

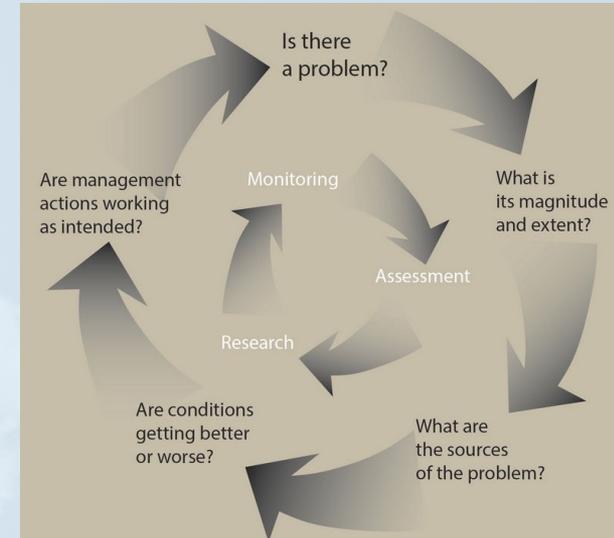
# WQExplorer

Aggregating Municipal and State Open Data for  
Water Quality Investigations

# Background

## Question-Driven Water Quality Monitoring and Assessment Approach

1. Is there a problem?
2. If so, what is its magnitude and extent?
3. What are the sources of the problem?
4. Are the conditions getting better or worse?
5. Are management actions working as intended?



## Public/Private Open Data Collaboration

- Orange County Public Works (OCPW)
- CloudCompli, Inc.

# Approach

## Issue Identification & Source Investigation

- Data sources
  - SMARTS Stormwater Violations via CA GreenGov API
  - SMARTS Industrial Raw Parameter Results via Data Extract
  - OCPW Municipal Stormwater Monitoring Data via Data Extract
- Process
  - Issue Identification & Prioritization (Monitoring and Assessment Questions 1 and 2)  
*OCPW Mass Emissions & Estuary/Wetlands Monitoring Data*
  - Source Investigation (Monitoring and Assessment Question 3)  
*SMARTS Industrial Raw Parameter Results & Stormwater Violations*
- Open collaboration
  - Publicly available @ <http://wqexplorer.cloudcompli.com>
  - Open source @ <http://github.com/cloudcompli/wqexplorer>

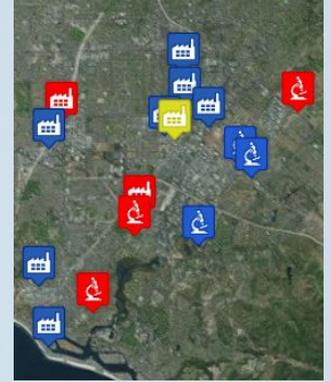
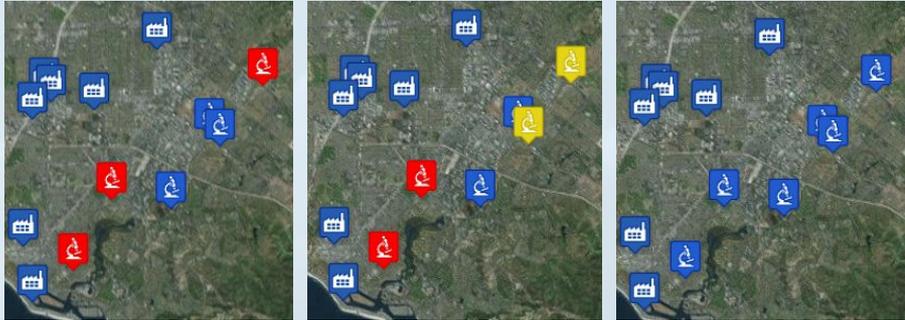


# Results

## Aggregate Effects & Uncaptured Factors

### Aggregate Effects (D. Cu)

- Exceedances of acute CTR criteria at multiple mass emissions stations
- Smaller discharges may contribute to cumulative build up
- Three facilities outside historic mean - if their pollution footprints were reduced, could result in a positive trend on the loading stations



### Uncaptured Factors

- Non-stormwater contributions (geology, atmospheric deposition)
- Discharges from unregulated facilities
- Improved granularity & more data sets might enable isolating contributing factors

# Discussion

## Limitations & Improvements

### Limitations

- Data Availability
- Correlation versus Causation

### Improvements

- Analytical Methods
- Granularity
- Latency
- Statistical Methods
- Sources