

Welcome

WHAT DOES “GREEN” MEAN?



Wing Tam, P.E.

City of Los Angeles
Department of Public Works
Bureau of Sanitation

NACWA

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Agenda

Presentation

- Overview of Los Angeles & Watersheds
- Regulatory Drivers
- What does Green mean?
- Implementation Strategies
- Example Projects
- Questions / Comments



Overview of Los Angeles

Population:

- County of Los Angeles: 10.3 M
- City of Los Angeles: 4.0 M

Area:

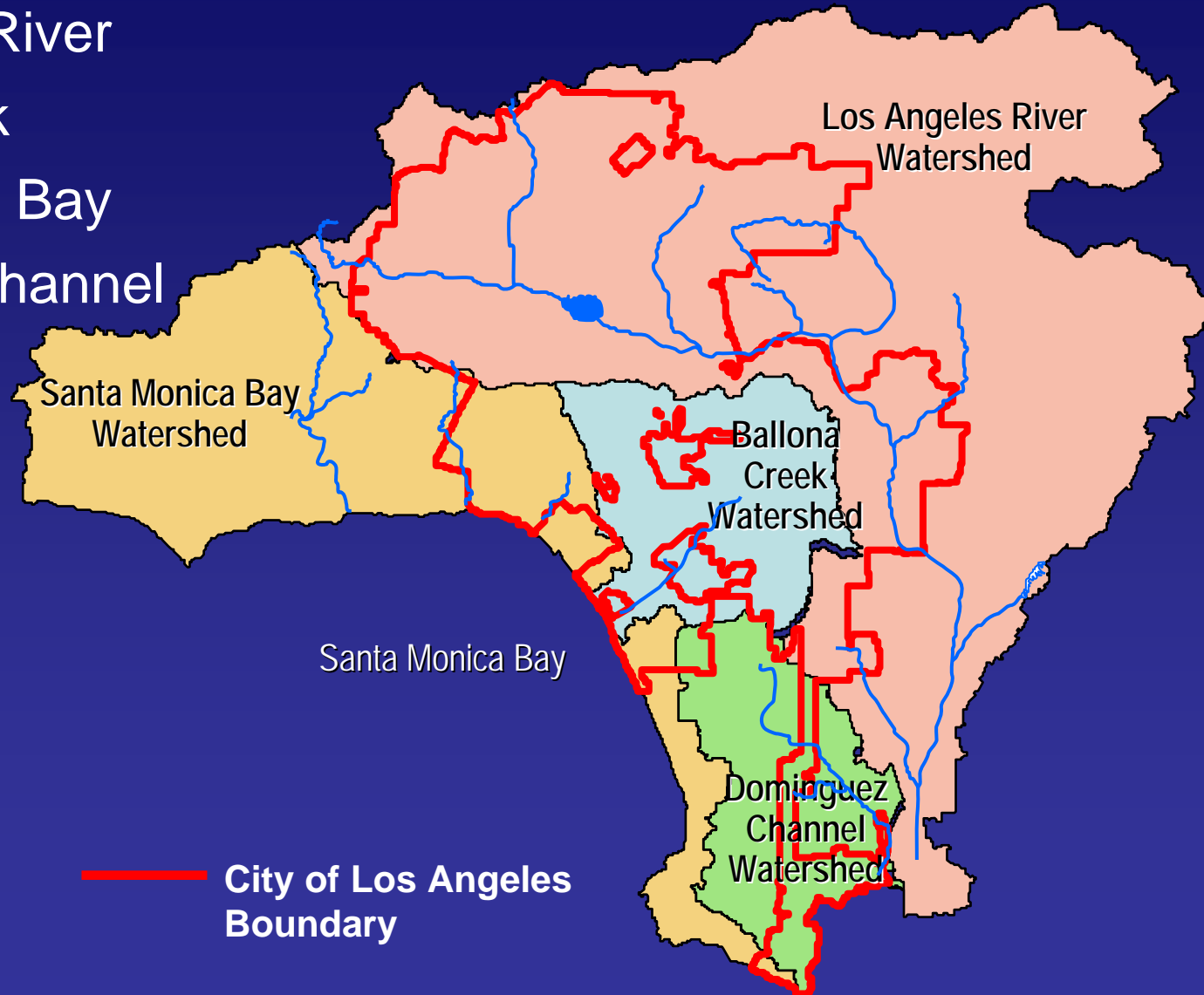
- County of Los Angeles: 4084 sq. mi.
- City of Los Angeles: 498 sq. mi.
- Dry, Semi-arid
- Average rainfall: 12 -13 in/yr
- 1,500 miles of storm drains



Overview of Watersheds

Four major watersheds

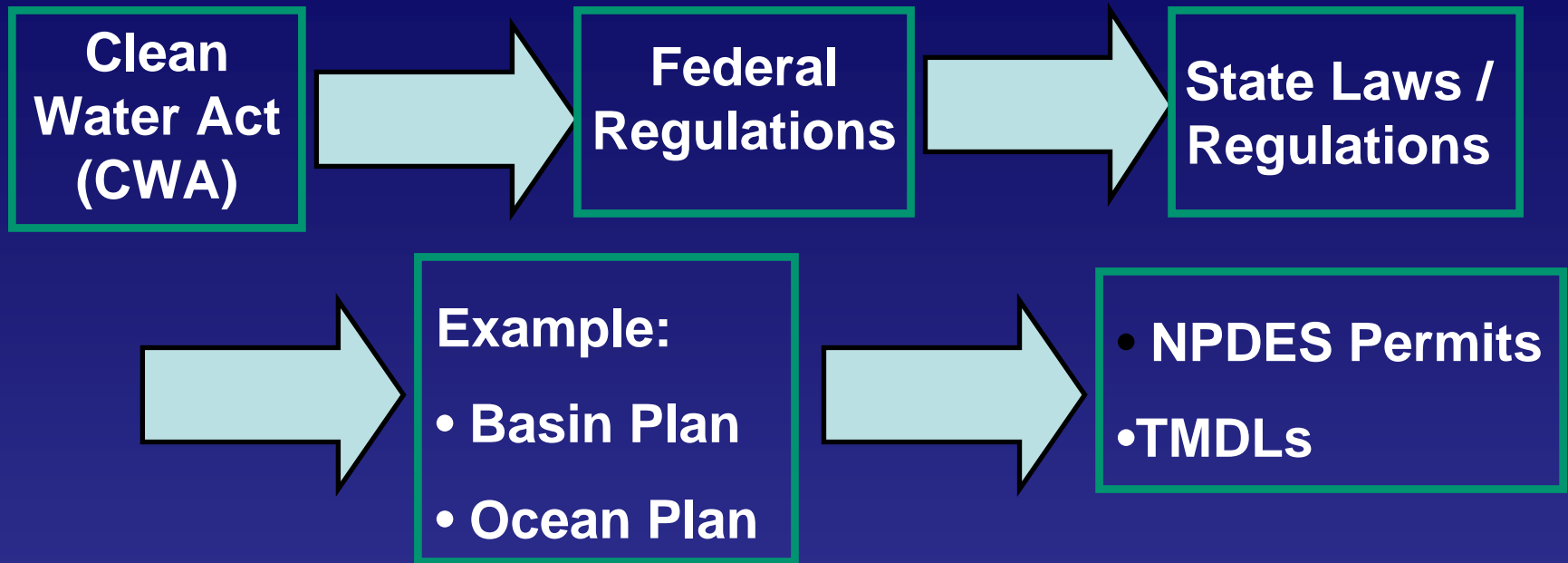
- Los Angeles River
- Ballona Creek
- Santa Monica Bay
- Dominguez Channel



City of Los Angeles
Boundary



Regulatory Drivers



- 13 TMDLs are currently adopted, 54 more are emerging/planned.



What does “GREEN” Mean?

GREEN reflects design and construction practices that significantly reduce or eliminates negative impact of buildings on the environment and occupants in the following areas:

- **Sustainable Site Planning**
- **Safeguards Water & Water Efficiency**
- **Energy Efficiency & Renewable Energy**
- **Conservation of Material & Resources**



Implementation Strategy

- **Institutional Measures**

- Street Sweeping
- Public Outreach
- Storm Drain Maintenance
- Land use Planning & Management
- Ordinance / Code Enforcement

- **Local (On-Site) Measures**

- Governmental
- Institutional Facilities
- Residential

- **Regional Measures**

- Large Scale
- End of Pipe Solutions



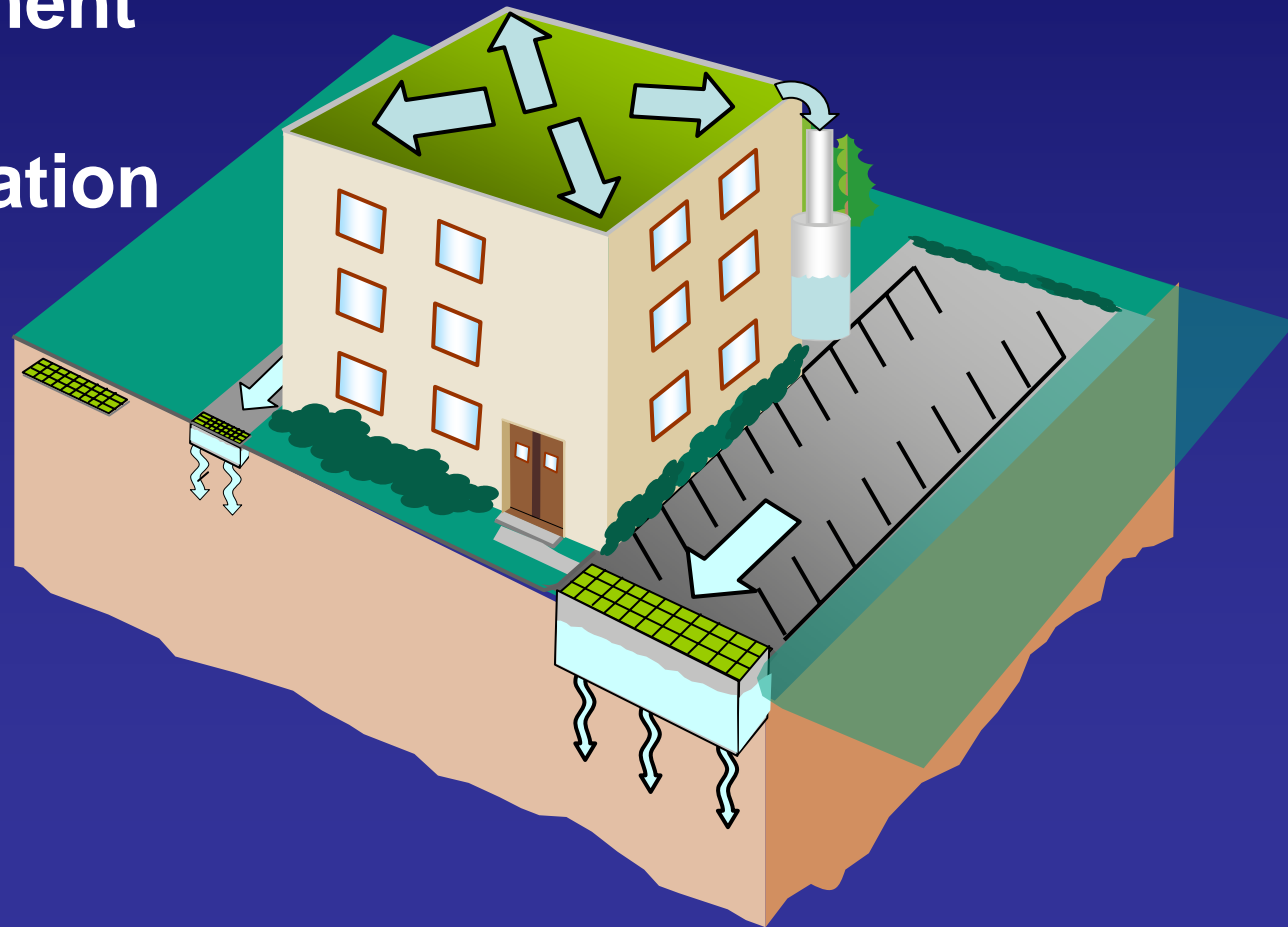
In Your
Neighborhood



Local (on-site) “Green” Solutions

Small-scale Capture and Infiltration Projects to Minimize Runoff Volume

- On-site treatment
- On-site infiltration
- Cisterns



Local “Green” Solutions

- Rain Barrels
- Diverting Down Spouts
- Tree Wells
- Porous Pavement
- Green Roofs



Example

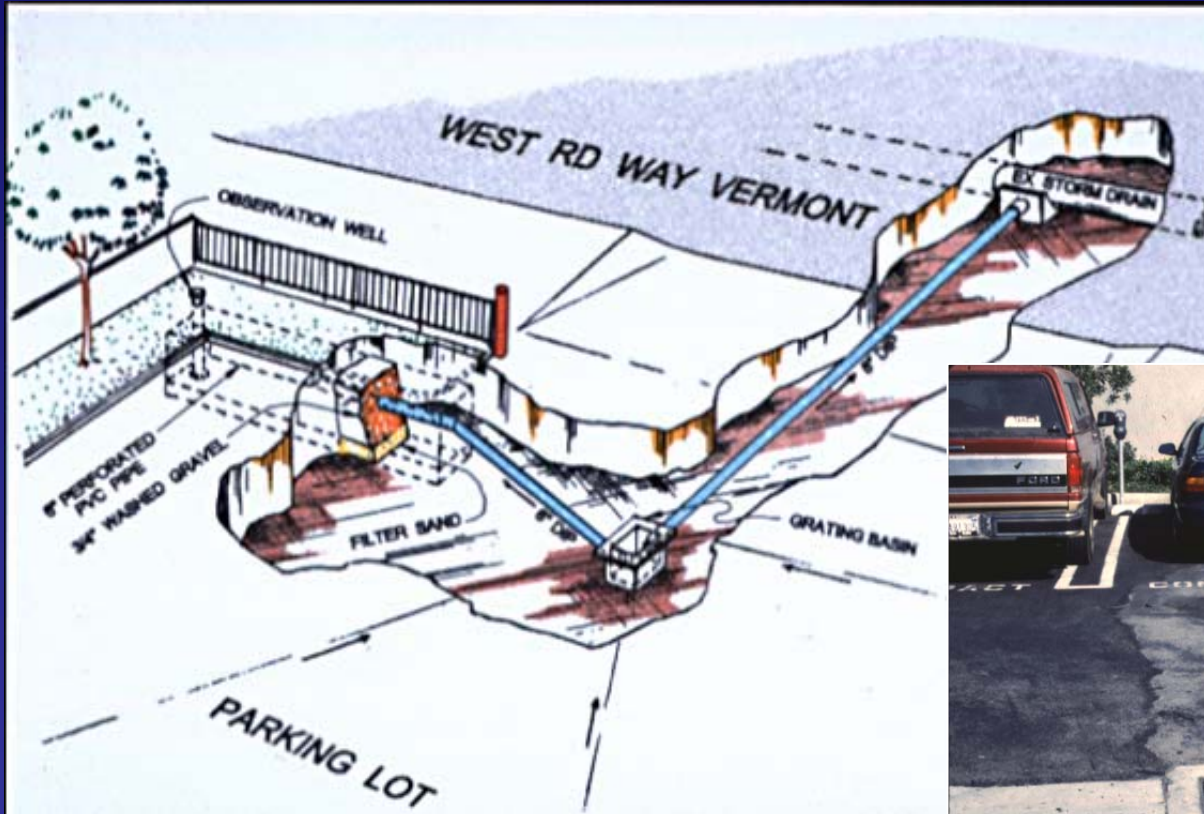
Hall House BMPs Demonstration Project

- Infiltration Trenches
- Vegetated Swales
- Porous Pavement
- Cisterns



Example

Los Angeles City Council District 8 Constituency Center Parking Lot - Infiltration



Example

Venice Beach Parking Lot Infiltration Trench / Vegetated Swales



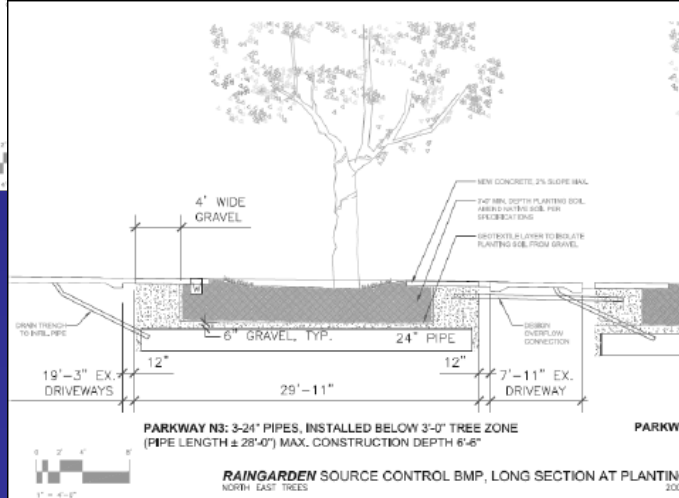
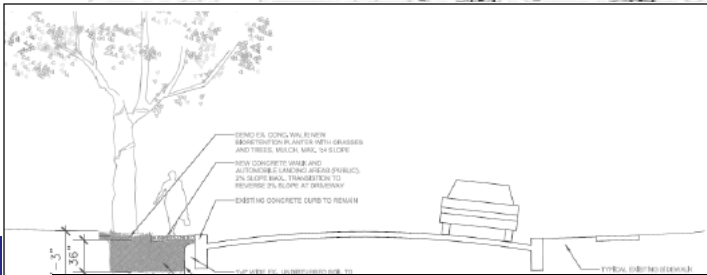
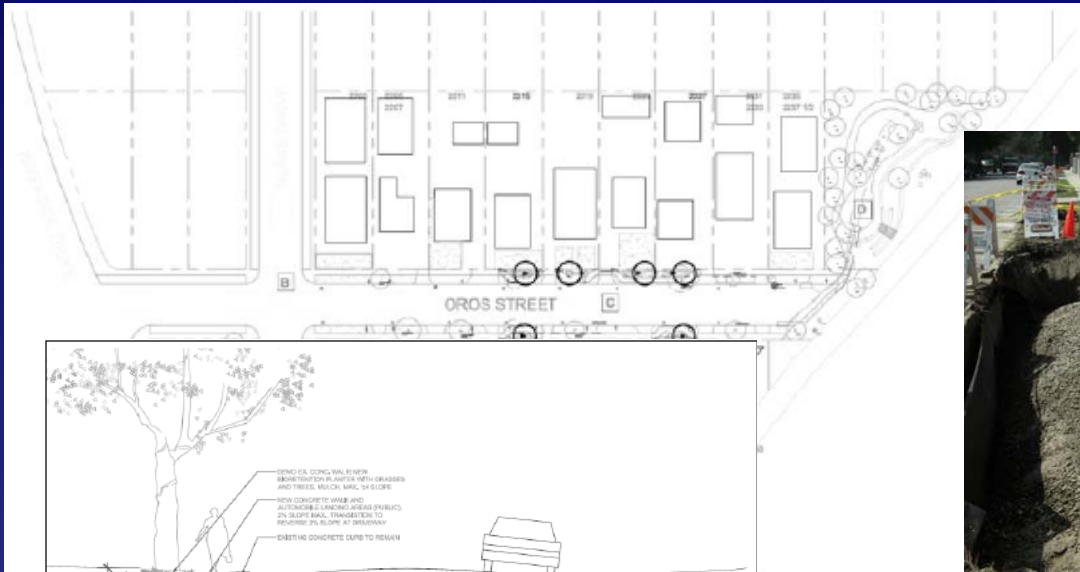
Example

Oros Green Street Project

- Retrofit 370' L x 30' W curb in residential stretch of Oros St
- Drainage area – 2.3 acres
- Targeted Pollutants
 - Bacteria
 - Metals
 - Trash
 - Oil & Grease



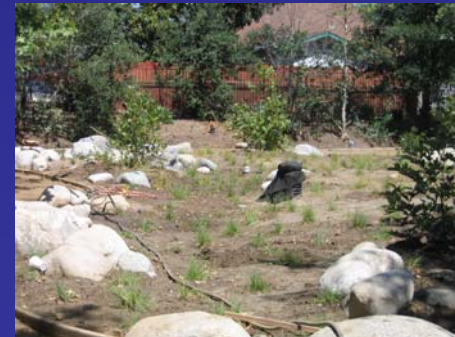
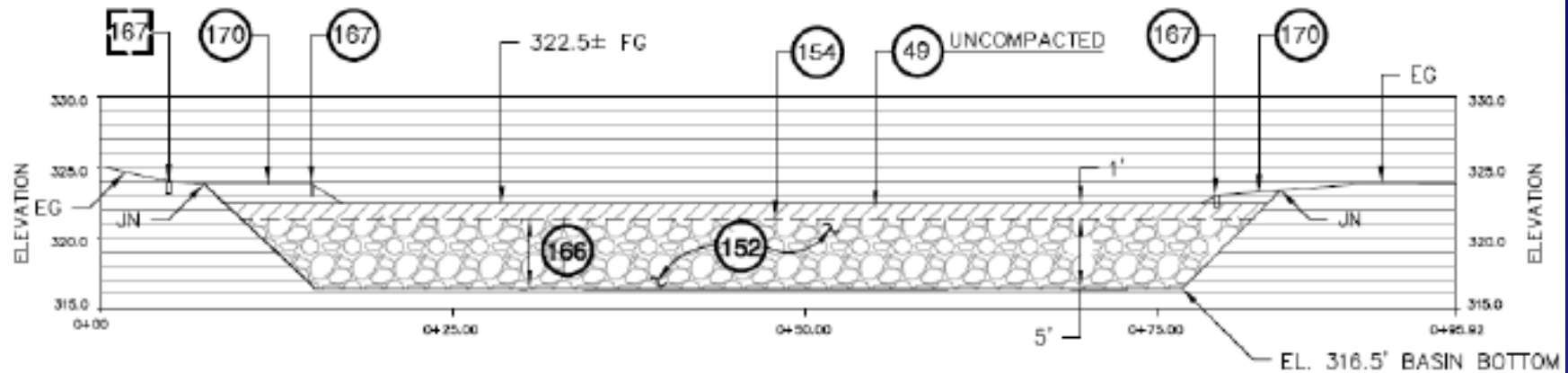
Oros Green Street: Installation of Stormwater Gardens



RAINGARDEN SOURCE CONTROL BMP, LONG SECTION AT PLANTING NORTH EAST TREES 2006



Oros Green Street: Installation of Infiltration Basin

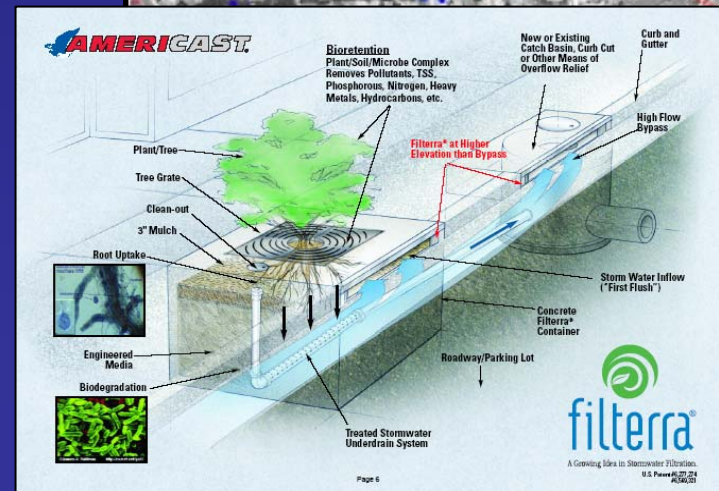


Example

Grand Ave Tree Wells Project

5-acre high-density residential and commercial corridor in the Venice area

- 20 units
- Targeted Pollutants
 - Bacteria
 - Metals
 - Trash
 - Oil & Grease



Filterra Tree Well
Catch Basins
Stormdrains



Example

Grand Ave Tree Wells Project



Regional “Green” Solutions

- Constructed Wetlands
- Infiltration Basins
- Detention/Retention Basins



Example

Japanese Gardens at D.C. Tillman Water Reclamation Plant in Van Nuys, CA

- 6 ½ acre Japanese Garden adjacent to D.C. Tillman Water Reclamation Plant
- Recycled wastewater used to supply lake and irrigation



Example

Open Charter Magnet School Stormwater BMP Demonstration Project

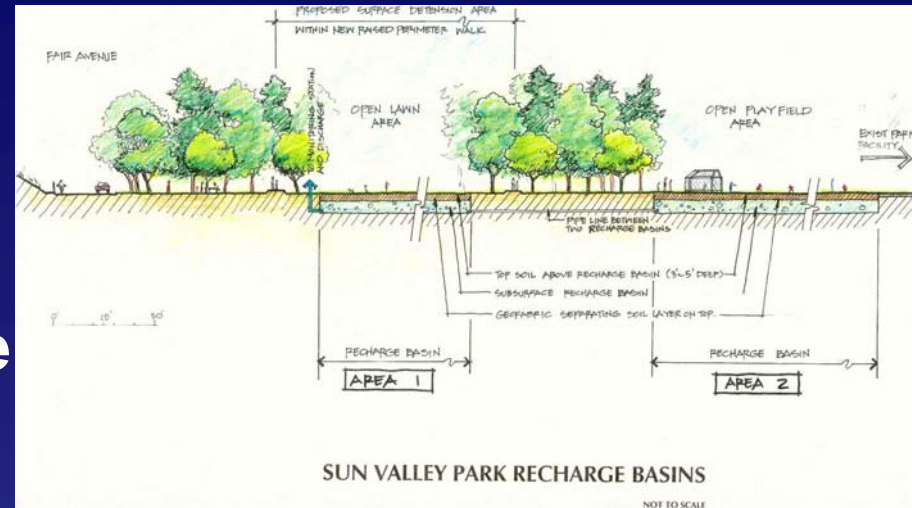
- Capture on-site runoff
- Reuse stormwater for landscaping
- Increase Open Space
- Joint Project
 - City of LA / Bureau of Sanitation
 - Los Angeles Unified School District
 - TreePeople



Example

Sun Valley Park Project

- Alleviate flooding and improve water quality
- Capture / Infiltrate / Reuse
- Increase Open Space
- Targeted Pollutants
 - Bacteria
 - Metals
 - Trash
 - Oil & Grease



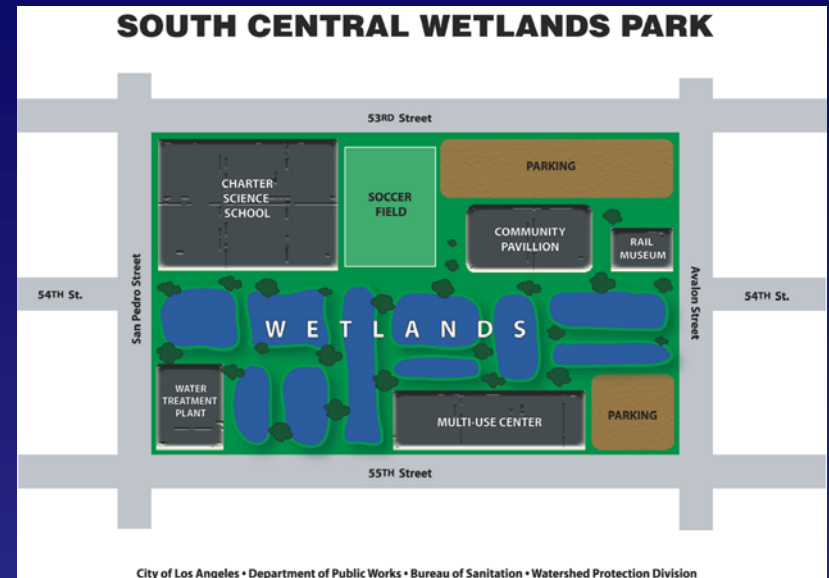
Sun Valley Park Project



Example

South Los Angeles Wetlands Project

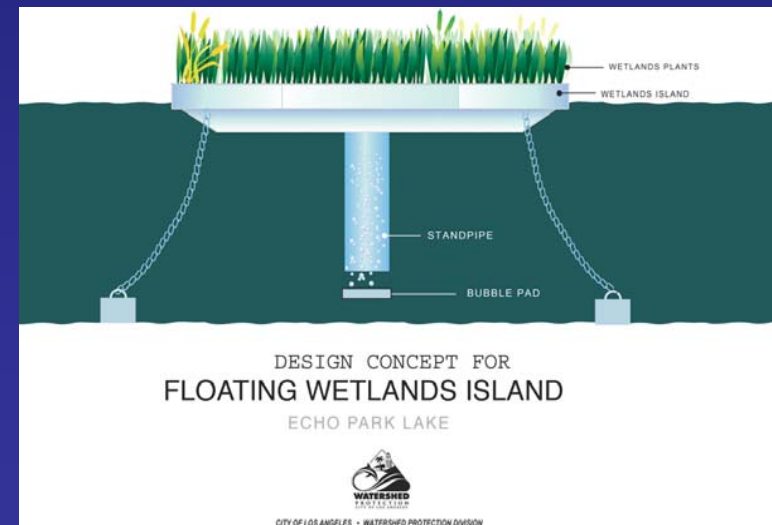
- Drainage Area – 540 acres
- 80,000 gal/day of dry weather runoff diverted
- Targeted Pollutants
 - Bacteria
 - Metals
 - Trash
 - Oil & Grease



Example

Echo Park Lake Floating Wetlands Project

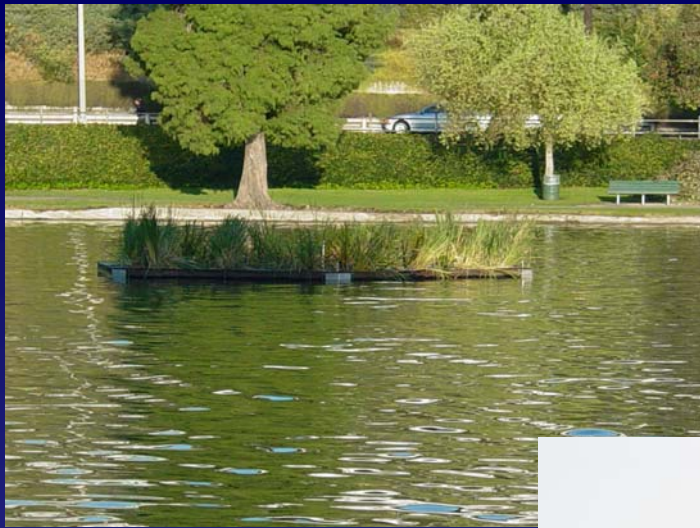
- 13 acre urban lake
- Provides hydraulic relief to storm drain
- Drainage Area – 365 acres
- Targeted Pollutants
 - Bacteria
 - Metals
 - Oil & Grease
 - TSS



Echo Park Lake Floating Wetlands Project

Floating Wetland Island

completed August 15, 2003



... 2 months later,
plants becoming
established

Photo: October 8, 2003



...after 1 year, plants have
filled in, well established.

Photo: November 17, 2004



ECHO PARK LAKE – SEDIMENT TRAP AND MEDIA FILTER



Stormwater Outfall/Mixed Media Filter/Sediment Trap
MTS

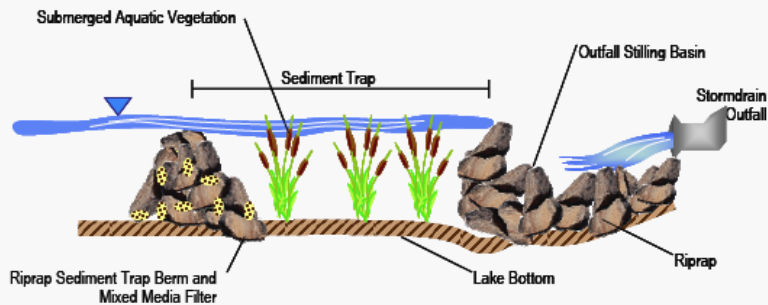


Figure 3-2: Schematic of the storm drain inlet sediment trap and media filter

Source: CDM.



Lake Edge Turf

- Replace retaining wall
- Retain grass edges
- Direct swale inlets to stormdrains



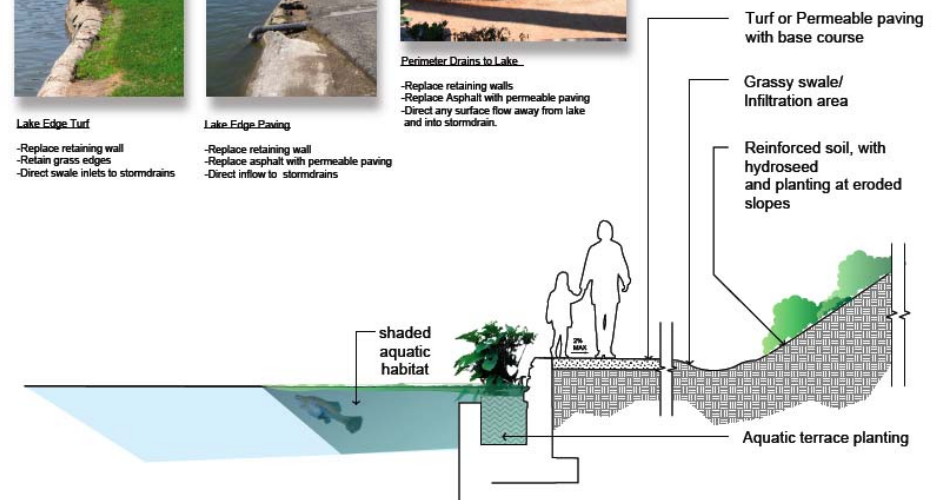
Lake Edge Paving

- Replace retaining wall
- Replace asphalt with permeable paving
- Direct inflow to stormdrains



Perimeter Drains to Lake

- Replace retaining walls
- Replace Asphalt with permeable paving
- Direct any surface flow away from lake and into stormdrain.



Example

Machado Lake Project

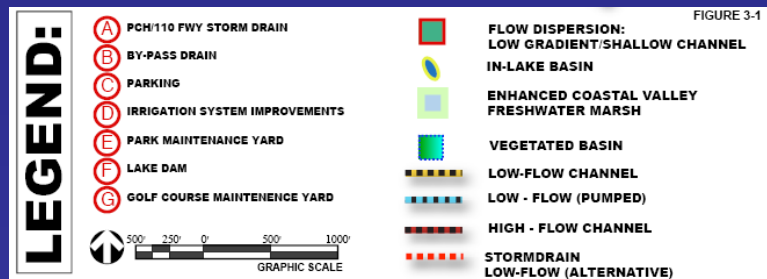
- 45 acre urban lake
- Drainage Area – 12,800 acres
- Targeted Pollutants
 - Algae
 - Ammonia
 - PCB's
 - Trash
 - Fish Tissue (Chem A, Chlordane, DDT, Dieldrin)



MACHADO LAKE ECOSYSTEM REHABILITATION PROJECT



March 1941



Future "Green" Projects

Green Streets

- Imperial Highway Sunken Median
- Cabrito Paseo
- Marsh Street Pocket Park



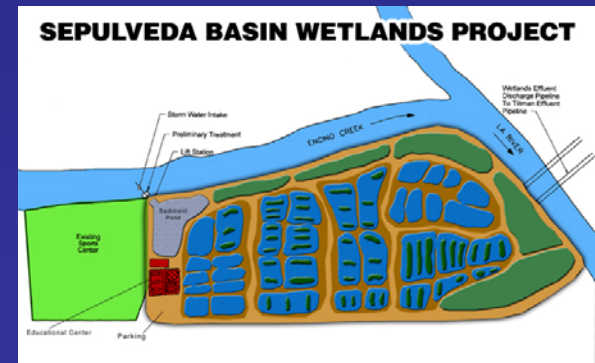
Green Roofs

- Various Governmental Roof Tops



Constructed Wetlands

- Sepulveda Basin Wetlands
- Strathen Pit



How Do We Fund These Projects?

–Local Measures:

- Proposition O:** \$500 million clean water bond (2004)

–State Measures:

- Proposition 12:** Safe Neighborhood Parks, Clean Water, Clean Air, and Coastal Protection Bond (2000)
- Proposition 40:** Clean Water, Clean Air, Safe Neighborhood Parks, and Coastal Protection (2002)
- Proposition 50:** Water Quality, Supply and Safe Drinking Water Projects. Coastal Wetlands Purchase and Protection (2002)
- Proposition 84:** Water Quality, Safety and Supply. Flood Control. Natural Resource Protection. Park Improvements (2007)



Questions / Comments

Wing Tam, P.E.
Assistant Division Manager

City of Los Angeles
Department of Public Works
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(213) 485-3985
Wing.Tam@lacity.org

