BRIEFING

Nature-Based Solutions for Nutrient Management in San Francisco Bay

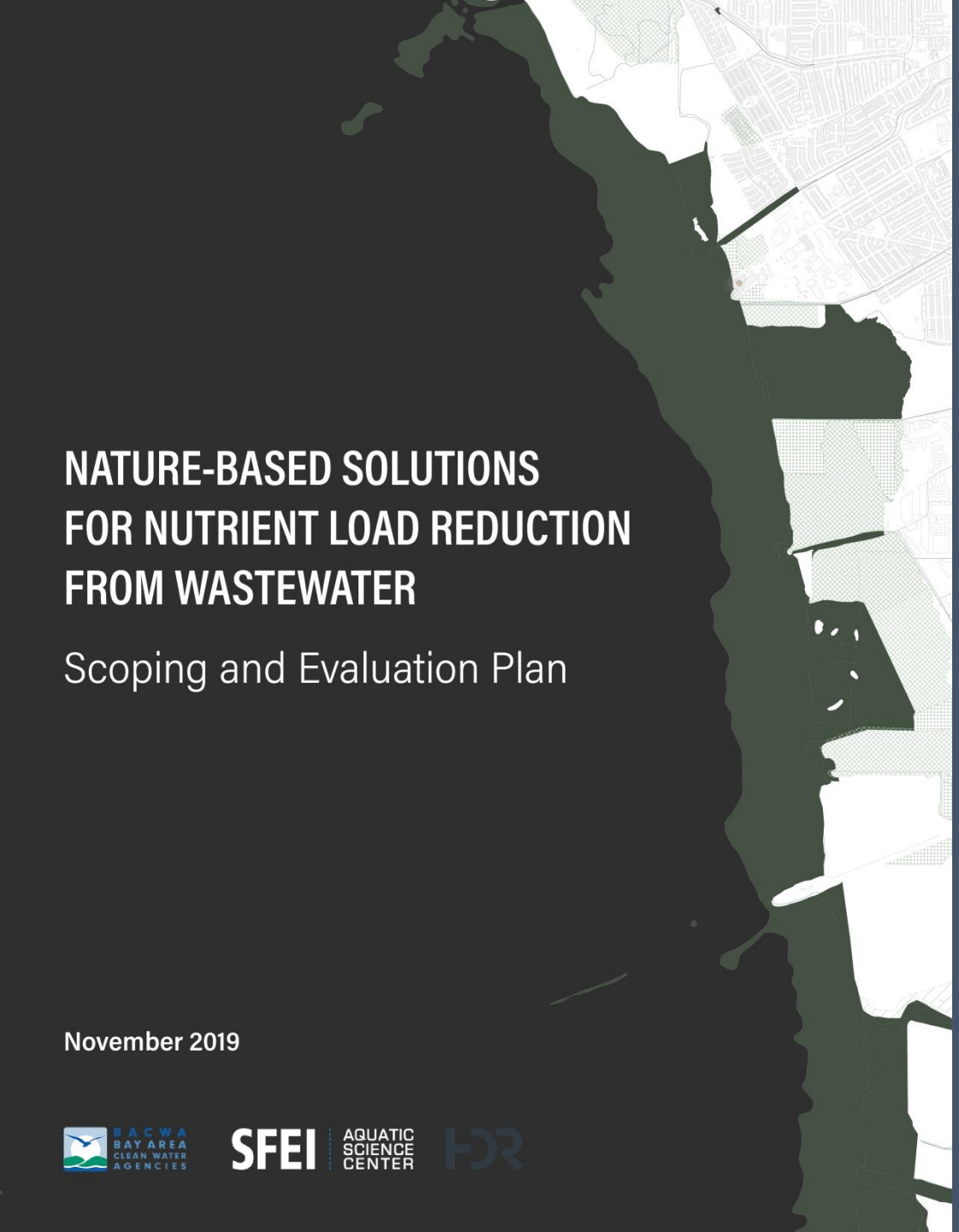
BACWA Annual Meeting | Jan 10, 2019

Ian Wren and SFEI

Nature-based treatment: an element of the Water Board's priority to evaluate multi-benefit nutrient load reduction strategies

Others:

- Grey-infrastructure
- Wastewater recycling
- Nutrient recovery for fertilizer



NATURE-BASED SOLUTIONS FOR NUTRIENT LOAD REDUCTION FROM WASTEWATER

Scoping and Evaluation Plan

November 2019

BACWA BAY AREA CLEAN WATER AGENCIES

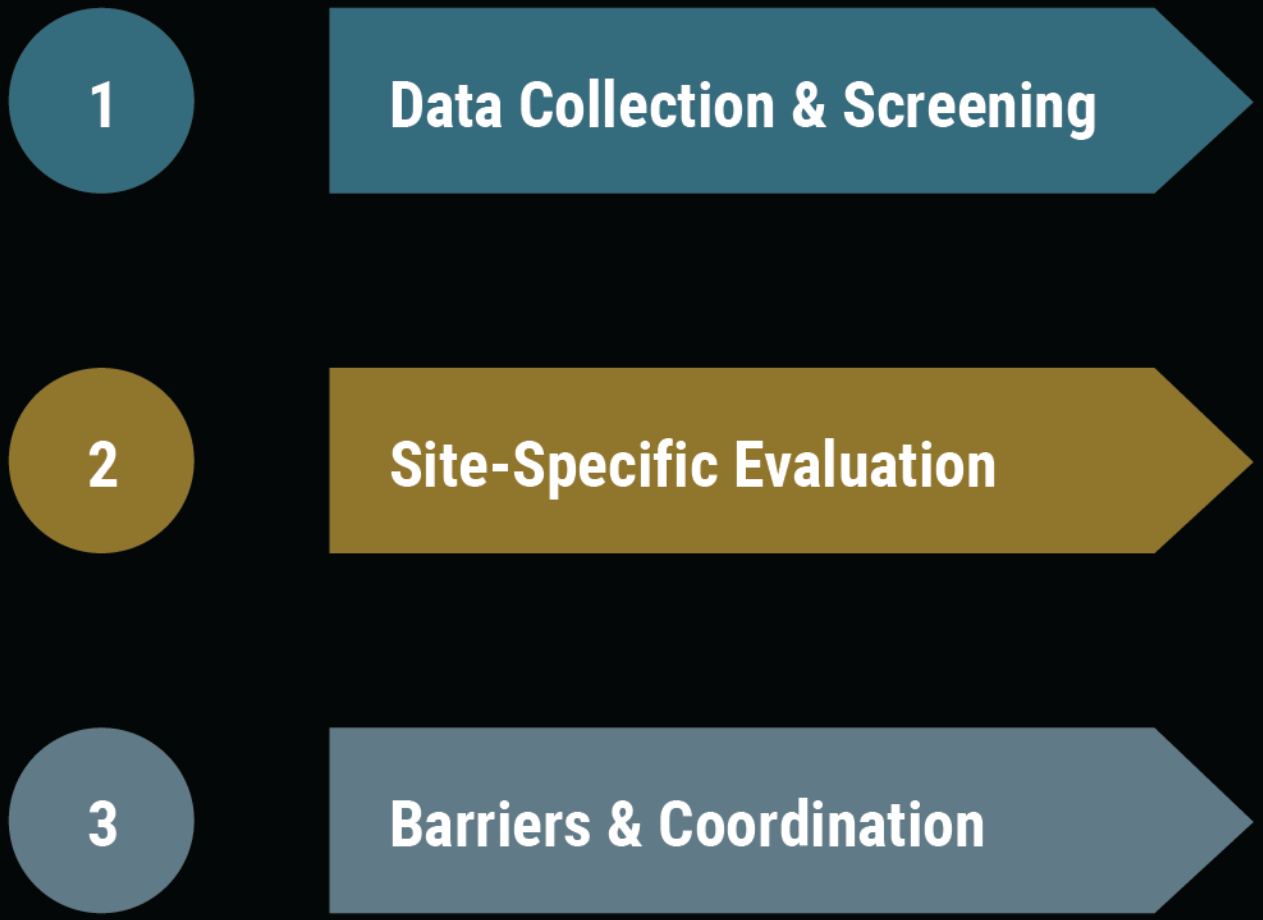
SFEI AQUATIC SCIENCE CENTER

HDR

Final Document submitted to the Water Board

Integrates two key elements of Provision VI.C.2 of the Nutrient Watershed Permit:

1. Scoping Plan
2. Evaluation Plan


1
Data Collection & Screening
2
Site-Specific Evaluation
3
Barriers & Coordination

1 Data Collection & Screening

- Desk-based screening of physical possibilities for nature-based solutions to wastewater treatment

- Discharger survey to collect data, identify institutional opportunities & barriers to implementation

- Preliminary assessment of NBS opportunities and corresponding estimated nutrient load reductions

- Identify 5-10 facilities for site-specific alternatives analysis, cost estimation, regulatory constraints

2 Site-Specific Evaluation

- Site inspections & interviews with key discharger staff at a select number of facilities

- Develop site-specific alternatives at 5 to 10 dischargers with considerable potential, including cost estimates, regulatory considerations, comparison with grey-scape solutions, and planning-level designs

- Supplement existing geospatial resurces to incorporate site-specific SLR adaptation strategies with the OLU Phase 2 project

3 Barriers & Coordination

- Compile information at regional NBS installations and potentially other West Coast projects

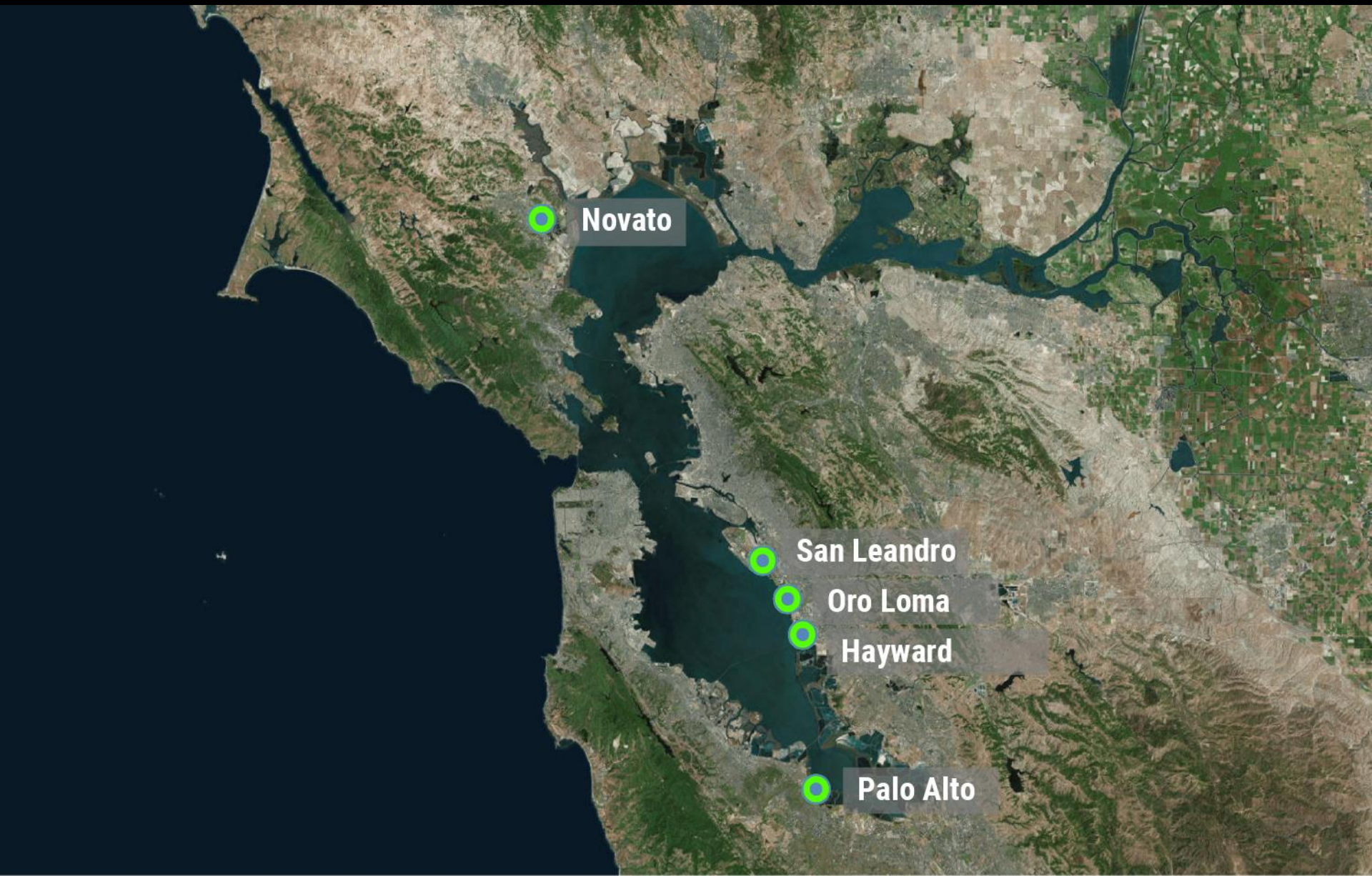
- Identify barriers to implementation, with a focus on regulatory issues, governance, and stakeholder engagement

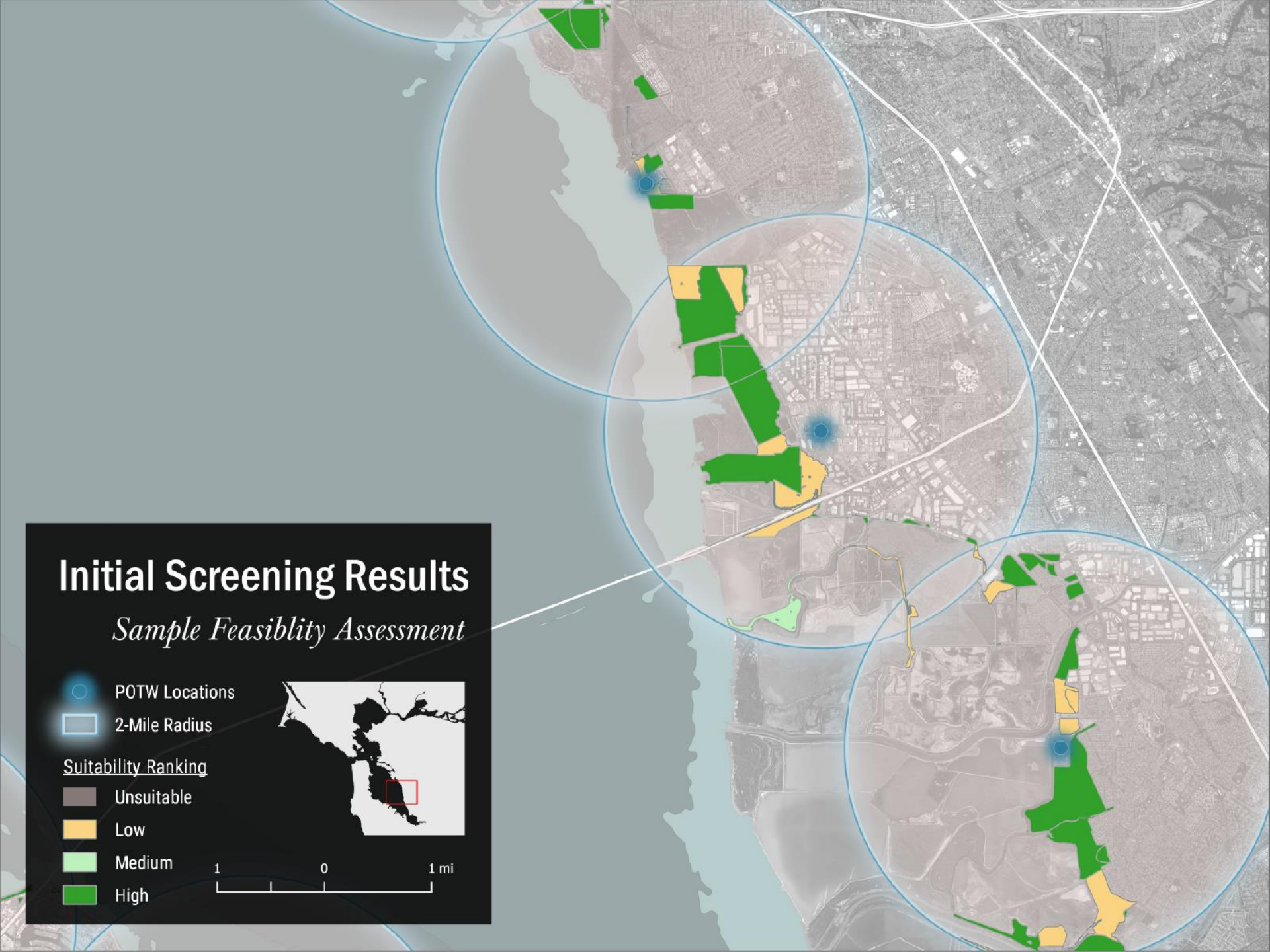
- Coordinate with SFEI's OLU initiative to develop sea level rise adaptation pathways at discharger- and OLU-scales

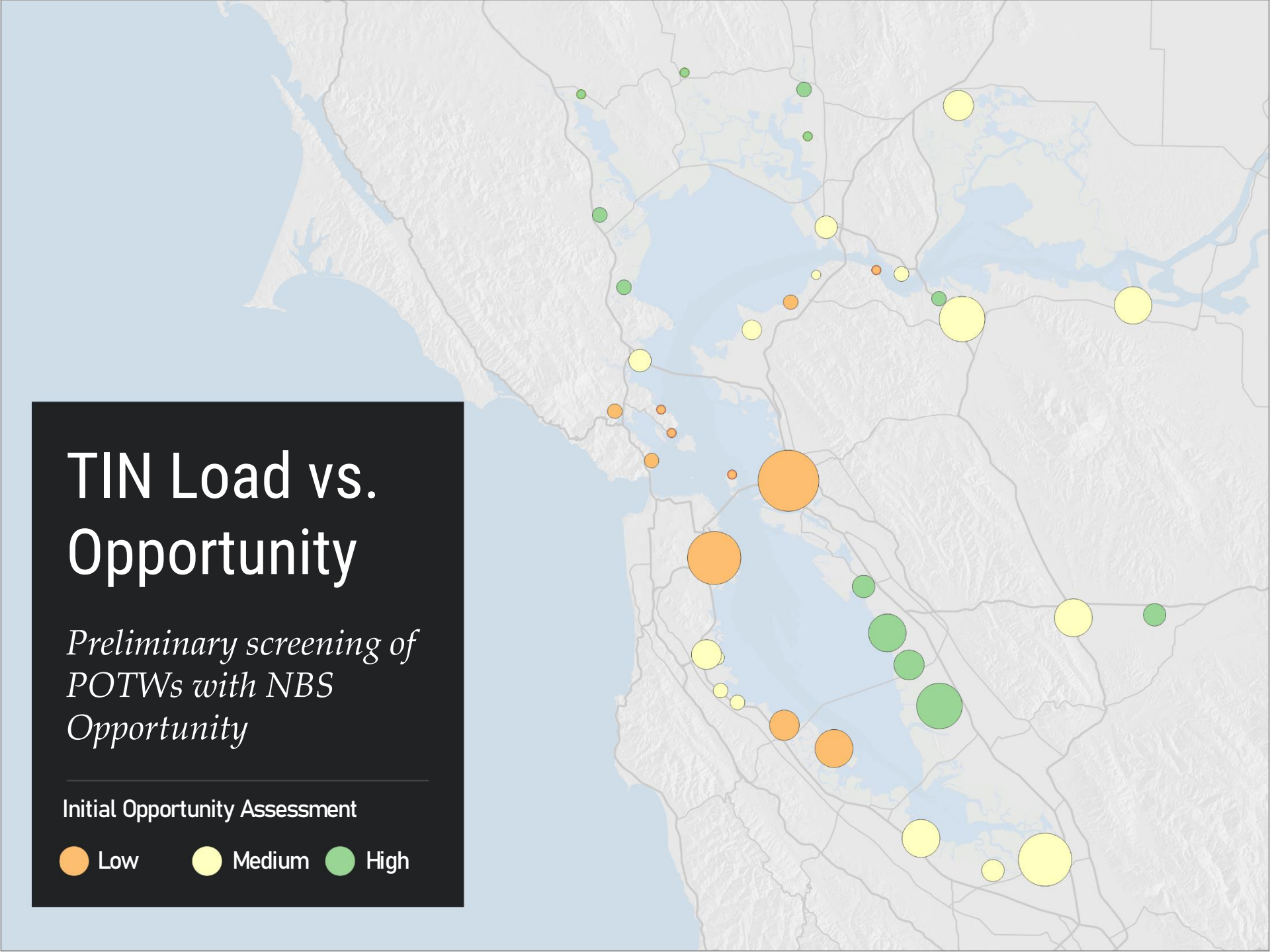
- Work with SFEP's Transforming Shorelines Project to build regional capacity for advancing NBS projects & enhance inter-agency coordination

Bay Area has history of nature-based treatment…

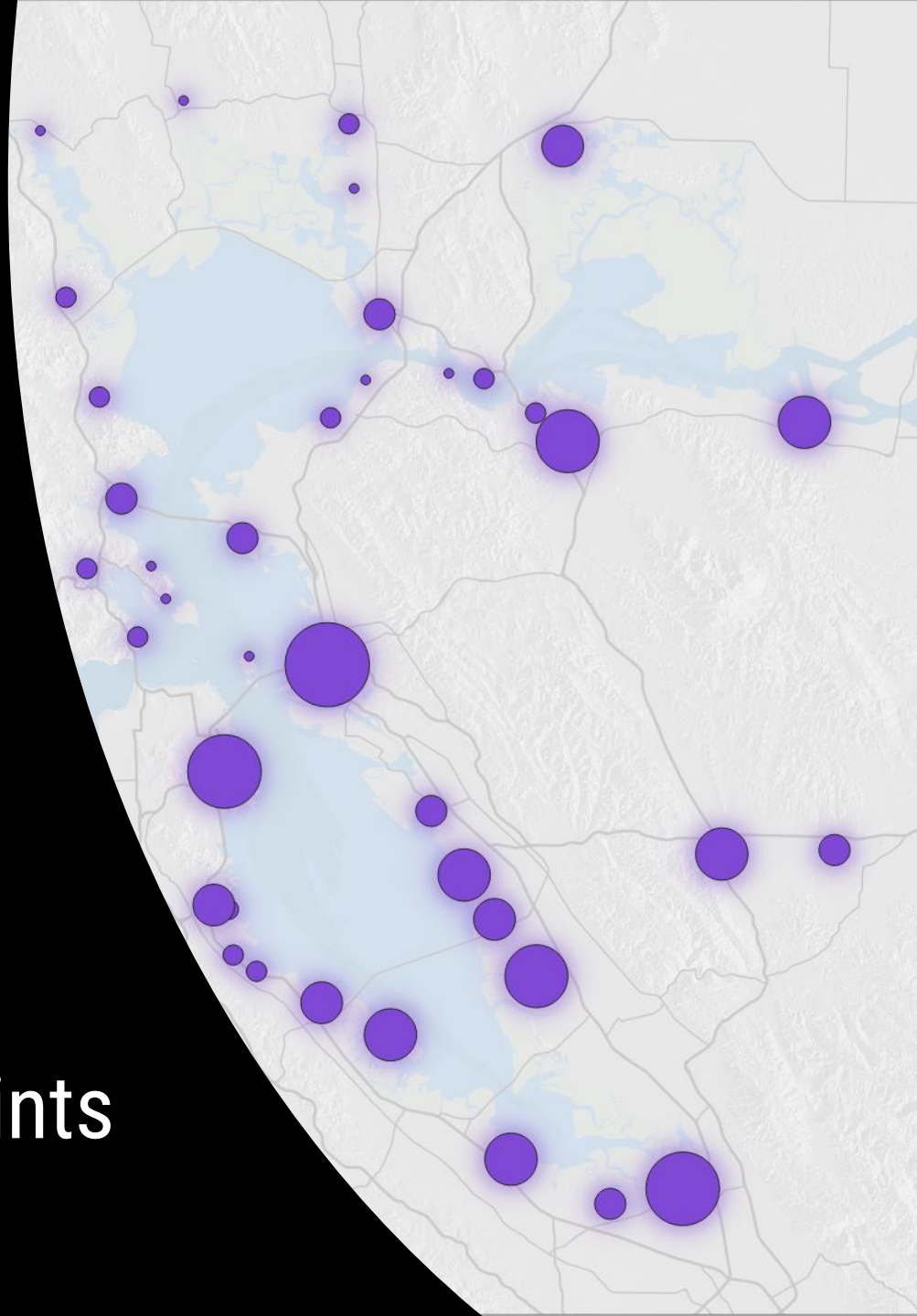
A new generation of projects being considered…

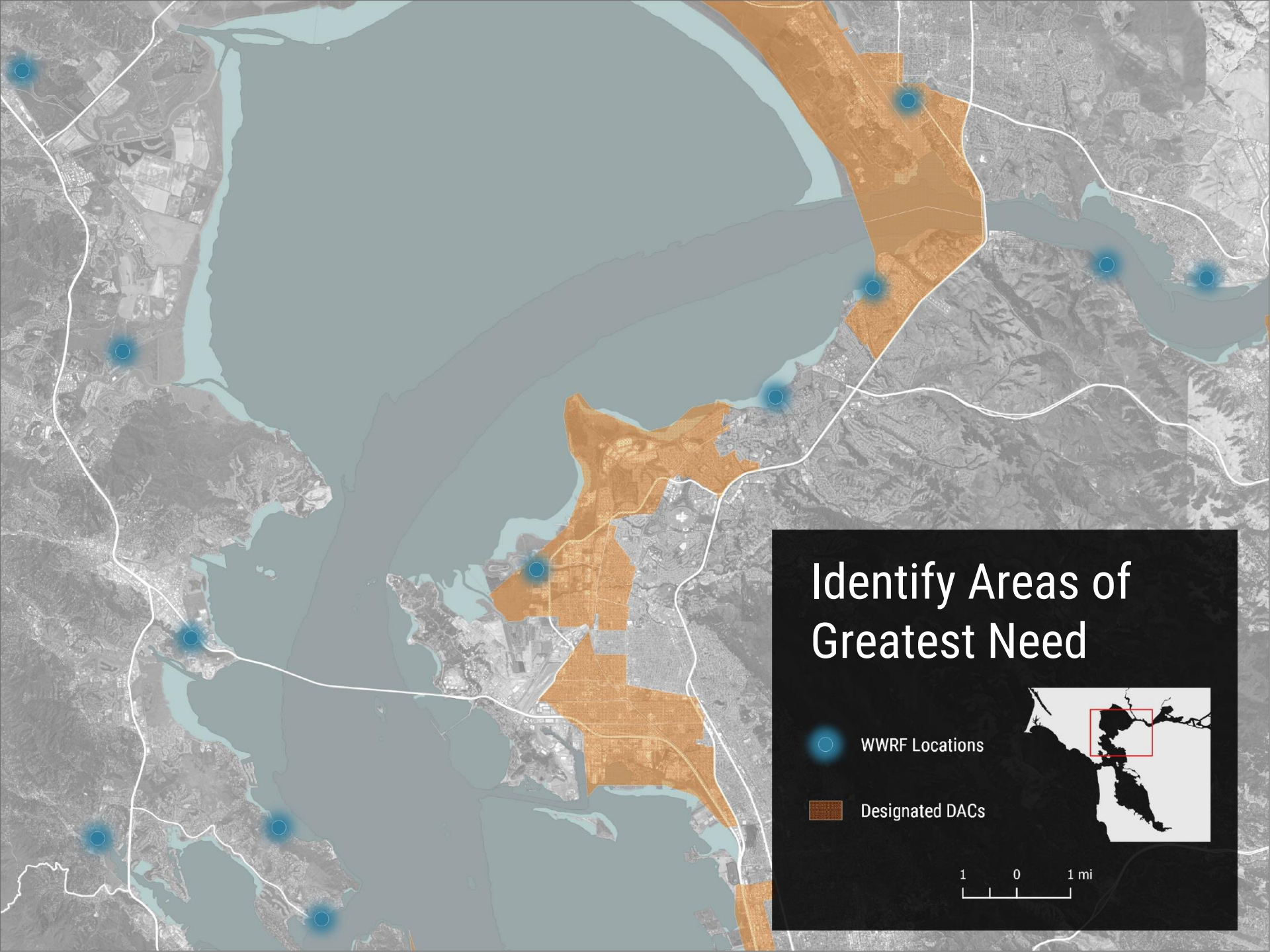



Initial Screening Results
Sample Feasiblity Assessment
POTW Locations
2-Mile Radius
Suitability Ranking
Unsuitable
Low
Medium
High
1
0
1 mi


TIN Load vs. Opportunity
Preliminary screening of POTWs with NBS Opportunity
Initial Opportunity Assessment
Low
Medium
High

- Cost
- Habitat
- Land use
- Flood risk
- Social equity
- Local preference
- Regulatory constraints




Identify Areas of Greatest Need
WWRF Locations
Designated DACs
1 0 1 mi


Q4 2019
Q1 2020
Q2 2020
Q3 2020
Scoping & Evaluation
Survey
Desk-Based Analysis
Site - Investigations
Evaluations

Thank You

BACWA BAY AREA CLEAN WATER AGENCIES

SFEI AQUATIC SCIENCE CENTER

HDR