

The background of the slide is a close-up photograph of water with numerous concentric ripples, suggesting raindrops falling into a pool. The water is dark blue, and the ripples create a complex, textured pattern of light and shadow.

Overcoming Barriers to Integrated Water Resources Management

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Local Success Stories

- Low Impact Development ordinances and MS4 permit requirements
- Proposition O – LA - \$500M bond measure
- Measure V – SM \$120 per household/yr
- TMDLs
- California Clean Beach Initiative
- Water Recycling in the region
- Conservation in the region

Site Design/LID Concepts

Some Common LID Best Management Practices ⁵

| | | | |
|--|---|--|--|
|  |  |  |  |
| Vegetated Swales / Bioswales | Rain Gardens | Rain Cisterns | Green Roofs |
|  |  |  |  |
| Permeable Pavers | Porous Pavement | Curb Bump-Outs | Curb Cuts |

POLLUTION REDUCTION

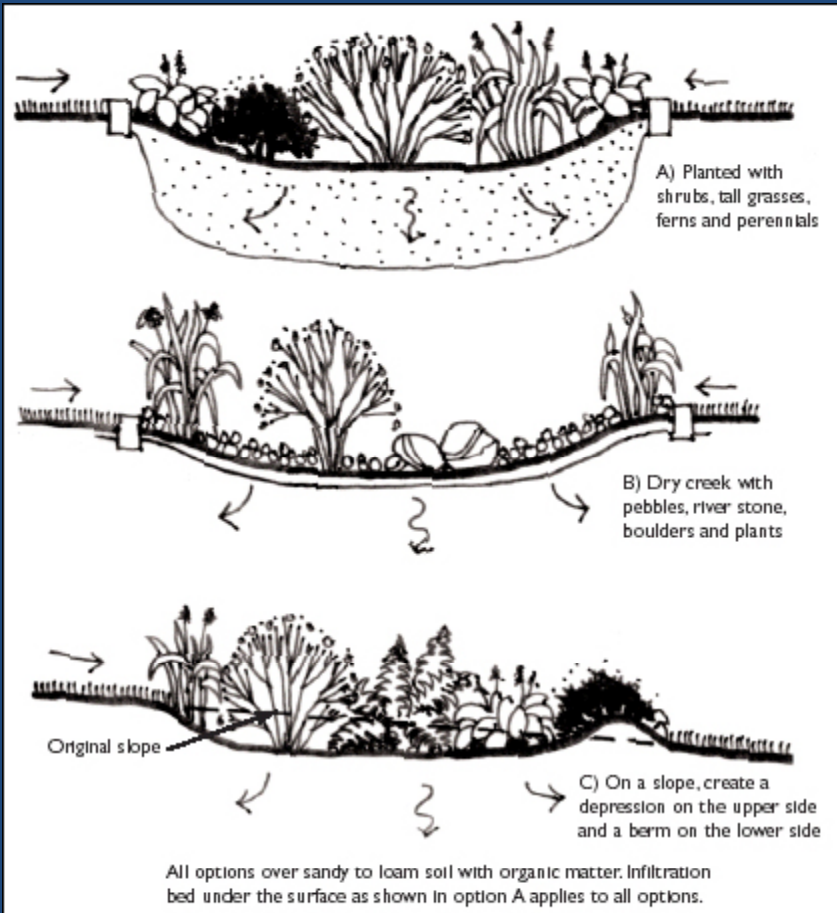
| | Best-performing conventional BMPS | | LID | Best-performing conventional BMPS | | LID |
|------------------|--------------------------------------|--|-------|--------------------------------------|--|-------|
| Suspended solids | 80.6% | | 99.5% | 75.4% | | 99.3% |
| Copper | 78.2% | | 98.0% | 69.1% | | 96.7% |
| Zinc | 84.3% | | 98.9% | 78.1% | | 98.8% |
| Phosphorus | 69.1% | | 98.8% | 70.7% | | 98.6% |



Los Angeles Ultra Urban Biofiltration



Rain gardens



Elmer Avenue



Prop O – Success Story



- Temescal
- LAWA
- Penmar Park
- LA Zoo Parking Lot
- Elmer and Oros Streets
- Venice Tree Wells
- Imperial Highway
- Chavez Park
- Strathern Pit
- Mar Vista Park Cistern
- Westside Park

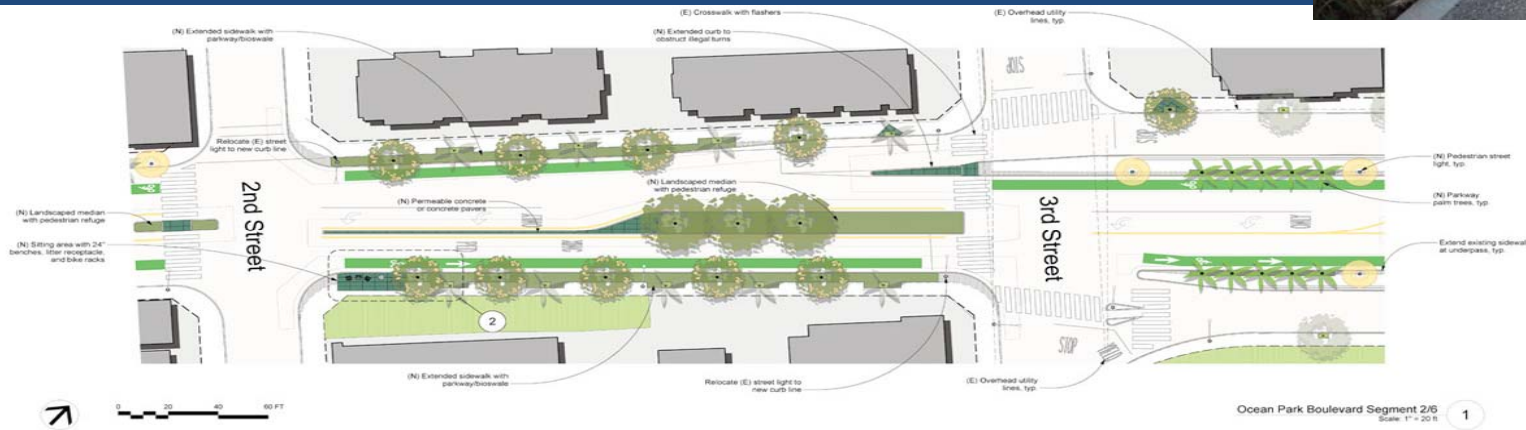
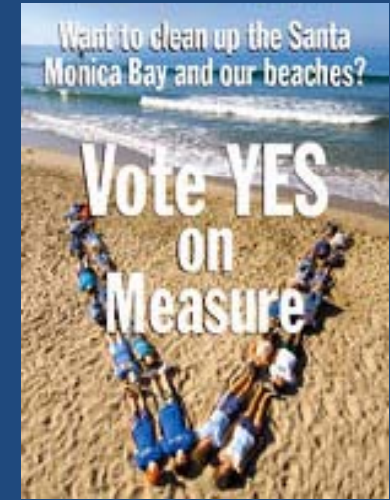
South LA Wetlands Park



Oros Street, Los Angeles



S.M. Measure V Success



LID – Ventura MS4

“Permittees shall require that all New Development and Redevelopment projects identified in subsection 5.E.II control pollutants, pollutant loads, and runoff volume emanating from impervious surfaces through infiltration, storage-for-reuse, evapo-transpiration or bioretention/biofiltration, by reducing the percentage of Effective Impervious Area (EIA) to less than 5 percent of total project area”

LID Santa Monica

- Approved in the summer of 2010
- Requires all new and redevelopment to infiltrate or capture and reuse 100% of the runoff generated by the 85th percentile storm.
- Green Streets - Requires LID compliance for all street improvement projects that cost greater than \$500K.

LID Los Angeles

- LA LID ordinance was approved by LA City Council in 2011
- Ordinance requires the infiltration, capture and use, or highly effective biofiltration for 100% of the runoff generated by the 85th percentile storm.
- Allows compliance off-site. Biofiltration has a multiplier of 1.5

LA County DPH Rainwater and Dry Weather Runoff Harvesting for Outdoor Non-Potable Uses

- Tier 1 – Rain Barrels (onsite collection and use)
- Tier 2 – Cisterns – onsite collection and use
- Tier 3 – Public cisterns receiving runoff from non-industrial areas (onsite or offsite collection and use)
- Tier 4 – Public or private cisterns receiving runoff from industrial or manufacturing sites (onsite or offsite collection and use).

Rain Barrels



Cisterns



California Recycled Water Policy

- Goals – 1 million more afy by 2020.
- 2 million afy more than 2002 by 2030
- Rainwater – 500K afy by 2020 and 1 M afy by 2030
- Salt and Nutrient Management Plans – by 2013.
2015 at the latest
- Plans will lead to better groundwater basin management – water quality (monitoring requirements and Anti-degradation) and supply
- Regional Board will decide to approve within a year of receipt

The Changes We Need to Redefine Stormwater Management and Augment Local Water Supplies

- LID Requirements nationally
- Uniform public health criteria for Rainwater Harvesting
- Clear national water recycling Health Guidance that promote safe reuse
- Economic incentives from water agencies and Federal agencies to capture and use stormwater
- Requirements on state and Federal transportation dollars to use a minimum percentage of award for LID BMPs (Ex: 1% of project cost)

Needed Changes cont.

- Water Agencies need to raise fees specifically for rainwater capture and infiltration projects. Public Works agencies can't make this happen alone.
- Federal Infrastructure improvement package needs to be a green infrastructure focus. Cities, states, Counties and NGOs need to team up and advocate for this with one voice. Package needs to be tied to clear water supply, flood control and water quality goals.

