City of San Diego – Storm Drain Characterization and TMDL Support Efforts

Ruth Kolb
Transportation & Storm Water Department
January 10, 2013

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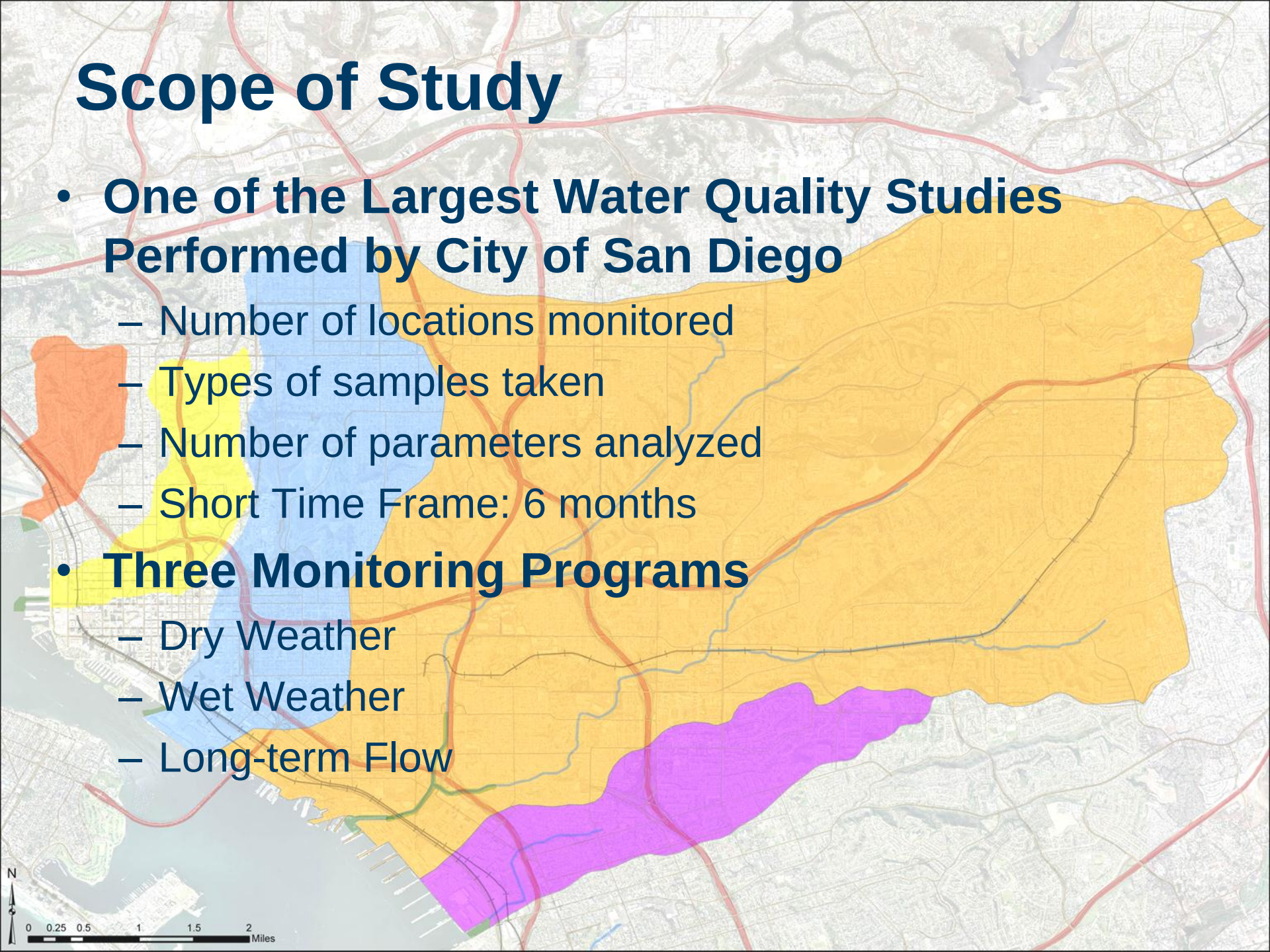
SAN DIEGO

Study Goals and Objectives

- Motivation to launch study: Several Impairments in San Diego Bay (i.e. 303 (d) list)
- Characterizing the distribution of pollutants in the project watersheds will help the City target problem areas and implement the appropriate management measures, which will lead to cleaner beaches, bays, and streams
- Data used to calibrate wet weather runoff modeling efforts for San Diego Bay Shoreline TMDLs

Scope of Study

- **One of the Largest Water Quality Studies Performed by City of San Diego**
  - Number of locations monitored
  - Types of samples taken
  - Number of parameters analyzed
  - Short Time Frame: 6 months
- **Three Monitoring Programs**
  - Dry Weather
  - Wet Weather
  - Long-term Flow



Scope of Study (cont'd)

- **Parameters analyzed:**
  - Five classes of organic compounds:
    - Organochlorine Pesticides (OCPs)
    - Organophosphorus Pesticides (OPPs)
    - Synthetic Pyrethroid Pesticides (SPPs)
    - PAHs
    - PCBs (all congeners and Aroclors)
  - Nutrients (TP & TN)
  - Bacteria (*Enterococcus*, Total & Fecal Coliform)
  - TSS, Sediment Particle-size distribution
  - General WQ Chemistry
  - Toxicity Test Bioassays
    - Solid-phase sediment – 10-day (*Hyalella azteca)*
    - Aqueous (*H. azteca, Americamysis [mysidopsis] bahia,* and *Strongylocentrotus purpuratus* – fertilization)

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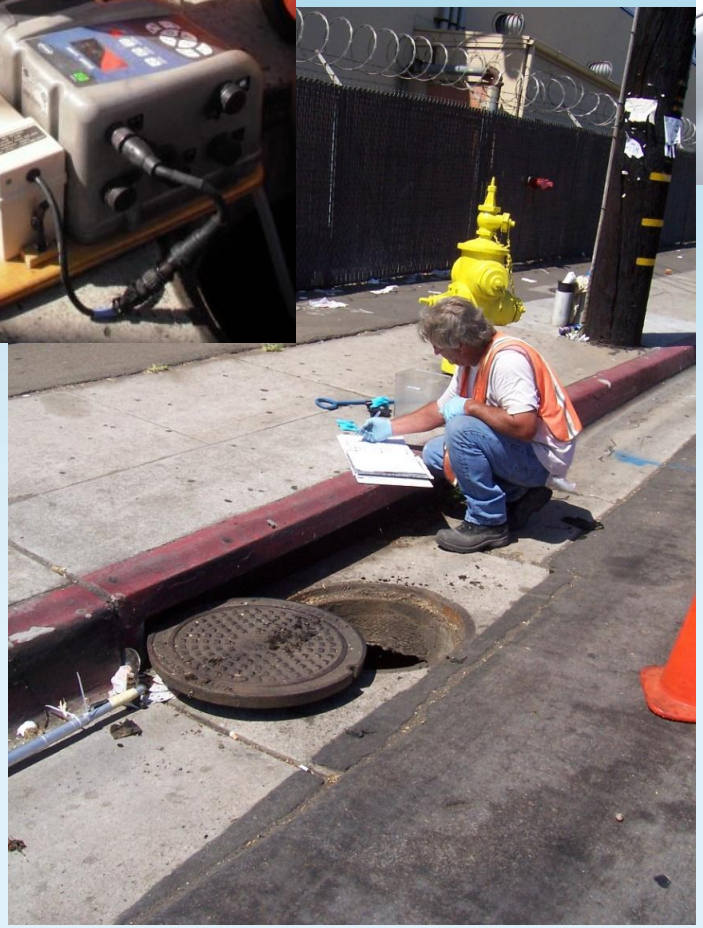
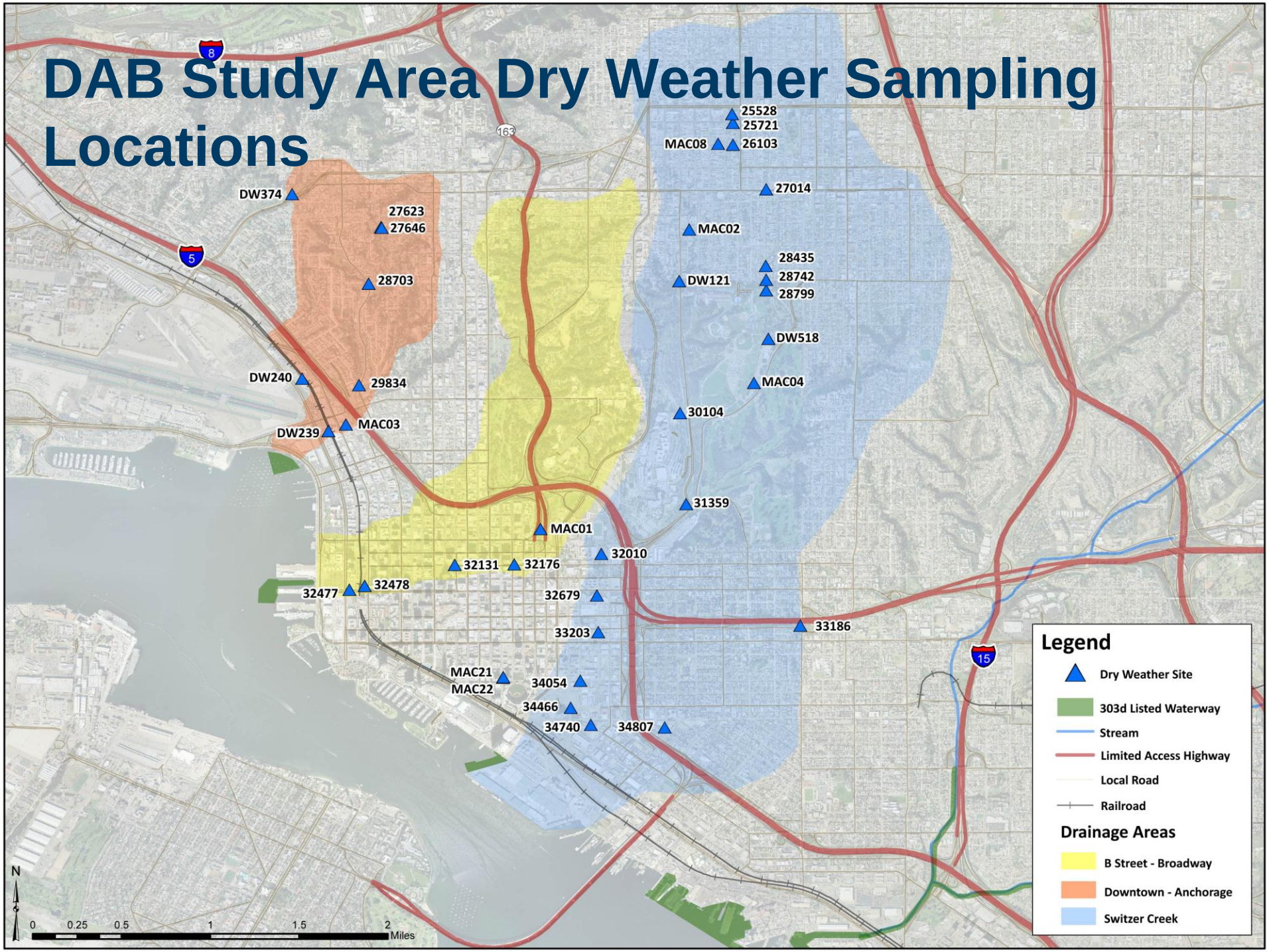
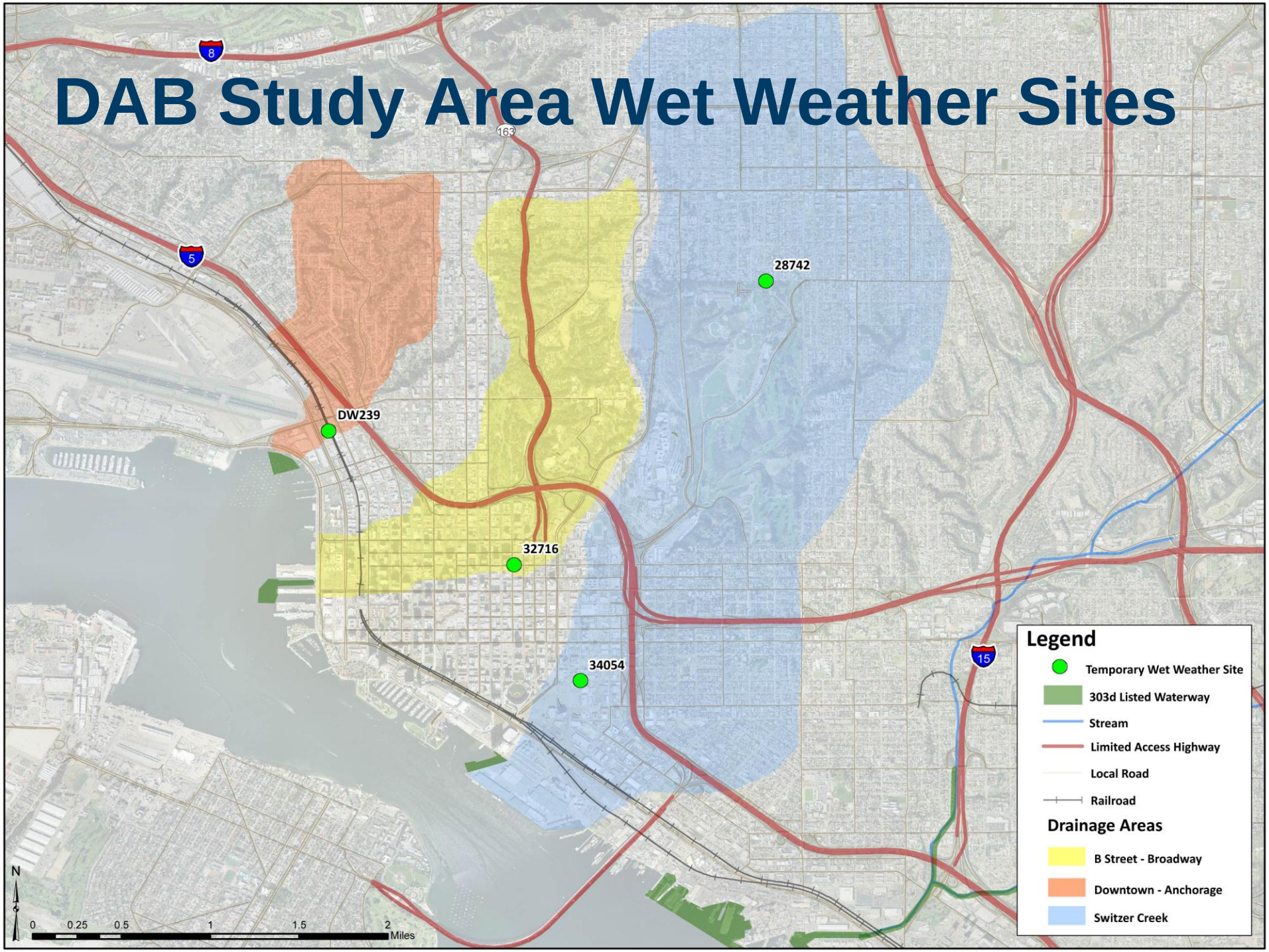


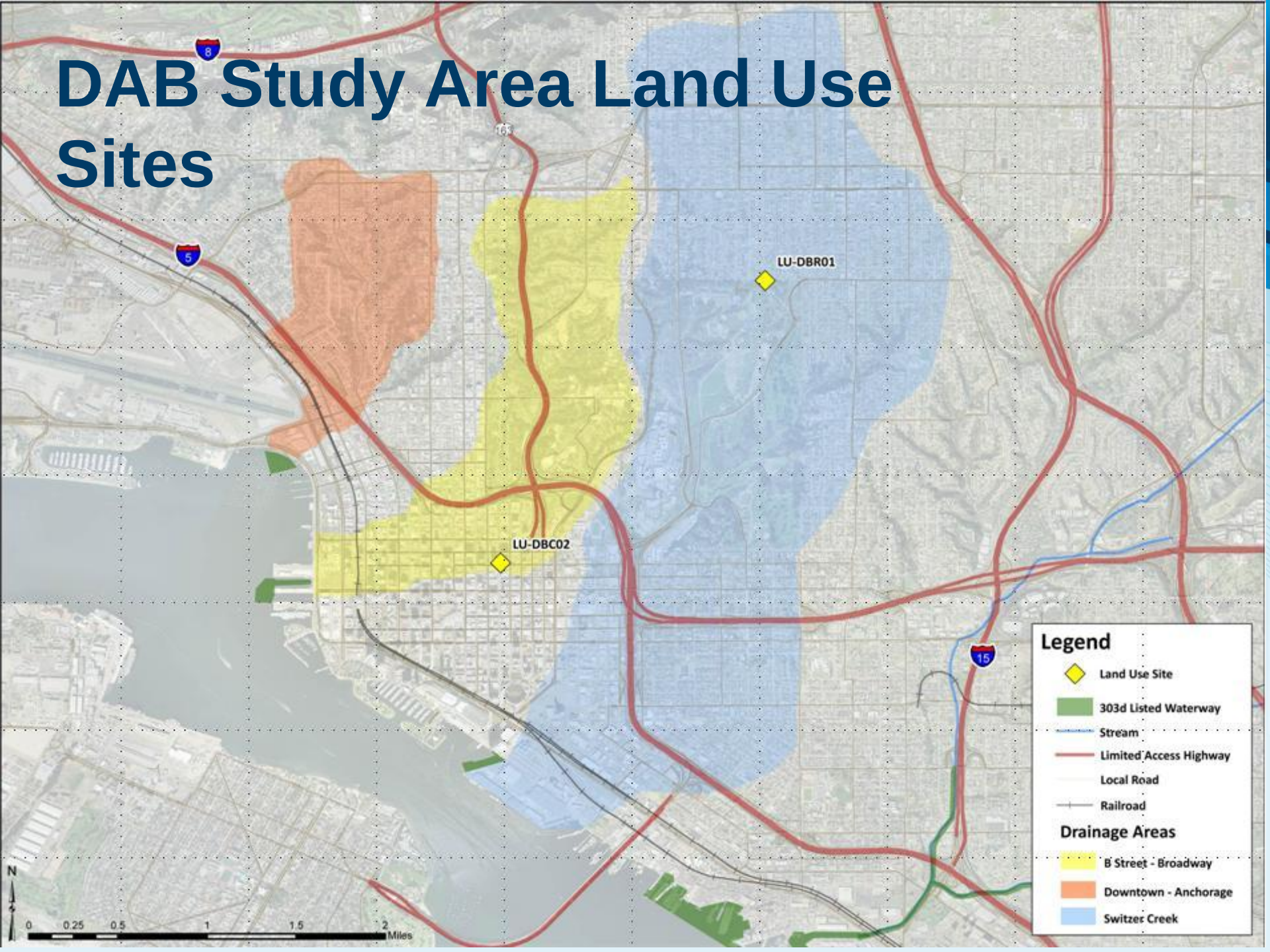
DAB Study Area Dry Weather Sampling Locations



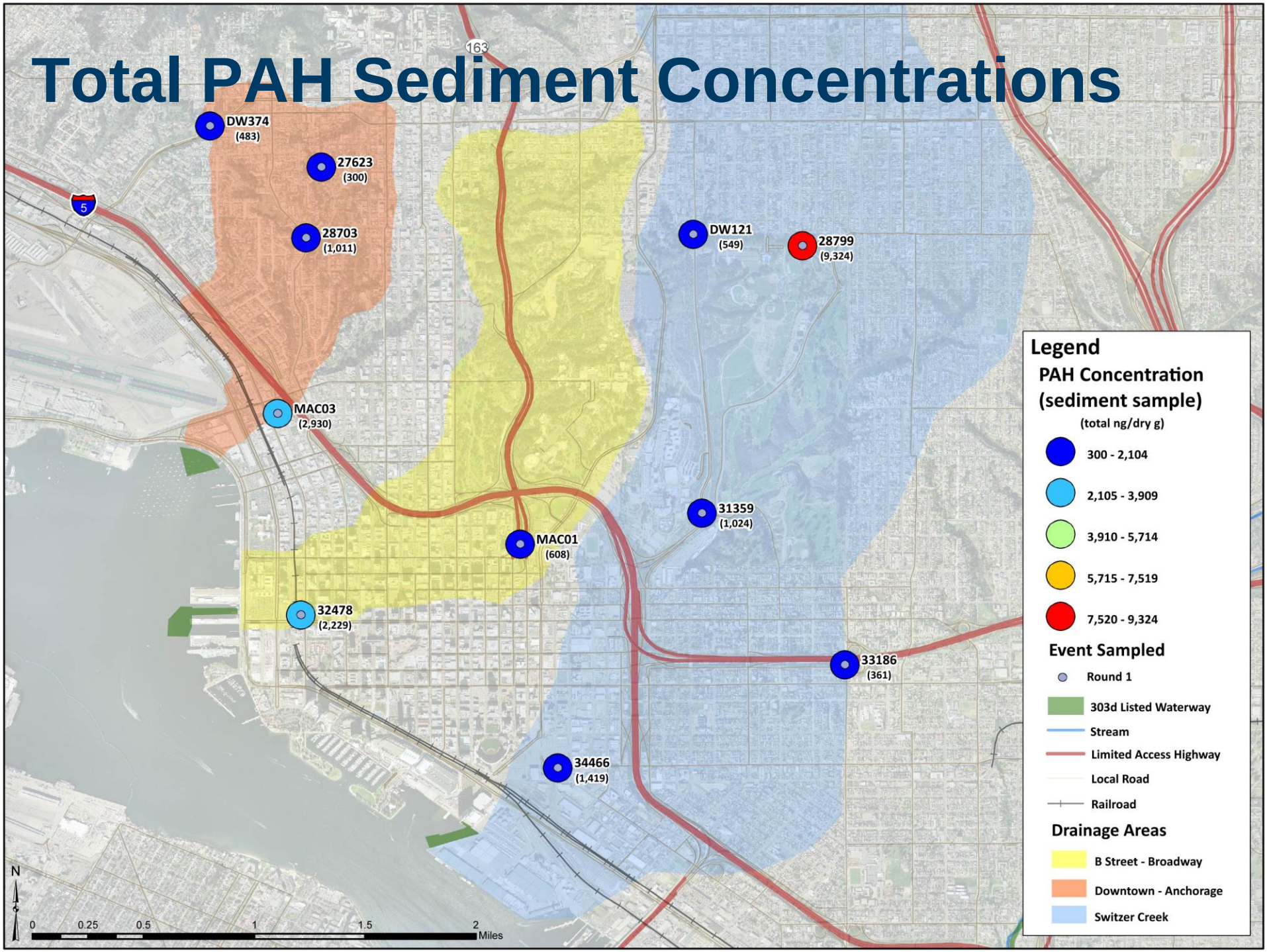
DAB Study Area Wet Weather Sites



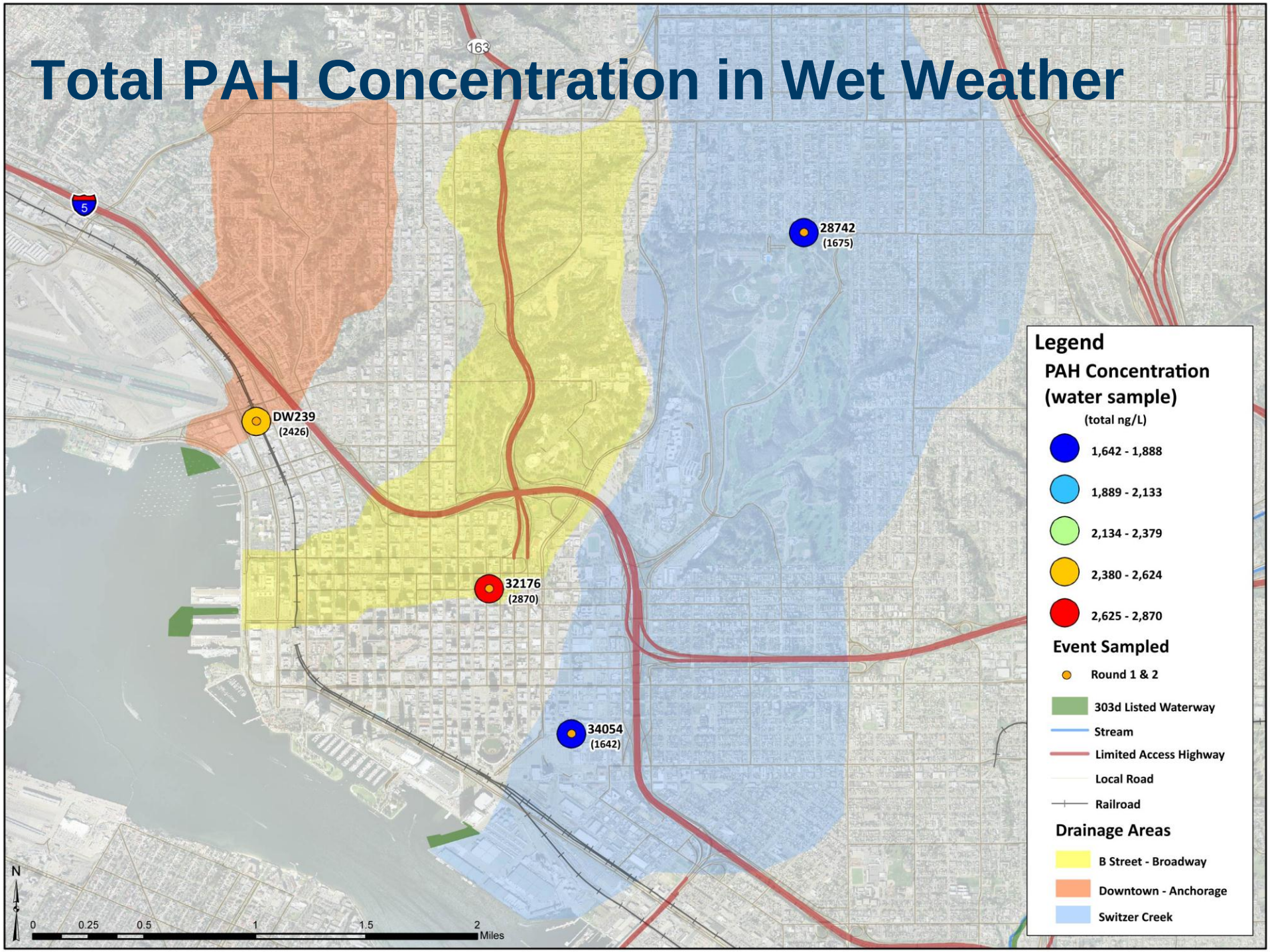
DAB Study Area Land Use Sites



Total PAH Sediment Concentrations



Total PAH Concentration in Wet Weather



Relevant Information

- **Key DAB parameters**
  - PAHs – anthropogenic
  - Organic Compounds
  - Total Metals
  - PCBs – non-detect

PAHs – Atmospheric Deposition

- Atmospheric Deposition is likely a significant contributor
- Literature review to identify key sources/pathways
- Developed conceptual model
- Future monitoring to identify atmospheric component

TMDL Modeling Support

- Provided watershed monitoring data to support model development/ calibration
- Watershed model development support in partnership with San Diego Regional Board