

The background of the slide features a panoramic view of a city skyline and waterfront. In the foreground, there is a body of water with several sailboats. The middle ground shows a dense urban area with various buildings, including a prominent tall, blue skyscraper. The background consists of rolling hills under a clear sky.

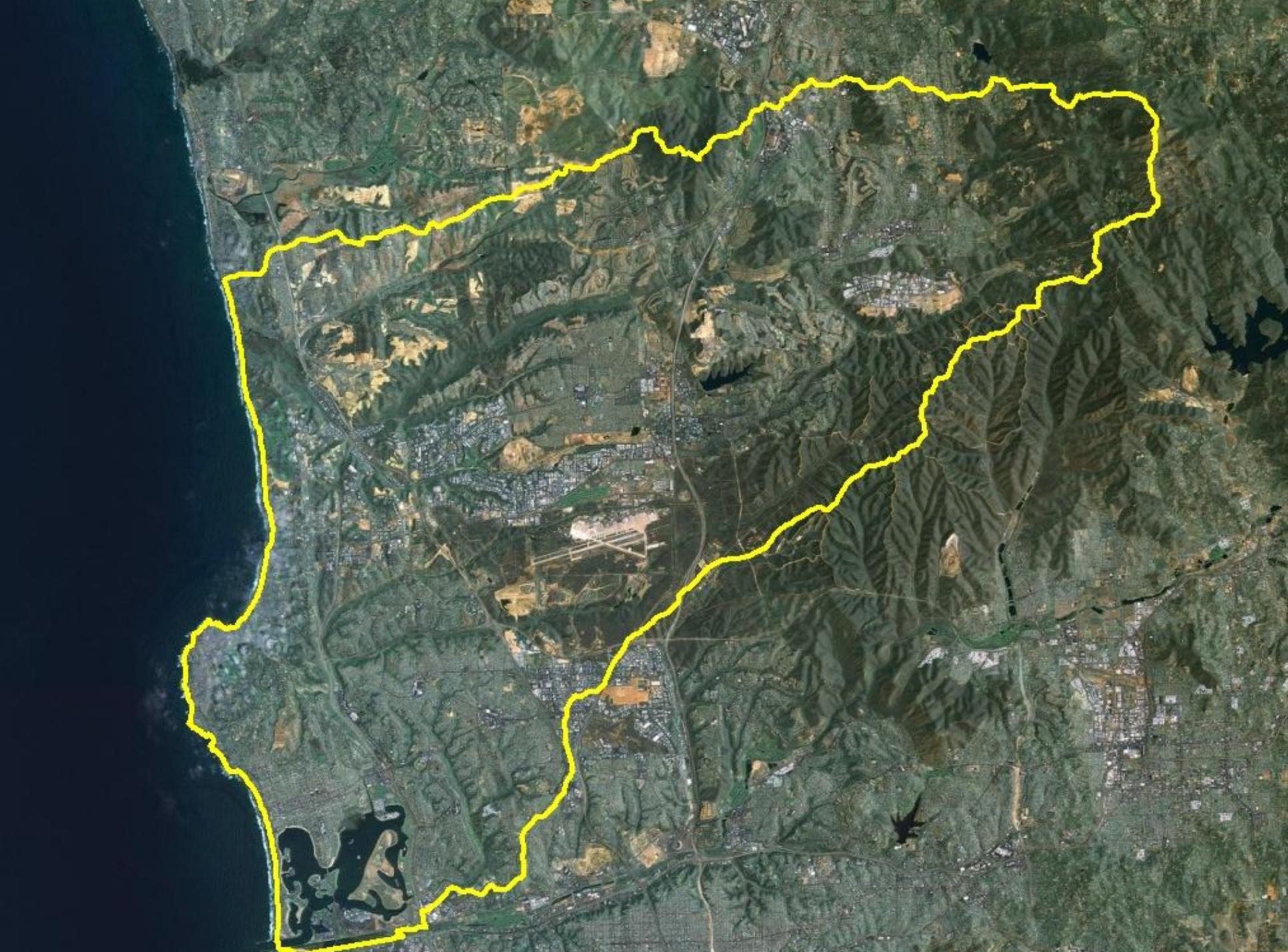
# Regional MS4 Permit Public Workshop (*continued*) December 12, 2012

Christina Arias, PE  
Wayne Chiu, PE  
Laurie Walsh, PE

Provision E.3.c.(2)

Hydromodification  
Management





# HYDROMODIFICATION ASSESSMENT AND MANAGEMENT IN CALIFORNIA

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Technical Report 667 - April 2012



**UCLA** Institute of the Environment and Sustainability  
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# What about exemptions?



# Tent. Order Requirement: Use Pre-Development Hydrology

Already included in South Orange,  
Riverside County MS4 Permits



infoUSA

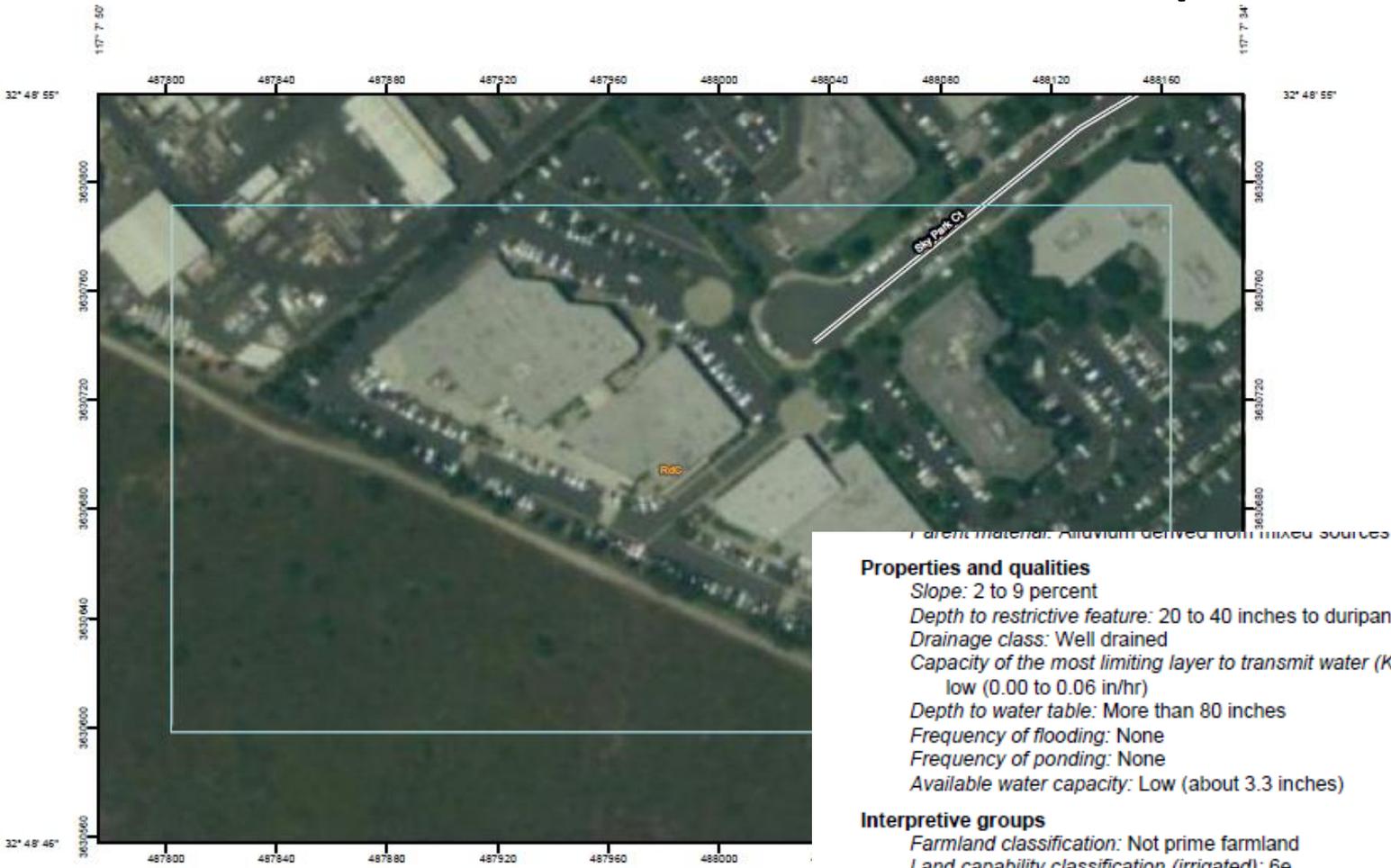
# Q: What is Pre-Development Hydrology?



A: Check surrounding area....



# ...or consult soil maps



## Properties and qualities

- Slope: 2 to 9 percent
- Depth to restrictive feature: 20 to 40 inches to duripan
- Drainage class: Well drained
- Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Available water capacity: Low (about 3.3 inches)

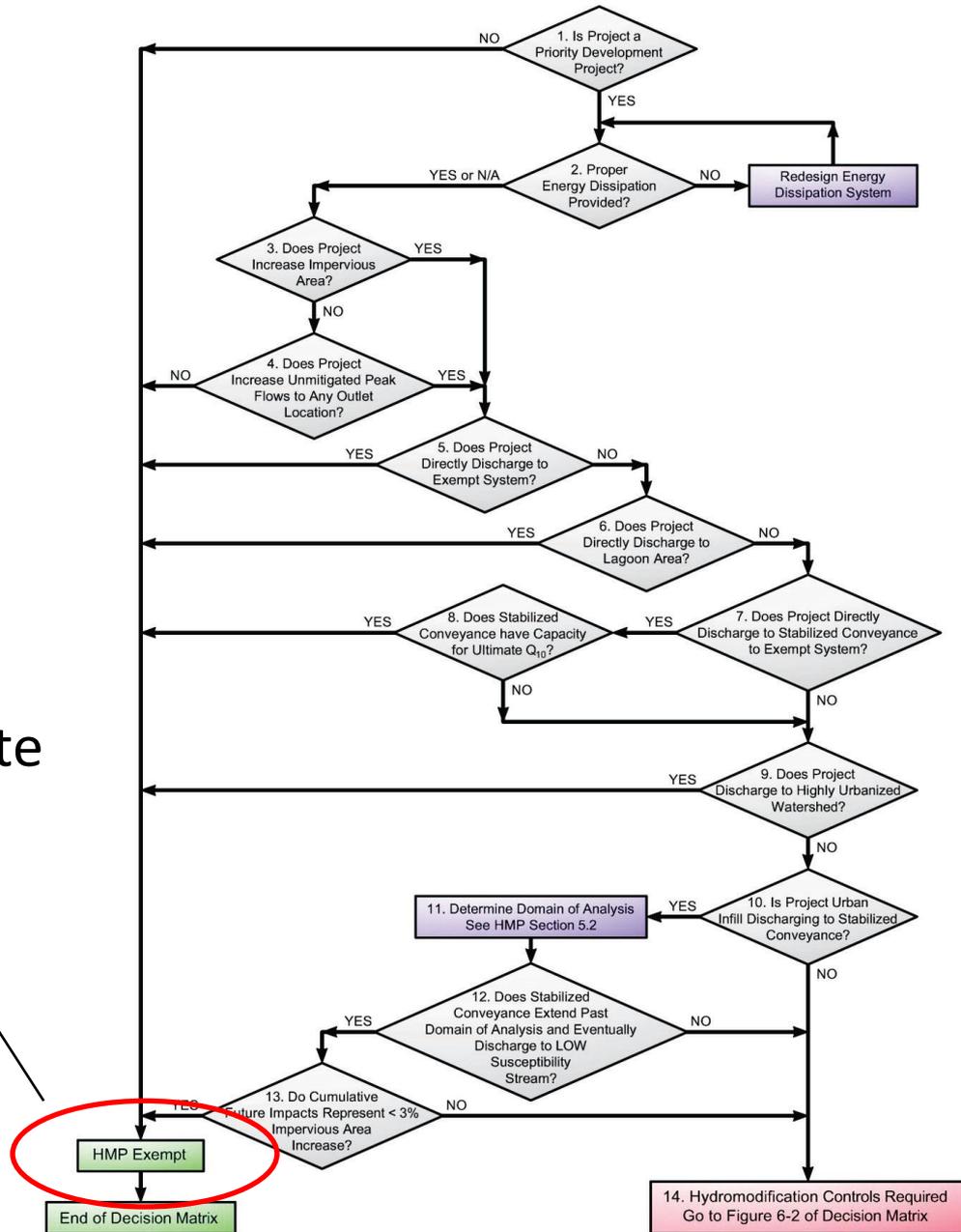
## Interpretive groups

- Farmland classification: Not prime farmland
- Land capability classification (irrigated): 6e
- Land capability (nonirrigated): 6e
- Hydrologic Soil Group: D
- Ecological site: ACID CLAYPAN (R019XD062CA)

## Typical profile

- 0 to 15 inches: Gravelly loam

# Alternative Compliance Offsite



# Alternative Compliance Options

- Offsite BMPs
- Retrofit projects
- Stream/habitat rehabilitation projects
- In-lieu fee

# Where are suitable locations?

- Same HU, preferably same HSA
- Wherever there is most beneficial impact for water quality
- Strategy is spelled out in Water Quality Improvement Plans

# Retrofit: 43<sup>rd</sup> and Logan St.



*Courtesy City of San Diego*

**Total Maximum Daily Loads**

and

**Other**

# Other

1. Clarify if the Tentative Order is a one size fits all approach. Is the Water Quality Improvement Plan a one size fits all approach? *{Grant Destache}*
- 2. Further explain the Illicit Discharge Detection and Elimination requirement in Provision E.2.a.(1) and (3) of the Tentative Order that pertains to discharges from footing drains and foundation drains. *{Eric Anderson}***

# Total Maximum Daily Load (TMDL)

1. Can the Copermittees meet the bacteria levels that are specific in the Total Maximum Daily Loads (TMDLs)? What sorts of technologies are available to the Copermittees to treat bacteria to the levels specified in the TMDLs?  
{*Grant Destache*}
2. Can the Copermittees achieve adequate waste load reductions in the MS4 discharges to meet the effluent limitations and compliance dates for bacteria in the Tentative Order? {*Grant Destache*}
3. What are the benefits of BMP based compliance with the TMDLs for bacteria compared to the Water Quality Based Effluent Limitations (WQBELs)?  
{*Grant Destache*}
4. Address the issue that Ruth Kolb, City of San Diego, raised regarding the Bacteria TMDLs. Clarify how we incorporated the Bacteria TMDLs into the Tentative Order to demonstrate that we incorporated it into the Tentative Order the way it was intended to be implemented. {*Eric Anderson*}
5. Throughout the presentations, it was said that it is infeasible to cleanup bacteria. Provide an explanation as to why, it is not the case, that cleanup of bacteria is infeasible. IN OTHER WORDS...Explain why it is in fact feasible to cleanup bacteria. Is it feasible to cleanup bacteria to levels in the TMDLs? {*Tomas Morales*}

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# Other

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### Question 3

How much is already being spent? What is the breakdown of costs? What is the timeframe of these?  
{Thomas Morales}

**Answer**

\$165 Million plus.....  
each year



## Question 2

Lots of big cost numbers were used during the meeting. (e.g. \$2 to \$4 billion over 20 years) How much do the Copermittes spend now and on what? {Henry Abarbanel}

**Answer**

Supporting Document 6 & 7



## Question 1

What is the cost of NOT implementing the provisions in the Tentative Order? (e.g. beach closures, ill health that taxpayers have to pay for through their private health plans or public costs, death's...) {Henry Abarbanel}



## Question 1

What is the cost of NOT implementing the provisions in the Tentative Order?

## Answer

**Beach Closures:** 5,794 closing / advisory days California 2011

- A hypothetical closure of Huntington Beach due to poor water quality:

Loss in beach related spending:

- One day: \$100,000
- One month: \$3.5 million
- Three months (summer season): \$9 million



## Question 1

What is the cost of NOT implementing the provisions in the Tentative Order?

## Answer

**Tourism:** 31 million visitors to San Diego each year,  
Tourism employs over 160,000 San Diegans

- Spend more than \$7.5 billion annually in San Diego
- Future brings Non-stop international flights

**Illnesses:** Excess cases of GI illness resulting from swimming in bacteria contaminated beach water costs Californians up to \$51 million per year (Pendleton et al., 2006)

Up to \$176 million per year (non-market costs included =  
willingness to pay NOT to get sick)

