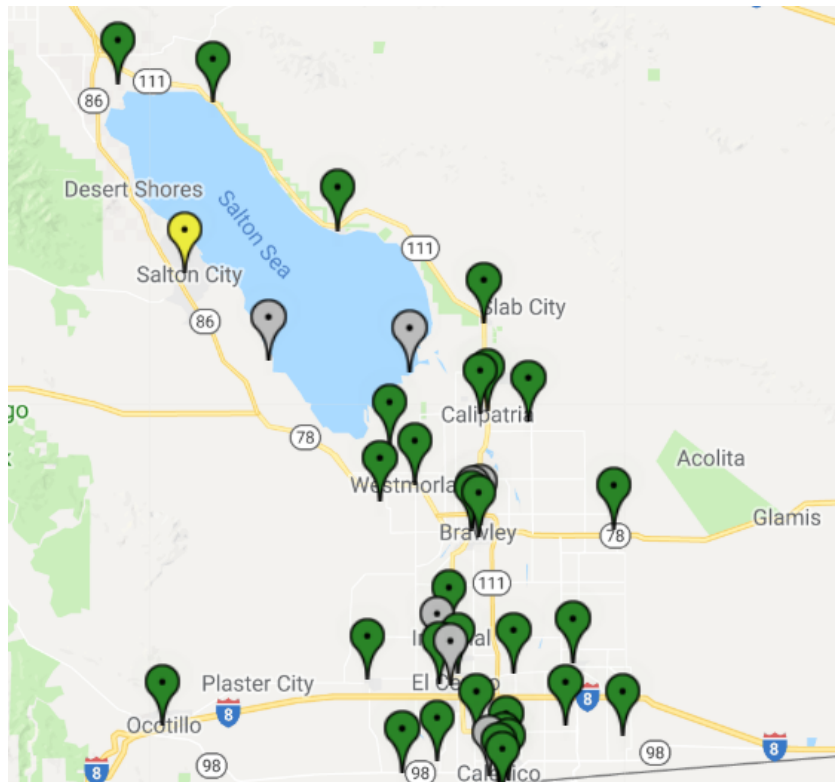# Using Dispersion Models to Interpret Data from Low Cost Monitors
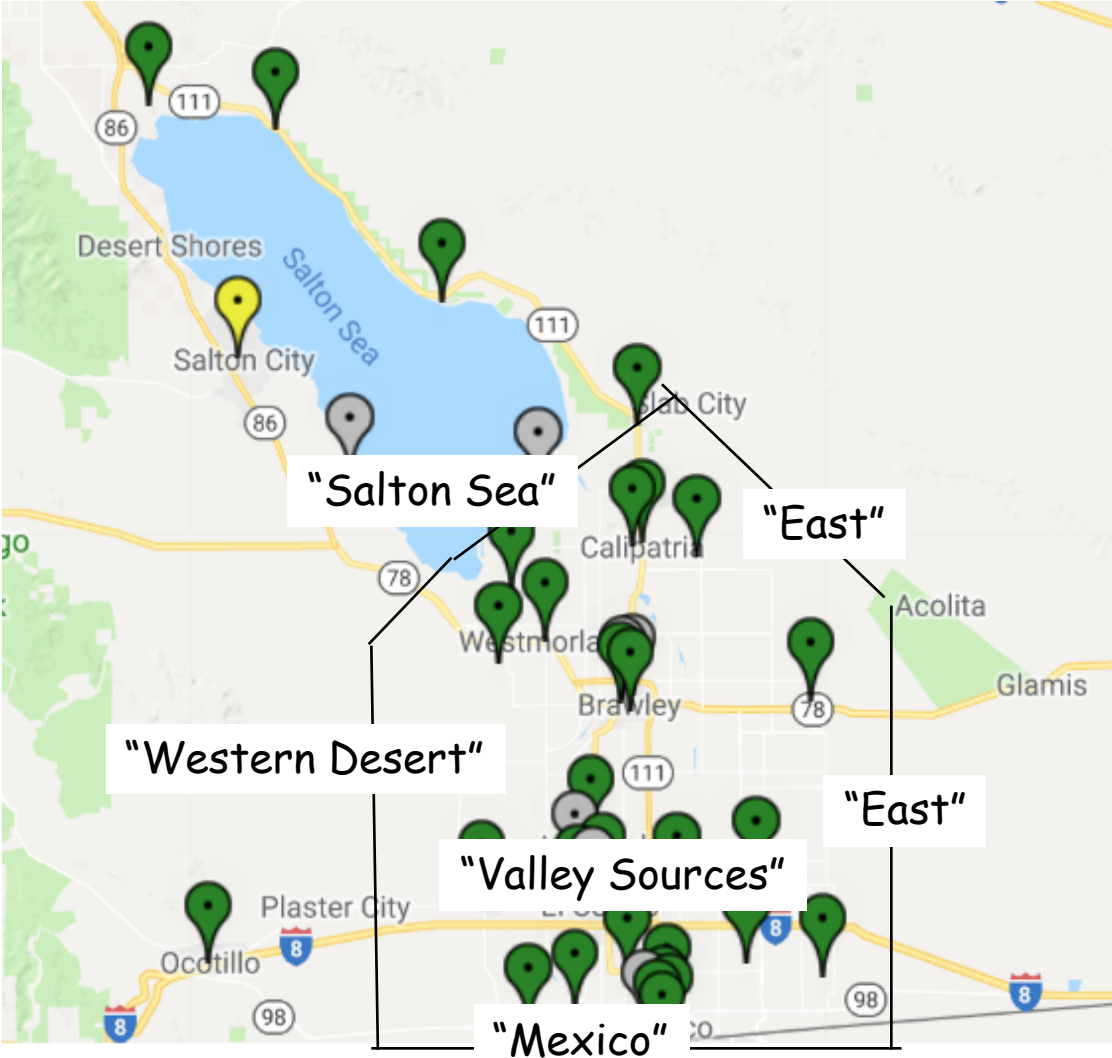
Faraz Ahangar, Akula Venkatram
University of California, Riverside, CA
Frank Freedman, SJSU

IVAN System-Identifying Violations
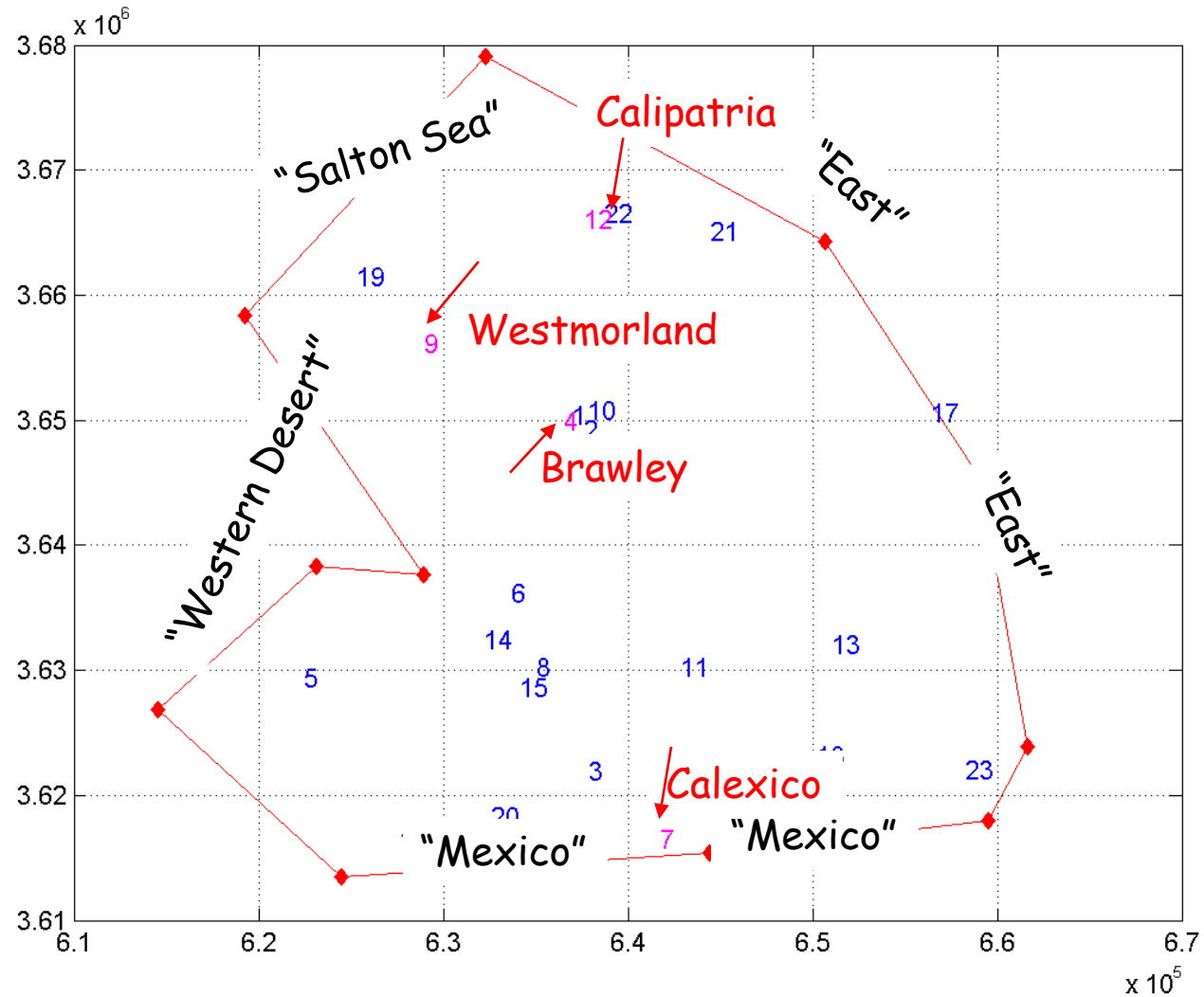Affecting Neighborhoods

How can we use a high density air quality network to understand the impact of PM sources on air quality in the Imperial Valley?
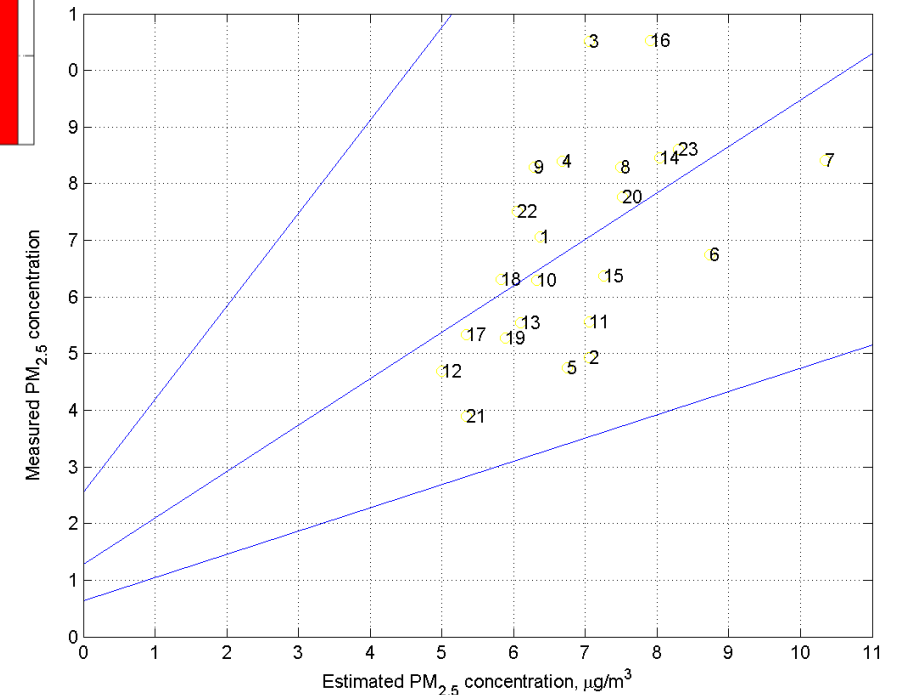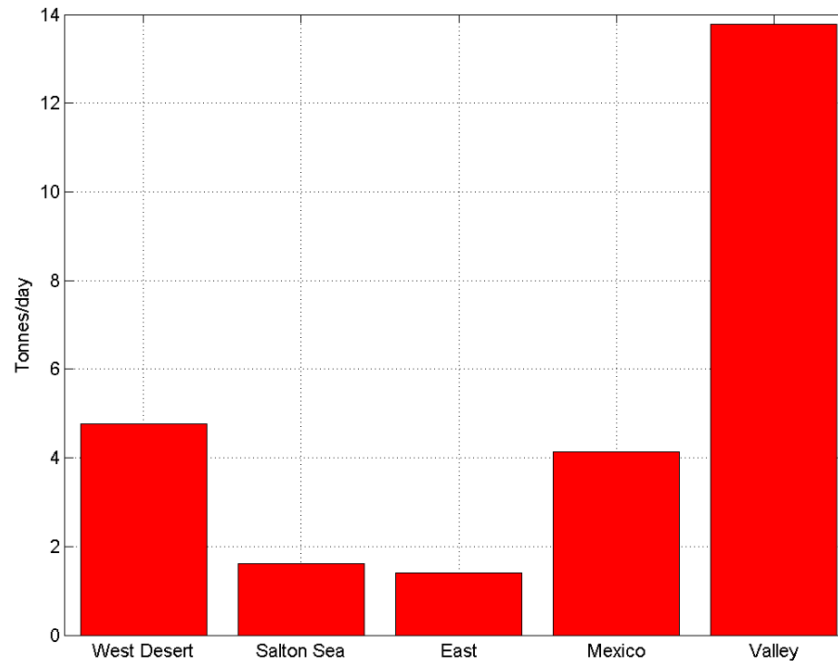
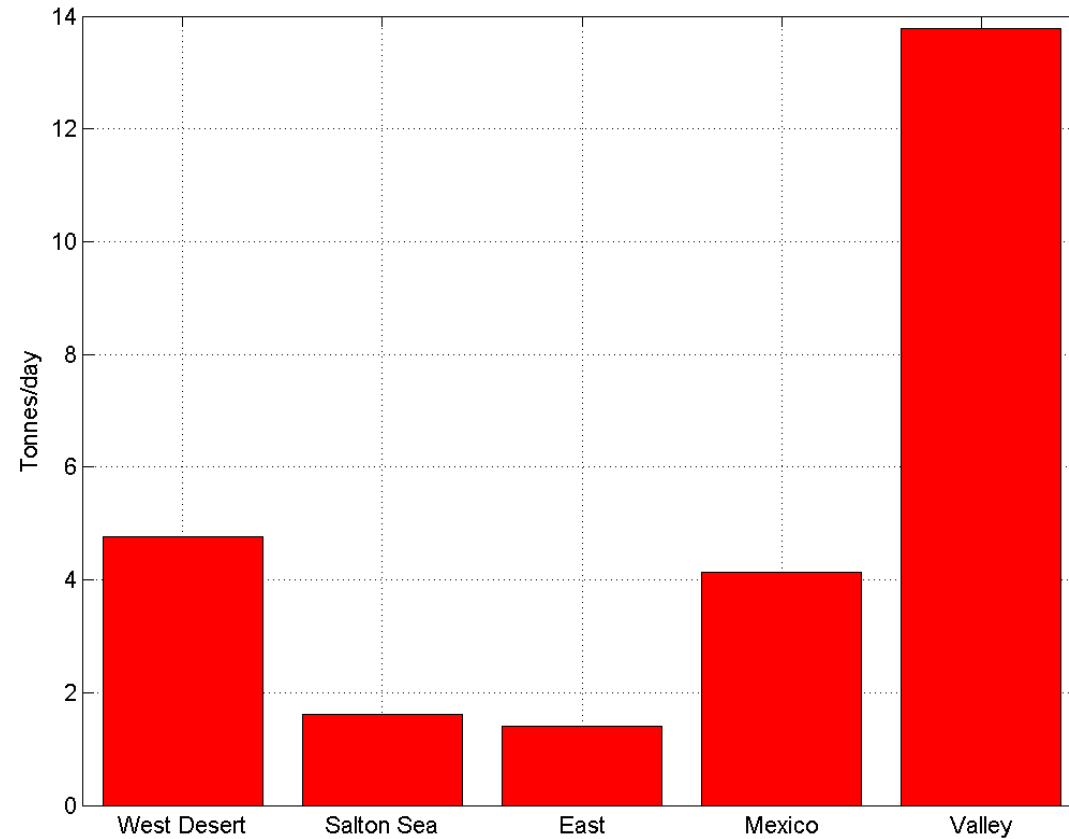# Naming Convention

Source and Receptor Locations

Applying Dispersion Models

1. Treat boundaries as line sources and valley as area source

2. Estimate concentrations using unit emissions from sources
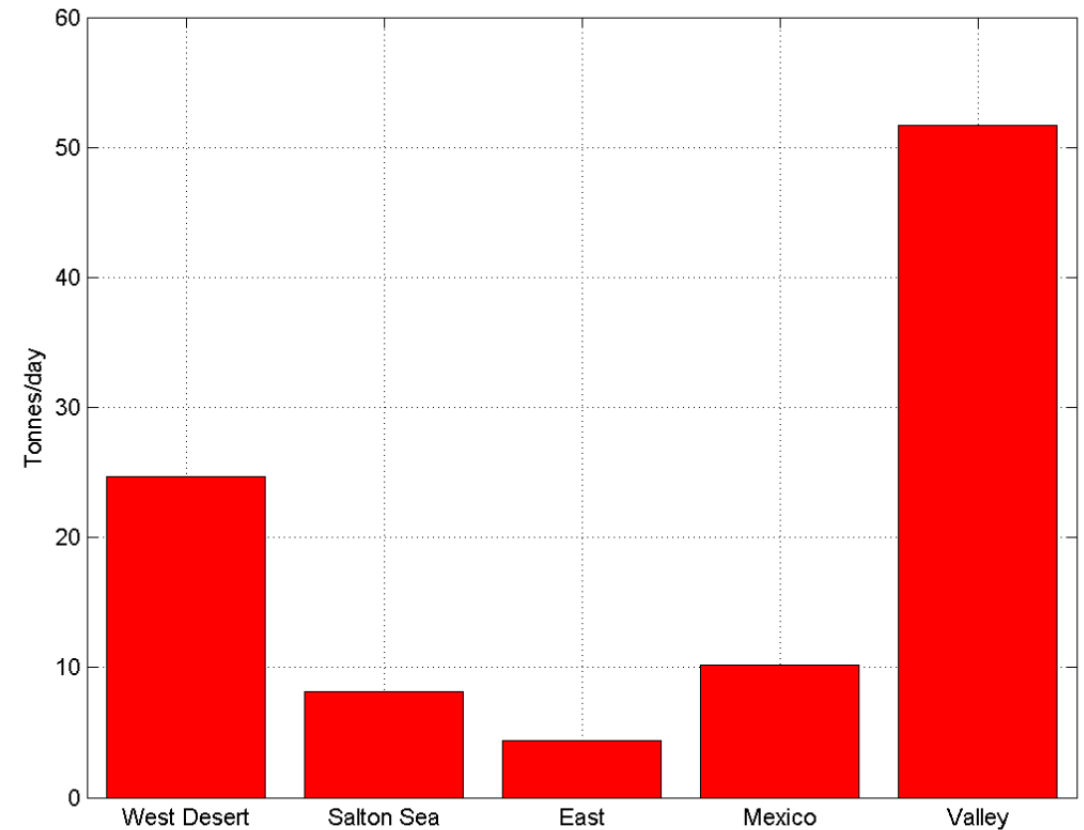
3. *Estimate emissions by fitting model estimates to PM$_{2.5}$ concentrations*
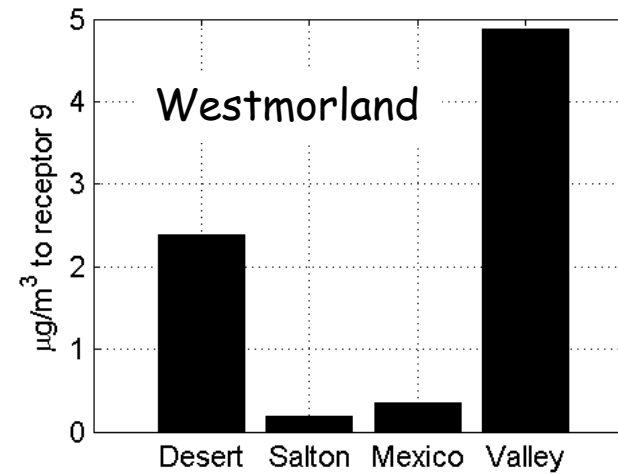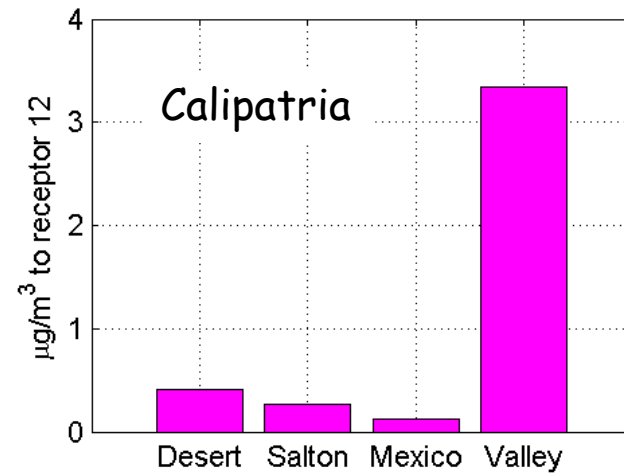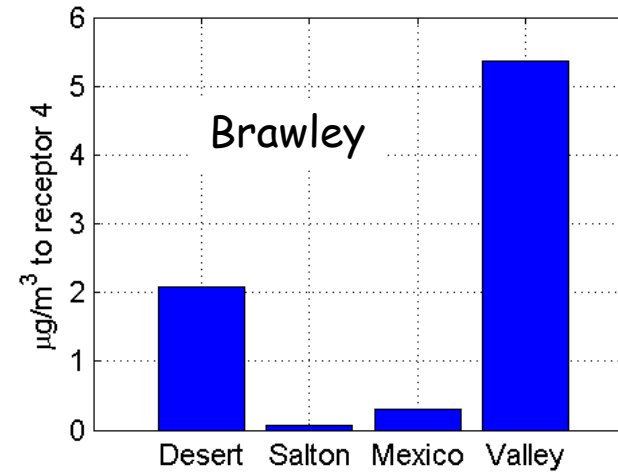
Emissions vary with wind speed
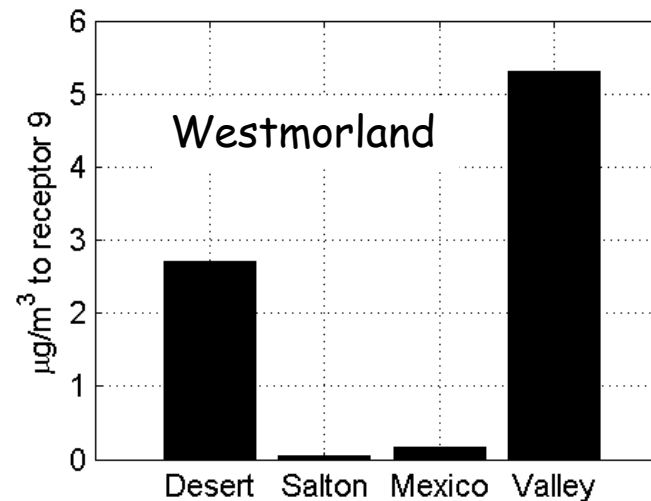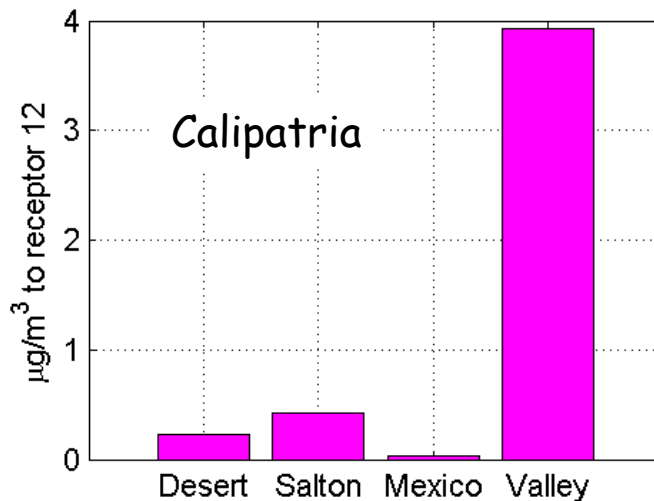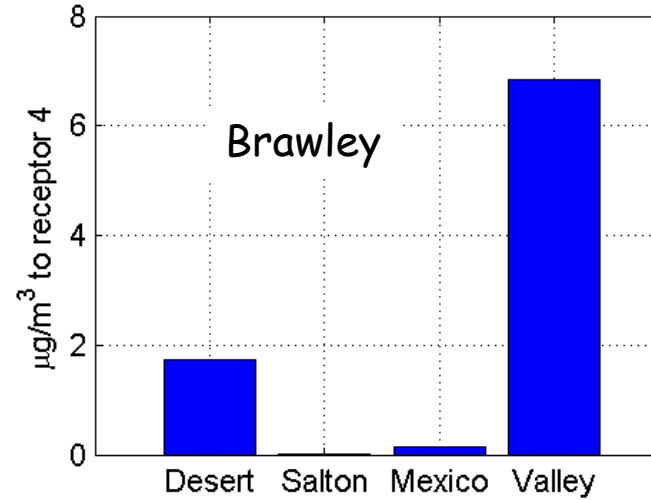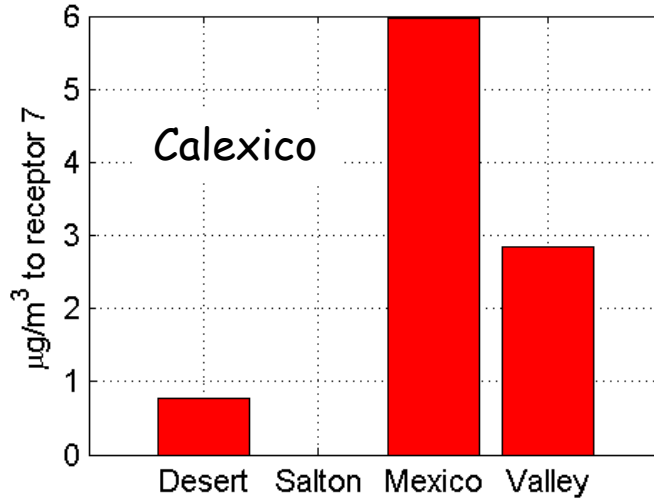

Emissions-All Winds

Emissions-High Winds
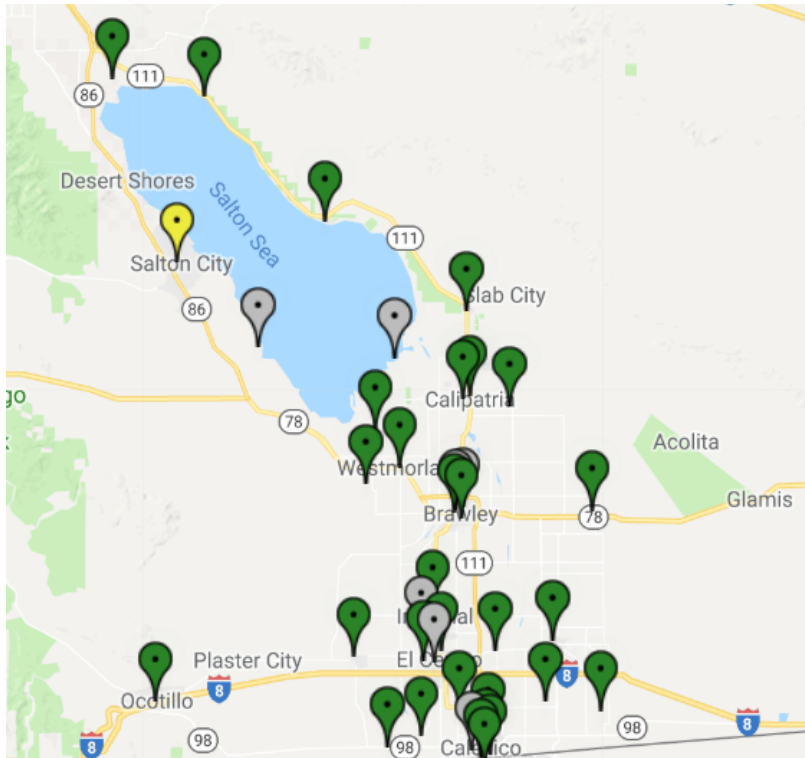
Contributions to receptor concentrations
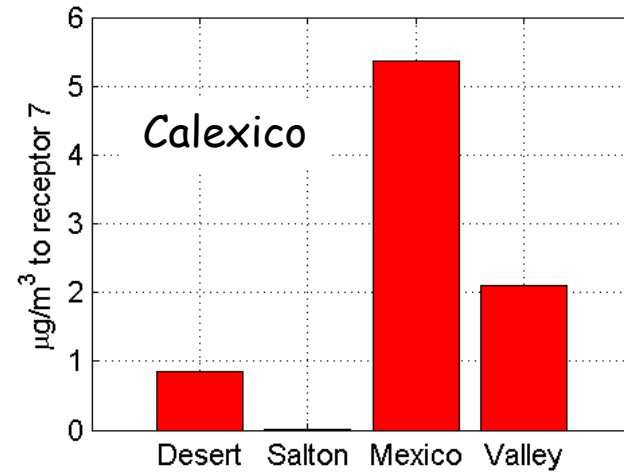
June 2017-High Winds

Summary

IVAN System-Identifying Violations Affecting Neighborhoods

We can use dispersion models to estimate

- Emissions of $PM_{2.5}$ from different sources

- Contributions of these emissions to receptor concentrations at *any* location inside region