement accepting responsibility for maintenance until the responsibility is legally transferred; and either
- ❑ A signed statement from the public entity assuming responsibility for Structural or Treatment Control BMP maintenance and that it meets all local agency design standards; or
- ❑ Written conditions in the sales/lease agreement requiring recipient to assume responsibility for maintenance and conduct a maintenance inspection at least once a year, or



Development Planning

BMPs

- **Maintenance Agreement Requirement (continued)**
 - ❑ Written text in project conditions, covenants and restrictions (CCRs) for residential properties assigning maintenance responsibilities to the Home Owners Association for maintenance of the Structural and Treatment Control BMPs; or
 - ❑ Any other legally enforceable agreement that assigns responsibility for the maintenance of post-construction Structural or Treatment Control BMPs.



Development Planning

SUSMP Format

➤ SUSMP is a Plan

- ❑ Some cities allow the use of grading plans to be the base plan
 - to show location of structural controls
 - to show drainage controls (catch basins, swales, etc.)
 - contours to show flow direction
 - no explanation of why controls were selected
 - difficult to understand
 - sizing calculations (e.g., to meet $\frac{3}{4}$ " standard) are often not included
 - Regional Board wants a standard format that is easy to understand
 - Some consultants go over-board by submitting SUSMPs that are more like SWPPPs (2-3 inch binders), which usually contain useless information
 - SUSMPs can cost \$3000 to \$10,000 – depending on the project
 - Does not have to be that elaborate



Development Planning

SUSMP Format

➤ SUSMP Contents

❑ Explanation of control selection for hardscaped areas

- Rooftop Runoff – type of control selected (should be infiltration type, or if not feasible, an explanation as to why) - an explanation of why a mechanical control is needed instead
- Parking areas/driveways – infiltration should be preferred but if not explain why and the justification for a treatment control
- Sidewalks – should almost always be subject to infiltration
- Streets (should avoid infiltration and mechanical treatment)



Development Planning BMPs

- Please call me to discuss SUSMP projects



Development Planning

Project Activities Requiring
BMPs/Mitigation Measures



Development Planning

- Project activities requiring BMPs (storm water mitigation) through CEQA review or discretionary approval
 - ❑ Vehicle or equipment fueling areas (canopy, proper grading/trench drains)
 - ❑ Vehicle or equipment maintenance areas, including washing and repair (clarifier usually)
 - ❑ Commercial/industrial waste handling (indoor storage/handling)
 - ❑ Outdoor handling/storage of hazardous materials (under cover/roof, off the ground)
 - ❑ Outdoor manufacturing (under cover/roof, off the ground)
 - ❑ Outdoor food handling (illicit discharge prevention, under cover/roof)
 - ❑ Outdoor animal care, confinement or slaughter (clarifier, illicit discharge prevention)
 - ❑ Outdoor horticulture (clarifier, illicit discharge prevention)



Development Planning

CEQA Reviews

- **Mitigated Negative Declarations/EIRs**
 - ❑ If project includes any of the project activities just mentioned, prescribe appropriate mitigation measures
 - ❑ If project also includes 1 of the 9 SUSMP project categories, indicate that it will conform with SUSMP requirements



Development Planning

General Plan Requirements



Development Planning General Plan

➤ Applies to 4 Elements

- Open Space
- Conservation
- Housing
- Land Use



Development Planning General Plan

- Each element should contain reference to runoff considerations
 - ❑ General Plan Consultants are usually aware of this requirement
 - ❑ Notify me of any planned update of these elements
 - ❑ Updated element must be submitted to the regional board



Development Planning

➤ Documentation

- ❑ Keep good records!
 - Need them in the event of an audit
 - Need them to complete annual reports due in September (annual report year coincident with fiscal year)
- ❑ Use evaluation forms (check lists), which is a permit requirement
- ❑ Track number and type of structural controls prescribed for SUSMP and Activity-Specific Projects (for submittal to the regional board)



Development Planning

➤ Public Education

-Developer/Contractor Fact Sheets

- A permit requirement
- Make them available, preferably at the counter for better visibility
- Make sure to re-stock them

