

NPDES Stormwater Permit Monitoring Update April 27, 2010

by Dean Wilson



Stormwater Outfall Characterization

Commercial

High Density Residential (4 houses/acre)

Low Density/Rural Residential (1 house 1-5 acres)

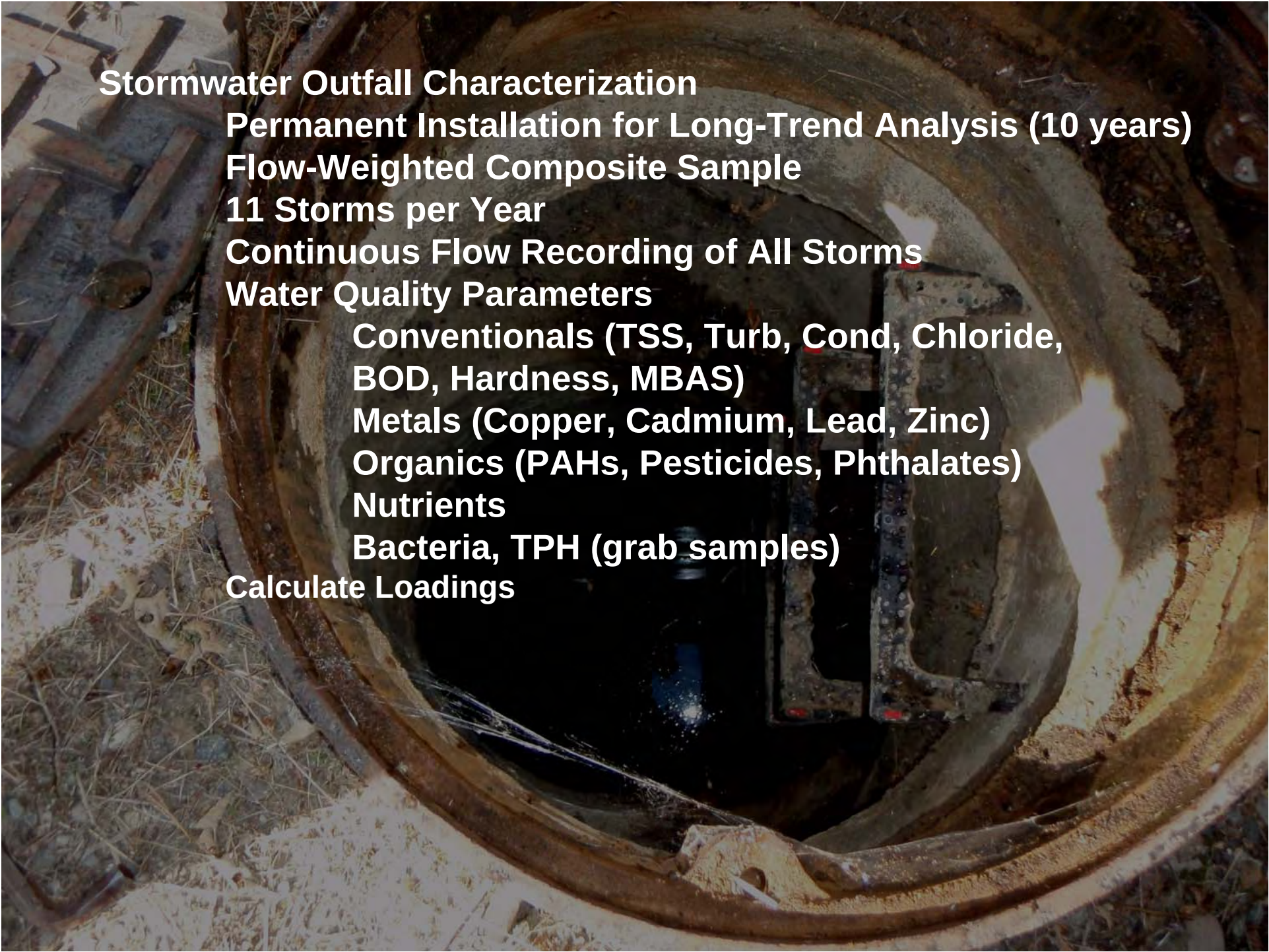
BMP Effectiveness Monitoring

Monitor Two Different BMP Types

Monitor Two of Each Type

Program Effectiveness Monitoring

U-design and Get Ecology Approval



Stormwater Outfall Characterization

Permanent Installation for Long-Trend Analysis (10 years)

Flow-Weighted Composite Sample

11 Storms per Year

Continuous Flow Recording of All Storms

Water Quality Parameters

**Conventionals (TSS, Turb, Cond, Chloride,
BOD, Hardness, MBAS)**

Metals (Copper, Cadmium, Lead, Zinc)

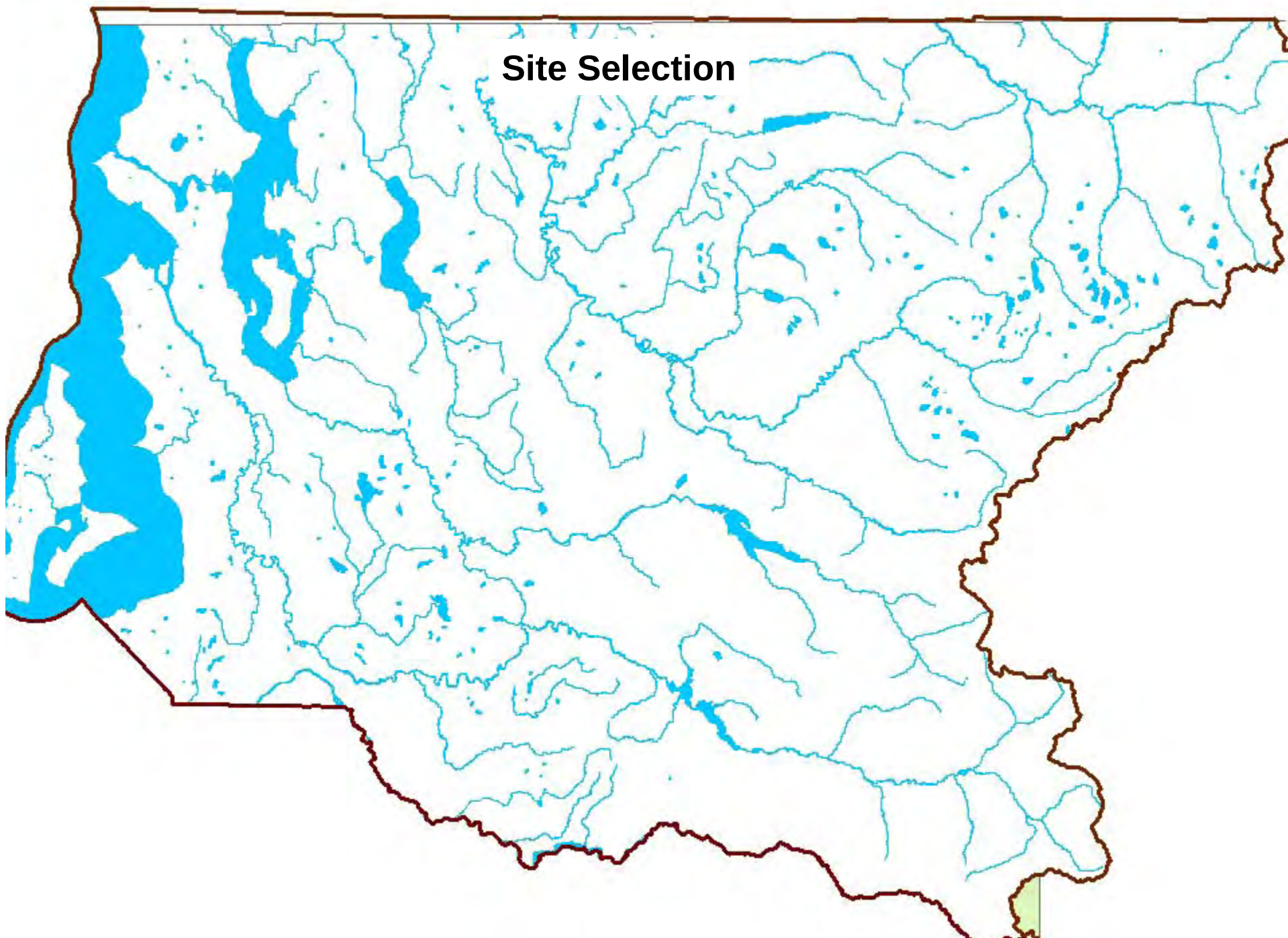
Organics (PAHs, Pesticides, Phthalates)

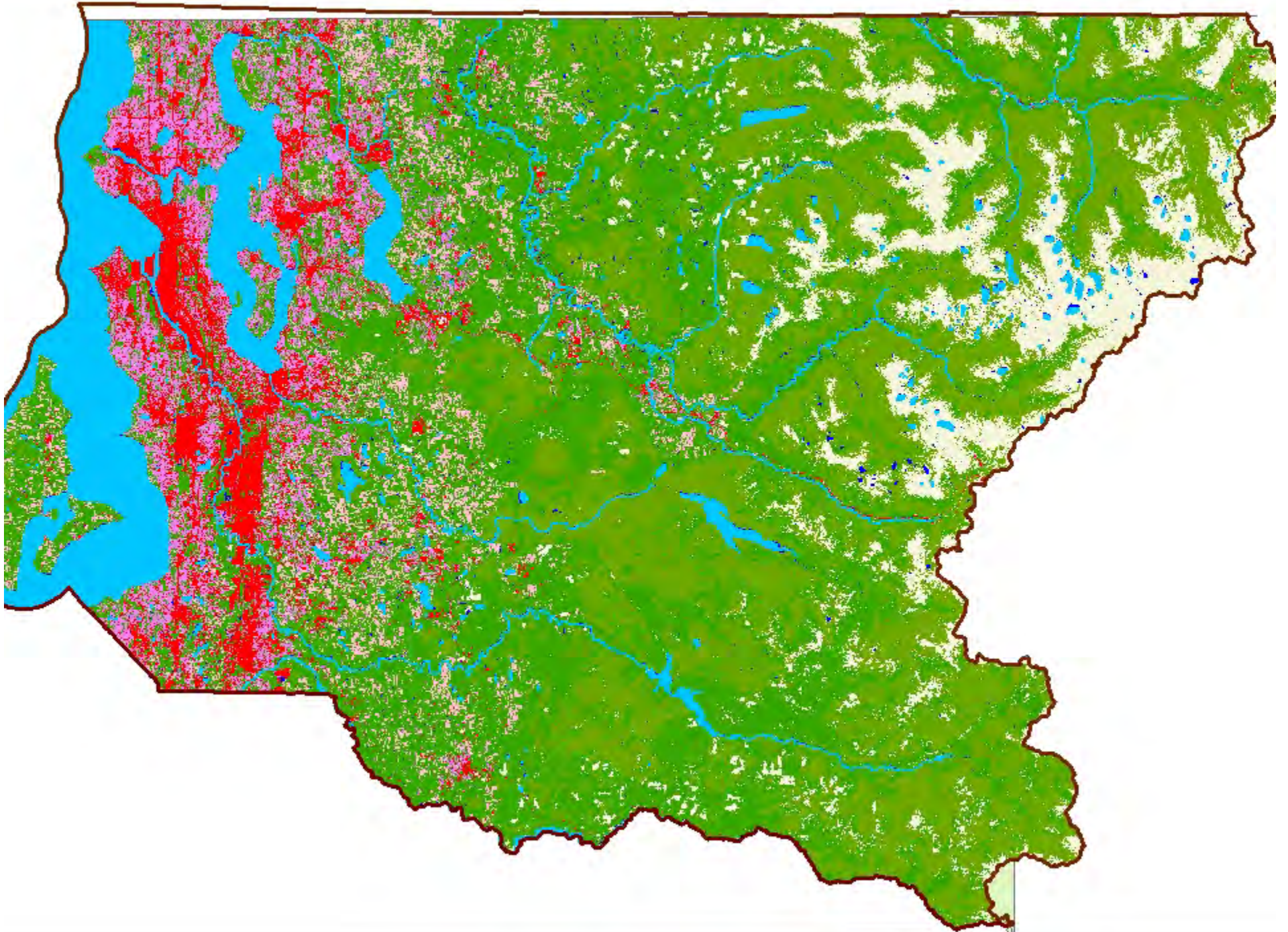
Nutrients

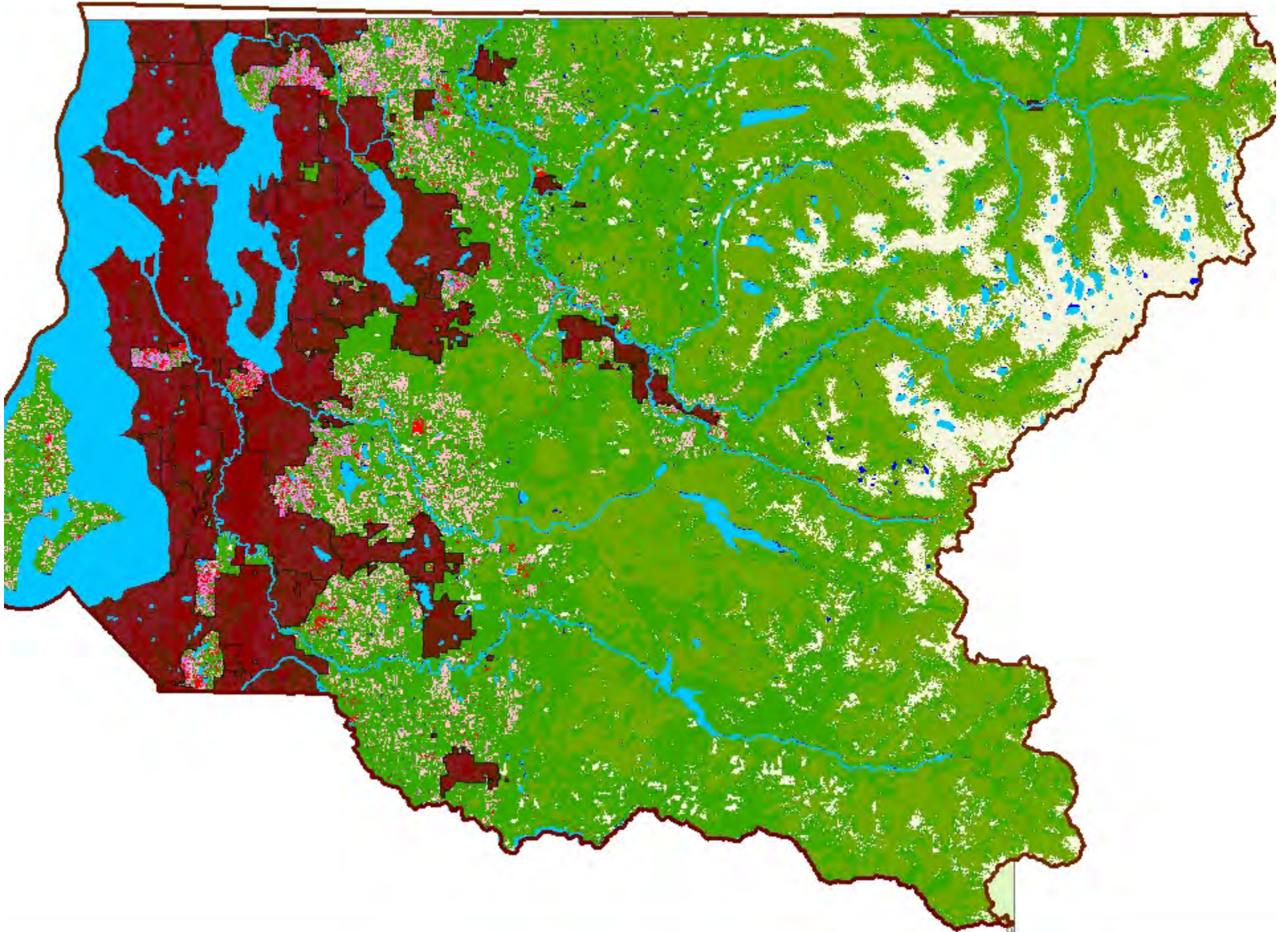
Bacteria, TPH (grab samples)

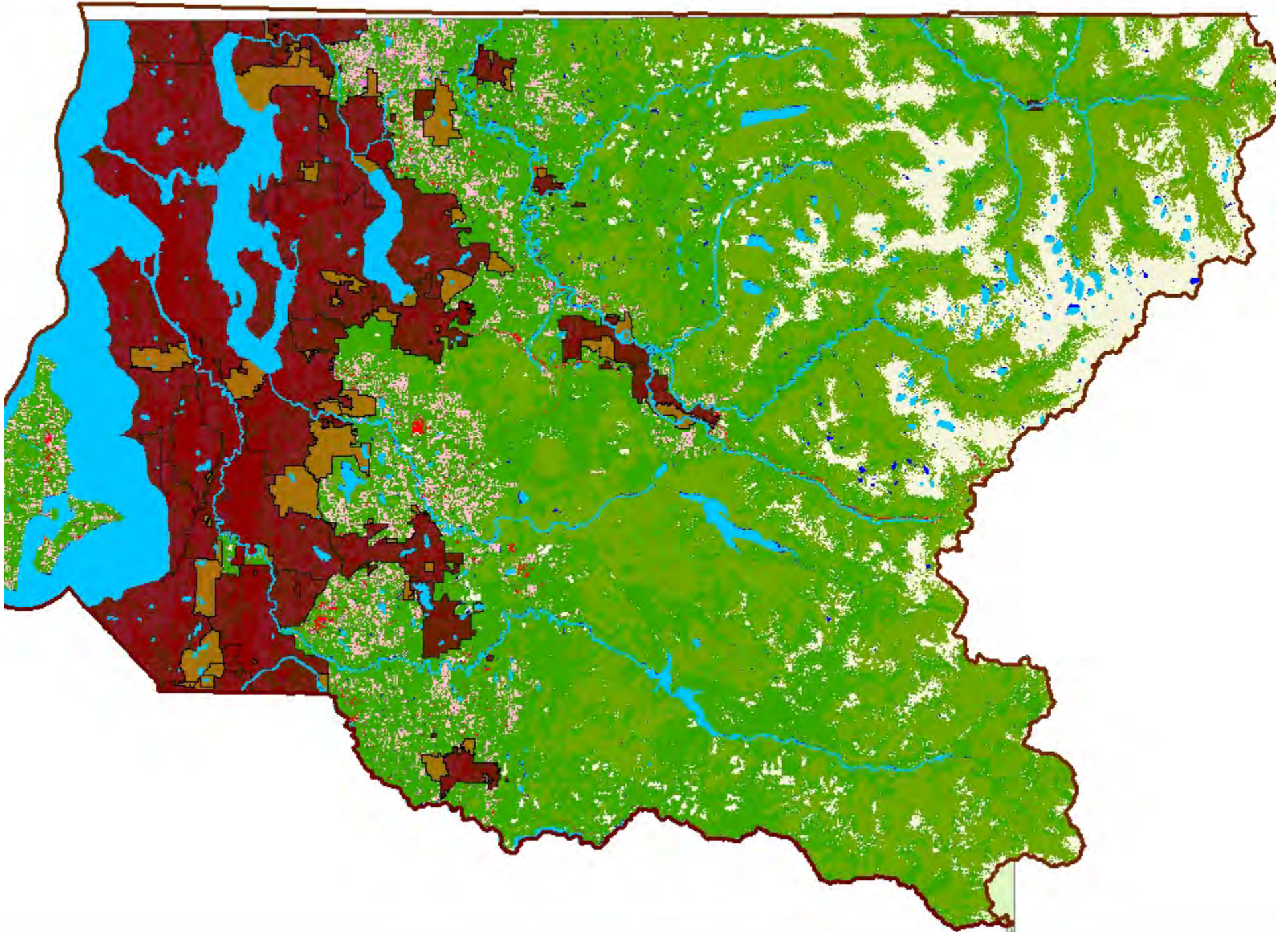
Calculate Loadings

Site Selection





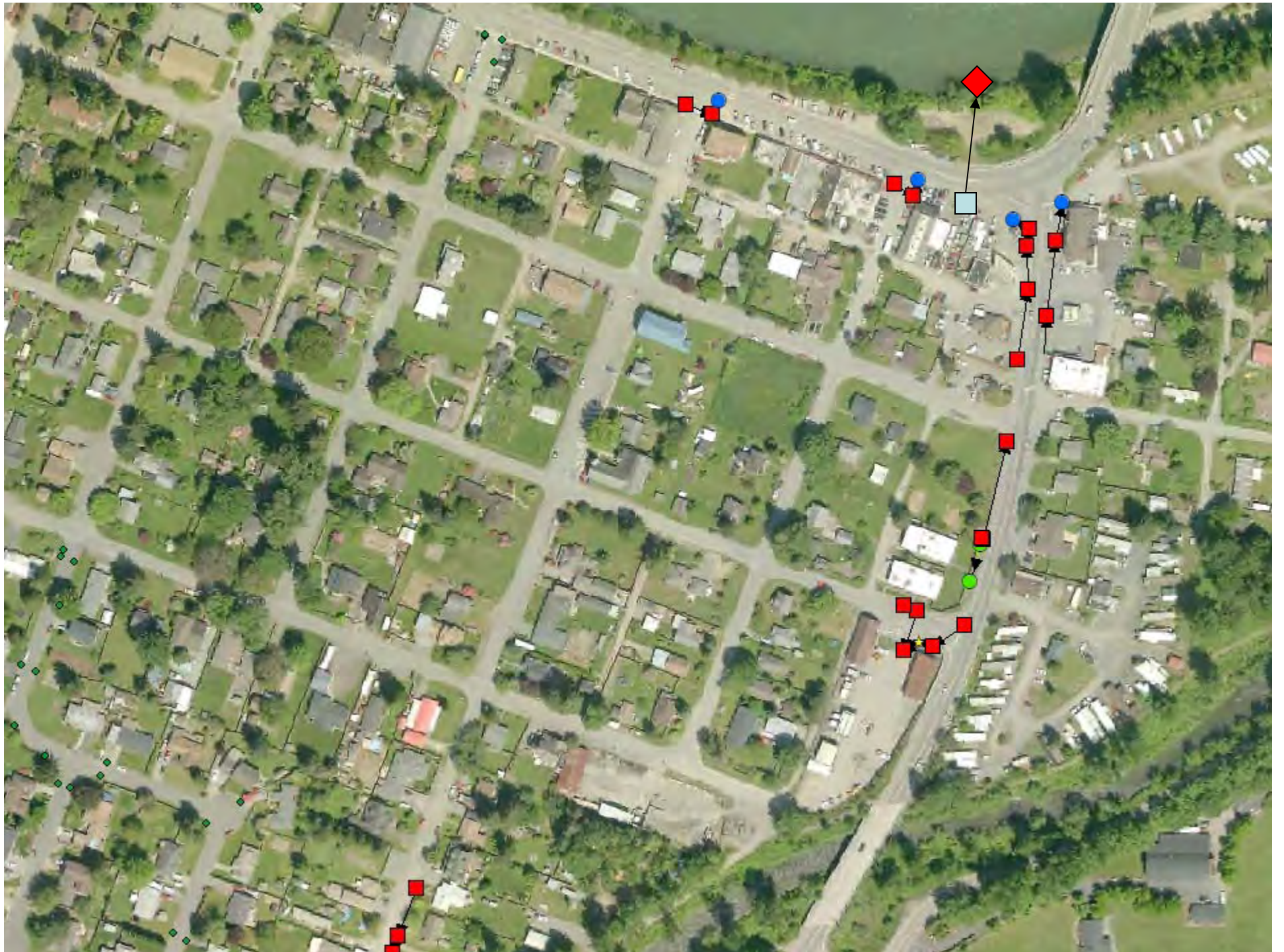




A yellow and brown welcome sign for Fall City. The sign has a yellow border and a brown center. The text "WELCOME" is in yellow, "To" is in brown script, and "FALL CITY" is in yellow. The sign is hanging from a wooden post with metal clips. The background shows green trees and a white sky.

WELCOME
To
FALL CITY









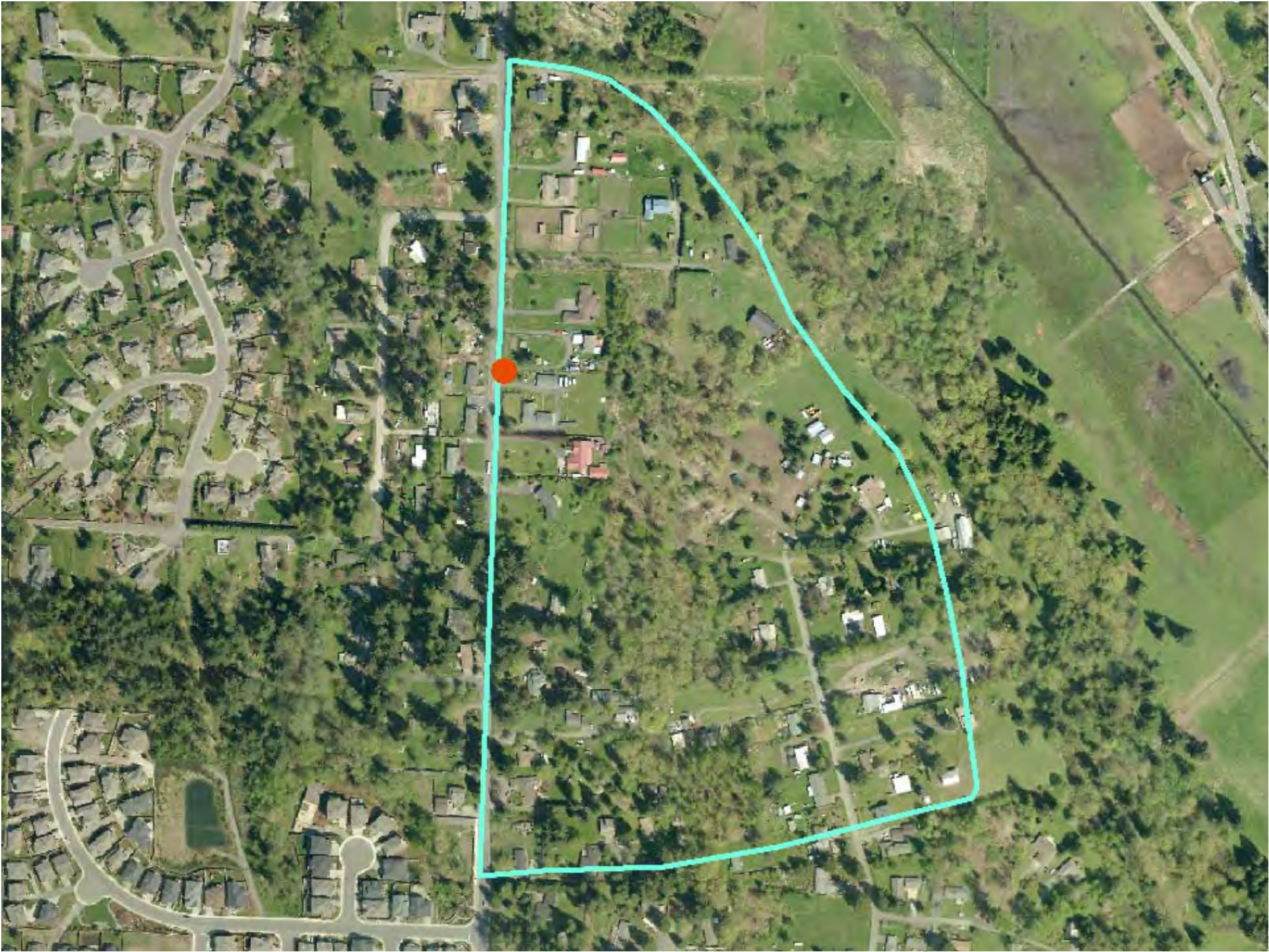


















Current Status

Commercial Site

7 Storms Collected

1st Storm 1.1M CFU/100ml Bacteria

High Density Residential

7 Storms Collected

Rural Residential

9 Storms Collected

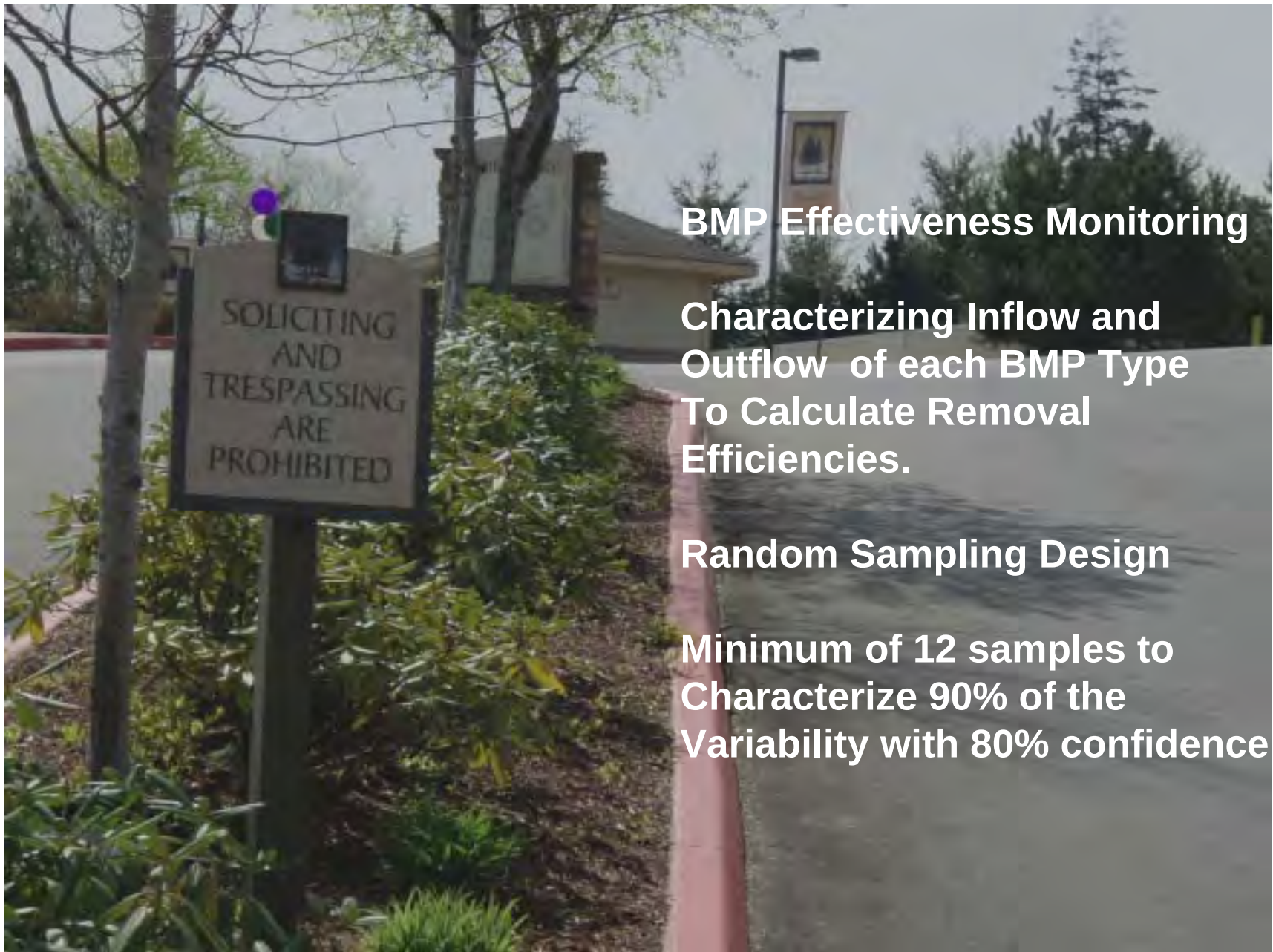


BMP Effectiveness Monitoring

Sand Filter

Presettling Pond/Vault

**Private Facilities on
Sammamish Plateau**



BMP Effectiveness Monitoring

Characterizing Inflow and Outflow of each BMP Type To Calculate Removal Efficiencies.

Random Sampling Design

Minimum of 12 samples to Characterize 90% of the Variability with 80% confidence



















Current Status

Upper Sand Filter Seems to be Working Well

7 Samples Collected From Inflow

9 Samples Collected From Pond Outflow

9 Samples Collected From Sand Filter Outflow

Lower Sand Filter, not so much.

2 Samples Collected From Inflow

3 Samples Collected From Vault Outflow

2 Samples Collected From Sand Filter Outflow

A photograph of a woven basket, likely made of wood or bark, lying on the ground in a field of tall grass and green plants. The basket is dark and has a complex woven pattern. It is surrounded by various types of vegetation, including tall grasses and broad-leaved plants. The lighting is natural, suggesting an outdoor setting.

Acknowledgements

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