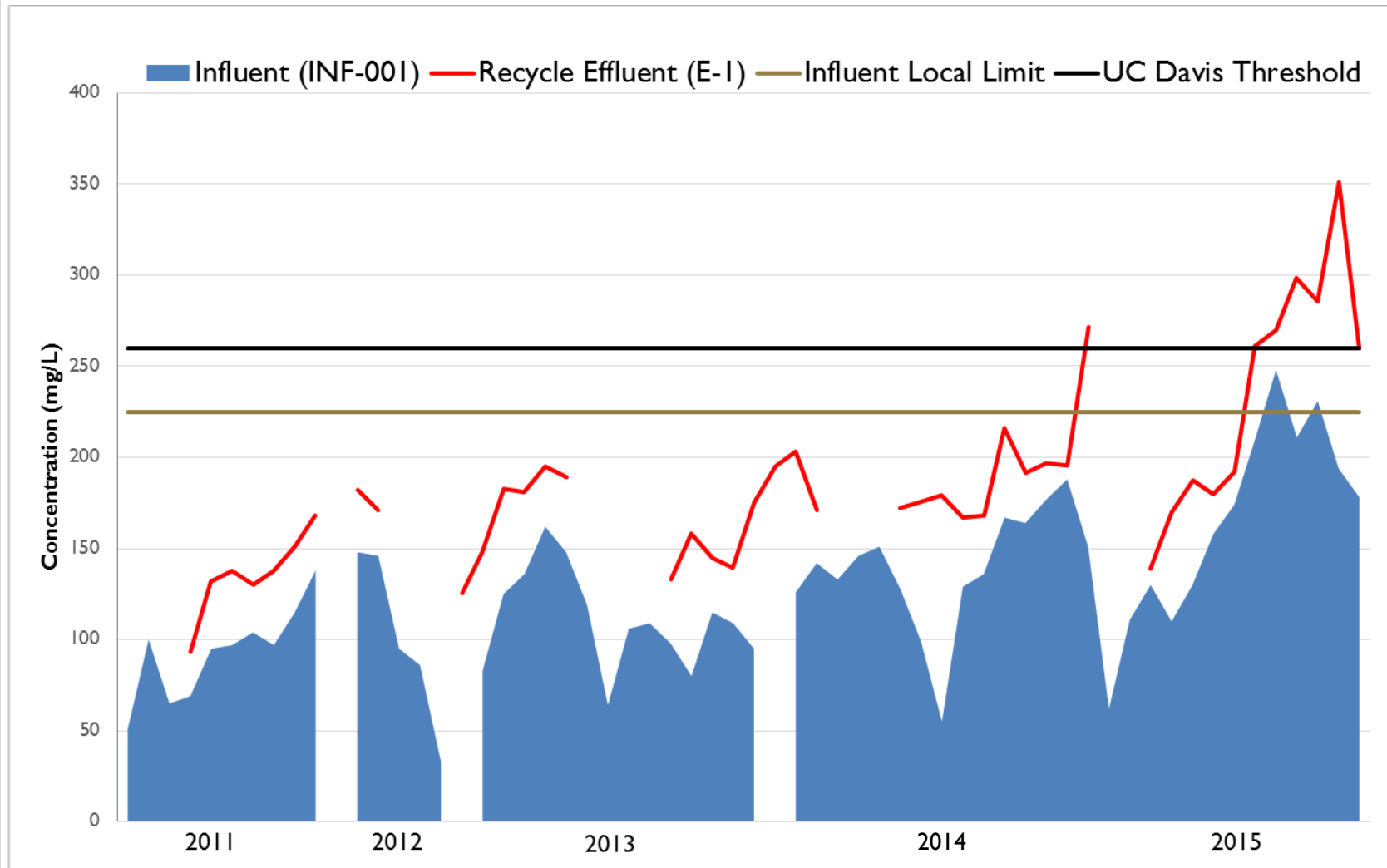


# Chloride Update

July 13, 2016



# Chloride Concentrations 2011-2015



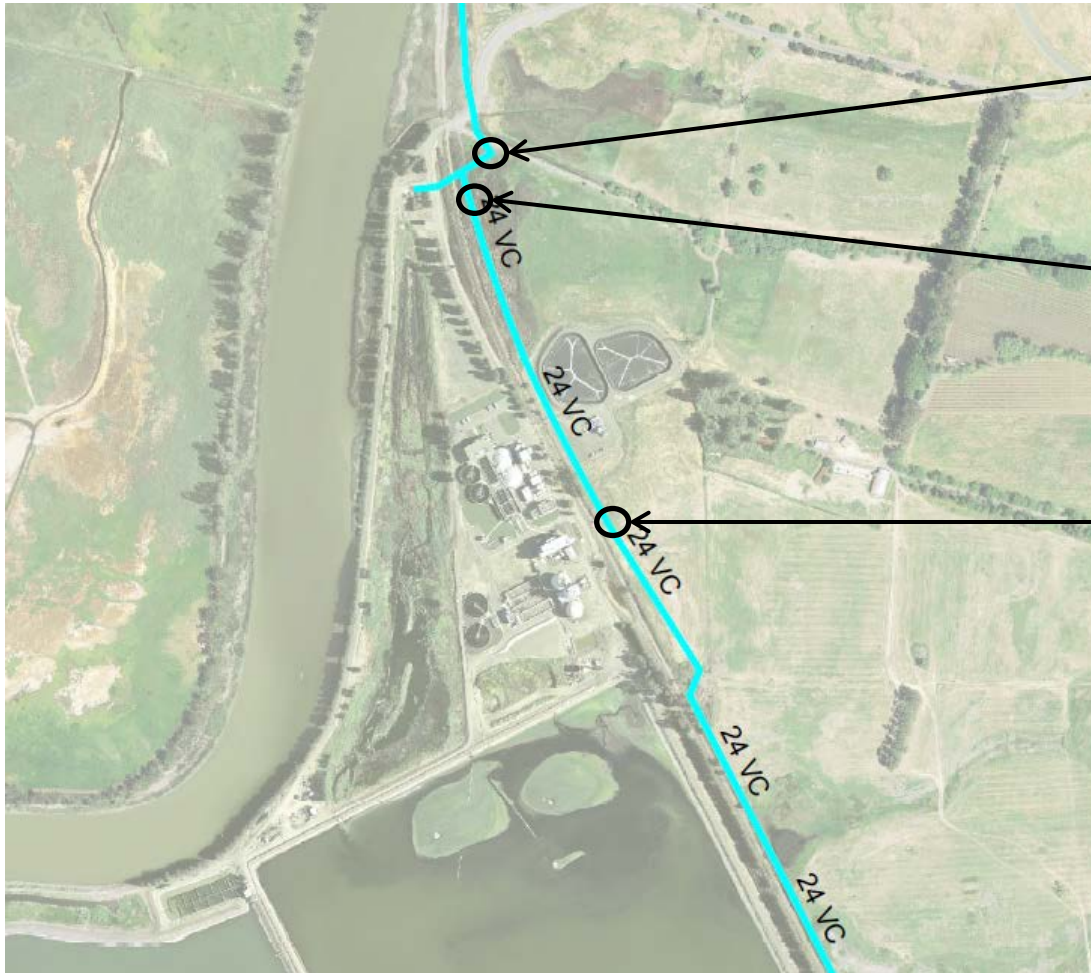
# Sources of Chloride

- Natural sources
  - Salt water infiltration from Napa River
- Dischargers
  - Water softeners
  - Boilers/Cooling towers
  - Medical facilities
  - Pool filters

# Work Completed to date

- Manhole rehabilitations
- CCTV inspection
- BMPs for water softeners, boilers, and cooling towers sent to users

# Manhole Rehabilitations



~5 gpm leak with  
800 mg/L Cl<sup>-</sup>

Small leak with  
400 mg/L Cl<sup>-</sup>

Small leak with  
400 mg/L Cl<sup>-</sup>

— Sewer main at elevation less than 0 (sea level)



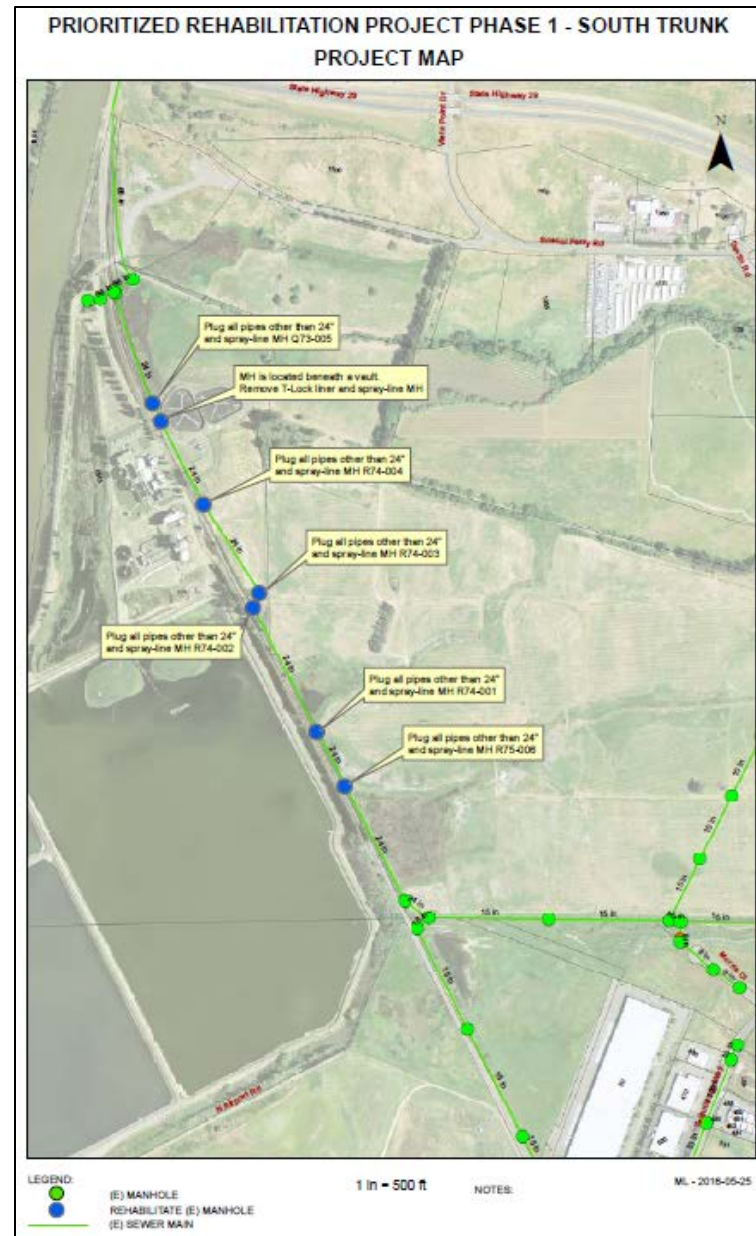


# Prioritized Rehabilitation Project Phase I - Initial Concept





# Prioritized Rehabilitation Project Phase I

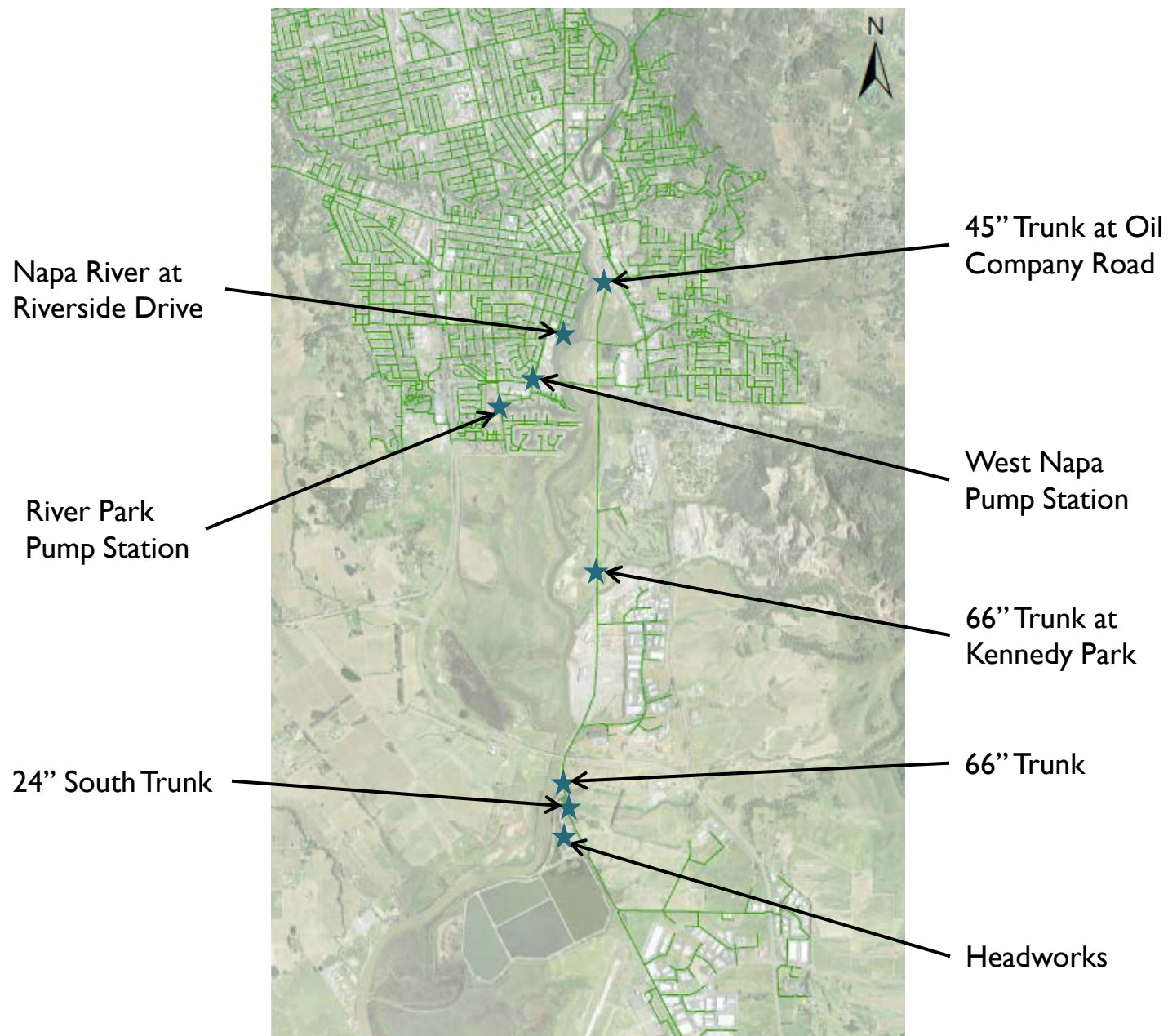




# Conductivity Monitoring

- 8 Fixed Monitoring Locations
  - Track changes in conductivity over time
  - Correlate conductivity to tide stage, river salinity, rainfall, temperature, etc.
  - Strategically located to isolate areas within the collection system
- 3 “Roving” Data Loggers
  - Trace high levels of conductivity upstream from fixed monitoring locations to pinpoint sources

# Fixed Monitoring Locations

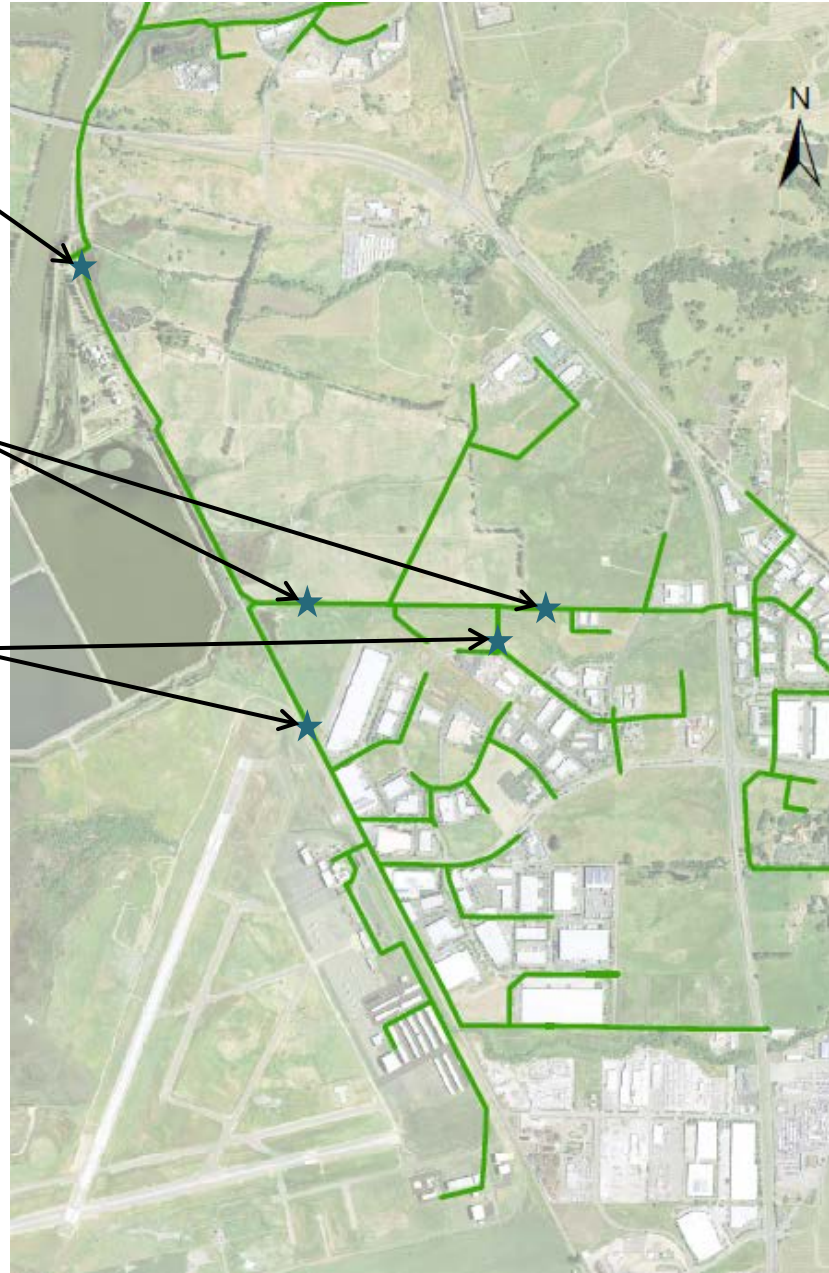


# 24" Trunk Upstream Trace

24" Trunk fixed  
monitoring location

Temporary  
Monitoring  
Location

Temporary  
Monitoring  
Location





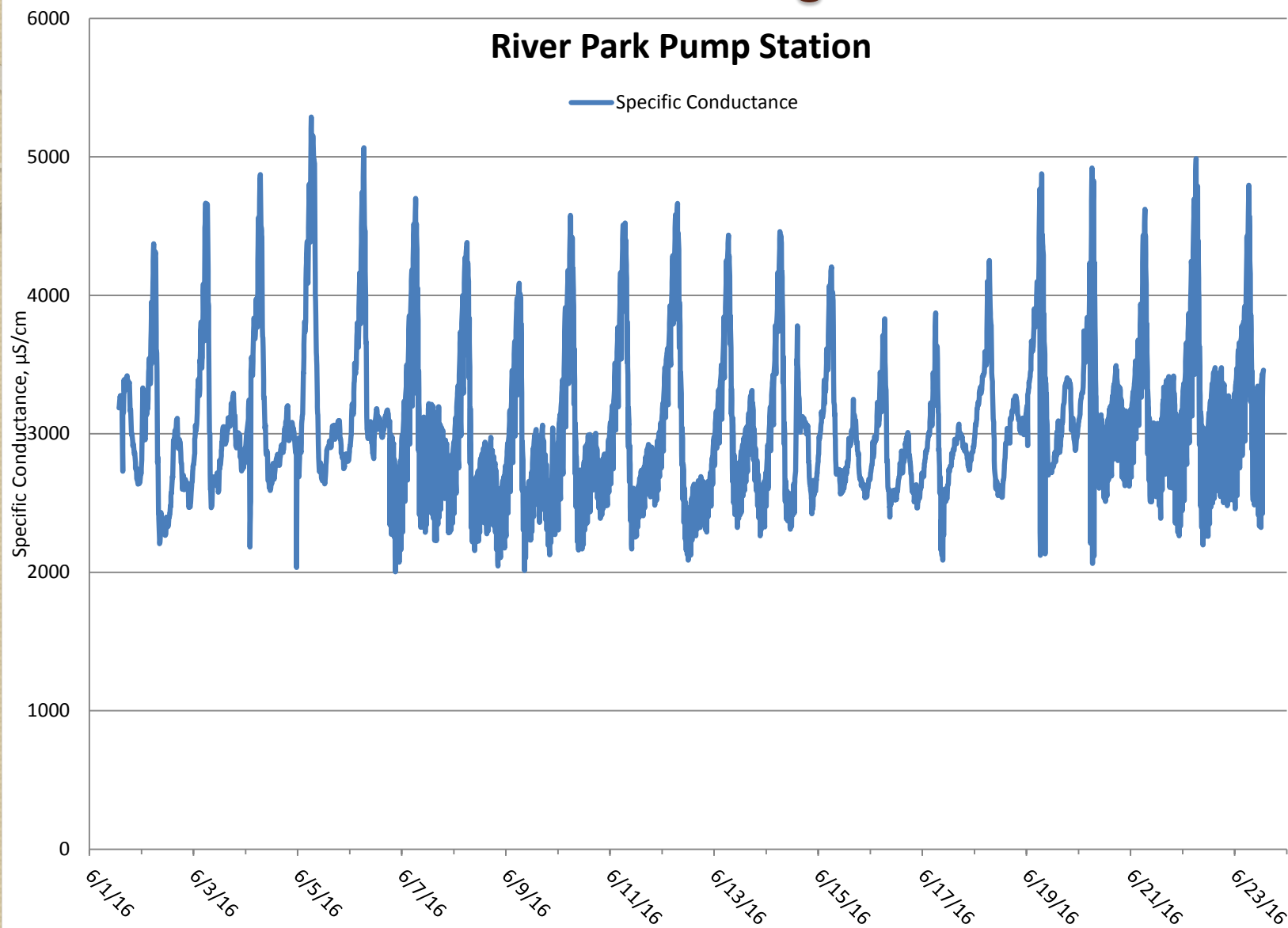
# River Park PS Fixed Monitoring

River Park PS  
Fixed Monitoring  
Location

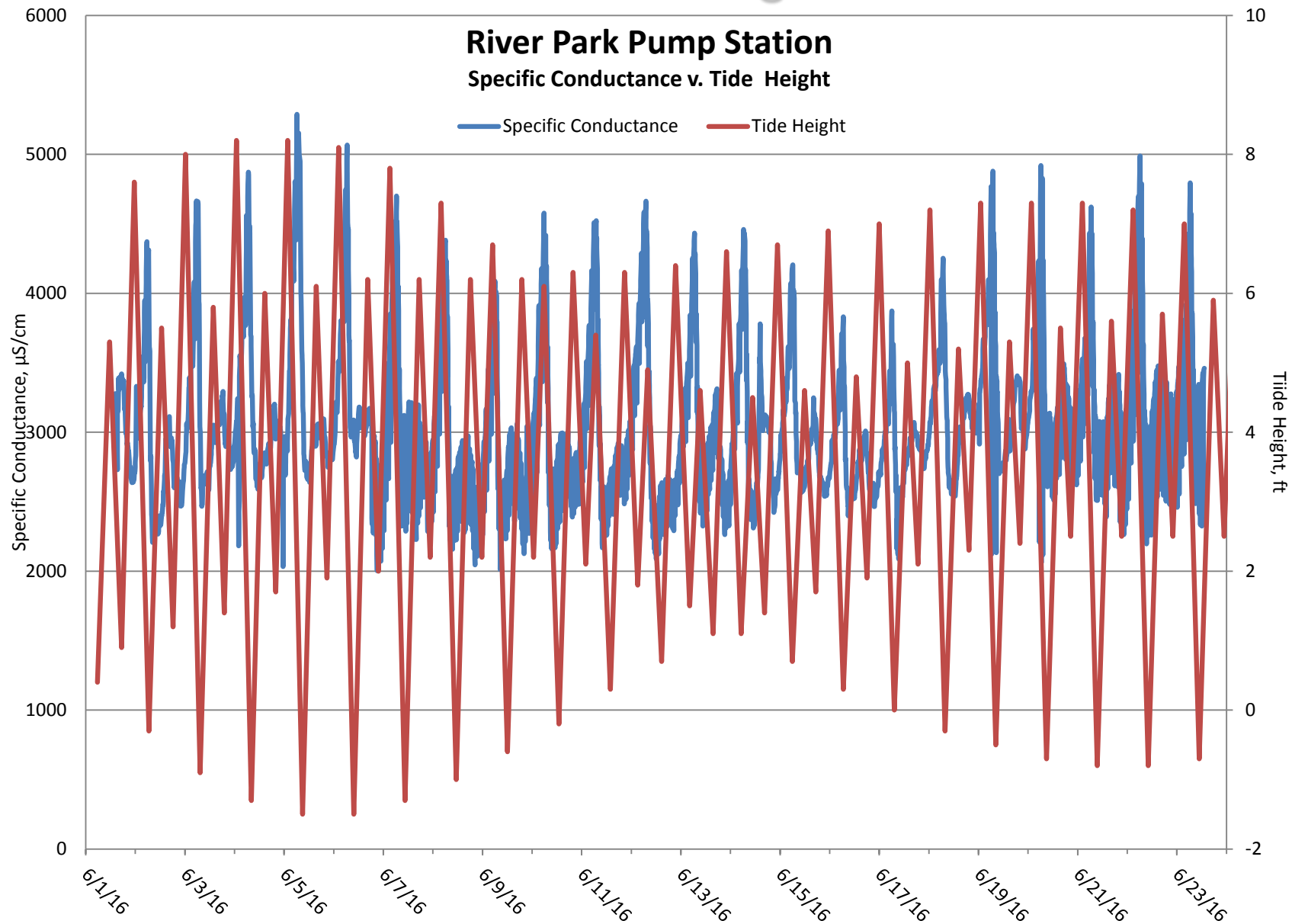




# River Park PS Fixed Monitoring



# River Park PS Fixed Monitoring



# River Park Upstream Trace

River Park Blvd  
Temporary  
Monitoring  
Location

River Park PS  
Fixed Monitoring  
Location

S Jefferson  
Temporary  
Monitoring  
Location

S Jefferson  
Temporary  
Monitoring  
Location

Newport Drive Temporary  
Monitoring Location



# Looking Ahead

- Continue monitoring conductivity as the dry season progresses
- Continue providing chloride updates to customers
- Use the “roving” probes to pinpoint sources of chloride
- Enforce BMPs for boilers, chillers, and water softeners
- Identify and implement projects to reduce chloride loading