

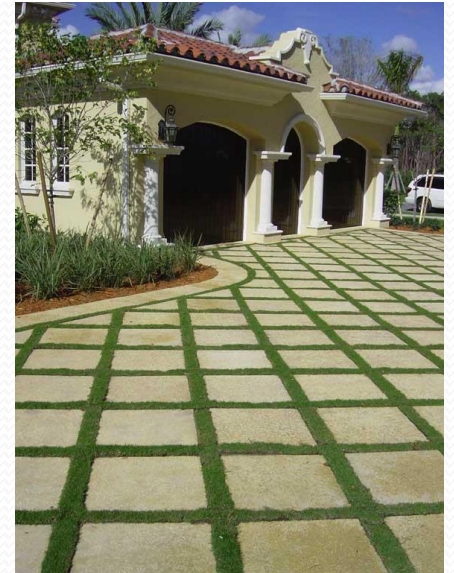
Precipitation, Projects and Possibilities

A Superintendents and Construction Managers
Overview

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City of Thousand Oaks
October 16, 2013

Brief History

- Mid- 20th Century:
 - “Gather and Go” (flood-control focus)
 - Pave everything, run it into gutters and drains
 - Get it out to the channel
- The New Era:
 - “Slow It, Spread It, Sink It, Re-think It”
 - Vegetate everything
 - Minimize (eliminate) scour on channels and streams
 - Replicate “pre-development” watershed response



Yes, It's Complicated

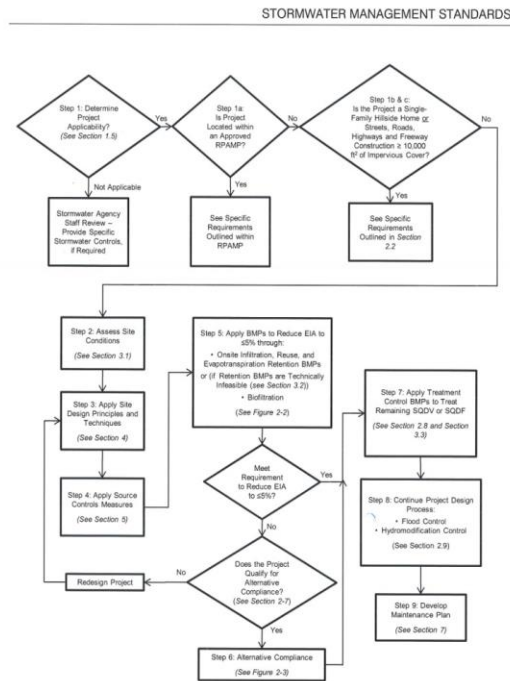


Figure 2-1: Stormwater Management Control Measures Design Decision Flowchart

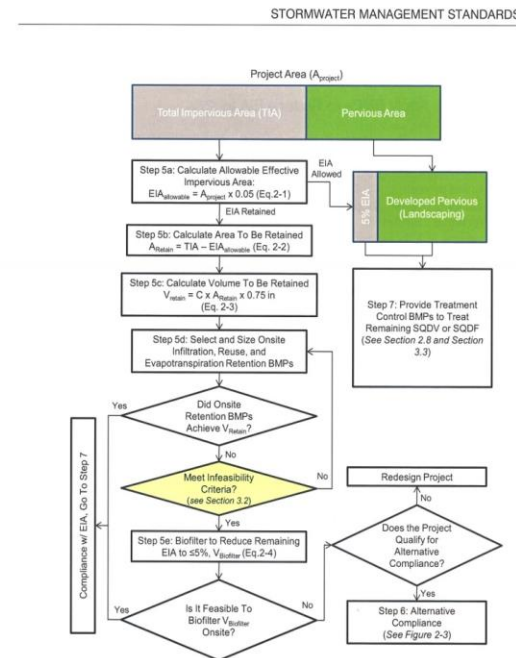


Figure 2-2: Apply BMPs to Reduce EIA to ≤5% Process Flow Chart

Post-Construction Mitigation

- “We’ve barely got the Construction-era figured out!”
 - Since 1994
- Low-Impact Design (Development), LID
 - Since July 2002 Tech Manual (Site Design)
- Now, can’t end the job now without permanent BMP’s (July 2012)
 - Jeremy Grant will discuss later
 - Key: think about maintenance first (Musgrove)



Projects Affected (beware Agency CIP's)

- *All projects that*
 - *Have ≥ 1 acre “disturbed” area; and*
 - *Add 10,000 SF impervious surface area (e.g., solar panel carports)*
- Industrial Parks with $\geq 10,000$ SF “altered” surface
- Commercial Strip Malls with 10,000 SF impervious surface area
- Retail Gasoline Outlets, ***Automotive Service Facilities***, and Restaurants with 5,000 SF “altered” surface area (certain SIC codes)
- ***Parking Lots with 5,000 SF or more impervious surface area (25 spaces)***
- ***Road projects with $\geq 10,000$ SF impervious surface*****
- ***Adjacent to or Directly discharge to Environmentally Sensitive Area***
(ESA; defined in Basin Plan); basically soft channels
- Single Family Hillside Homes (simplified “checklist” requirements)

** Special requirements: Use EPA publication

“Managing Wet Weather with Green Infrastructure: Green Streets”

Latest Requirements

- Became “Official” October 2011
- 5% Effective Impervious Area (EIA)
 - Retain $\frac{3}{4}$ ” (~every) storm
 - Evapotranspiration (spread it)
 - Infiltrate (sink-it)
- Infeasibility Criteria (tight soil)
 - Can’t spread, can’t soak
 - ⇒ Apply **biofiltration**
 - Requires 150% treatment



Tried Everything, Still Won't Work

- Elusive 5% EIA
 - “Alternative Compliance” for certain projects
 - Redevelopment / Infill
 - “Smart Growth” / Ped & Bike Trails
 - Flood control, drainage, wet-utilities
 - Historical preservation
 - Low-income Housing
 - Otherwise, **go back and try again**
 - “Alternative” means “Offsite” or “Fee”
 - Fee has been studied and dismissed as infeasible



EPA “Green Streets”

- Re-thinking
- The EPA website (webcast)
 - **“Retrofits: Green Streets and Operation & Maintenance”**
 - http://cfpub.epa.gov/npdes/courseinfo.cfm?program_id=o&outreach_id=473&schedule_id=1064
- What’s it mean?
 - Less paving
 - More veggies
 - More-frequent maintenance (?)
 - Live vegetation tends to grow



The “TGM Tool”

- Available on-line at VCStormwater.org
 - Some agencies have “customized”
 - Integrated into the pre-
“deemed-complete” process
- Information-intensive
 - **12-Tab spreadsheet**
 - Project data, applicability determination
 - Site-planning considerations, Area calc’s
 - Stormwater volume calc’s; mitigation BMP’s
 - Verify feasibility, alternative compliance
 - *or start over!*
 - Submittal checklist

The screenshot displays the 'General Information' tab of the TGM Tool spreadsheet. The title is 'VENTURA COUNTYWIDE STORMWATER QUALITY PROGRAM POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN (PCSMF) FOR [Insert Project Name in General Info.]'. The form includes fields for 'Project Name', 'Preparation/Revision Date', 'Prepared for:' (Name of Owner/Developer, Street Address, City, State, Zip Code, Telephone), and 'Prepared by:' (Name and Title of Preparer, Company Name, Street Address, City, State, Zip Code, Telephone). A certification statement reads: 'I hereby certify that the information provided in this Application is correct.' Below this are sections for 'Application Prepared by:' (Print Name and Firm), 'Signed' (Signature of Project Engineer in the Firm Named Above), and 'Title' (Affix Professional registration stamp of the person named above with signature and expiration date). The spreadsheet interface shows the 'Home' tab selected, and the status bar at the bottom indicates 'Ready Page: 1 of 1'.

Hydromodification

- Sediment, Scour and the Environment
 - Goal: Channel Restoration
 - The horse is out of the corral in most VC cities
 - Contradiction: No sediment allowed; water-match focus
- Strategy: determine “stable” condition
 - CIP to achieve
- Applicability \Rightarrow Exemptions:
 - $\text{SFR} \leq 10,000$ SF impervious surface
 - Maintenance
 - Grandfathered
 - Non “Applicability” areas (Applicability Maps)
 - Engineer-proven “Low Risk”
- Requirement
 - Show no adverse impact (Erosion potential, $E_p = 1.0$)
 - Show negligible impact



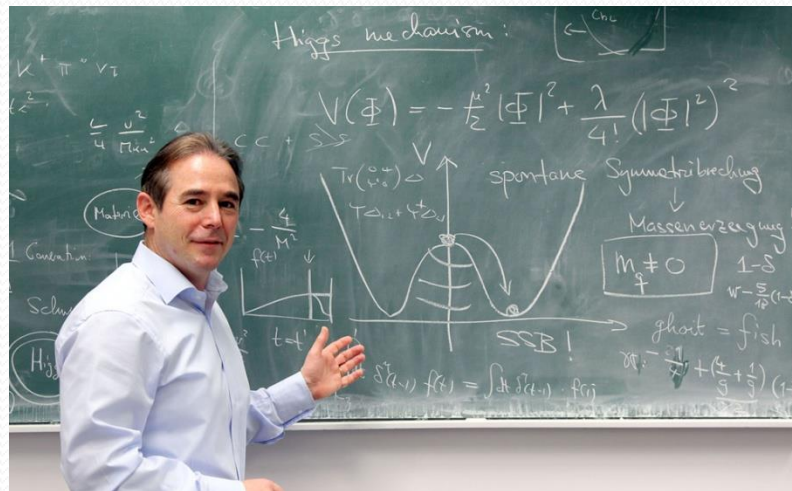
Resources

- Ventura County Technical Guidance Manual (TGM) for Stormwater Quality Control Measures
 - See VCStormwater.org/publications
 - TGM
 - Frequently asked questions (FAQ's)
 - Latest TGM "Appendix"
 - The Hydromodification Control Plan (HCP)



Training

- December 12, 2013 8am – 12pm
- City of Thousand Oaks Scherr Forum Theater
(City Council Chambers)
- TGM Training: Hydromodification Control Plan
 - E_p of 1.0 nearly impossible to demonstrate
 - Look toward “negligible” impact



Questions?

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