Humboldt Bay Sea Level Rise Adaptation Planning Project

Adaptation Planning Working Group
Land Use Authorities/Core Group
Organizational Meeting

Desired Meeting Outcomes:

- Understanding of Humboldt Bay Sea Level Rise Adaptation Planning (HBSLRAP) Project
- Establish APWG's Goals and Objectives
- Establish APWG's Membership
- Establish APWG's Meeting Schedule
- Establish APWG's Planning Approach

AGENDA

1) Introductions

HBSLRAP Project

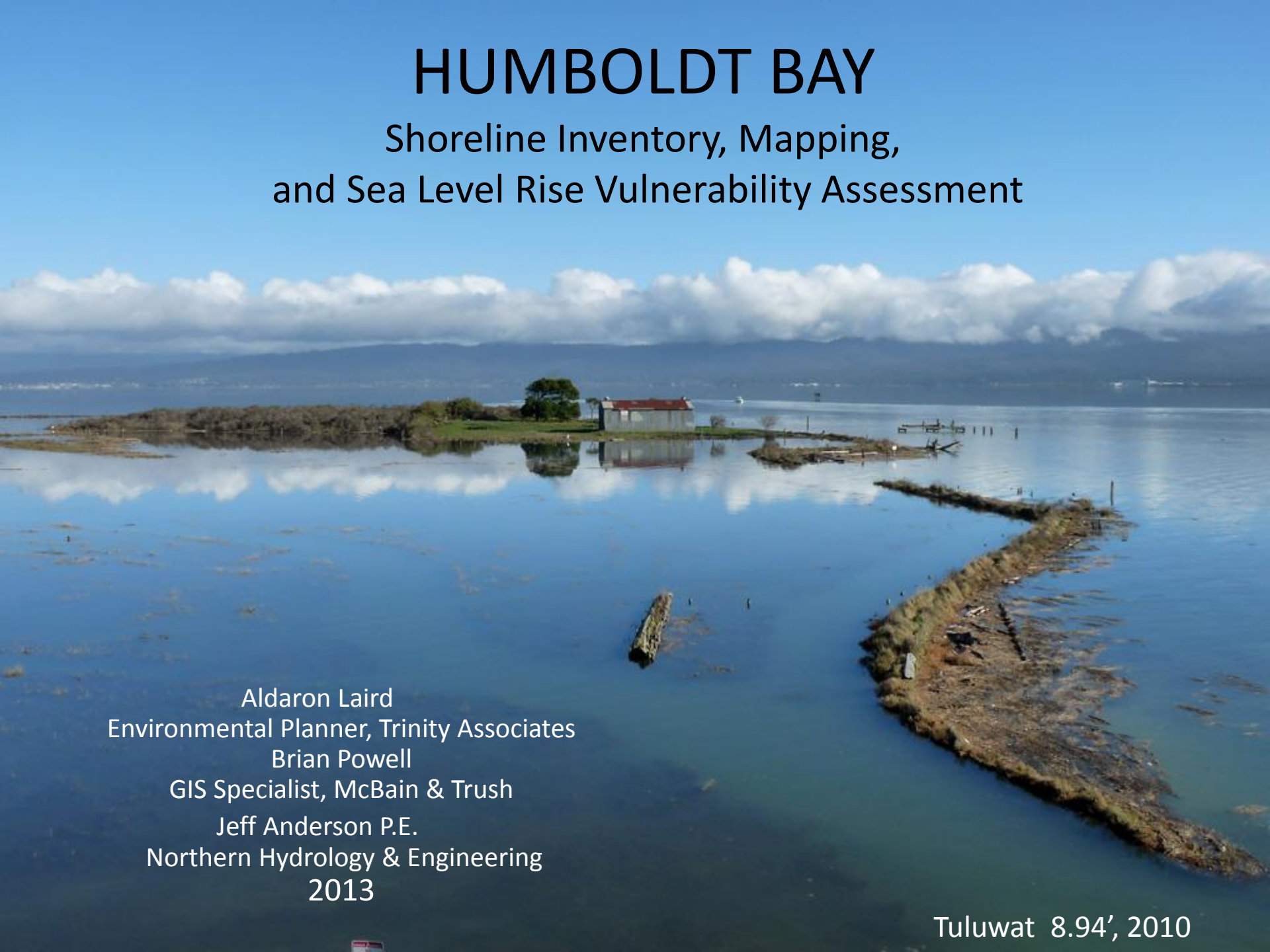
2) HBSLRAP Project Overview: Phases I and II
3) Roles: CEI, Co-Lead Agencies, SLR Adaptation Planner, Core Group, APWG, and Vulnerability Assessment Engineer
4) Relationship: Vulnerability Assessment and Adaptation Planning Components
5) Timeframe
6) Products

APWG

7) APWG Goals and Objectives
8) Land Management and Resource Agency Invitations-Contacts
9) Non-Agency Stakeholder Participation-Invitations-Contacts
10) First Meeting Date
11) Adaptation Planning Approach

HUMBOLDT BAY

Shoreline Inventory, Mapping, and Sea Level Rise Vulnerability Assessment



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Northern Hydrology & Engineering
2013

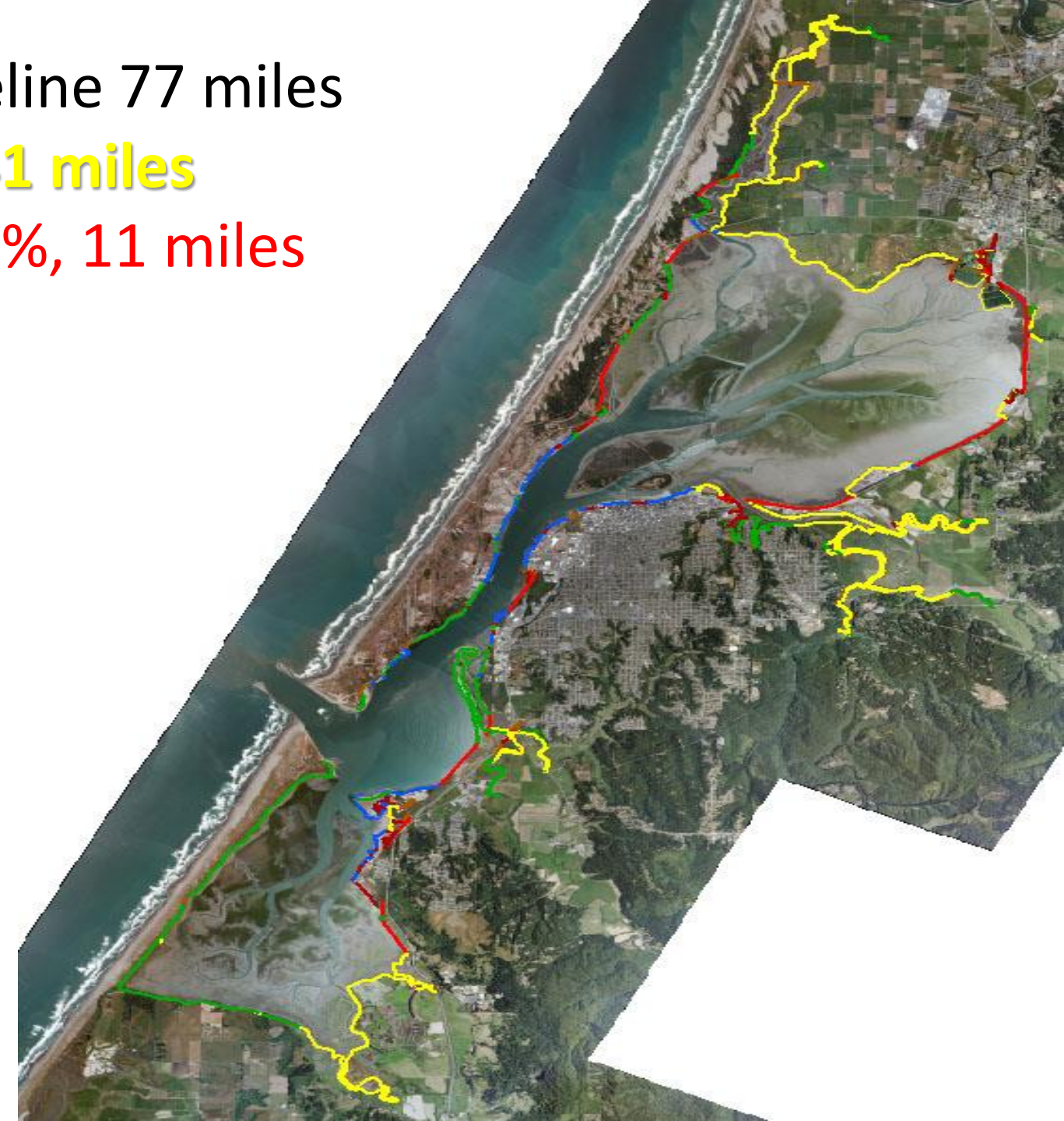
Tuluwat 8.94', 2010

Phase I: Humboldt Bay Shoreline Inventory, Mapping and Sea Level Rise Vulnerability Assessment

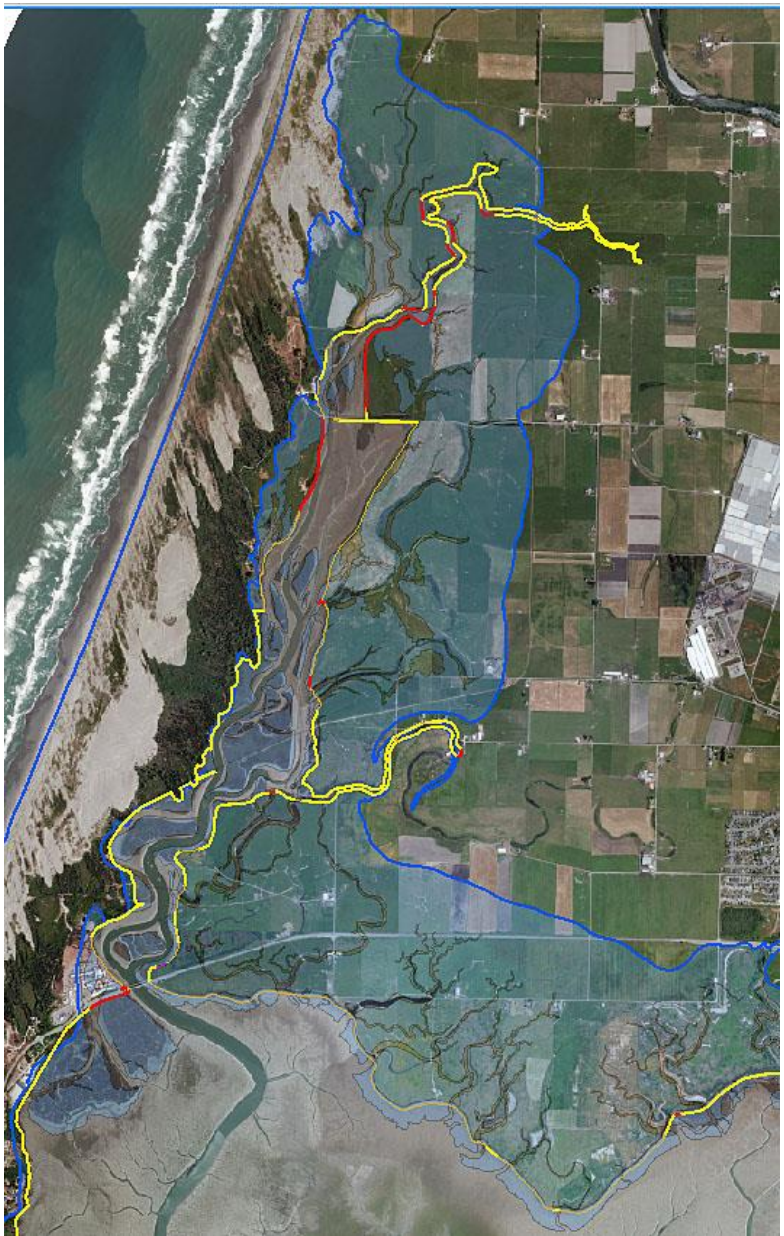
- Created a geospatial database of the shoreline of Humboldt Bay, documenting shoreline structure, cover, elevation, and the presence of water control structures and tidal wetlands.
- Identified shoreline segments that are vulnerable, under existing conditions, to coastal erosion and overtopping and flooding of low lying former tidelands.
- Identified shoreline segments that would be vulnerable, from rising sea levels, to overtopping and flooding of low lying former tidelands.
- Identified at risk land uses, infrastructure, and resources, from shoreline vulnerability from existing and future sea level elevations.

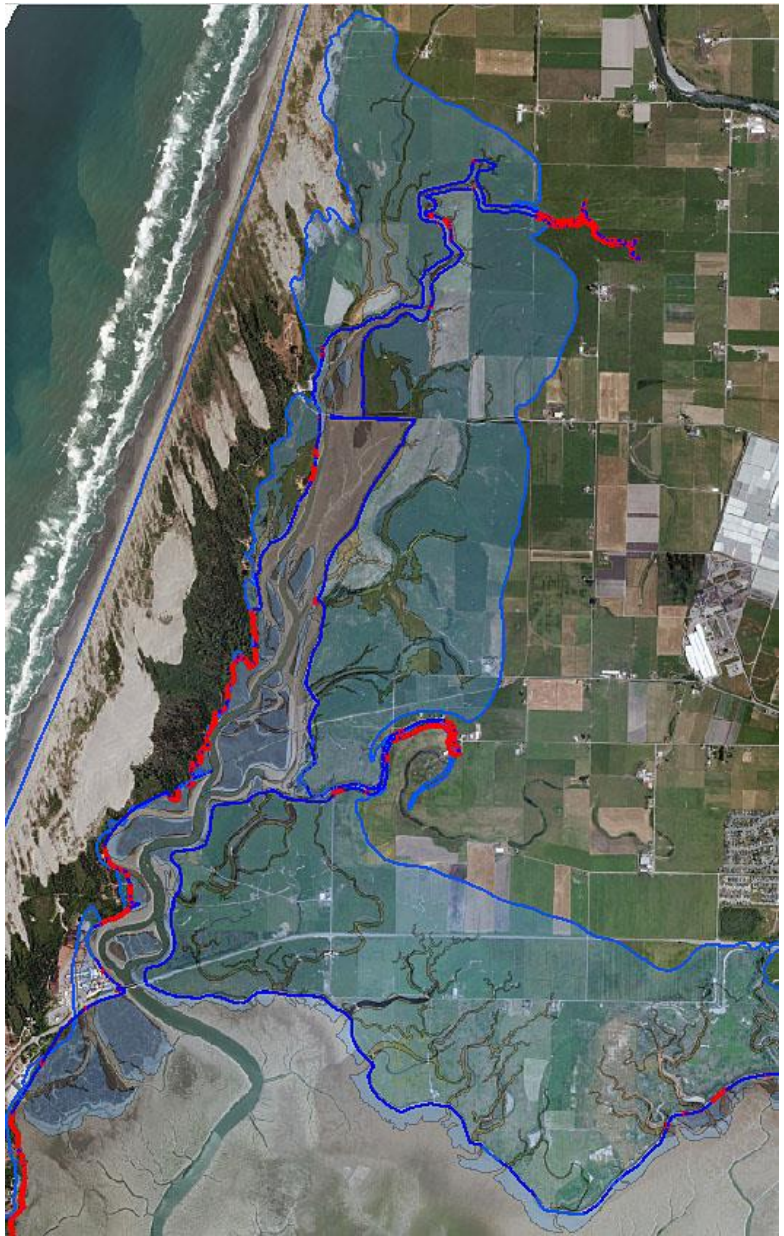
Artificial Shoreline 77 miles

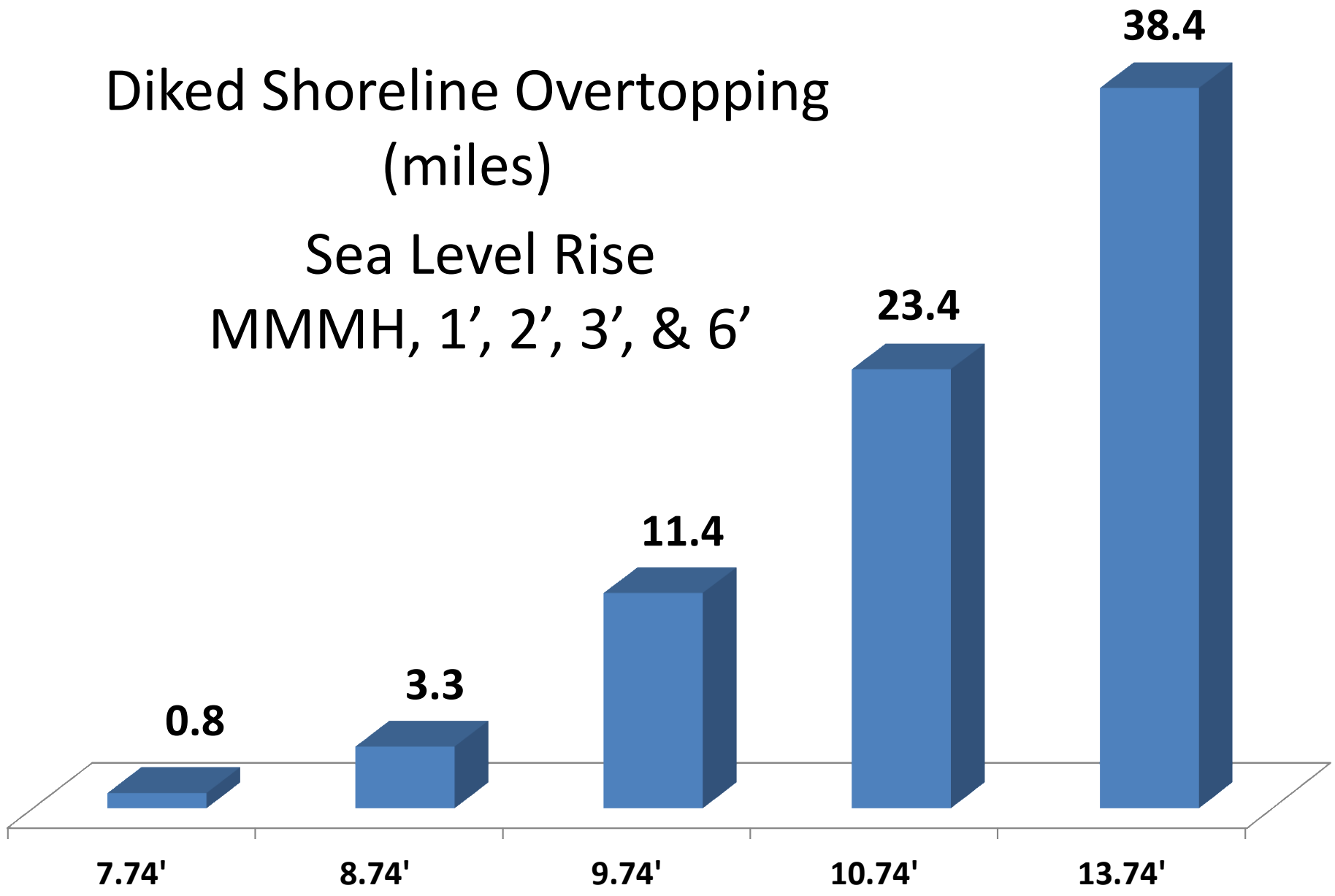
- **Dike = 53%, 41 miles**
- Railroad = 14 %, 11 miles



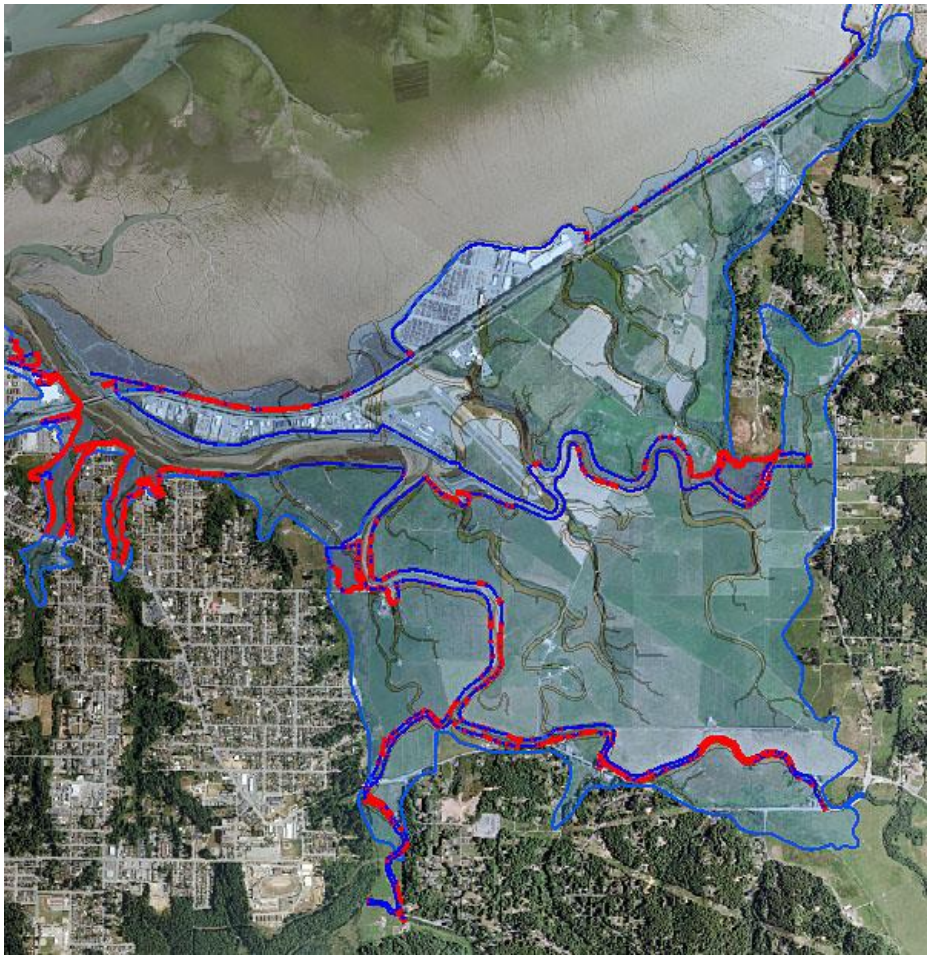
Shoreline Structure/Cover-Shoreline Elevation

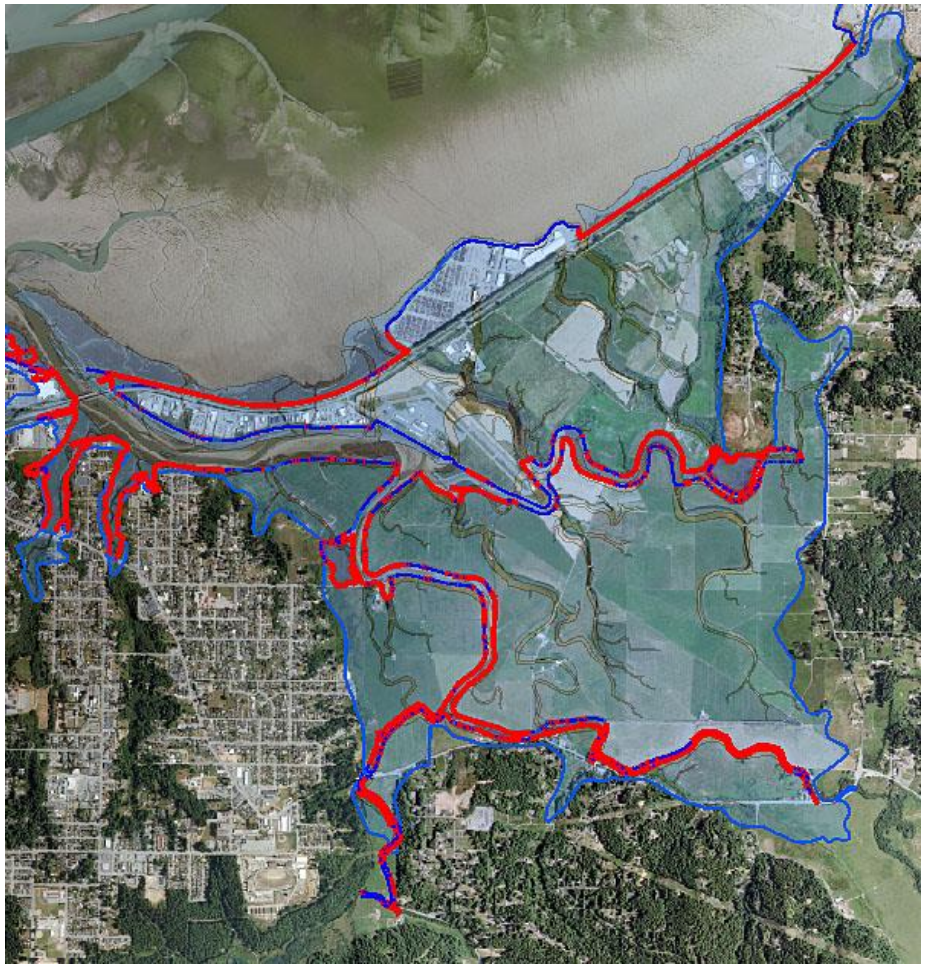





Diked Shoreline Overtopping
(miles)
Sea Level Rise
MMMH, 1', 2', 3', & 6'
0.8
3.3
11.4
23.4
38.4
7.74'
8.74'
9.74'
10.74'
13.74'

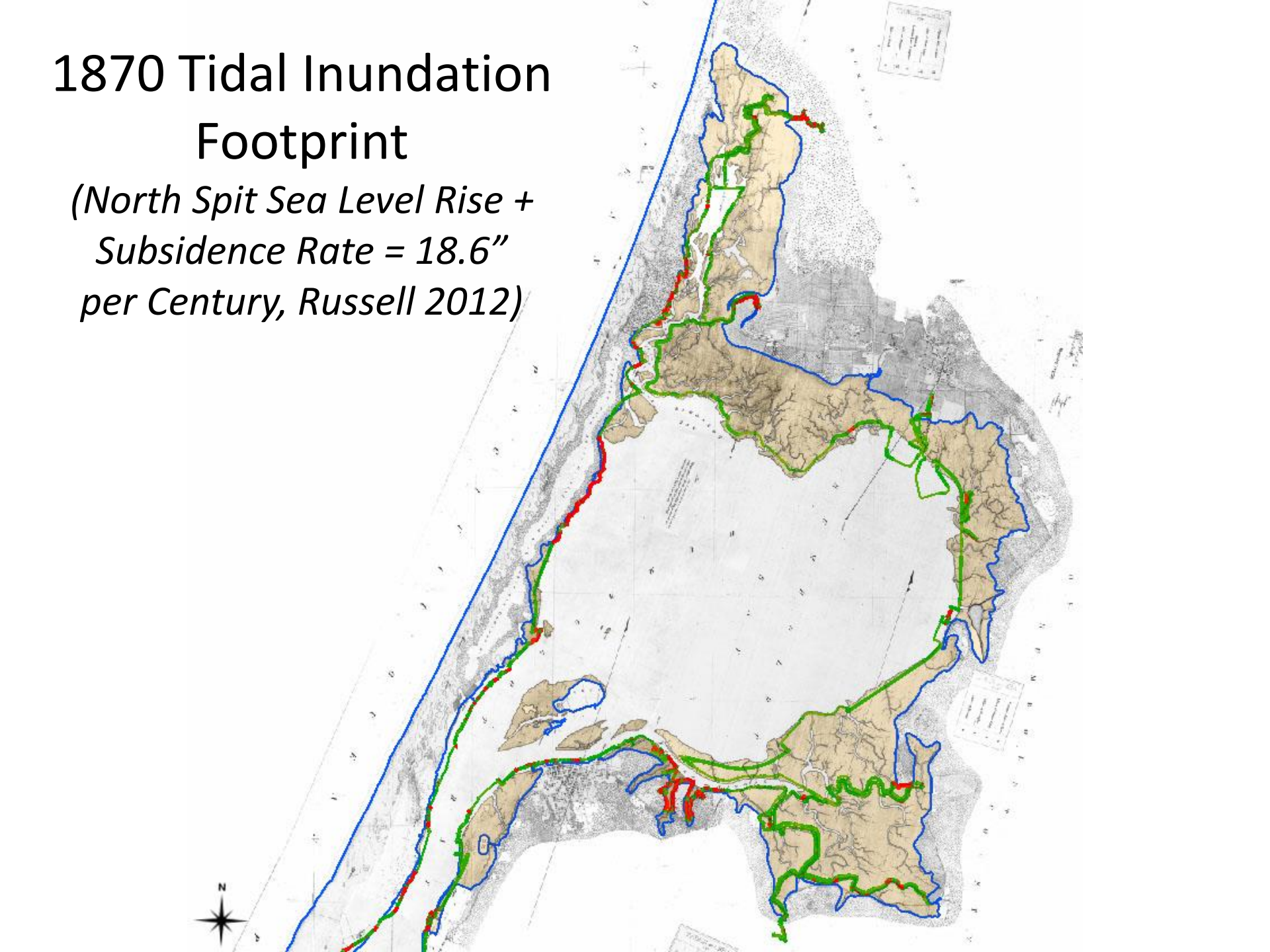
Eureka Slough Diked Shoreline
2.0’ SLR/9.74’ vs. 3.0’ SLR/10.74’





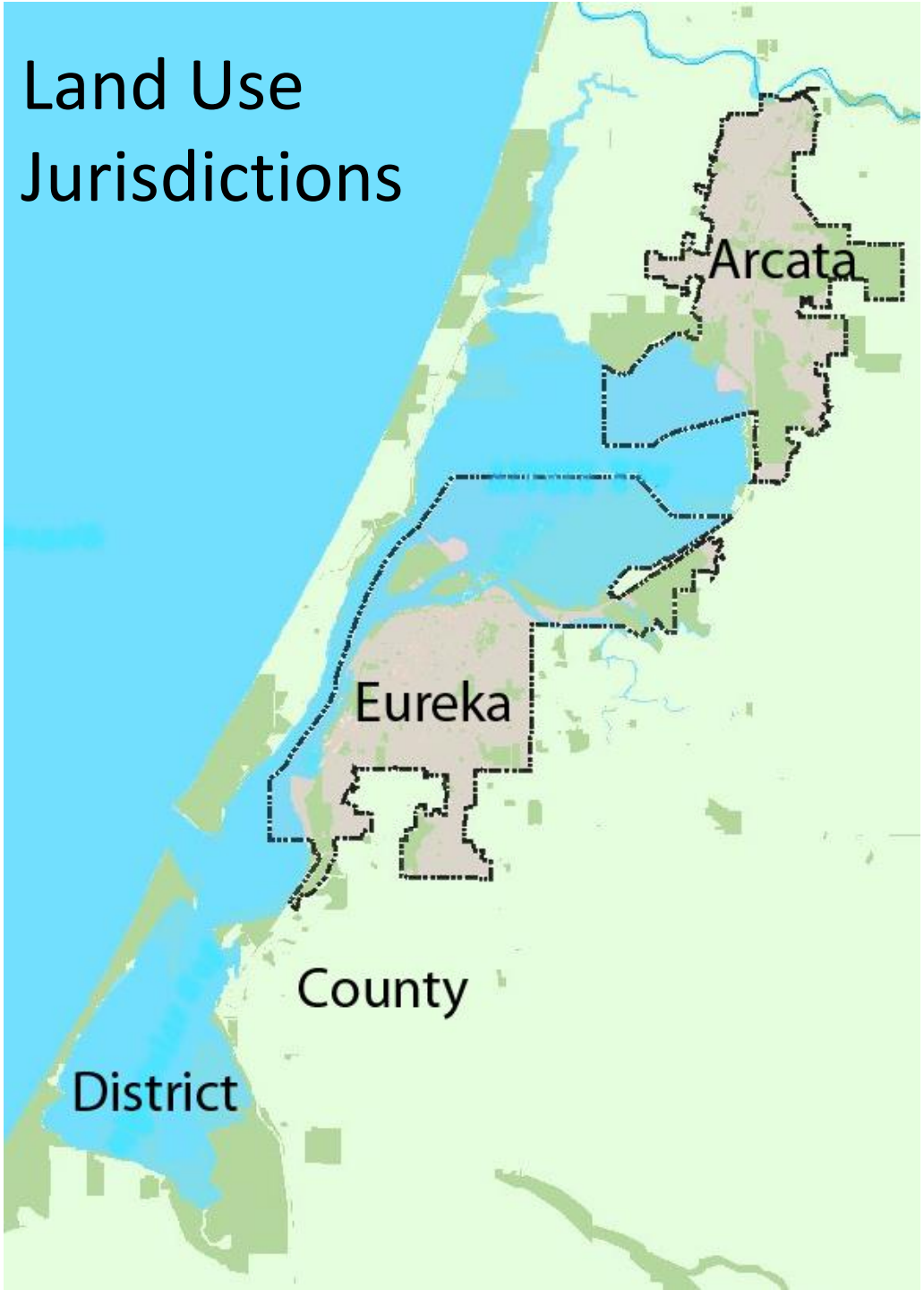
1870 Tidal Inundation Footprint

(North Spit Sea Level Rise + Subsidence Rate = 18.6" per Century, Russell 2012)



Adaptation Planning Strategy

We cannot manage or protect the shoreline
parcel by parcel, we need to address entire hydrologic units.


Land Use
Jurisdictions
Arcata
Eureka
County
District

Phase II: Adaption Planning for Sea Level Rise

- **Technical Studies to Establish Current and Future Sea Level Rise Inundation Zones Incorporating local Subsidence Rates and Groundwater Modeling**

- **Coordinate/Facilitate Bay-wide SLR Adaptation Planning via Core Working Group: Humboldt County, Harbor District, City of Eureka & Arcata + Land Management Agencies, and Resource Protection Agencies**

- *Inform the public and stakeholders of the region's vulnerability to sea level rise and land uses/infrastructure/property that are at risk from coastal flooding under current tidal conditions and with sea level rise*

Sea Level Vulnerability Assessment

- Produce an inundation model based on 2010 LiDAR
- Produce inundation maps for several water surface elevations
- Produce a groundwater elevation model

Adaptation Planning Working Group

- Inventory land uses, physical assets, services at risk under existing conditions and to increasing sea levels and groundwater elevations
- Prioritize land uses, assets, and services based on their existing and future sustainability
- Develop adaption strategies and plans for the six hydrologic units on Humboldt Bay for short-term and long-term implementation

3) Roles: CEI, Co-Lead Agencies, SLR Adaptation Planner, Core Group, APWG, and Vulnerability Assessment Engineer
4) Relationship: Vulnerability Assessment and Adaptation Planning Components
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APWG Goals

- Complete a coastal hazards vulnerability assessment, of the Humboldt Bay region, under current tidal conditions and with sea level rise.
- Complete a risk assessment of land uses and assets in the Humboldt Bay region.
- Create integrated regional land use strategies for the Humboldt Bay area that adapt to coastal hazards from the historical legacy of shoreline development and rising sea levels.

APWG Objectives

- Identify areas around Humboldt Bay that are currently vulnerable to coastal hazards and from rising sea levels, rising groundwater, and subsidence.
- Identify land uses, infrastructure, resources, and property that is at risk currently from coastal hazards, from rising sea levels and rising groundwater, and subsidence.
- Prioritize land uses, infrastructure, resources, and property at risk, based on principles of sustainability in the Humboldt Bay region.
- Identify the capacity of land use, land management, and regulatory authorities to reduce or avoid risk to land uses, infrastructure, resources, and property from existing coastal hazards, rising sea levels and rising groundwater, and subsidence.
- Develop a regional approach to land use, land management, and regulations that reduce or avoid risk, by 2030, to sustainable land uses, infrastructure, resources, and property from existing coastal hazards, rising sea levels and rising groundwater, and subsidence.

8) Land Management and Resource Agency Invitations-Contacts
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Long-Term Sea Level Rise Inundation Areas [Current Tsunami Zone]