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

- Vegetated Swales / Bioswales
- Rain Gardens
- Rain Cisterns
- Green Roofs
- Porous Pavement
- Curb Bump-Outs
- Curb Cuts
POLLUTION REDUCTION

<table>
<thead>
<tr>
<th></th>
<th>Best-performing conventional BMPS</th>
<th>LID</th>
<th>Best-performing conventional BMPS</th>
<th>LID</th>
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</thead>
<tbody>
<tr>
<td>Suspended solids</td>
<td>80.6%</td>
<td>99.5%</td>
<td>75.4%</td>
<td>99.3%</td>
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<tr>
<td>Copper</td>
<td>78.2%</td>
<td>98.0%</td>
<td>69.1%</td>
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<tr>
<td>Zinc</td>
<td>84.3%</td>
<td>98.9%</td>
<td>78.1%</td>
<td>98.8%</td>
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<tr>
<td>Phosphorus</td>
<td>69.1%</td>
<td>98.8%</td>
<td>70.7%</td>
<td>98.6%</td>
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Los Angeles Ultra Urban Biofiltration
Rain gardens

A) Planted with shrubs, tall grasses, ferns and perennials

B) Dry creek with pebbles, river stone, boulders and plans

C) On a slope, create a depression on the upper side and a term on the lower side

All options over sandy to loam soil with organic matter, infiltration bed under the surface as shown in option A applies to all options.
Prop O – Success Story

South LA Wetlands Park

- 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
Oros Street, Los Angeles
S.M. Measure V Success
“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.