

Storm Water Management – Regulating BMP Selection for New Development and Redevelopment

Xavier Swamikannu


**April 8, 2010
Cypress, CA**

A dark silhouette of a mountain range with jagged peaks, spanning the width of the slide at the bottom. The background behind the mountains is a gradient from dark blue at the top to a lighter blue/purple at the bottom.

CA Municipal Storm Water Permitting

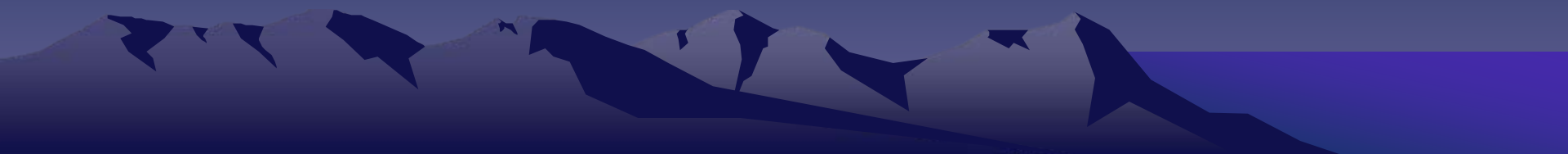
- First term MS4 Permit (1990)
 - Program development
- Second term MS4 Permits (1996)
 - Program implementation
- Third term MS4 Permits (2001)
 - Program advancement
- Fourth term MS4 Permits (2009)
 - Define outcomes

Storm Water Permitting – New Development and Redevelopment

- Model Development Planning Programs
 - Standard Storm Water Mitigation Plans
SUSMPs/ SQUIMPs/ WQMPs
 - CEQA Plan Review Check Lists and Guidelines
 - General Plan Element Revisions
 - Technical Guidance Documents
- 

Planning & Land Development Program

Original Objectives

- Minimize storm water runoff
 - Minimize impervious surfaces
 - Minimize pollutant loadings
 - Properly select, design & maintain BMPs
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Planning & Land Development Program

Objectives in 4th Term MS4 Permits

- Promote LID strategies
- Develop land in a sustainable manner to maintain predevelopment hydrology
- Manage storm water as a resource
- Reduce storm water pollutant loads

New Development/ Redevelopment Criteria

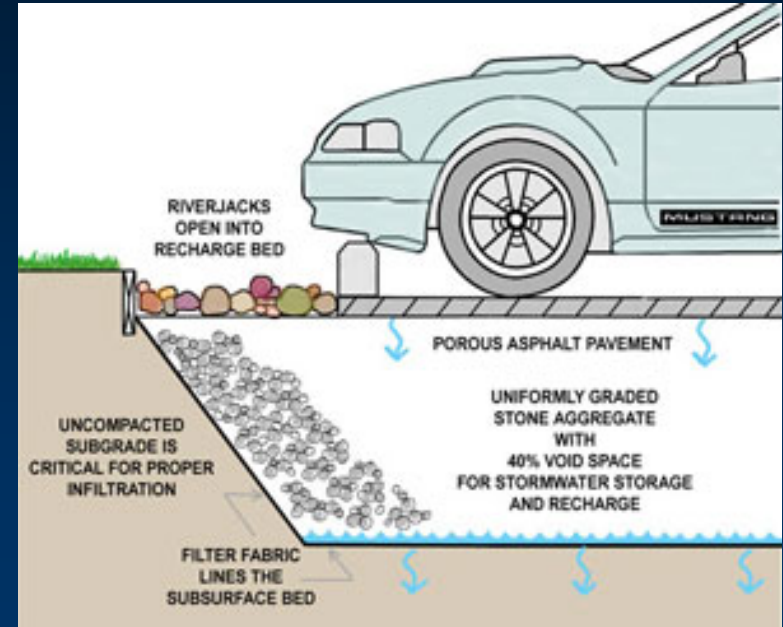
LID Mitigation Criterion

- Reduce Effective Impervious Area (EIA) to less than 5% or,
- Mitigate the 85th percentile storm

By -

- Harvest and reuse
 - Infiltration
 - Evapotranspiration, or
 - Biotreatment
- 

Mitigating Impervious Surfaces



Federal Law

Energy and Internal Security Act (2007),
Section 438, 'Stormwater Requirements
for Federal Development Projects'

- Facility with a footprint that exceeds 5000 sq ft shall maintain predevelopment hydrology with regards to temperature, rate, volume and duration of flow

EPA Guidelines

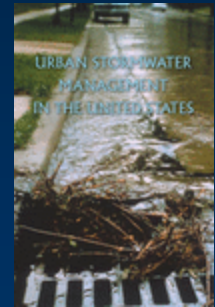
EPA technically interprets to mean,

Option 1 - Mitigate (infiltrate, evapotranspirate, harvest and reuse) the 95th percentile 24 hour storm event for the project area, or

Option 2 – With hydrologic and hydraulic analysis, demonstrate that pre-development hydrology is maintained using the 1, 2, 10, and 100 year 24 hour storm event hydrographs

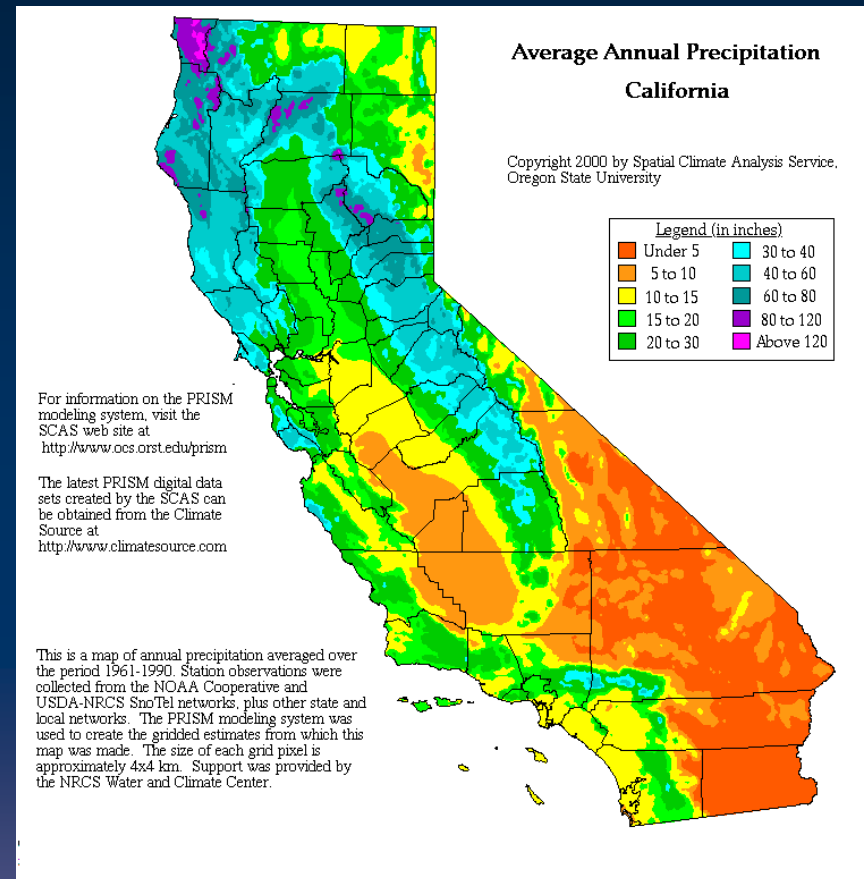
The National Research Council Recommendations

- The full distribution and sequence of wet weather flows must be considered to mitigate adverse impacts
- Roads and parking lots are very significant land uses that contribute to impacts
- Integration of industrial, construction, and municipal storm water permits are essential
- Watershed models are too incompletely advanced to predict causal links between discharges and surface waters



CA Rainfall

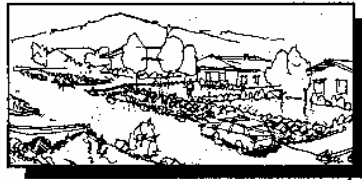
- Wet to Dry
- Snow, Rain, and Sun



Get The Big Picture - Integration



WET PONDS



LINEAR INFILTRATION BASINS



LOCAL STREETS



STREAM CROSSING



NEIGHBORHOOD GREENWAYS



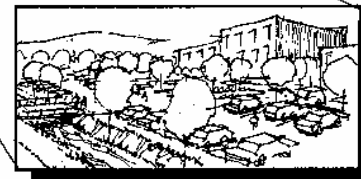
PEDESTRIAN STREAM CROSSING



COMMUNITY BOULEVARDS



DOUBLE-MEDIAN BOULEVARDS



PARKING LOTS

