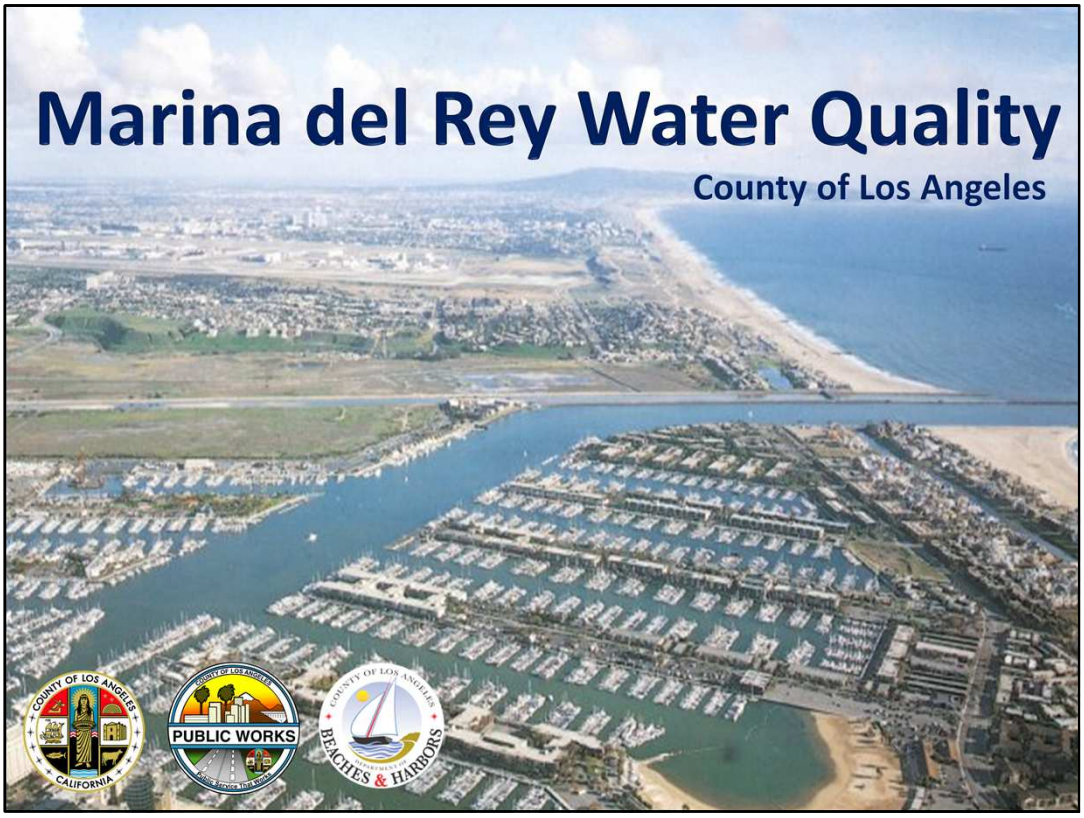


Introduction:

Hi my name is Michelle Reed and I am a Sr. Civil Engineering Assistant for Los Angeles County Department of Public Works. I work in Watershed Management where my current role deals with developing projects that serve multiuse purposes such as flood control and water conservation, storm and urban runoff water quality enhancement, recreation, habitat protection, open space, and landscaping.

Marina del Rey is one of the watersheds that the County oversees and this presentation will cover pollutants in the Marina that we are trying to address as well as various projects we have or will be implementing to help improve the water quality.

Total Maximum Daily Load

- Protects **human health**
- Sets **pollutant limits**
- **EPA** and **State** Standards

The LARB sets water quality standards to prevent impairment of water quality and protect human health.

This criteria is referred to as The Total Maximum Daily Load which specifies the maximum amount of a pollutant that a water body can receive.

Pollutants can be carried to the beach and to the Harbor by stormwater flow and urban runoff.

Marina del Rey currently has TMDLs for toxics, pesticides, metals, trash, and bacteria.

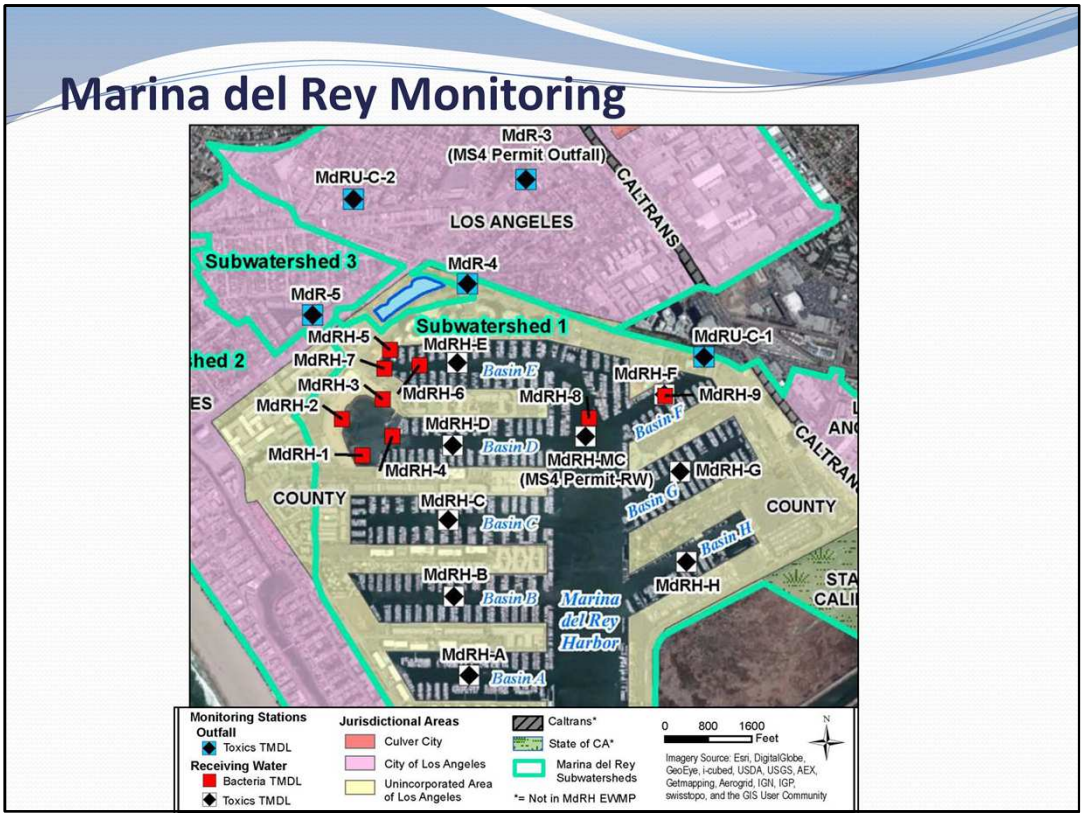
Compliance for these pollutants is based on EPA and State Standards.

Currently, bacteria is the most time sensitive pollutant in the harbor. One area that has been in the news recently is Marina Beach which has appeared on Heal the Bay's watch list for beaches with high levels of bacteria.

For over a year, I have been going out to the Marina, once a week, to do site inspections. I look for excess runoff and bacterial sources. In particular, I check to see if flows are reaching 12 specific catch basins that outlet directly to the harbor. Some observations I have made:

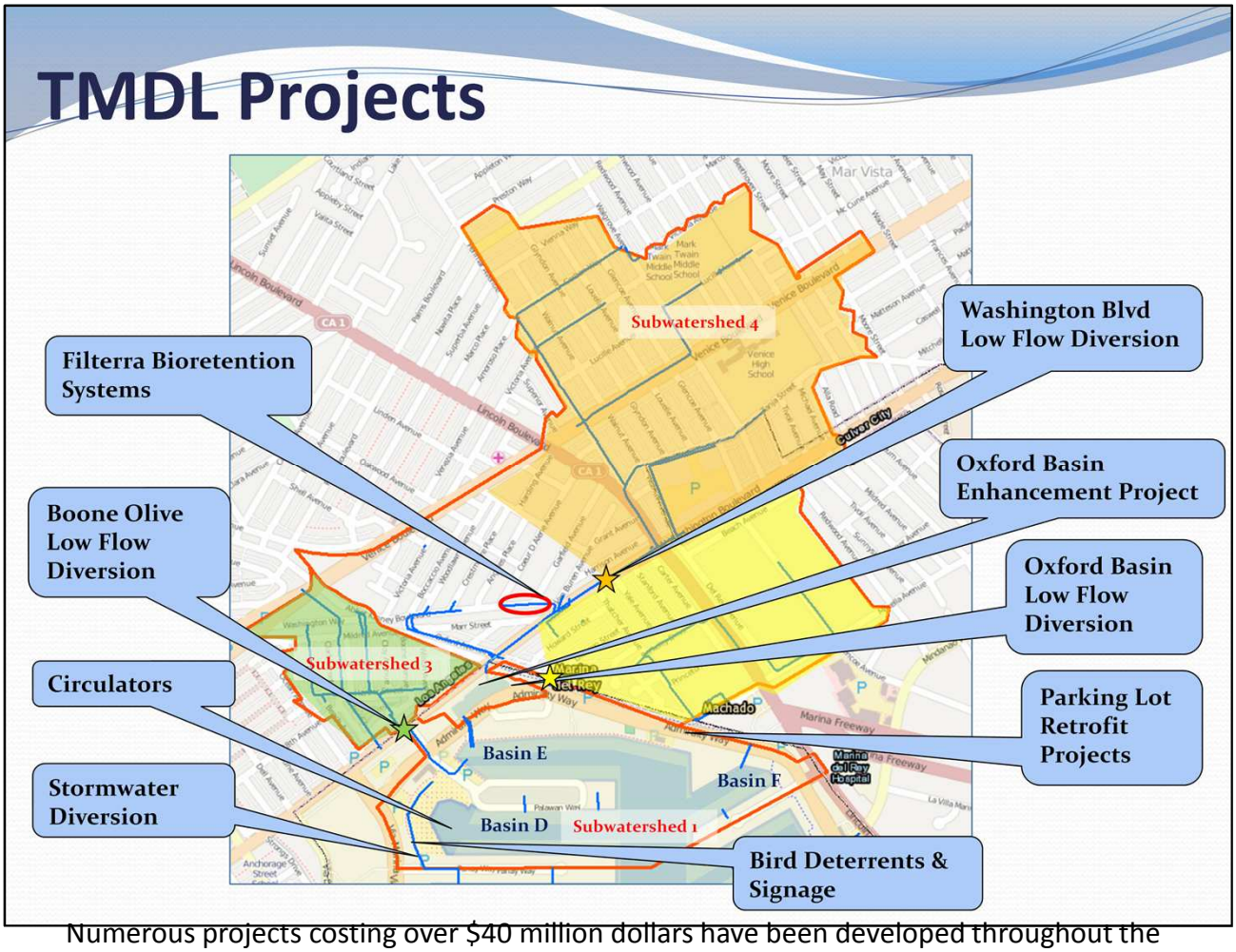
- Birds and dogs are a potential source of fecal bacteria in the water
- Unidentified substance in the harbor
- Trash/food
- Over-irrigation from nearby residents, hotels, and restaurants
- Poor housekeeping by one local restaurant

Due to our efforts, we have been able to identify broken irrigation lines and improper wash down activities due to our observations and have reported them to the appropriate agencies.



We have a robust water quality monitoring program. WE take samples at several locations throughout the Marina each week and measure pollutant levels. This information tells us how we are doing and helps to guide mitigation efforts.

This map show the locations of all the bacteria and toxics monitoring stations we have throughout the Marina.



Numerous projects costing over $40 million dollars have been developed throughout the water shed to help improve the water quality in the marina.

Low Flow diversions were installed to divert urban runoff to the sewers.

Circulators were installed under the dock at Marina Beach.

With upcoming and recent projects we are now putting our efforts into multi-pollutant and multi-beneficial approaches.

One of the first water quality improvement projects recently constructed is the Marina del Rey Parking Lot 5 Project.

Prior to the project, the runoff from this 2.3 acre parking lot flowed west into two catch basins before being discharged into the Marina.

The new project proposed to replace the existing planter boxes with four bio-filtration modular wetlands units as BMPs to treat the flow before being discharged into the Marina

The top left photo shows the scale of the each unit. They are approximately 30 feet long
The top right photo shows the filter cartridge and the media inside the cartridge that absorbs the pollutants
The photos on the bottom show the finish product when it was installed.
A recent photo shows how much the vegetation has established since the initial planting.

Due to the drought, we have only been able to monitor 3 storms over the past two years with only 1 of those storms contributing significant flow. That single event saw a decrease in e.coli by 95%-- based upon previous sampling events. We plan to monitor effectiveness over the next two years and hope to have even more data to measure the effectiveness of this BMP.

The total construction costs was $250,000 and the project was completed in Sept. 2014

The next water quality project is Parking Lot 7.
Parking Lot 7 consists of six bioretention swales that infiltrates the runoff from the 1 acre parking lot that used to discharge to the street and thereafter the Marina.
The bioretention swales are located where the grass parkway used to be.

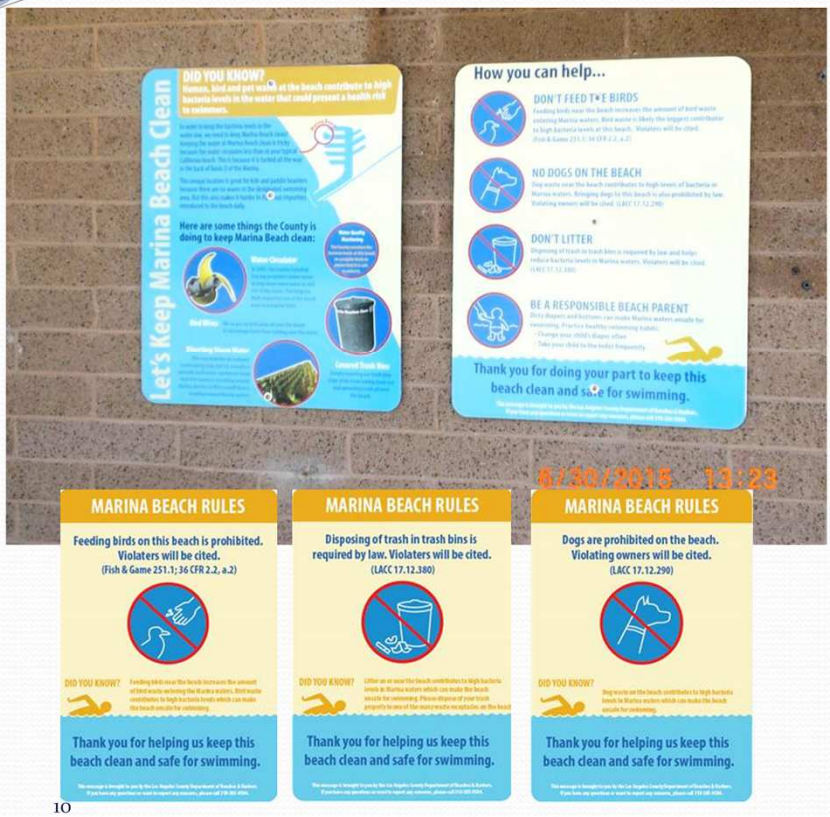
And here is a photo before and after the project was implemented during a recent rainfall event where 100% of the runoff was infiltrated into the ground with no discharge to the marina. The parkway has now transformed into a multi-benefit BMP that infiltrates runoff, improves water quality, benefits sustainability, and increases drought tolerant landscaping.

These two parking lots are the first of four parking lots we plan to retrofit in the near future. This is a new way to use existing infrastructure in an innovative and sustainable fashion to provide multiple benefits to various stakeholders.

The capital cost was approximately $250,000 and it was completed in September 2014.

$400K for both Parking Lot 5 & 7 came from a Coastal Impact Assistance Program Grant which helped ease the financial burden.

Education and Outreach Plan



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Recently, an educational and outreach plan was fully implemented by June 2015. Twelve signs were fabricated and installed near Marina Beach to reach as many users as possible. The signs included information about no dogs allowed on the beach, no feeding of birds, and no littering. We also included a sign about all the water quality BMPs in the Marina del Rey Harbor.

Beach Rule Signs
Twelve (12) 12x17" sign panels

(1) No Feeding Birds
(8) No Dogs
(2) No Litter
(1) Responsible Parent

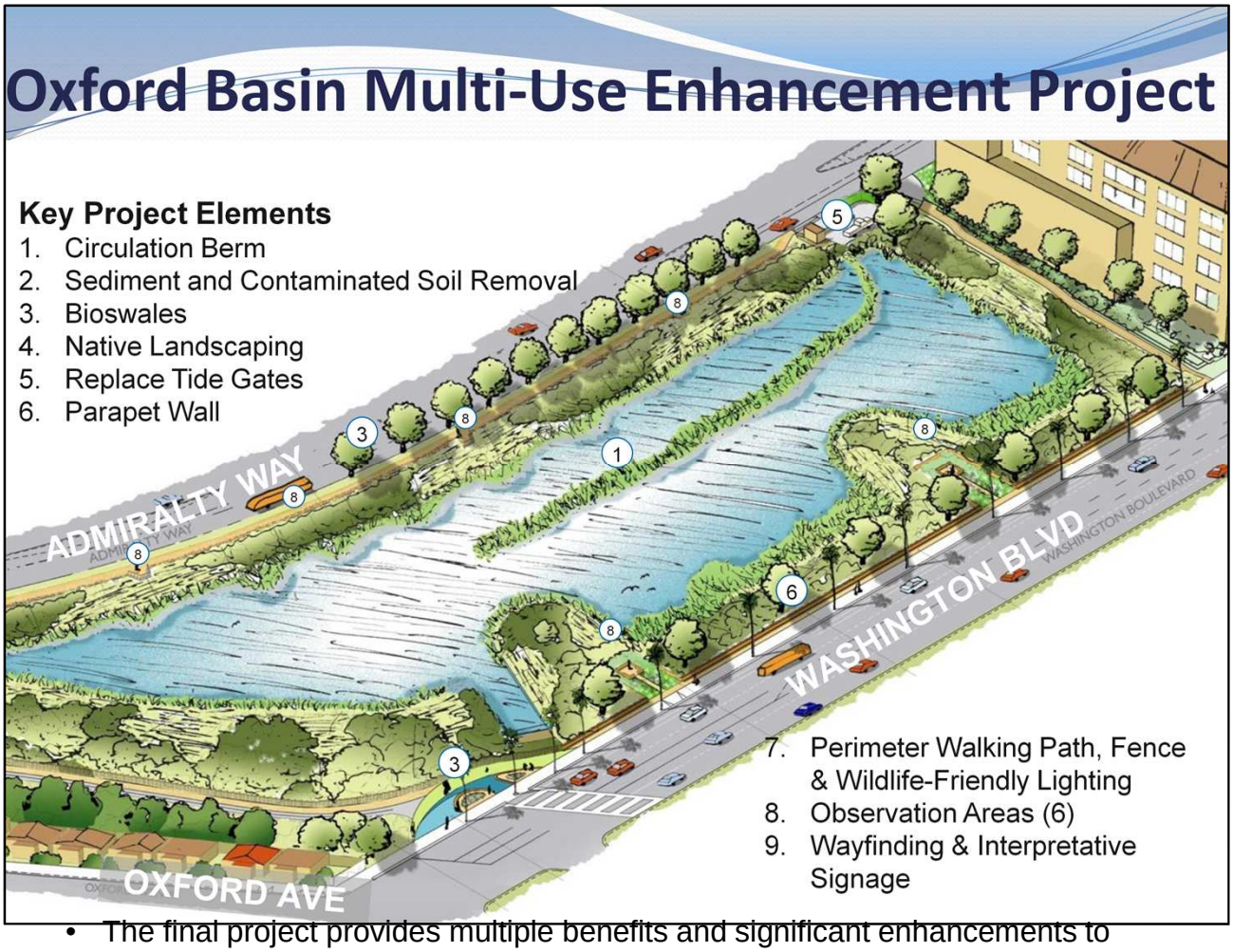
Install June 2015

The highly anticipated project is the Oxford Retention Basin, completion scheduled this week.

Was originally constructed to protect low-lying neighborhood from flooding.

Before storm events, the basin is emptied at low tide and the tide gates are closed. This provides storage for flows from two major storm drains during high tide in the marina. The Basin is then drained during the next low tide.

During dry weather, which is most of the time, the tide gates allow partial tidal exchange



- The final project provides multiple benefits and significant enhancements to Flood Control, Habitat, Water Quality, and Public Access
- Flood control benefits include…
    - construction of a 2-foot high parapet wall along Washington Boulevard to help prevent potential flooding during extreme storm events
- Habitat benefits include...
    - removal of non-native plants and replacement with natives,
- We also constructed a circulation berm which will work with newly installed tide gates to improve dissolved oxygen and decrease stratification of the water in Oxford Basin

Oxford Basin - Signage

- We will also be adding wayfinding signage to help orient visitors and draw passers-by in for extended visits
- Our Landscape Architects and the project team worked with biologists and other experts to develop these signs which will include wildlife, habitat, site history, water quality, and oceans and tides
- We worked to create educational signs that met visitors on many levels, with pretty pictures for casual browsers but with some “technical meat” for the current and future ecologists and engineers visiting the site

- Another water quality project is Parking Lot 9 BMP project which is under construction and will be completed by this fall
- proposed to address the stormwater runoff from the 1.5 acre parking lot.
- Includes 4 sets of bioswales and biofiltration units (similar to Parking Lot 5) that will treat the runoff before discharge into Basin E
- include multi-benefit amenities such as a parklet with benches and interpretive signage about how the BMP works.

- $1.6 M

What can you do?

- Public Outreach
- Report a problem

Questions?

- Michelle Reed: mreed@dpw.lacounty.gov

- However, despite all our efforts, exceedances still persist.
- Public outreach to inform residents about trash, pollution, and regulations
- Report a problem -contact Beaches and Harbor Staff or Harbor Police.