

# Cost-Benefit Analysis of California's Hexavalent Chromium Drinking Water Standard: Some Practical Lessons for Public Water Systems

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Richard B. Belzer, Ph.D.

California-Nevada Section  
American Water Works Association  
Spring Conference  
Anaheim, CA  
March 26, 2014

## Questions that Should Be Asked

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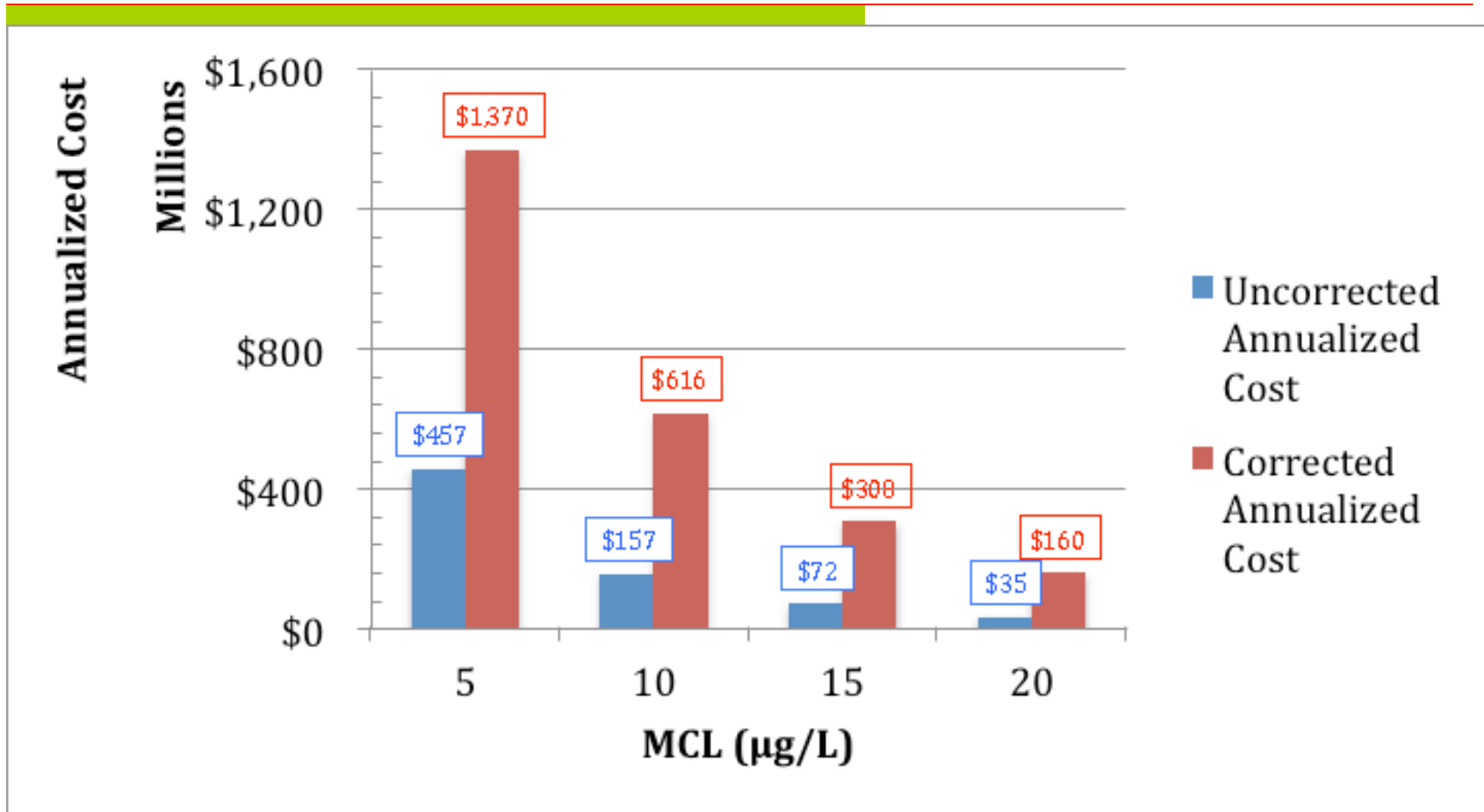
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  - What are the net benefits of a Cr(VI) MCL?
    - Statewide
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  - Is OEHHA's cancer risk estimate trustworthy?
  - Would an MCL disproportionately harm the poor?
  - **Is there anything that you can do?**
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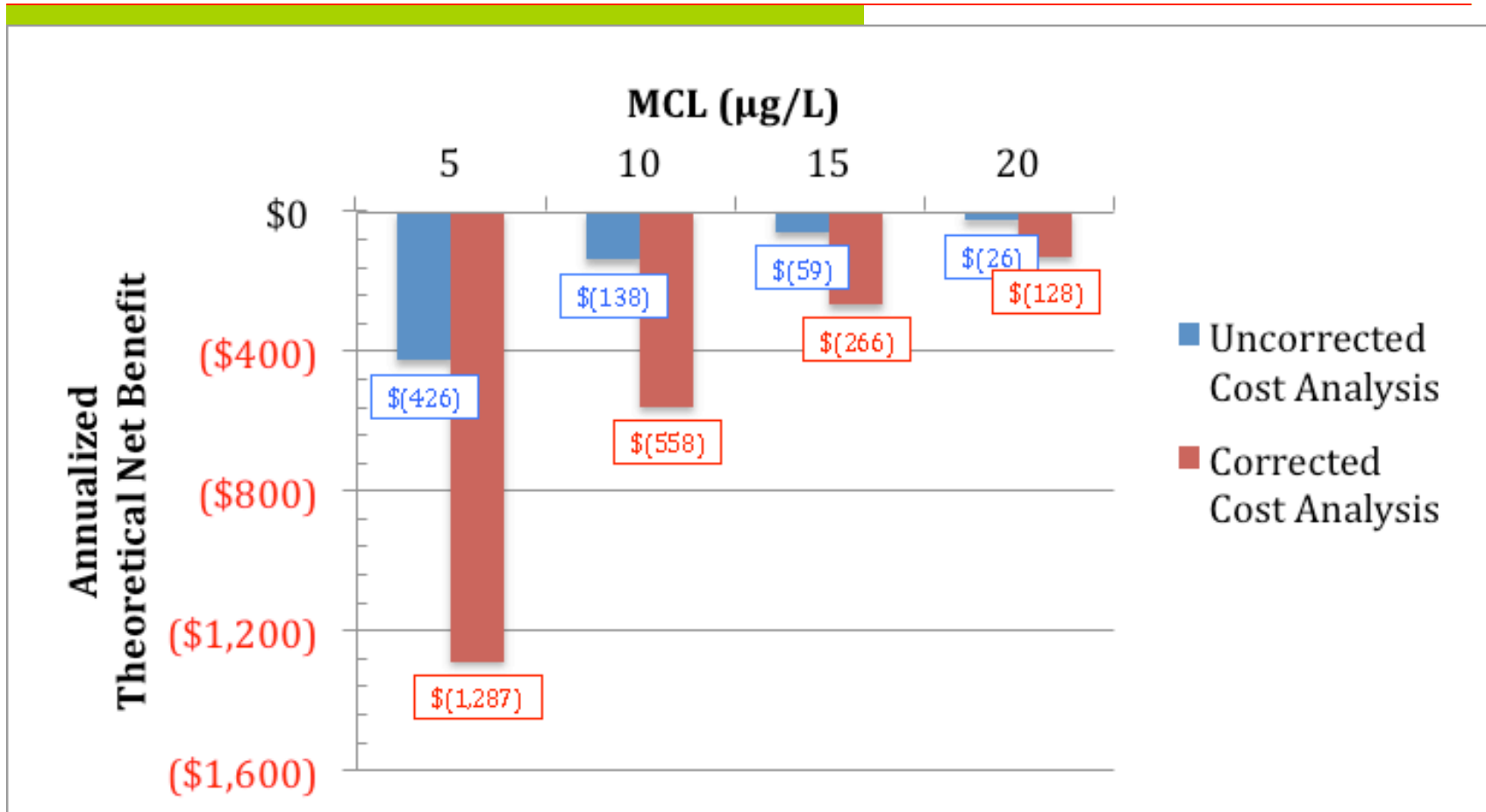
# WHICH MCLs ARE ECONOMICALLY FEASIBLE?

# Statewide Annualized Costs

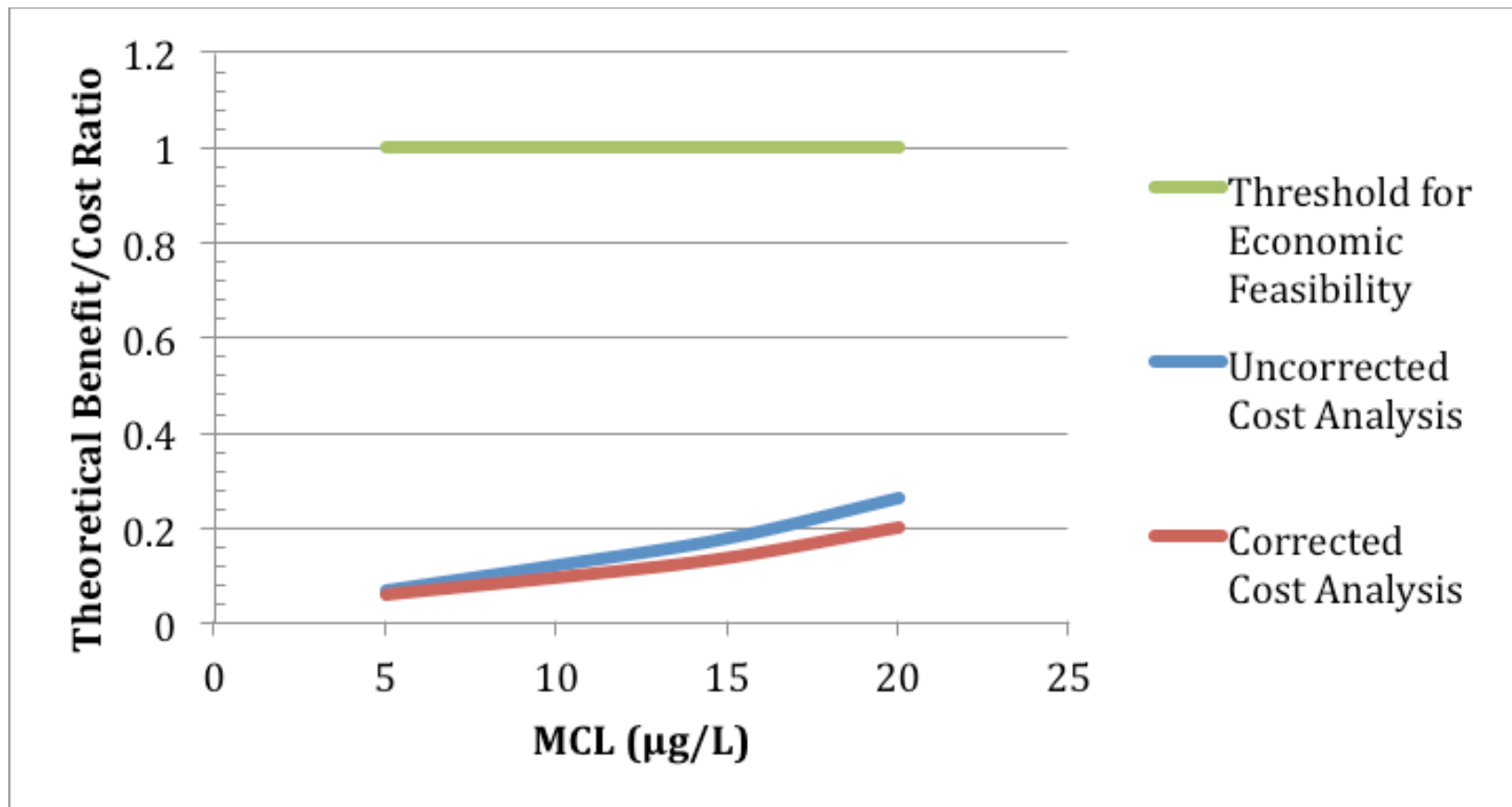




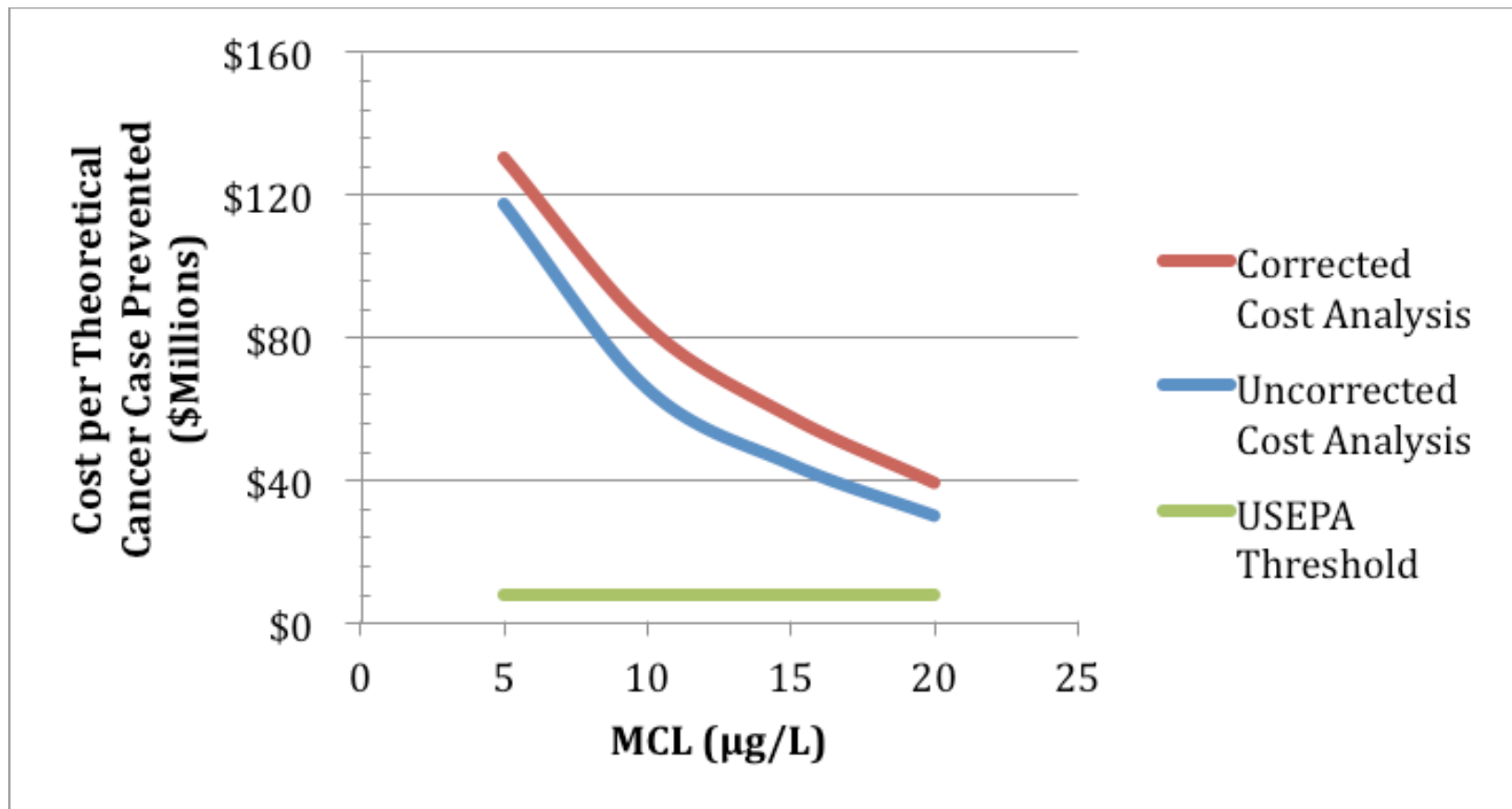
# Statewide Annualized Theoretical Net Benefits



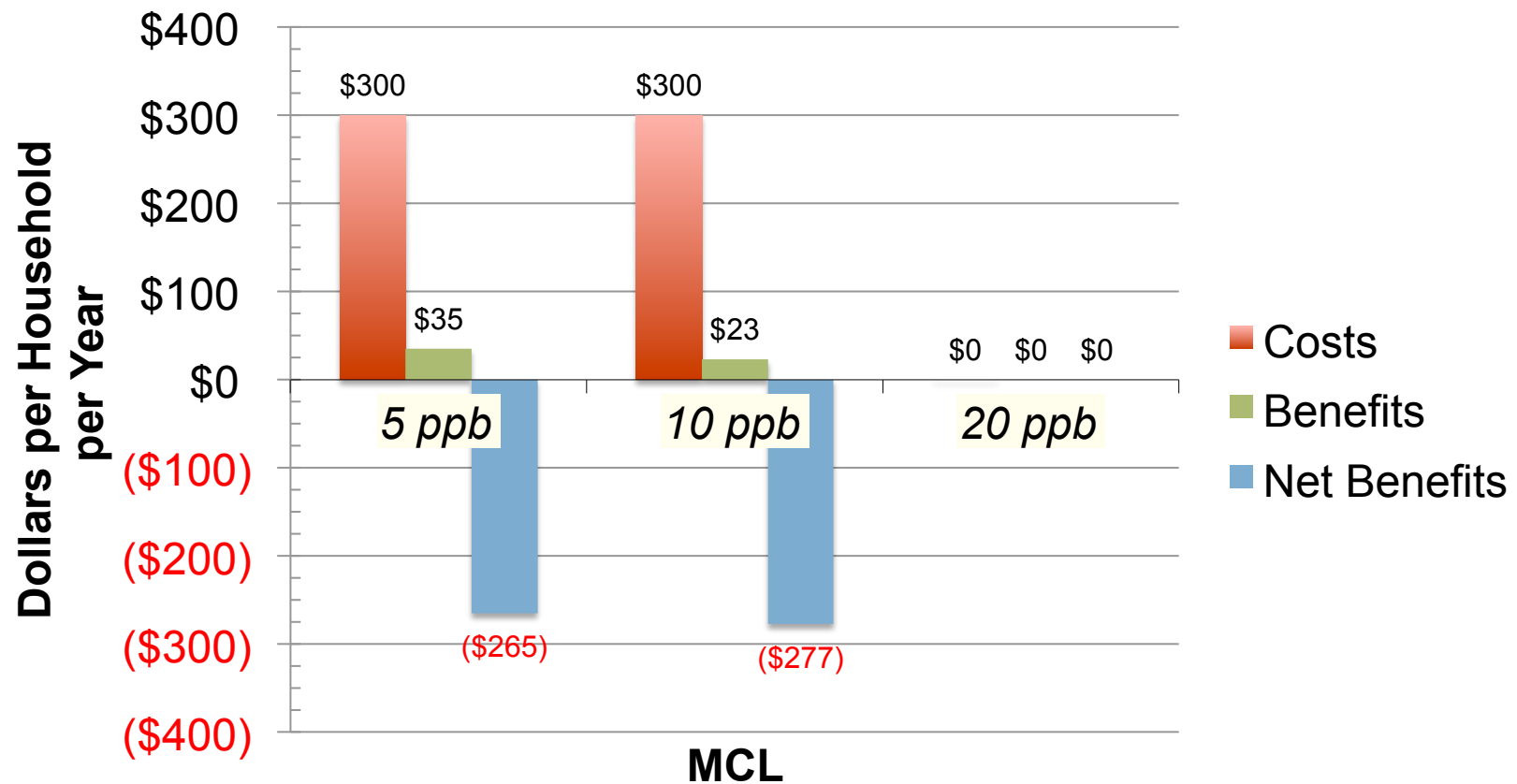
# Theoretical Benefit/Cost Ratios



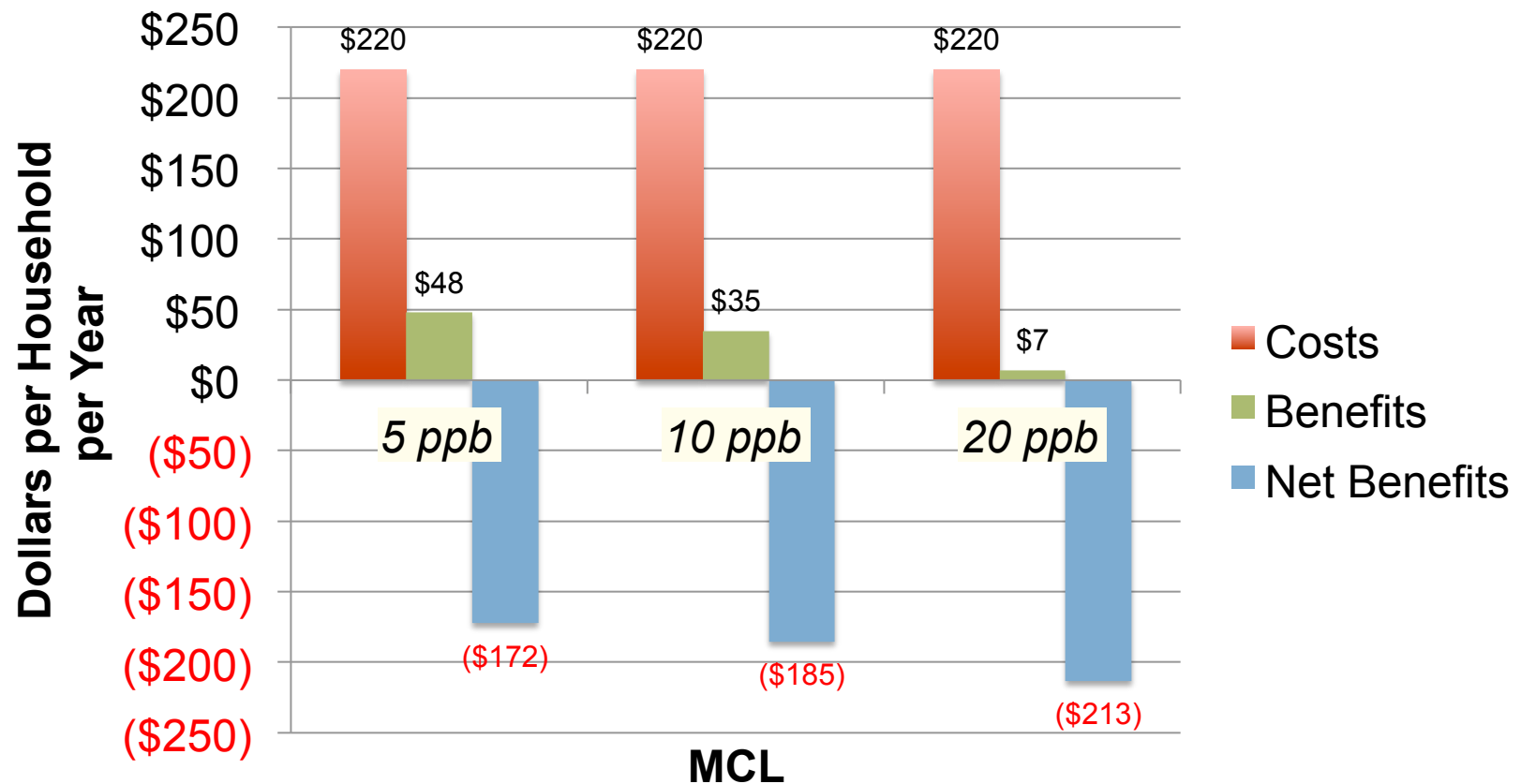
# Theoretical Cost-Effectiveness Ratios



# Annualized Costs, Benefits and Net Benefits: Willows, California



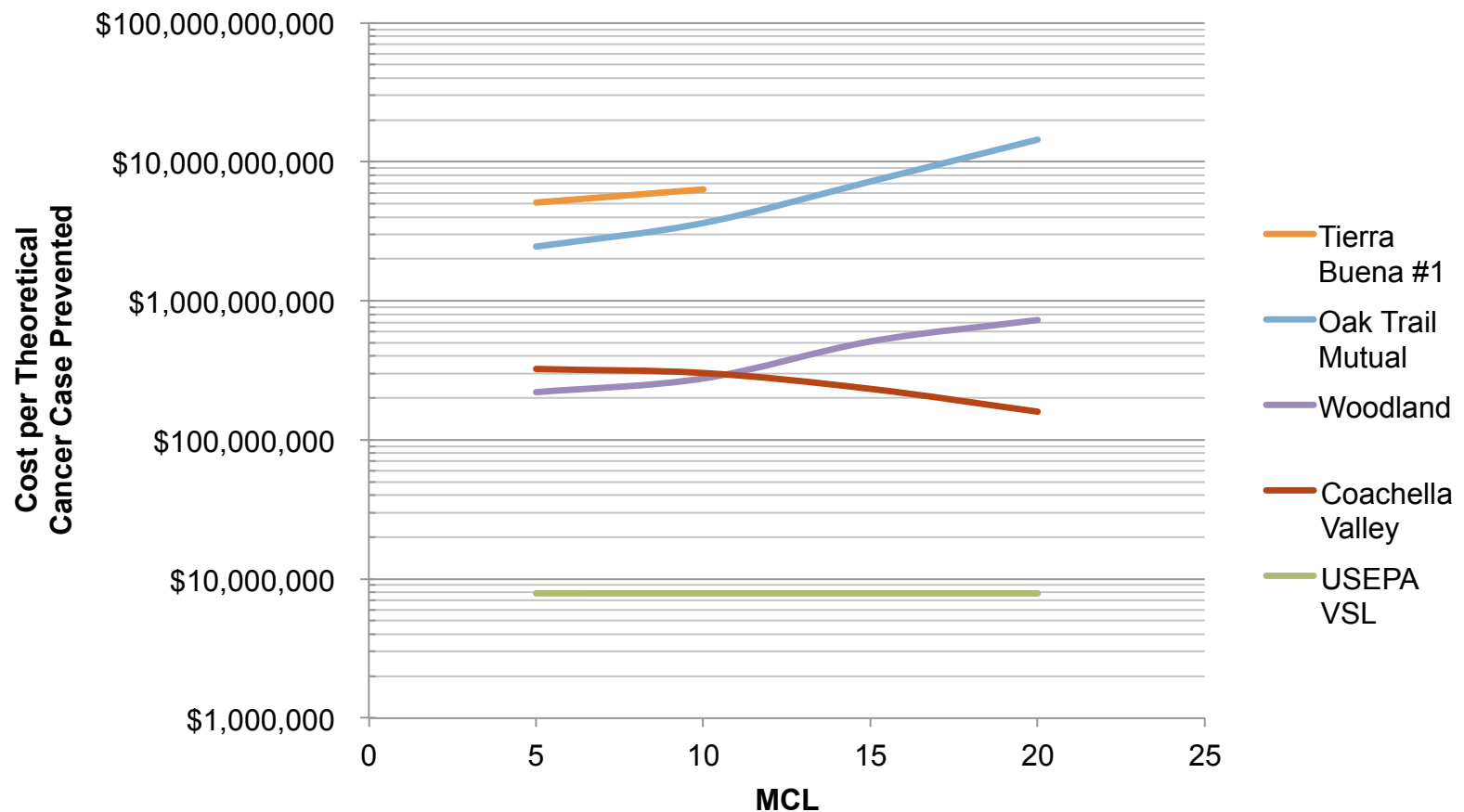
# Annualized Costs, Benefits and Net Benefits: Dixon, California



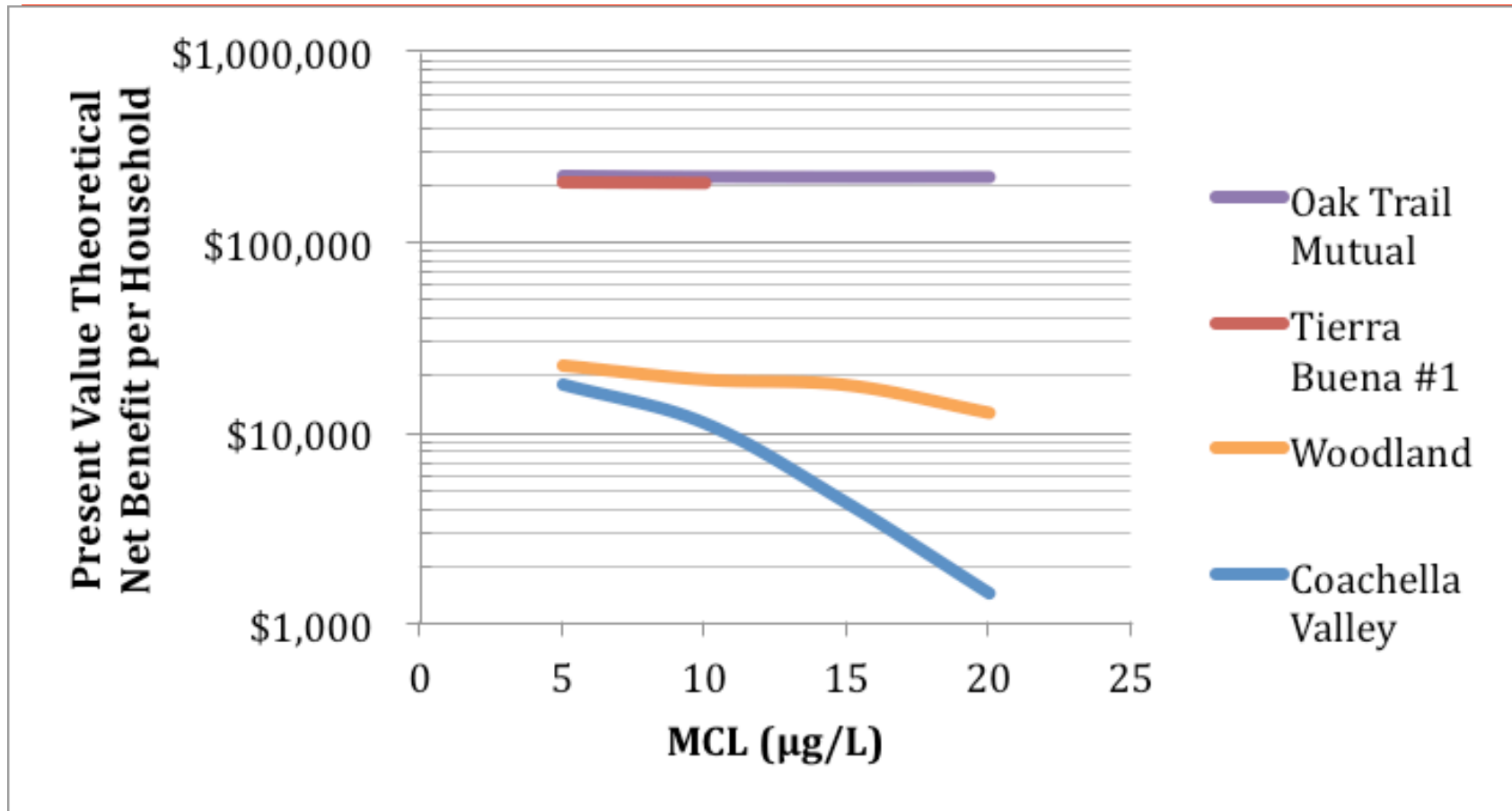
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# CASE STUDIES: WQTS EXAMPLES

# Cost-Effectiveness Ratio of Cr(VI) Treatment for WQTS Case Studies



# Change in Home Value per Household for WQTS Case Studies





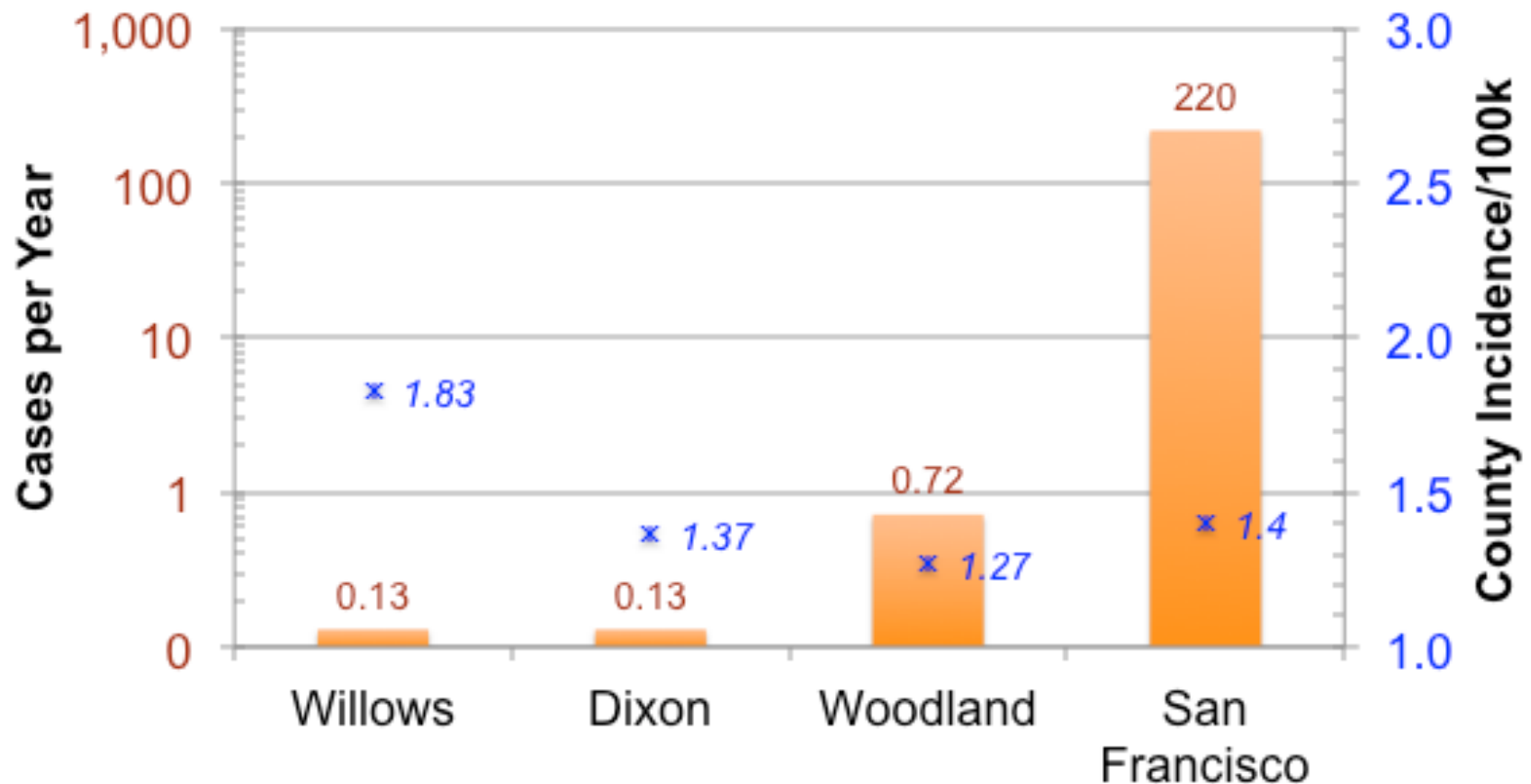
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# OEHHA CANCER RISK ASSESSMENT

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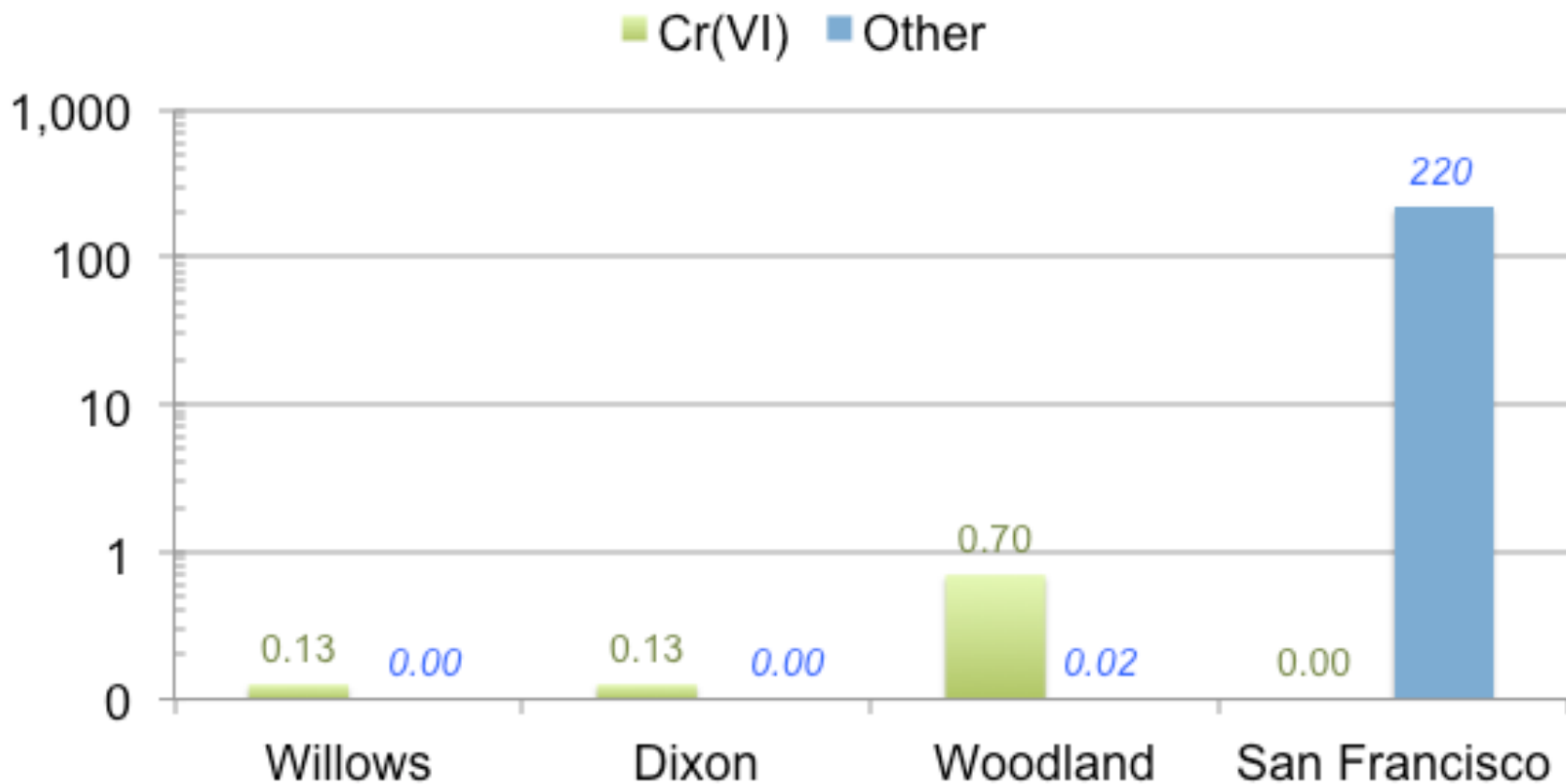
# Annual Incidence and Average Annual Number of Cancers of the Small Intestine, by Jurisdiction



Source: California Cancer Registry, 1988-2010 (Countywide); 2 significant figures

# Percent of Actual Cancers of the Small Intestine 'Caused' by Cr(VI) vs. Something Else

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Sources: California Cancer Registry, 1988-2010 (Countywide); and OEHHA PHG

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# ENVIRONMENTAL JUSTICE

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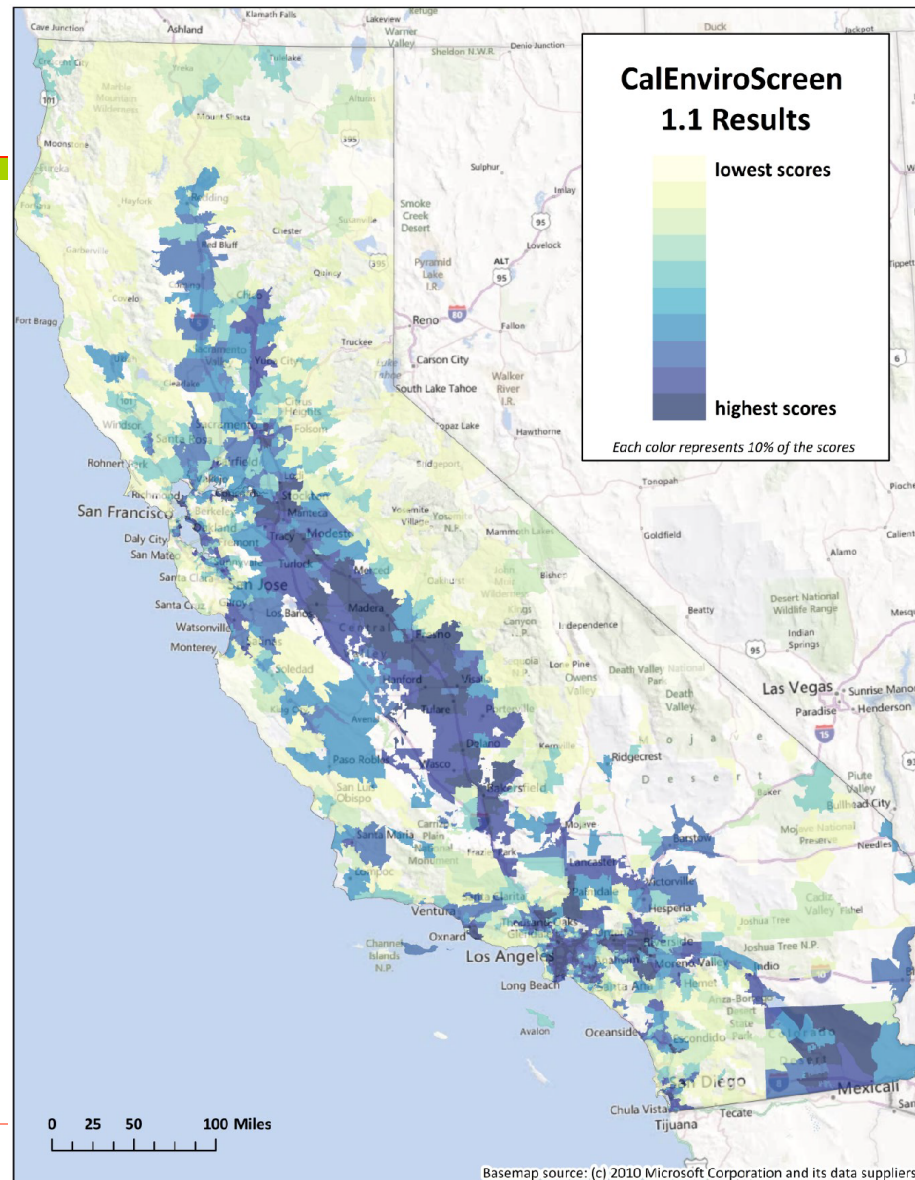
# CalEnviroScreen 1.1 Statewide Results

## THE RANKING SCHEME

- 12 'pollution burden' indicators
- 6 population characteristic indicators
- ZIP Code level resolution
- Darker blues are 'bad'

## ITS ADVERTISED USES

- Administering grants
- Promoting compliance
- Prioritizing site cleanup
- Identifying opportunities for sustainable economic development



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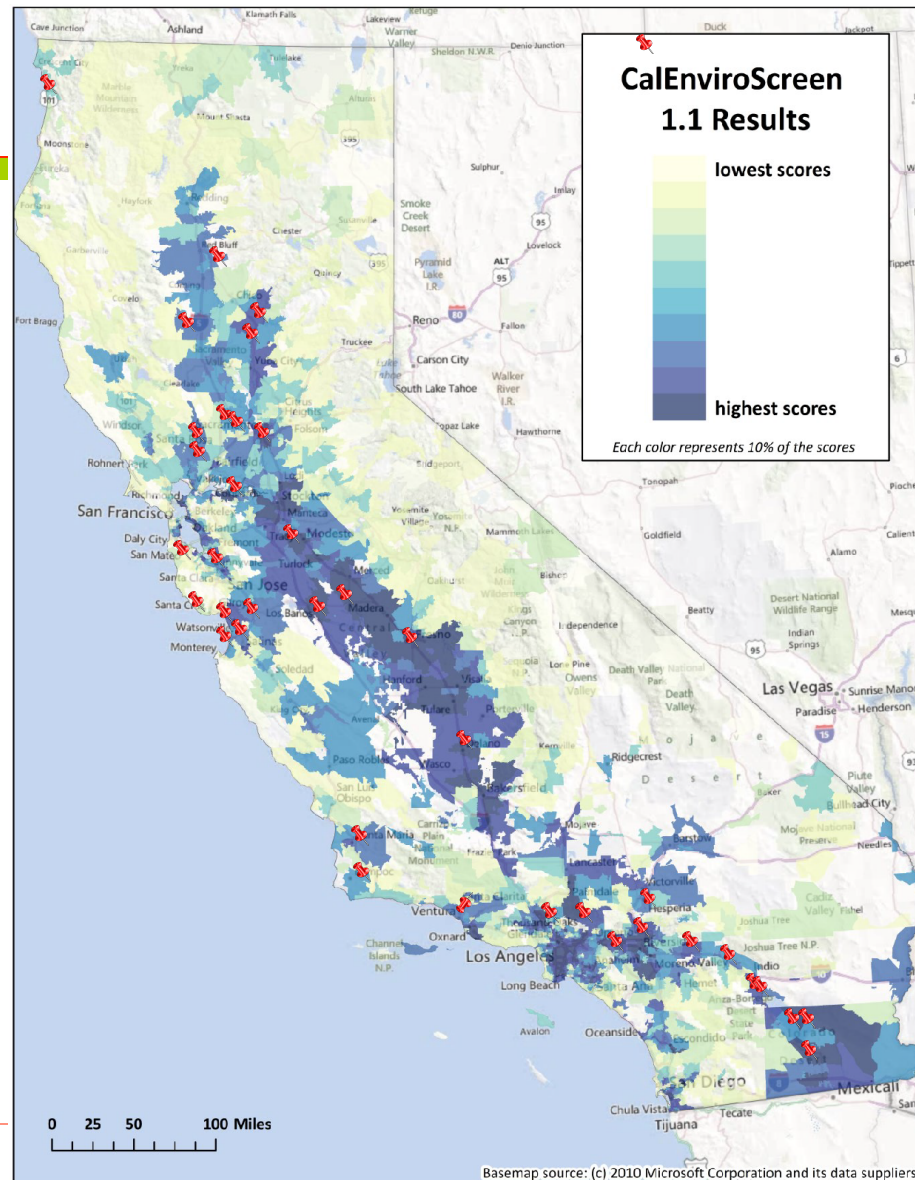
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IMPACTED BY Cr(VI) MCL



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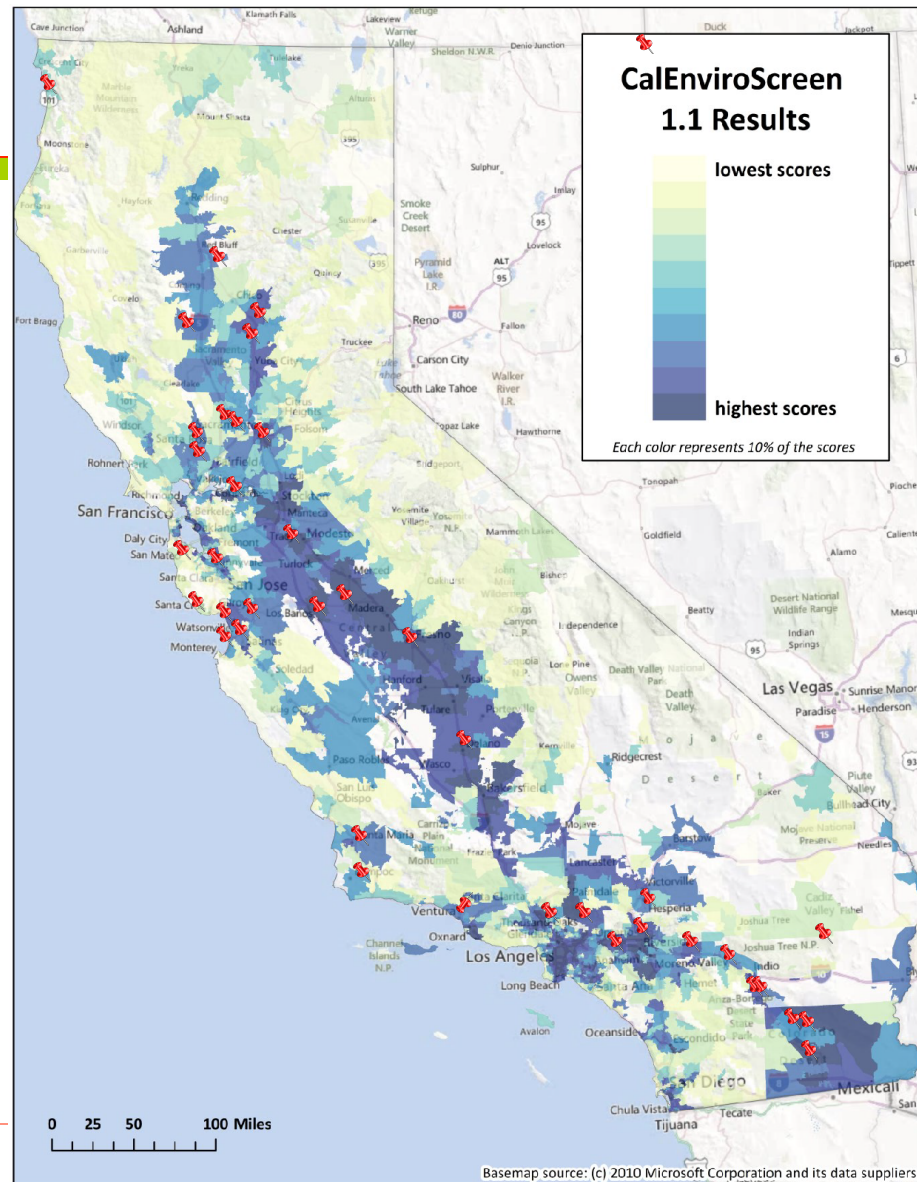
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# NEXT STEPS



## Ways to Communicate Your Concern

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- Help your customers calculate how little they gain from a Cr(VI) drinking water standard.

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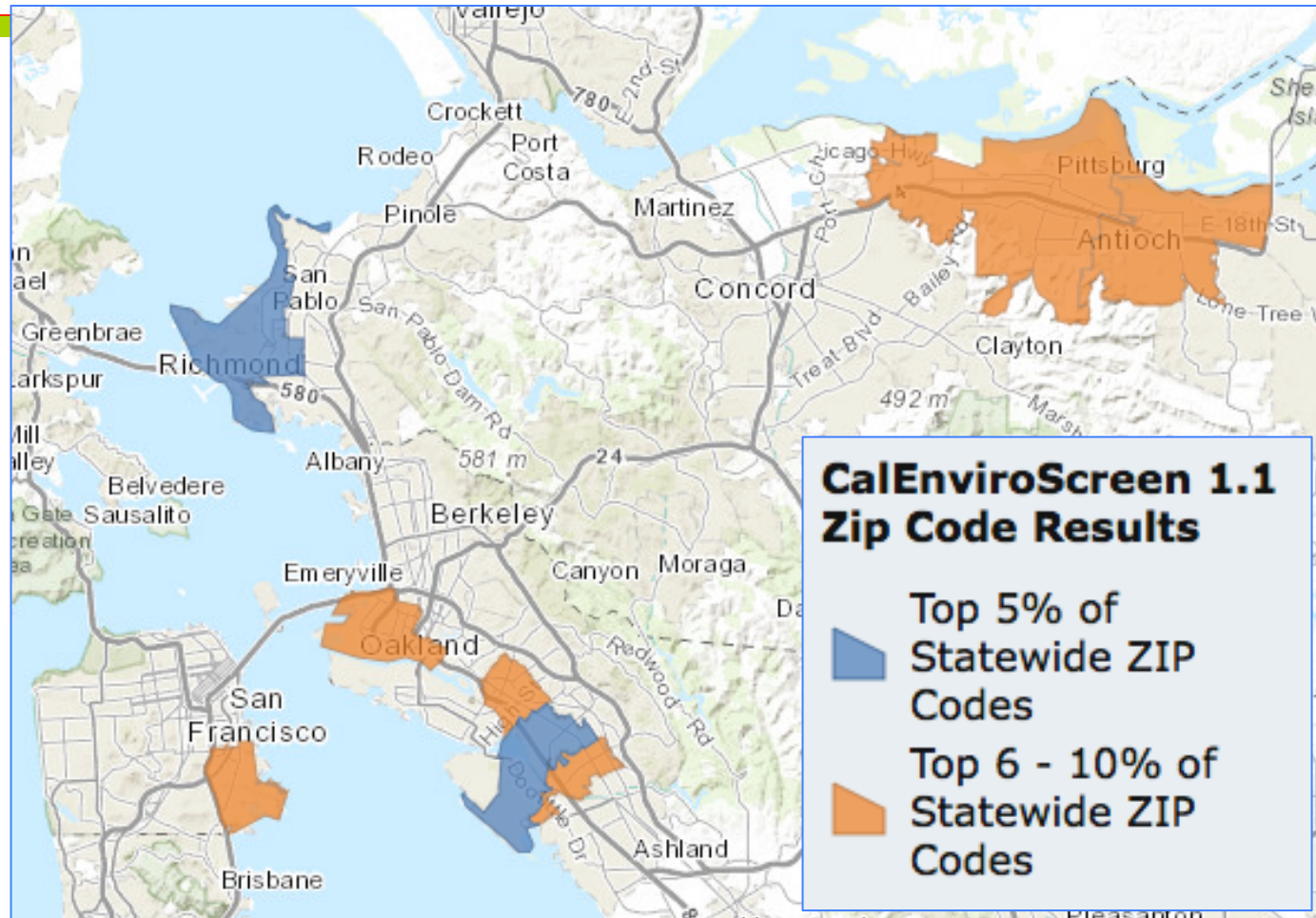
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## Ways to Communicate Your Concern

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- Help your customers calculate how little they gain from a Cr(VI) drinking water standard.
- Insist that the standard follow the law's economic feasibility requirement.
- Ask CDPH to determine whether an MCL would have disproportionate impacts on the poor.

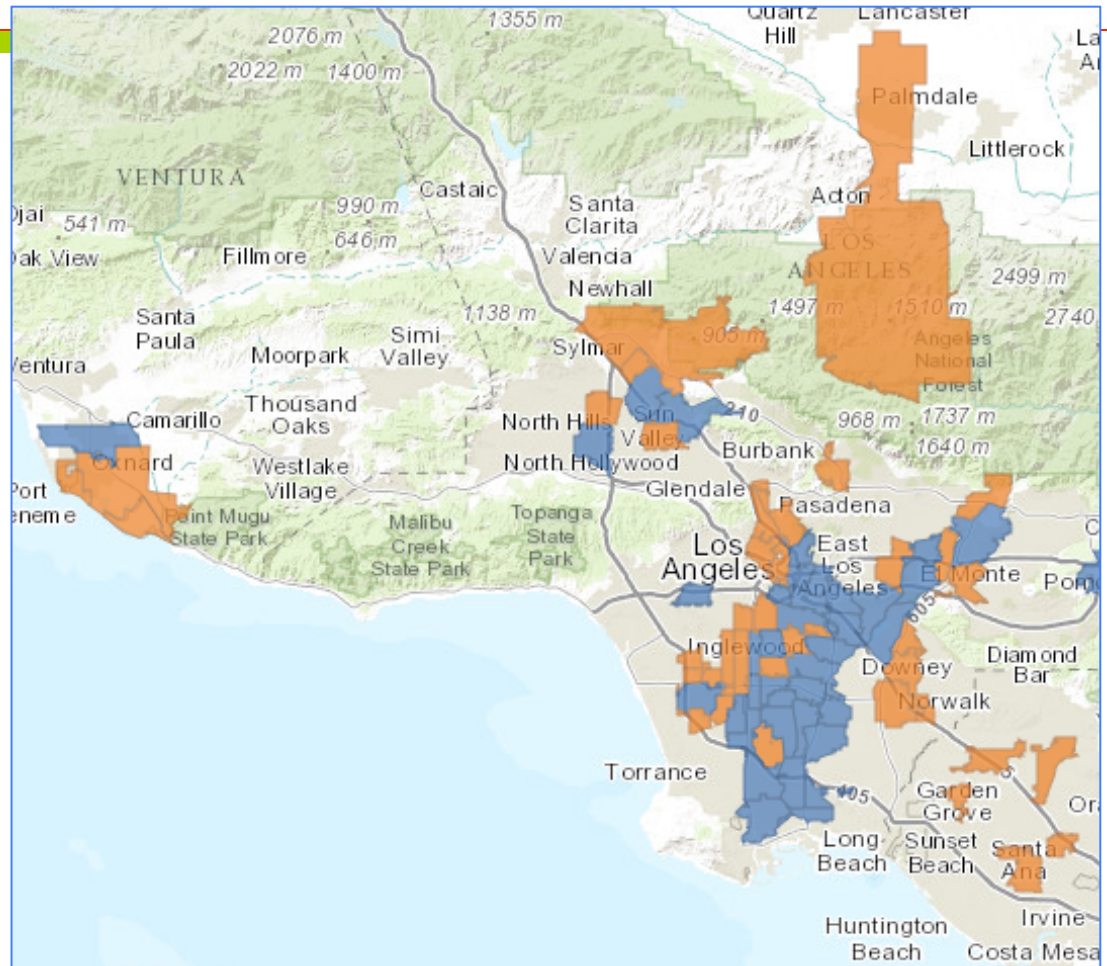
# Are your customers here?



# Here?

## CalEnviroScreen 1.1 Zip Code Results

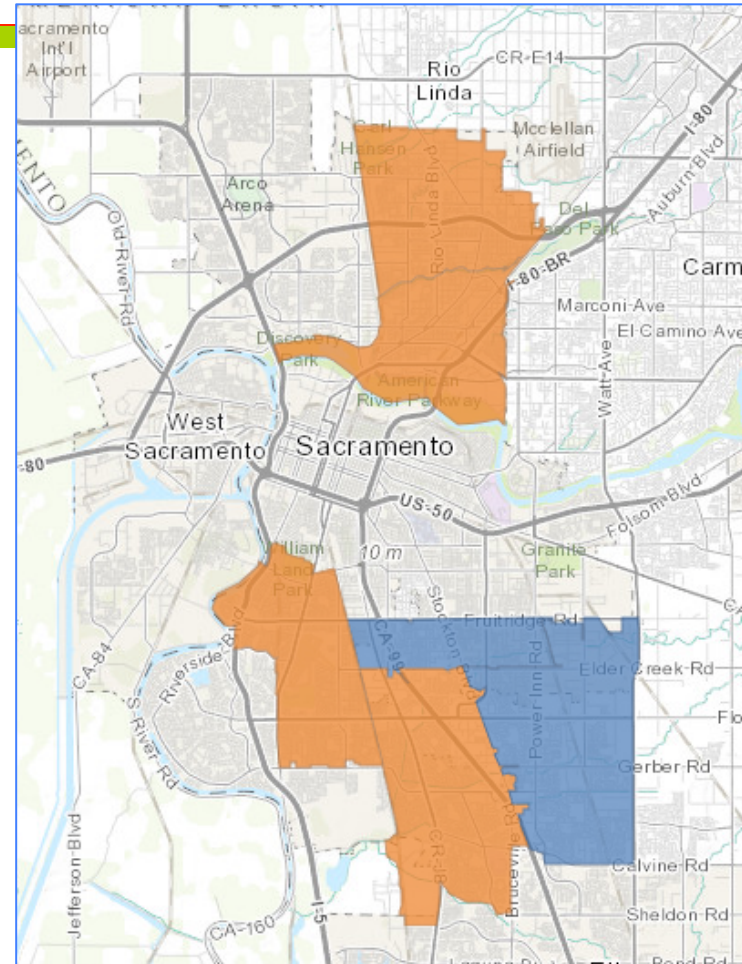
-  Top 5% of Statewide ZIP Codes
-  Top 6 - 10% of Statewide ZIP Codes



# How about here?



## CalEnviroScreen 1.1 Zip Code Results

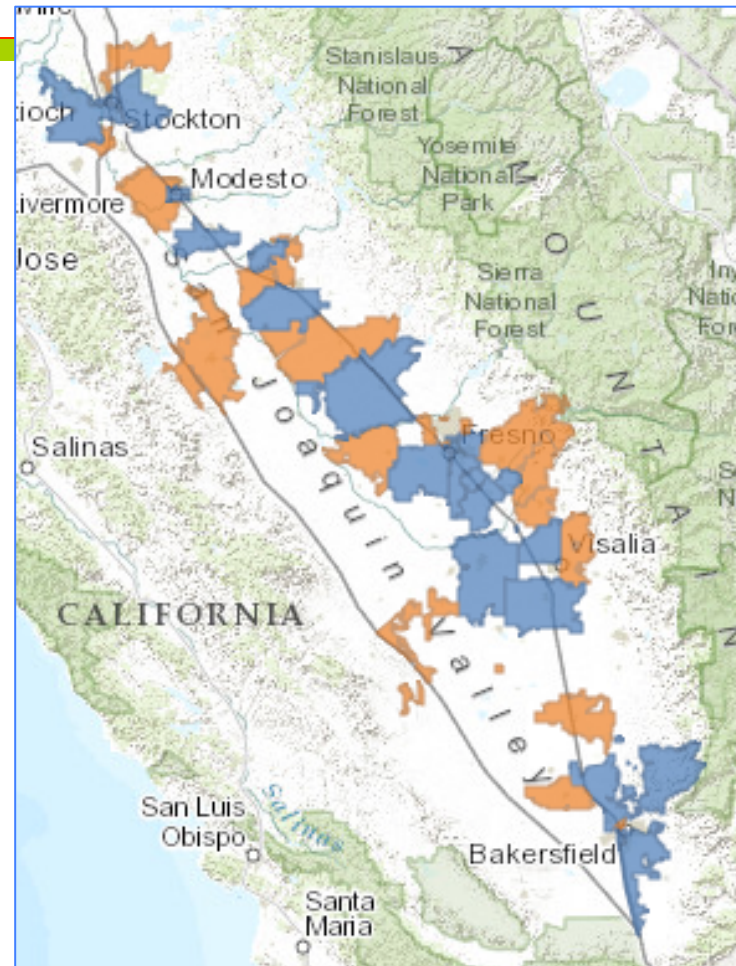
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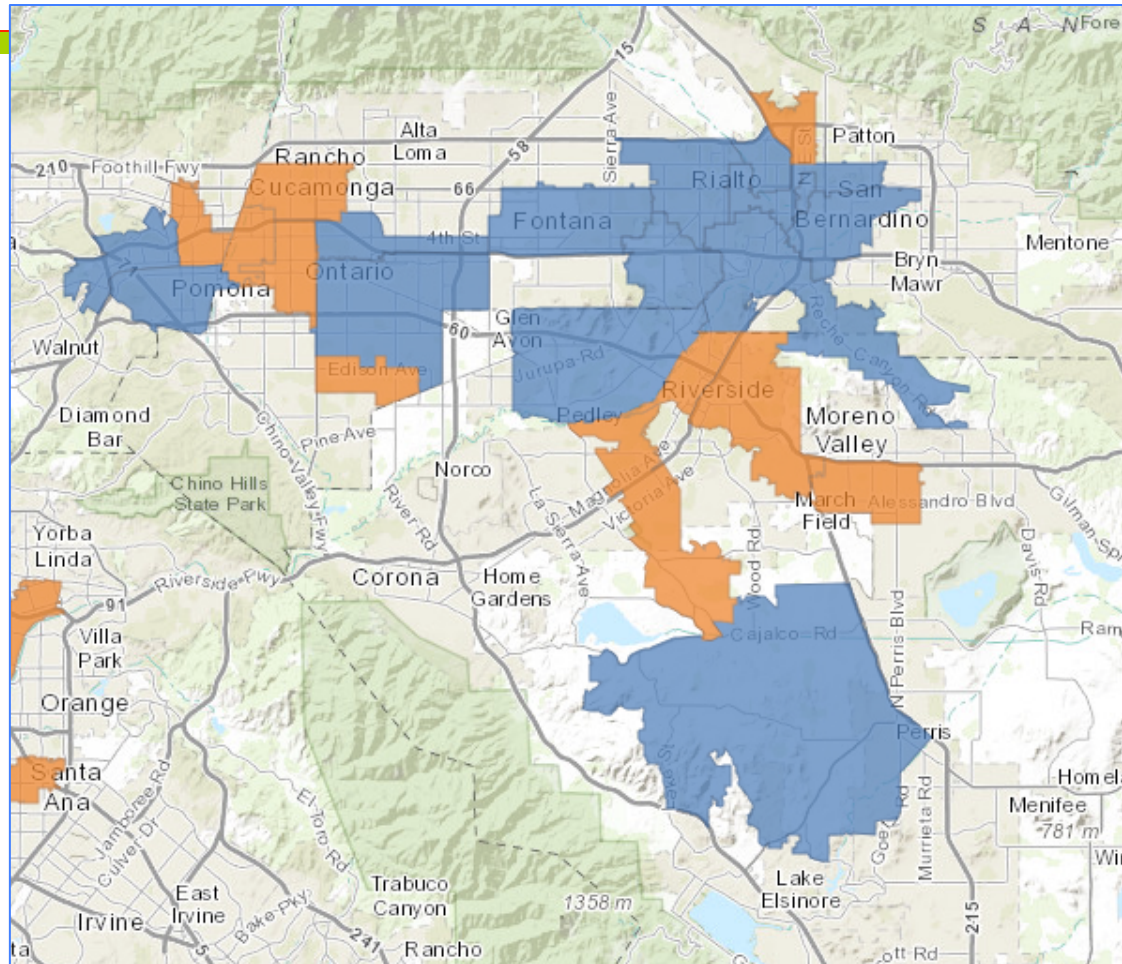
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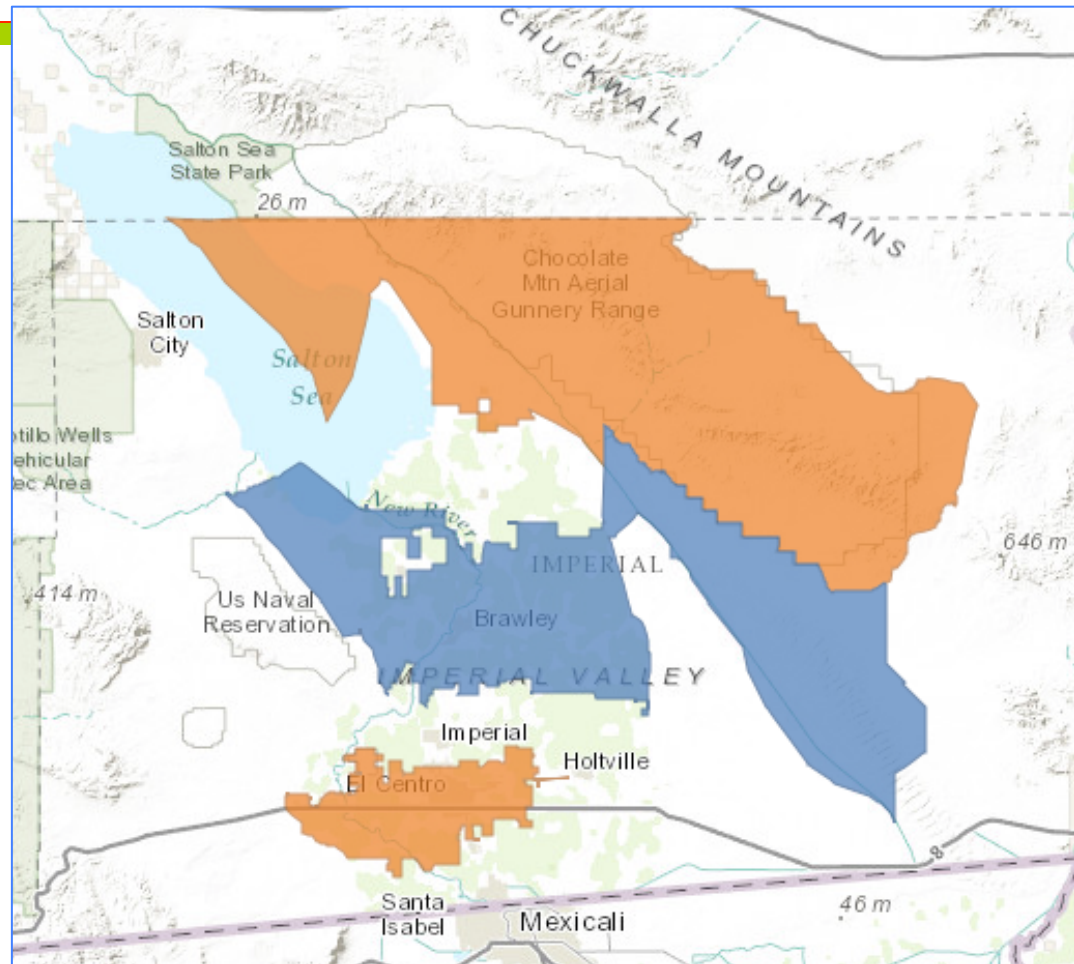


Or here?

...then you clearly have high environmental justice impacts.

**CalEnviroScreen 1.1  
Zip Code Results**

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