

# Palos Verdes Peninsula Watershed

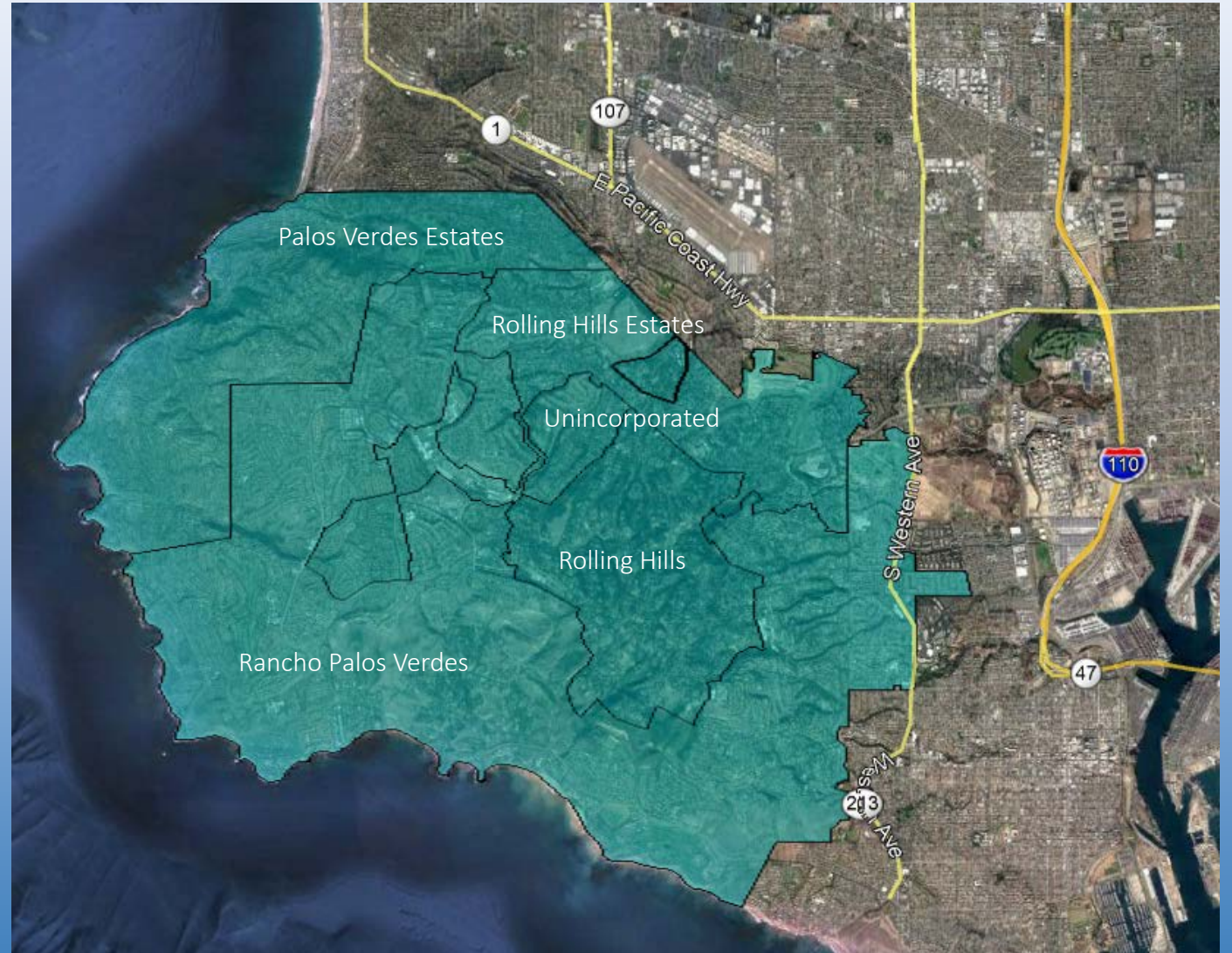
July 12, 2018



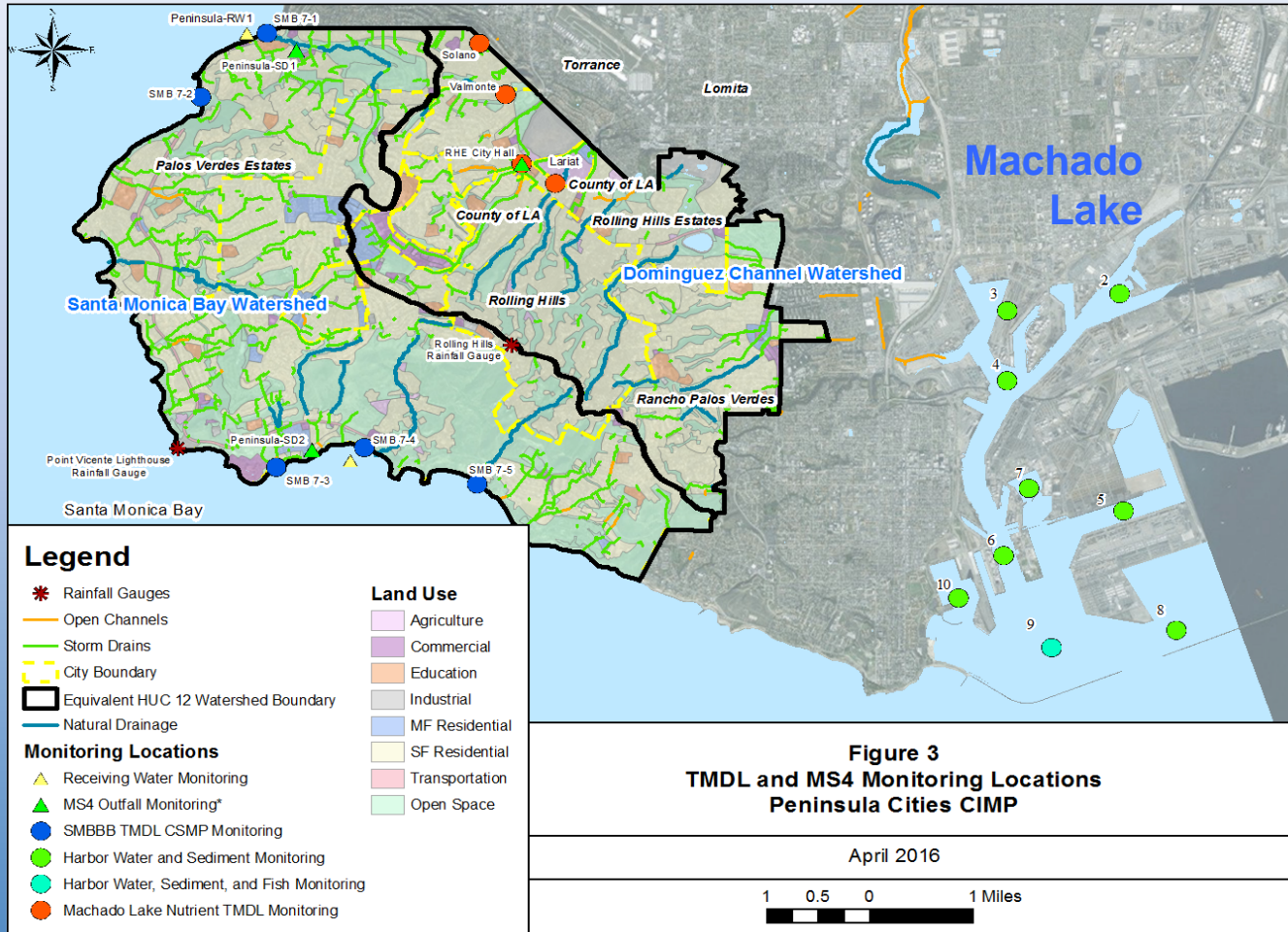


# Watershed Map

- Los Angeles County
- Los Angeles County Flood Control District
- Palos Verdes Estates
  - Population: 13,000
- Rancho Palos Verdes
  - Population: 42,000
- Rolling Hills Estates
  - Population: 8,000
- Rolling Hills
  - Population: 1,800



# Coordinated Integrated Monitoring Program (CIMP)

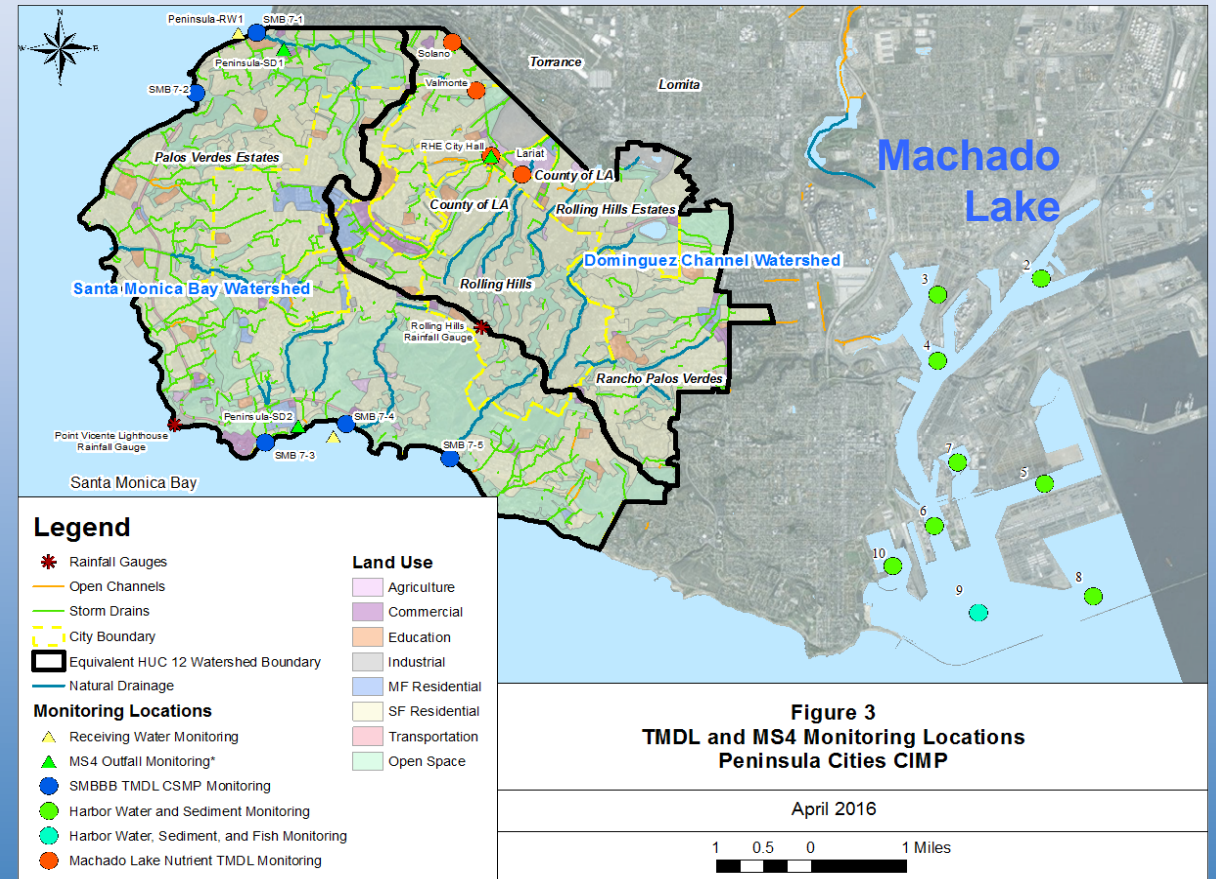


- Receiving Water Monitoring
  - Wet weather: 3x/year
  - Dry weather: 2x/year
- Stormwater Outfall Monitoring:
  - Wet weather: 3x/year
- Non-stormwater Outfall Screening and Monitoring Program:
  - Screen, identify NSW flows, eliminate/monitor
- TMDL Monitoring:
  - Santa Monica Bay Beach Bacteria TMDL
  - Machado Lake TMDLs
  - Greater Los Angeles and Long Beach Harbor Toxics TMDL



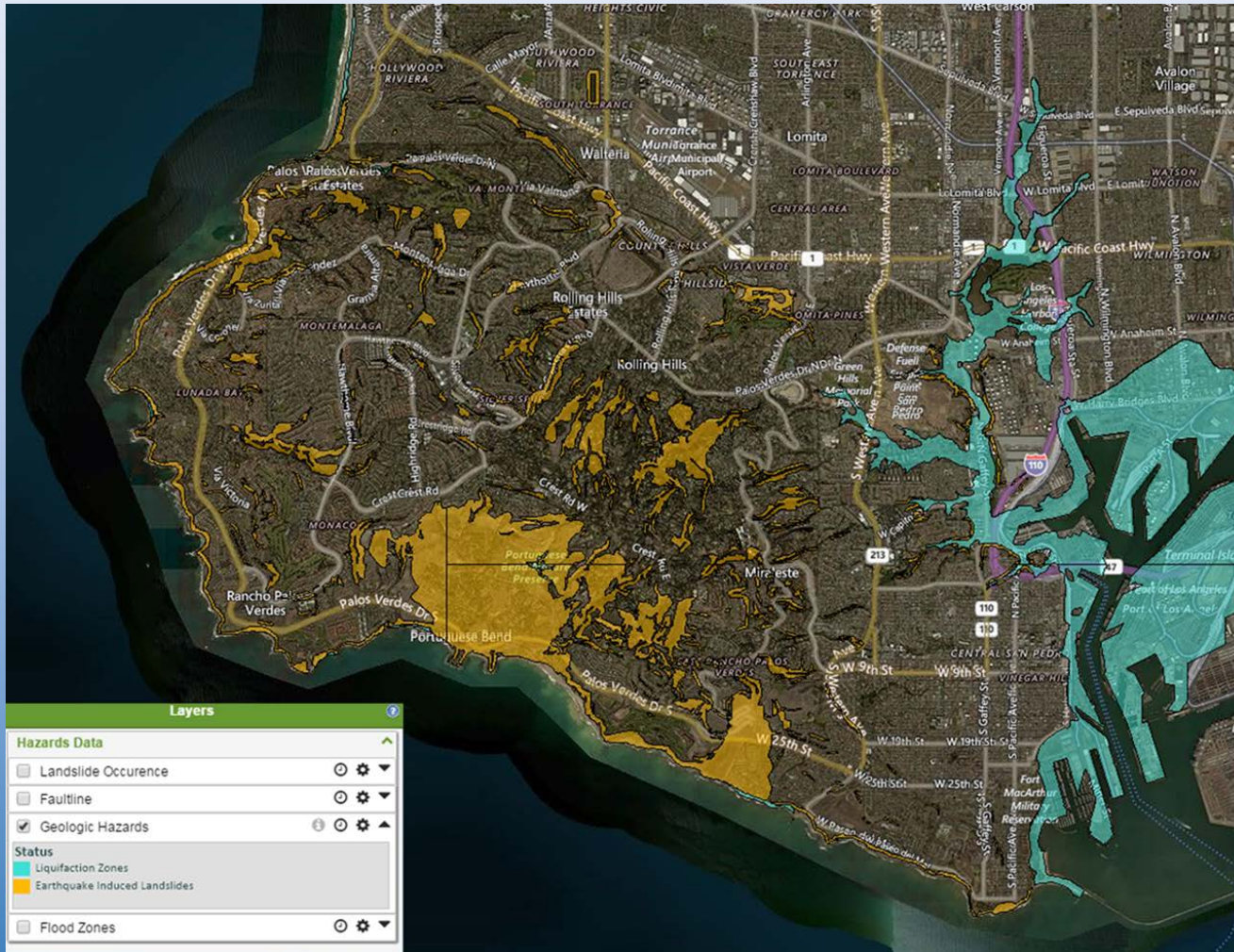
# TMDL Monitoring

- Santa Monica Bay Beach Bacteria TMDL
  - Weekly sampling:
    - 3 types of bacteria at 5 PVP beaches
- Machado Lake TMDLs
  - Monthly sampling: Nitrogen and Phosphorous
  - 3 storm events:
    - Nitrogen and Phosphorous
    - Pesticides and PCBs
  - 2x/year at 7 Rolling Hills sites: Trash
- Greater Los Angeles and Long Beach Harbor Toxics TMDL
  - Wet: 2x/year
  - Dry: 1x/year
    - 22 water sample locations for metals, pesticides, and PCBs
    - Sediment: 2x/5 years
    - Fish tissue: every 2 years





# Geotechnical Constraints



- PVP is geologically unique
- Geologic and geotechnical constraints do not allow for regional infiltration-based stormwater control measures
- Flow-through treatment BMPs are the key structural BMPs that are feasible



# Structural Projects



- Total LID projects: 19
- Total public retrofit projects: 2
- Total regional projects: 3

- Biotreatment in Rancho Palos Verdes



# San Ramon Canyon Project

- Located in the City of Rancho Palos Verdes
- Completed in October 2014
- Purpose: Erosion controls, storm drain system repairs and improvements, canyon streambed restoration, native landscaping, trail improvements
- Structures Built:
  - Two tunnels (2,300 feet)
  - Storm drain pipe (4,000 feet)
  - Concrete outlet structures installed at the bottom of the canyon and at the beach





# Map of Rancho Palos Verdes Reserves





# Rancho Palos Verdes Ecological Reserves:



## Alta Vicente Reserve:

- 55-acre parcel on slopes below and around the RPV City Hall
- 5-acre habitat restoration project was initiated in 2008

## Three Sisters Reserve:

- 99-acre parcel that is home to several rare wildflower and bird species
- 21-acre habitat restoration project was initiated in 2009 involving 250 weed-removing goats and 8,000 native plantings



## Filiorum Reserve:

- 191-acre parcel acquired by the City in 2009
- Completed a 21-year effort to preserve 900 contiguous acres of protected open space by providing a wildlife corridor between the Three Sisters Reserve and Portuguese Bend Reserve
- The Conservancy, City of RPV, State Coastal Conservancy, and more than 700 local donors contributed \$6.5 M for the parcel acquisition





# Chandler Ranch and RHCC Golf Course Regional Project



- Located in the City of Rolling Hills Estates
- 707-acre tributary area within Machado Lake Watershed
- Infiltration systems online in January 2018
- Privately funded – required by City via EIR and conditions of approval:
  - Hydrologic function of quarry preserved post-development: retention/infiltration of 50-year storm



# Subsurface Infiltration Galleries





# Casaba Estates Project

- Located in the City of Rolling Hills Estates
- 28.6-acre tributary area within Machado Lake Watershed
  - 8.6-acre onsite area
  - 20-acre offsite area
- Privately funded through the City required conditions of approval (CEQA)
- Bioretention completed in 2014
  - 12 new homes completed 2016
- Bioretention of 50 year storm
- Porous paving and water efficient landscaping
- Certified trash capture devices on catch basins





# Model Equestrian Center

- **Located in the City of Rolling Hills Estates**
  - Public Retrofit Project completed in 2016
  - Funded in part with \$1M from Prop 84 IRWM
- **Venue for sustainable horsekeeping outreach:**
  - Interpretive signage on BMPs throughout facility
  - Pony camp materials
- **Source Control and Treatment BMPs include:**
  - Biofilters that treat 2 acres of horsekeeping area
  - Covered manure storage area
  - Horse wash racks diverted to sanitary sewer
  - Drainage improvements to divert stormwater around horsekeeping areas
  - Advance technology footings in riding rings promote rapid percolation and minimize dust



Construction of Biofiltration System



# Bluff Cove Retrofit Project



Located in the City of Palos Verdes Estates

4.1-acre ocean front passive park

Completed in 2015

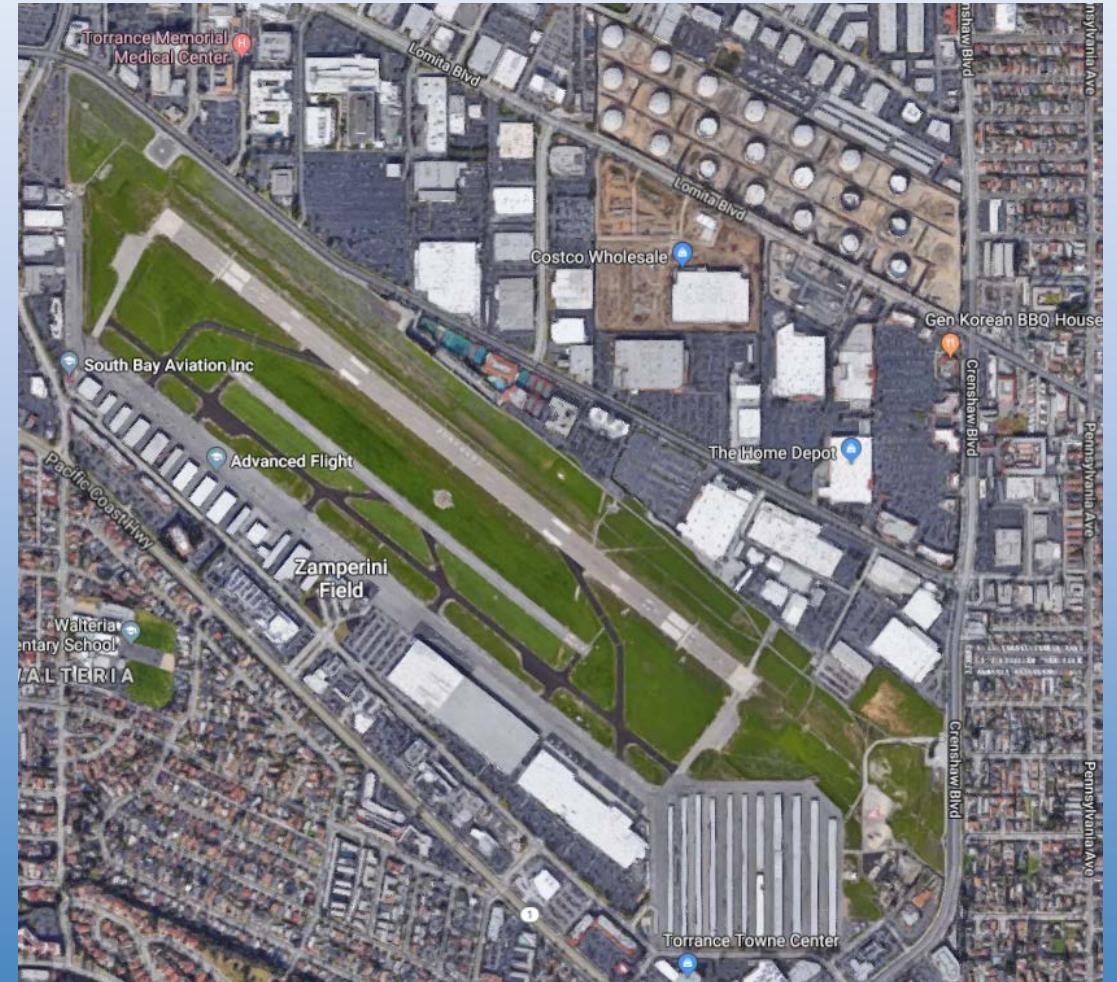
Property re-designated as public open space:

- Post project runoff converted to pre-development condition
- Removed 1.5 acres of impervious area thru demolition/removal of 7 single-family residences
- Reduced from 36% to 0% impervious



# Torrance Airport Project

- Collaborative project with the City of Torrance
- Potential infiltration opportunity
- Project will address Machado Lake TMDLs:
  - Nutrient
  - Pesticides and PCBs
- The MOA for preliminary design has been executed by PVP WMG members





# Machado Lake Trash TMDL Implementation

- Total cost of trash capture system installations: \$2.51 million
- Agencies were jointly awarded \$1.75 million in Prop 84 funding:
  - Torrance (lead)
  - Rolling Hills Estates
  - Ranchos Palos Verdes
  - Palos Verdes Estates
  - Lomita
  - Carson
- Trash capture systems installed in PVP Watershed:
  - 77 CPS (Rolling Hills Estates)
  - 39 CPS, 107 ARS (Rancho Palos Verdes)
  - 75 CPS (Palos Verdes Estates)
  - 72 CPS (County)
- Rolling Hills and Rolling Hills Estates are demonstrating zero trash in single-family residential areas via monitoring





# Santa Monica Bay Nearshore and Offshore Debris TMDL Compliance

- Total estimated cost of full-capture systems installations: \$1,043,371
- Awarded \$600,000 in Prop 84 Santa Monica Bay Restoration Grant funding
- MOU agreement execution in progress:
  - Rancho Palos Verdes
  - Palos Verdes Estates
  - Rolling Hills Estates
- ~1,368 CPS trash capture systems to be installed



Connector Pipe Screen



# Small Construction Site Brochure



**KEEP IT  
ONSITE!**

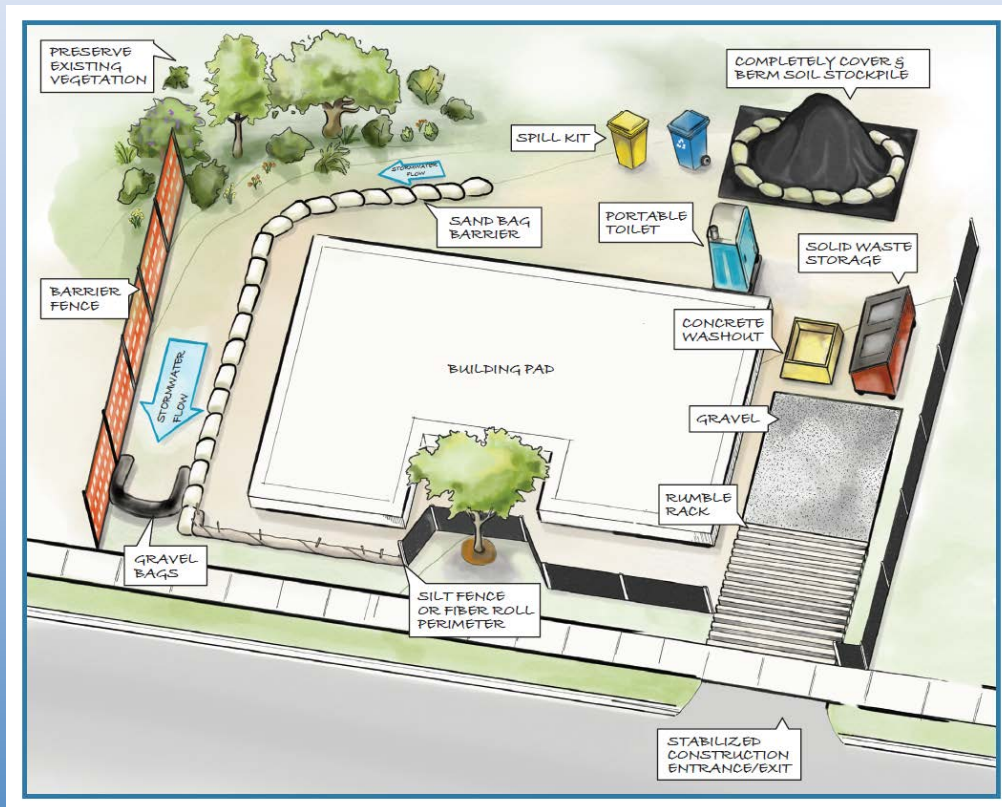
## Best Management Practices for Small Construction Sites

Our beaches, coastal streams and wetlands are precious to our coastal communities, but human activity such as construction work can pollute these natural treasures unless contractors use effective best management practices (BMPs).

This brochure outlines the minimum required BMPs for construction projects that disturb less than one acre\* of soil (small construction sites).

\* Construction projects that disturb one acre or more of soil must comply with the Statewide Construction General Permit: [waterboards.ca.gov/water\\_issues/programs/stormwater/constpermits.shtml](http://waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml)

- Non-structural measure
- Collaborative public outreach material
- Contains information on best management practices





# Horse Owner Pamphlet



Clean LA  
Together, we can  
make a difference  
Tips  
For Horse Owners

County of Los Angeles  
[www.CleanLA.com](http://www.CleanLA.com)

## Prevention Measures...

### Facilities Design

Place barns, corrals and other high-use areas where rain or irrigation will drain away from the nearest creek. Surround the area with pasture, if possible.

- Direct runoff on your property so that it does not cross livestock areas.
- Cover manure storage facilities to protect from rainfall and surface runoff.
- If possible, design diversion terraces that allow runoff to be filtered through vegetation before it enters a creek or storm drain
- Adjust all irrigation to conserve water and avoid runoff.
- Utilize fencing to keep horses away from environmentally sensitive areas and streams.

### Grazing

- Divide grazing areas into three or more units of equal size and rotate animals.
- When grass is grazed down to 3 or 4 inches, move horses to another section, allowing the grass to grow to 8 to 10 inches before allowing regrazing.
- If possible, keep animals indoors and away from wet fields during rainfall.



### Pesticide Alternatives

Plan your pest management strategy in this order:

- Physical Controls
  - Pheromone Traps
  - Tarps
  - Bug Zappers
  - Fly-Tight Storage Sheds
- Biological Controls – Nature's Way

These include pest-specific bacterial controls and predatory insects as well as swallows, bats, and other insect eating animals. A healthy vegetative buffer with a variety of native plant species on your property can attract these beneficial predators as well as filter storm water and irrigation runoff.
- Chemical Controls – Your Last Resort

Use least-toxic products first:

  - Pyrethrin-based insecticides
  - Dehydrating dusts (e.g. Silica gel)
  - Insecticidal soaps
  - Horticultural oils

**Remember - Dumping or allowing anything to run into a creek, gutter or storm drain is ILLEGAL**

To report illegal dumping or spills, call (888) 253-2652

- Non-structural measure
- Contains information on stormwater pollution prevention
- Distributed by Los Angeles County



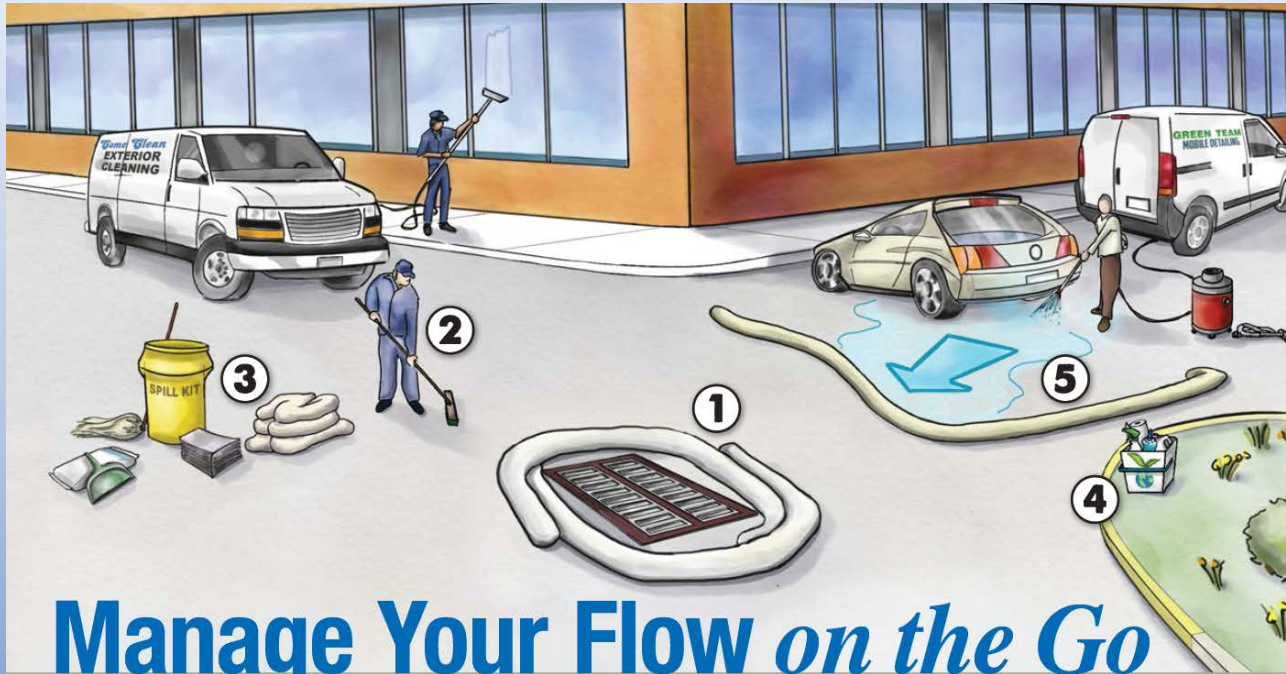
# Sustainable Gardening Website

- Non-structural measure
- Collaborative public outreach effort
- Focus on sustainable landscaping, integrated pest management, and pesticide/fertilizer use
- Example topics:
  - Pest resistant plants
  - Composting workshops
  - Pesticide and fertilizer recycling locations





# Mobile Business Tip Card



## Manage Your Flow *on the Go*

Mobile businesses are an important part of our community and, like all businesses, must follow best management practices to ensure their processes and waste products don't harm the environment. Federal, State, and local regulations prohibit the discharge of pollutants (wastewater, sediment, debris, etc.) from mobile cleaning operations into the storm drain system; which includes streets, gutters, and catch basins. Check out the tips below, which correspond to the numbers on the front of this card, to ensure that you are conducting your business in a safe and legal manner.

- Non-structural measure
- Targeted assistance to mobile businesses that include cleaning operations:
  - Auto Detailers
  - Power Washing
  - Exterior Cleaners
  - Carpet/Upholstery Cleaning
- Best management practices and approved locations of wastewater disposal are provided



# Conclusions

- PVP is implementing the EWMP and the CIMP
- PVP is making efforts to collaborate with agencies outside of the watershed management group
- Resources are limited and future funding is a primary concern



Thank You.

Questions?