



Introduction to the Seahurst Park Ecosystem Restoration Project: A Process of Transformation



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Environmental Science Center Public Education Series

Acknowledgements

Project Partners

- City of Burien (Owner)
- U.S. Army Corps of Engineers, Seattle District

Other Major Funding Sources

- Federal
 - National Oceanic and Atmospheric Administration
 - U.S. Environmental Protection Agency
- State
 - Salmon Recovery Funding Board
 - Aquatic Land Enhancement Acct.
 - Estuary and Salmon Restoration Prg.
 - Land & Water Conservation Fund
 - Puget Sound Acq. & Restoration Fund
- County
 - Green/Duwamish Watershed/WRIA 9
 - King Conservation District

Acknowledgements

Planning Design Team

- Prime Consultant: Anchor QEA
- Subconsultants:
 - Coastal Geologic Services
 - Shannon & Wilson
 - Berger ABAM
 - Patano+Hafermann Architects
 - Roth Hill Engineering Partners
 - Cross Engineers

Pre- and Post-project Monitoring

- Anchor QEA
- Coastal Geologic Services
- Univ. of Wash. Fisheries/WET

Construction Contractors

- Phase 1: MarVac, A-1, Segale
- Phase 2: CKY

Environmental Science Center

- Environmental Science Center Foundation
- Bassetti Architects

Presentation Overview

1. Introduction and Project Background
2. Project Overview by Key Issues
3. Implementation and Monitoring
4. Summary and Conclusions



1. Introduction and Project Background

- Site and Project History
- Purpose and Need, Goals, and Challenges
- Project Context



Site History: Timeline



Pre-settlement:
Uses by Native
Americans included
extensive clam
digging and fishing

Early 1900s:
Site is logged

1930s:
Fox family purchases,
establishes residence, and
uses site for clandestine
“rum running” operations

1940s–1970s:
South Basin
used for Wa
85 Water Su

Site History: Timeline



1993:
City of Burien
established

1996:
King County
transfers park
to City of
Burien

1997–1999:
Washington Department of Fish
and Wildlife denies proposal to
place more rock (gabion) to
protect south seawall

2000:
Puget Sound
listed as
under threat
Species Act

Project History: Timeline



2001:
Master Planning
Begins

2002:
Master Plan
adopted by City
Council

2005:
Phase 1A
(City/USACE)
South Seawall
removal
completed

2006:
Phase 1B
(City/NOAA/SR
FB): Phase 1
vegetation
restoration
completed

2007:
City acq
(31 acres)
Brown fa
increasi
to prese
183-acre

Project Purpose, Need, and Constraints

- Extensive park armoring has degraded nearshore habitat
- There are significant restoration benefits on site and downdrift
- Rare opportunity, landscape position, size of park's shoreline
- Significant recreational and educational use is constraint/opportunity

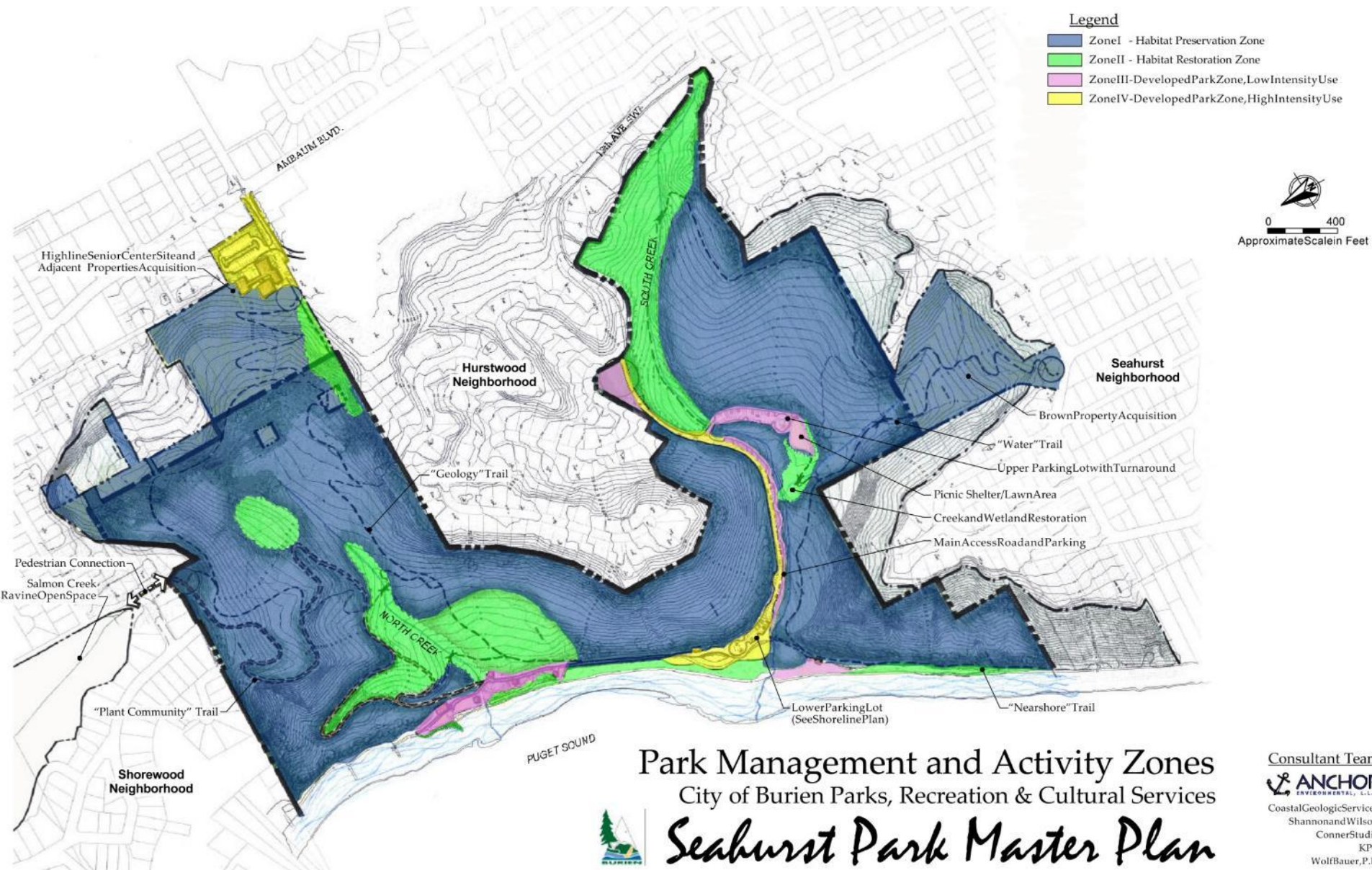


Ecosystem Restoration Goals

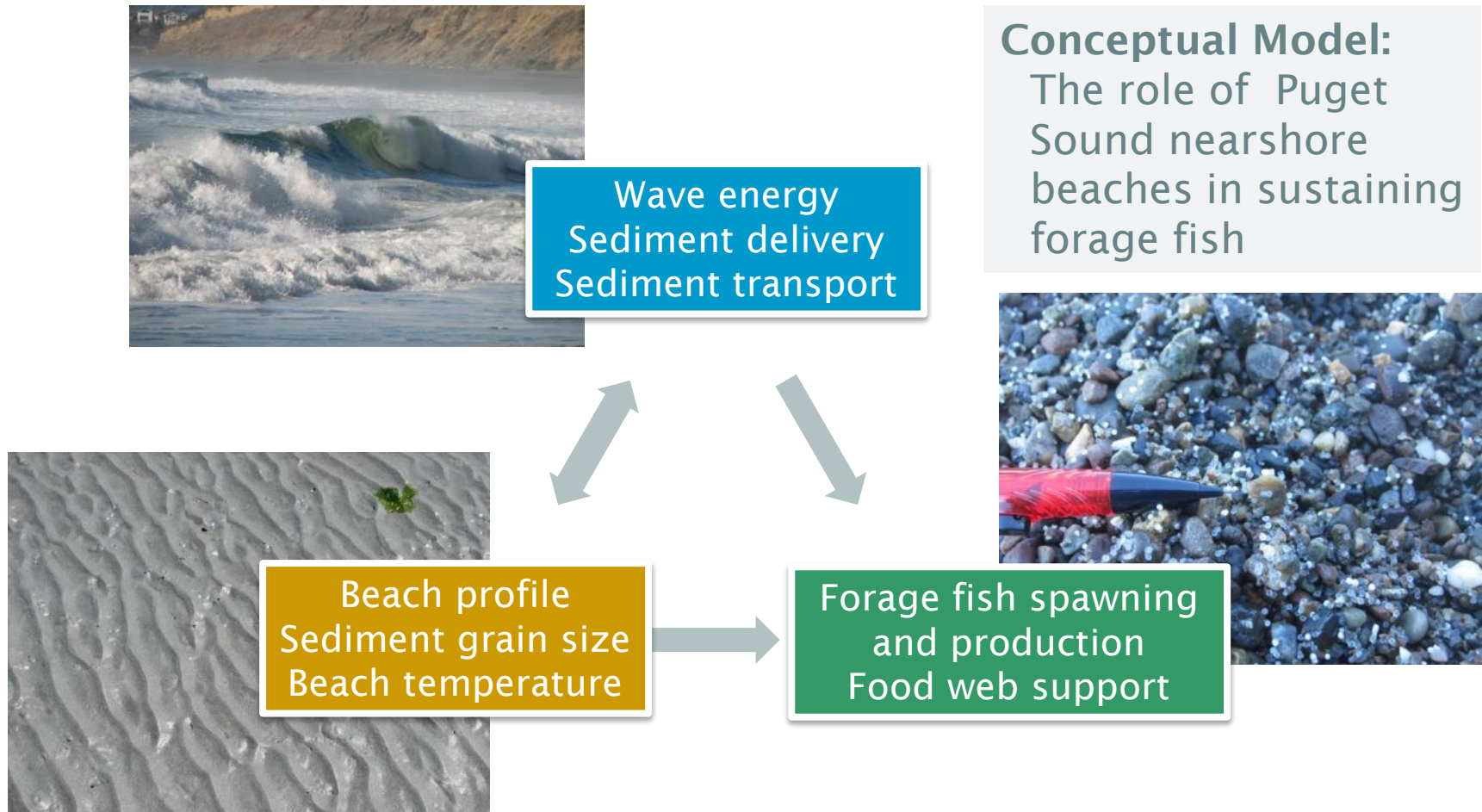
- Preserve existing high-functioning nearshore habitats
- Restore and protect the natural bluff-to-beach sediment process
- Restore beach slopes and substrates
- Restore forage-fish spawning, juvenile salmon rearing, and migration intertidal habitats
- Restore upland and shallow intertidal habitat connectivity
- Diversify habitat in the freshwater/saltwater interface



Habitat Preservation and Restoration Zones



Process-based Restoration Approach



Source, Conceptual Model: PSNERP and Simenstad et al. 2006; Penttila 2007

Park Renovation Goals

- Locate Park Facilities Where Compatible with Habitat Processes
- Improve Disabled (ADA) Access
- Improve Access to Beach
- Protect and Support Educational Facilities and Programs
- No Net Loss of Recreational Facilities
- Improve Functionality and Availability of Recreation Amenities
- Long-term Sustainability/Durability



Key Project Challenges

- Uncertainties with Funding a \$11 Million Project
- Balancing Habitat Restoration with Recreation and Educational Uses
- Cultural Resources
- Long Implementation Timeframe
- Sea-level Rise
- Construction Timing, Access, and Seasonal Site Conditions
- Utility Relocations
- Landslide Management and Environmentally Critical Areas



Context: Puget Sound Nearshore



Source: Puget Sound Nearshore Ecosystem Restoration Project

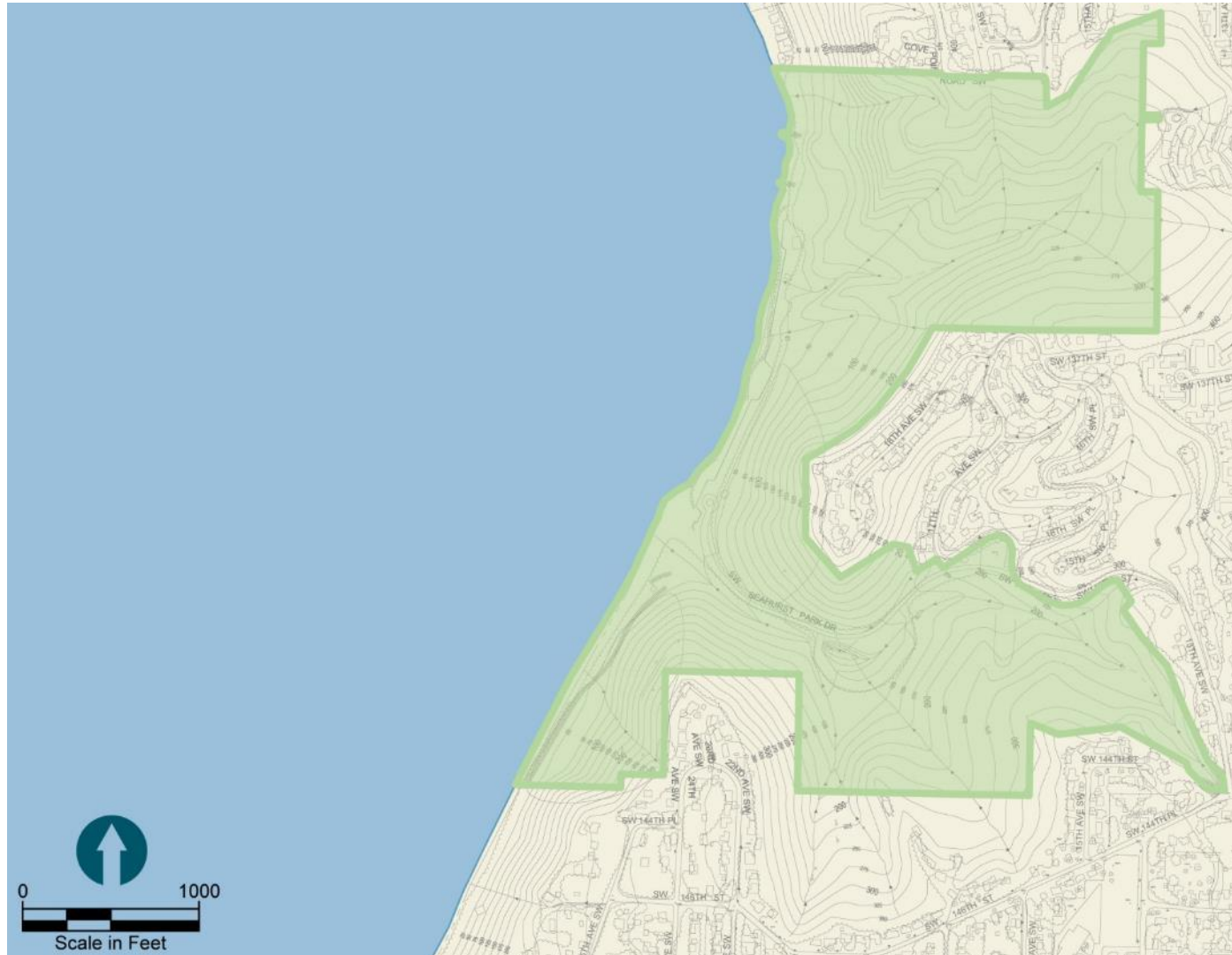
Context: Park Setting Greater Seattle/ Tacoma



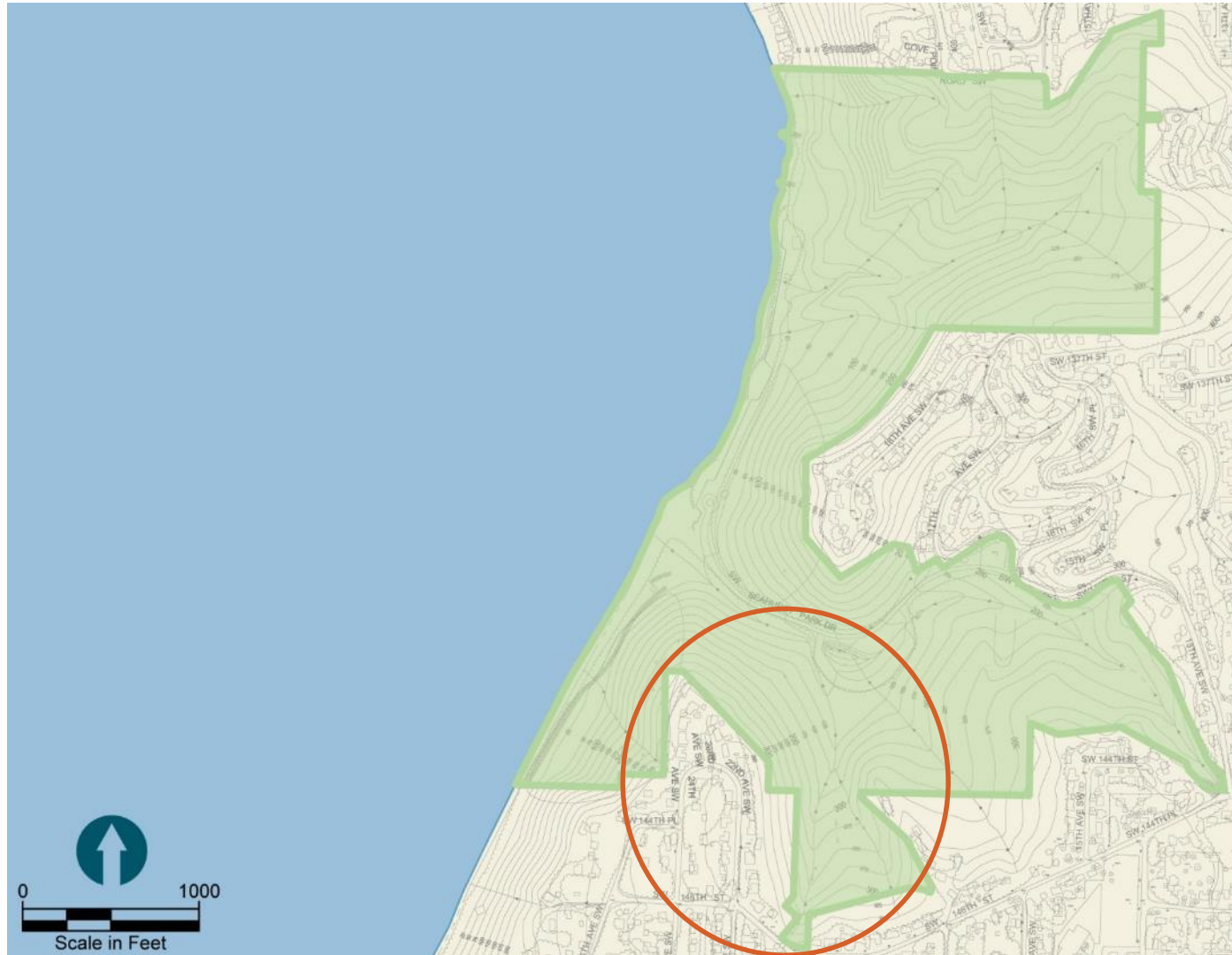
Context: Park Setting Local/Burien



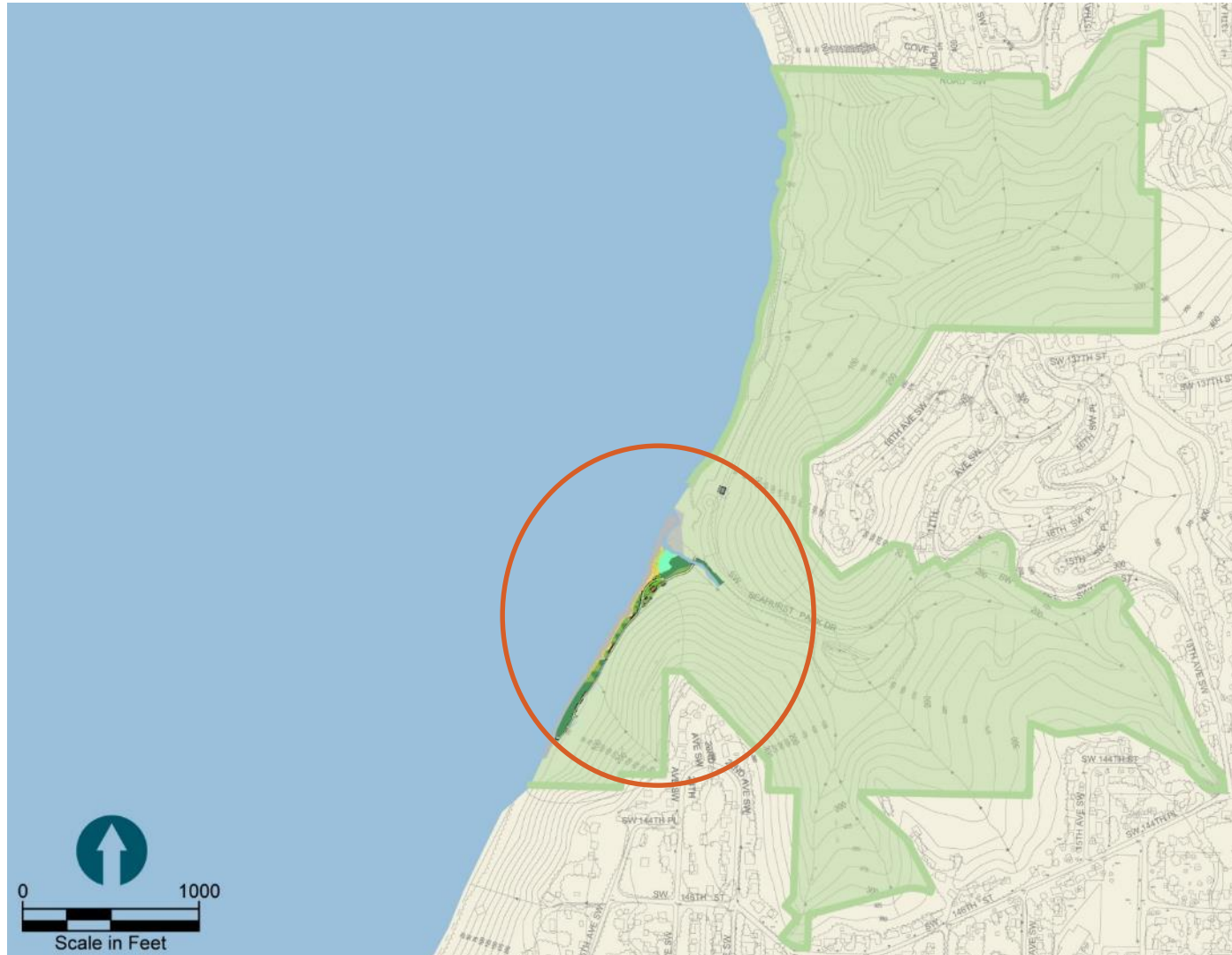
Project Site and Phasing: 2001



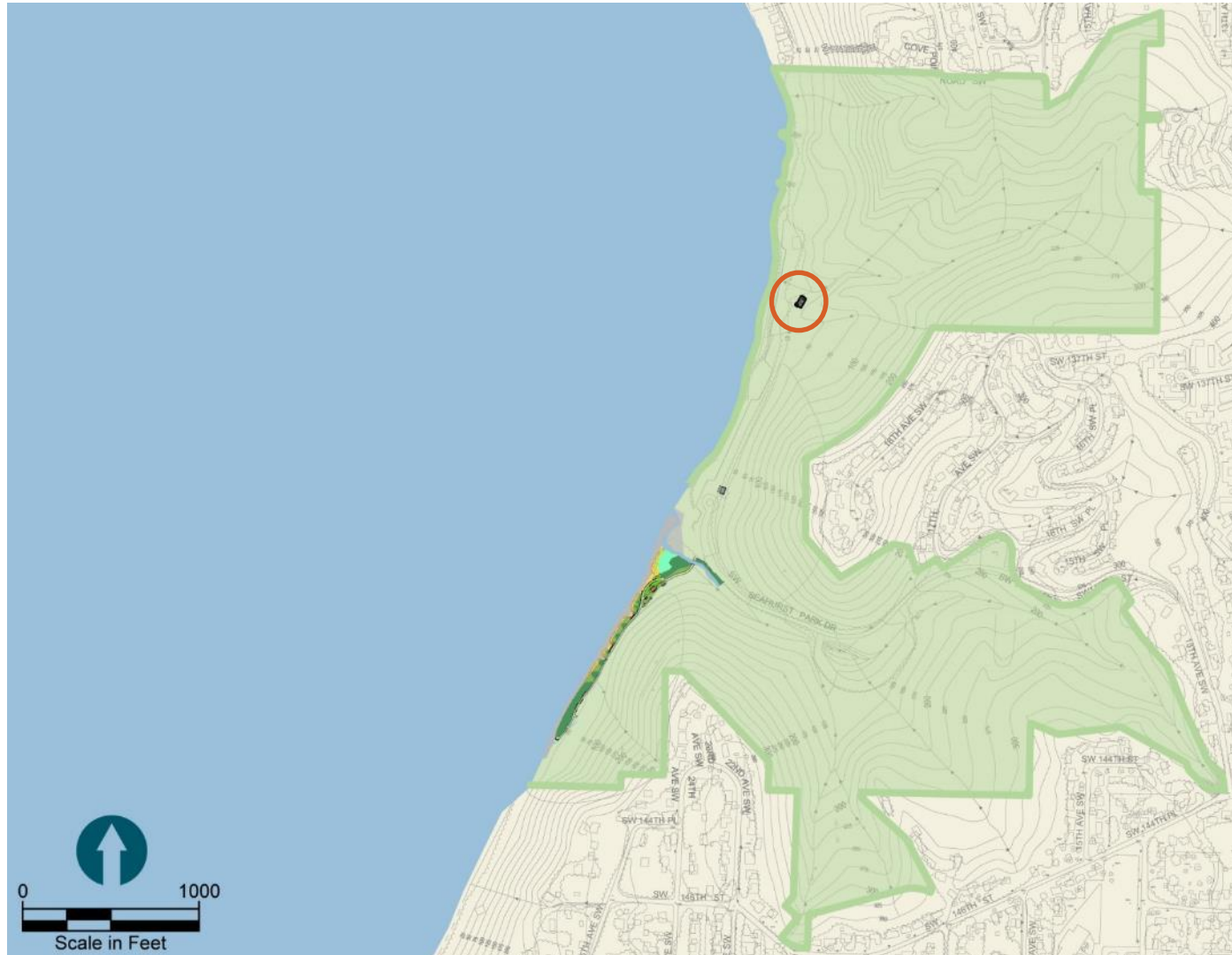
Project Site and Phasing: 2007 Park Addition



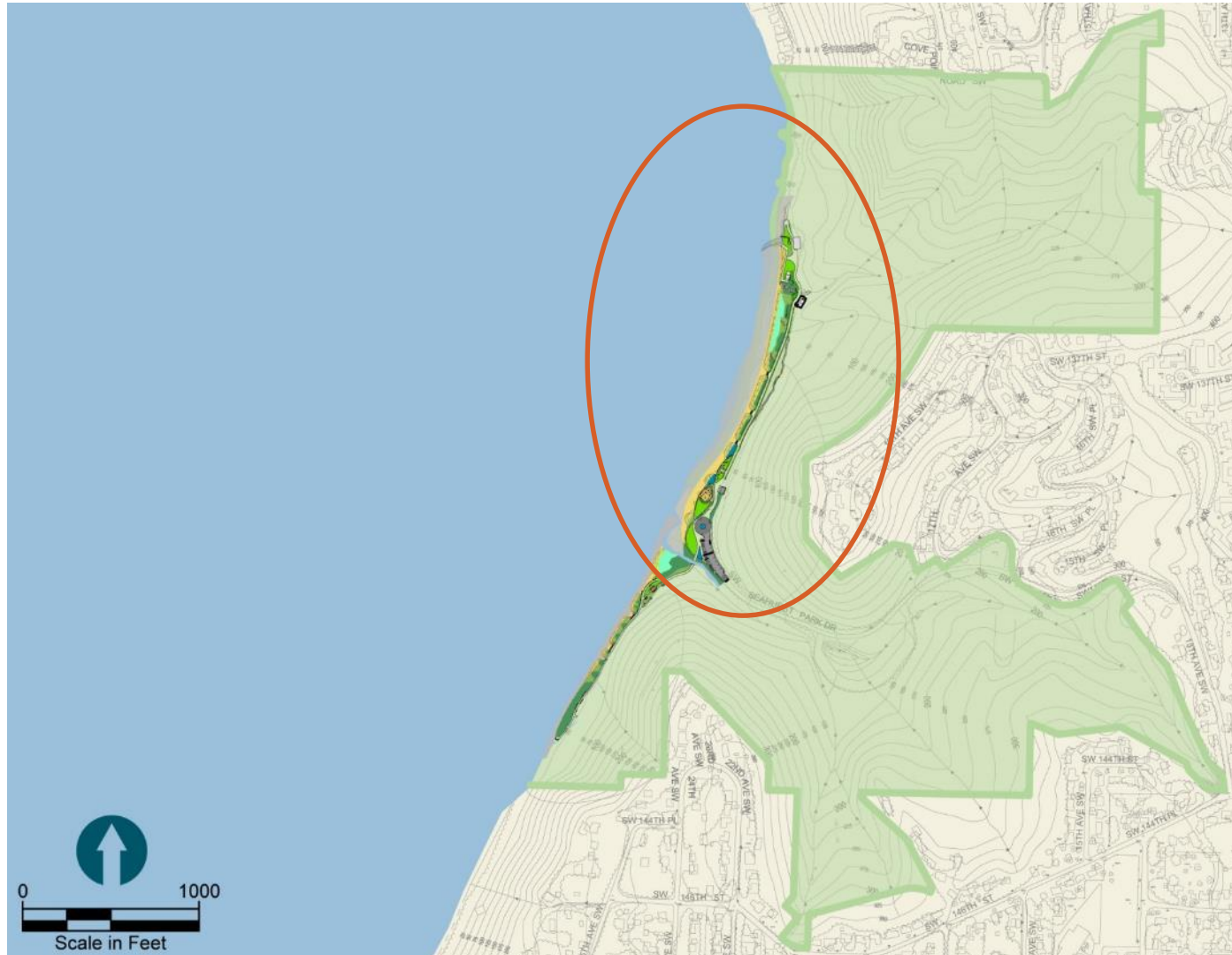
Project Site and Phasing: 2003–2008, Phase 1



Project Site and Phasing: 2011 ESC Building



Project Site and Phasing: 2008–2014, Phase 2

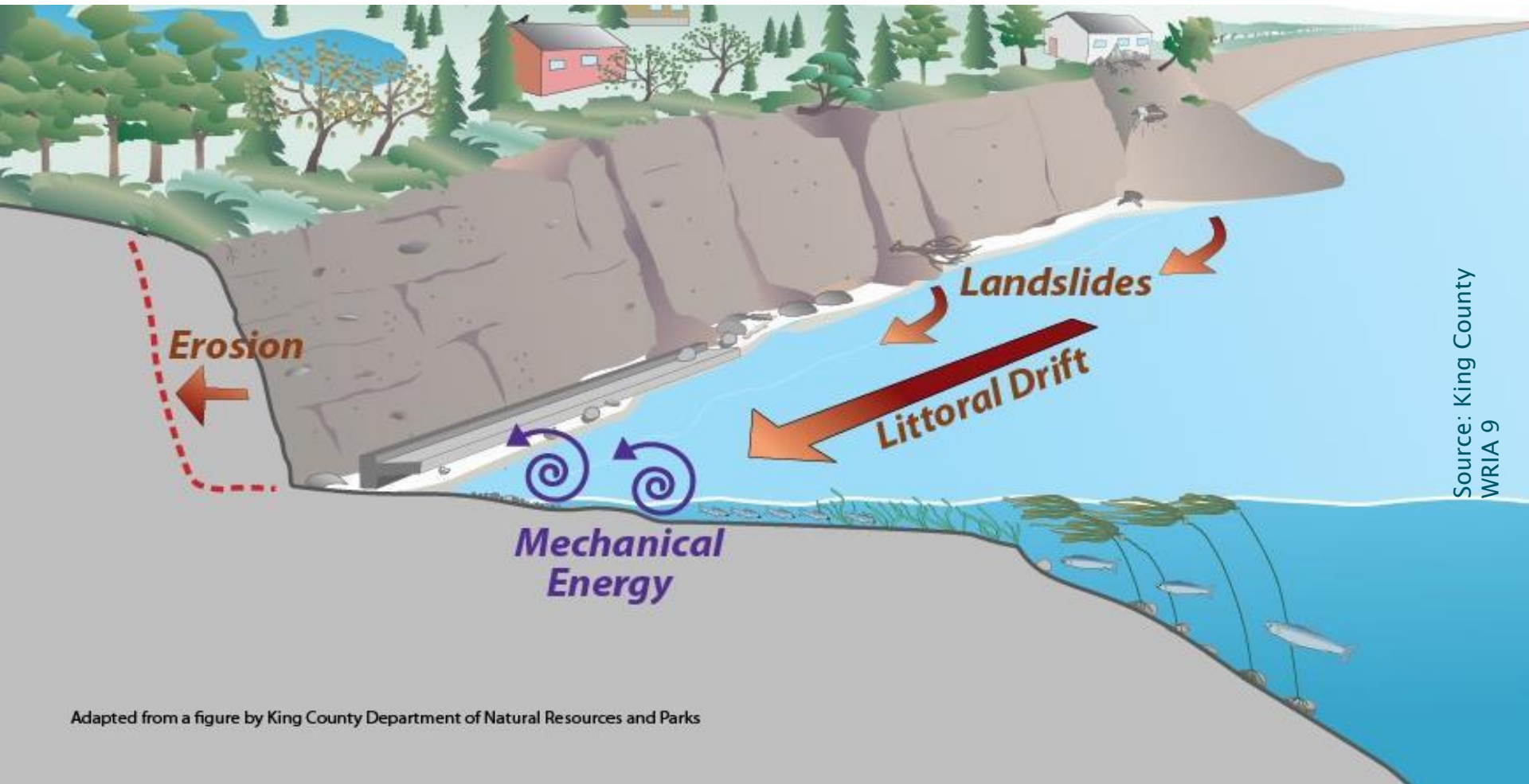


2. Project Overview by Key Issues

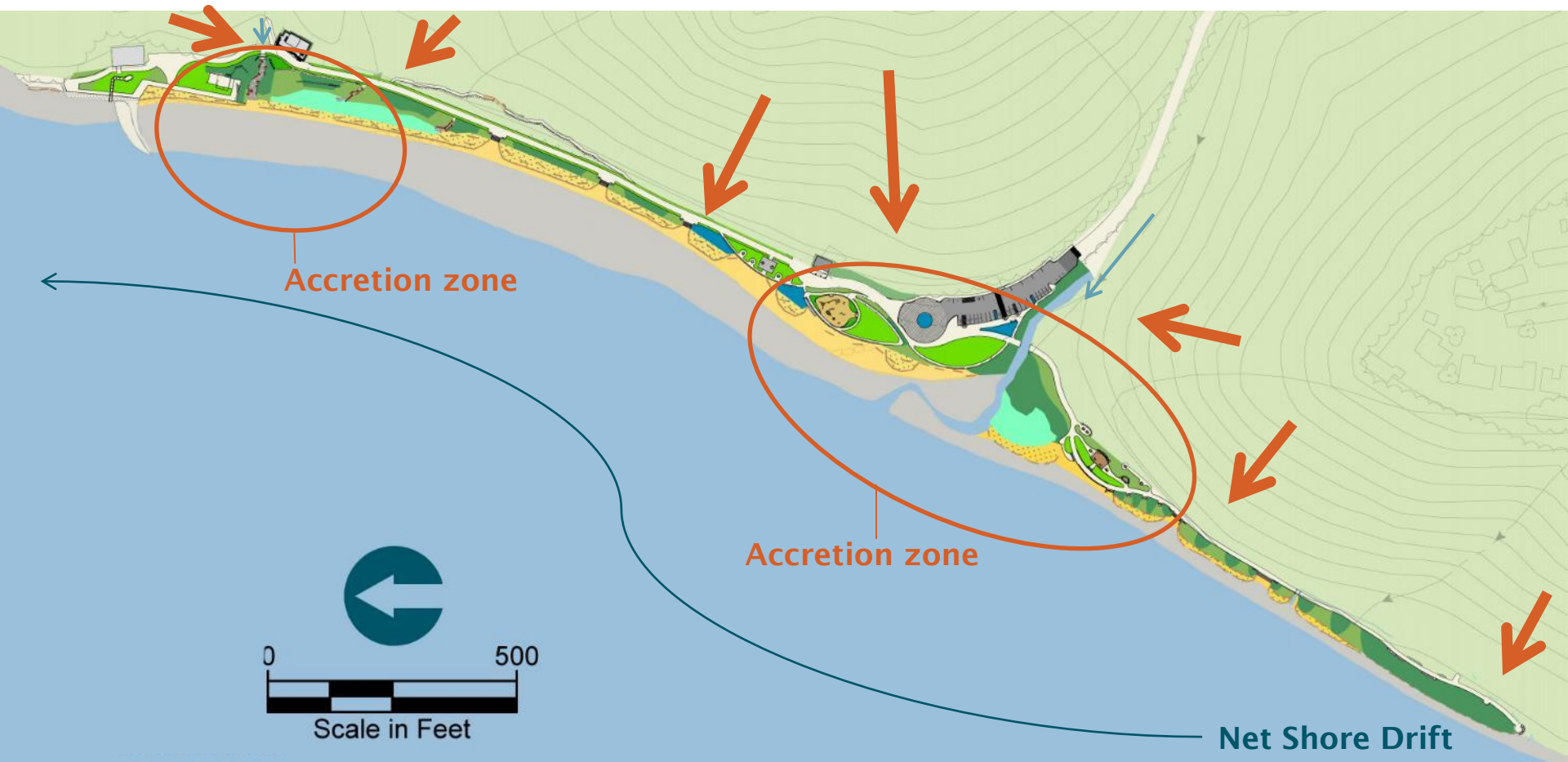
- 1 Supporting Habitat-forming Processes
- 2 Habitat Diversity and Connectivity
- 3 Public and Stakeholder Priorities
- 4 Balancing Park Use and Habitat
- 5 Supporting Educational Use
- 6 Relocating and Redesigning Infrastructure



Issue 1: Supporting Habitat-forming Processes



Issue 1: Bluff-to-beach Sediment Supply Processes



1: Supporting Habitat
Forming Processes

2: Habitat Diversity and
Connectivity

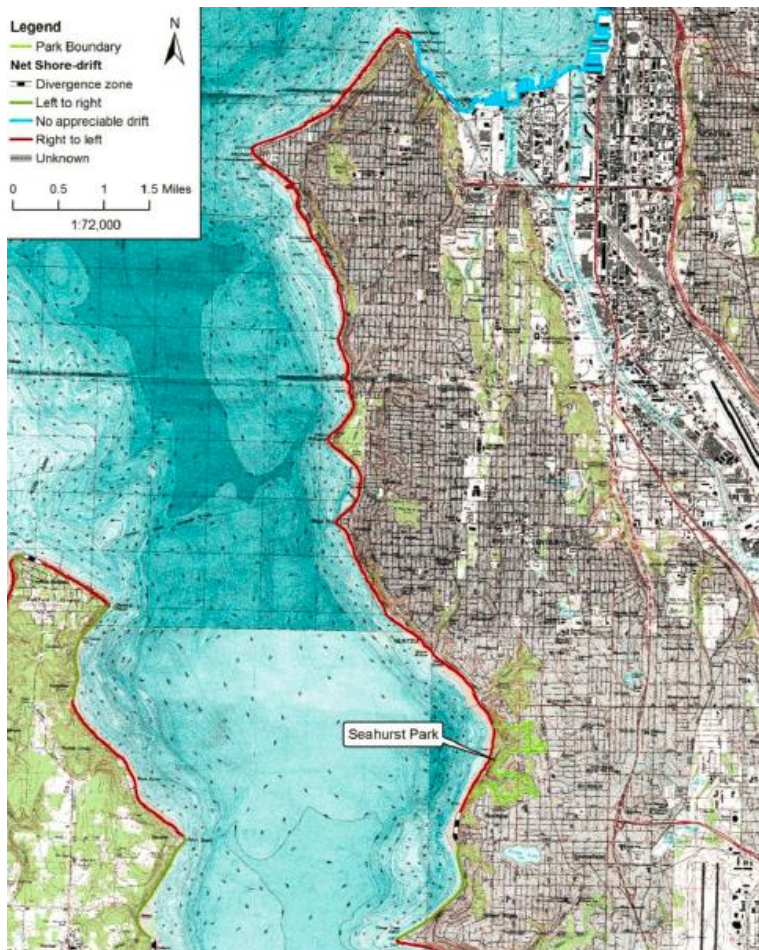
3: Public and
Stakeholder Priorities

4: Balancing Park Use
and Habitat

5: Supporting
Educational Use

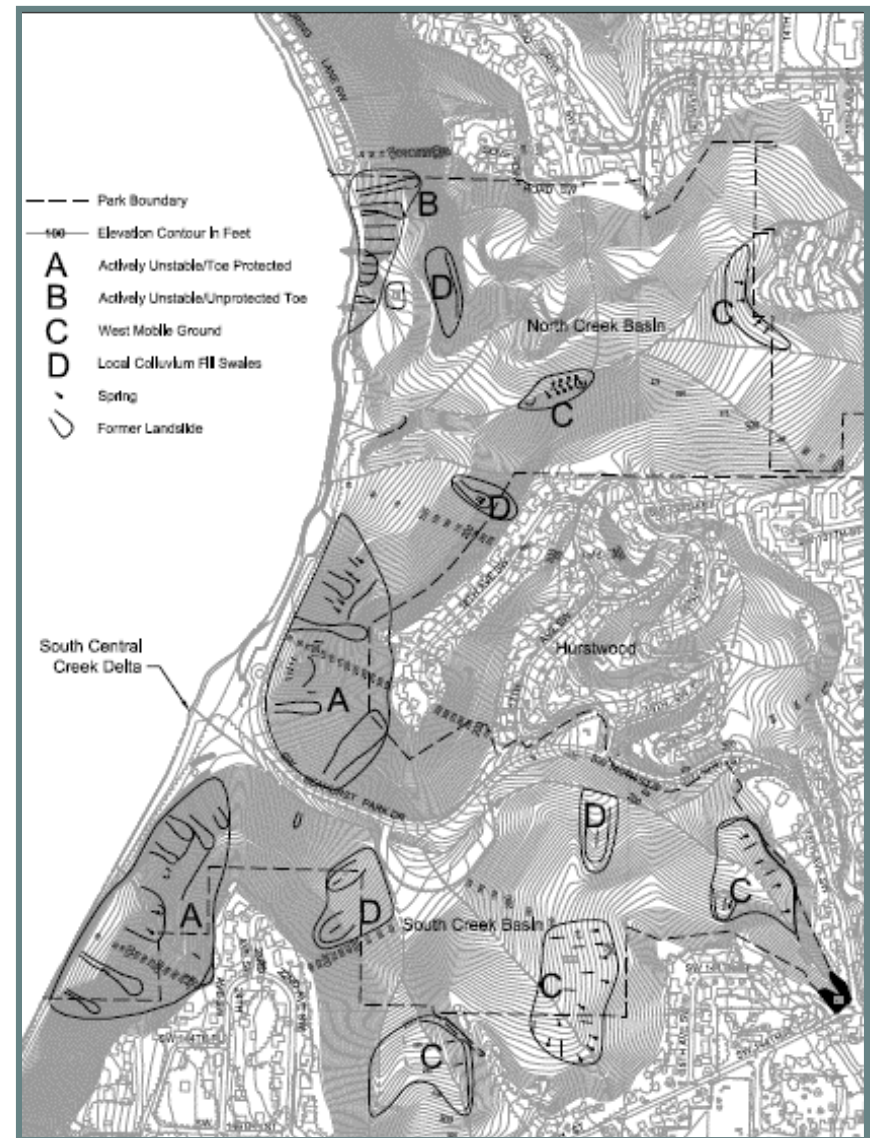
6: Relocating /
Redesigning Infrastructure

Issue 1: Drift Cell and Feeder Bluffs



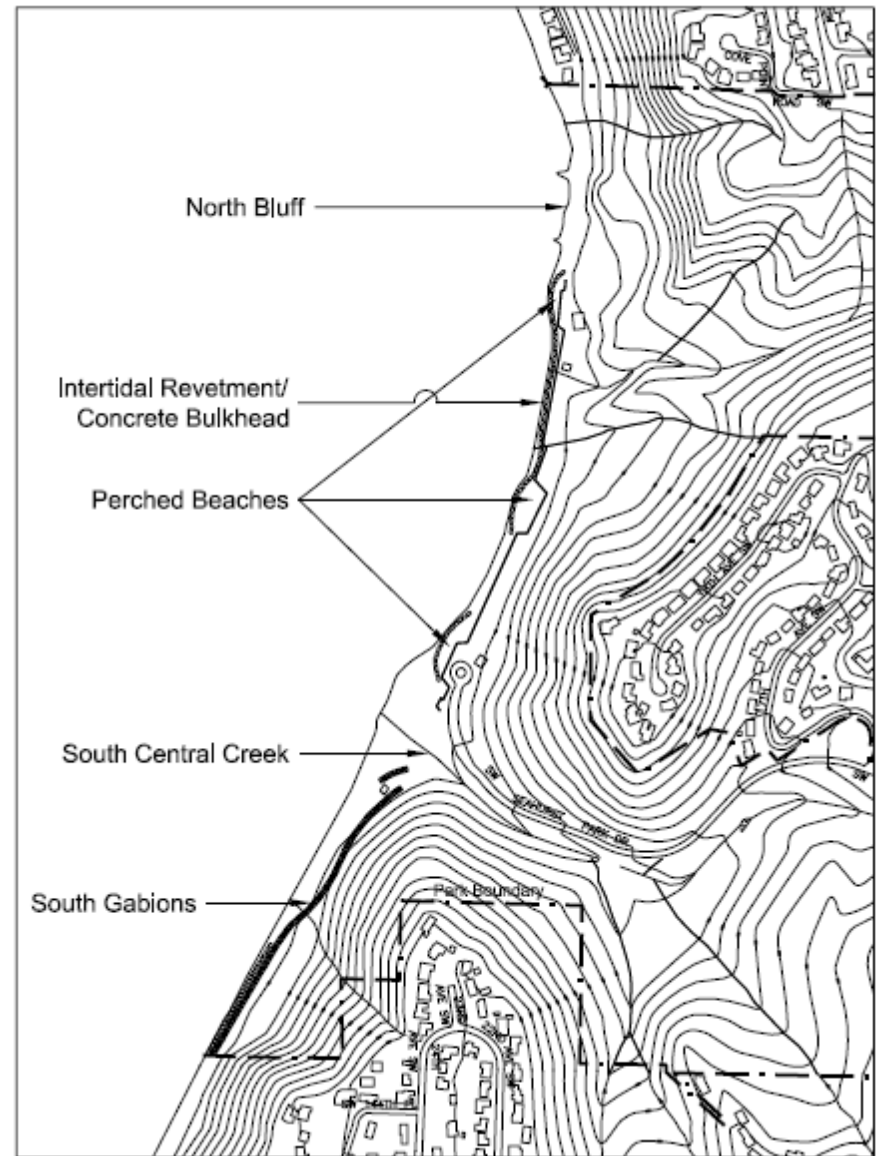
Sources: Johannessen et al. 2005

Issue 1: On-site Unstable Hillsides



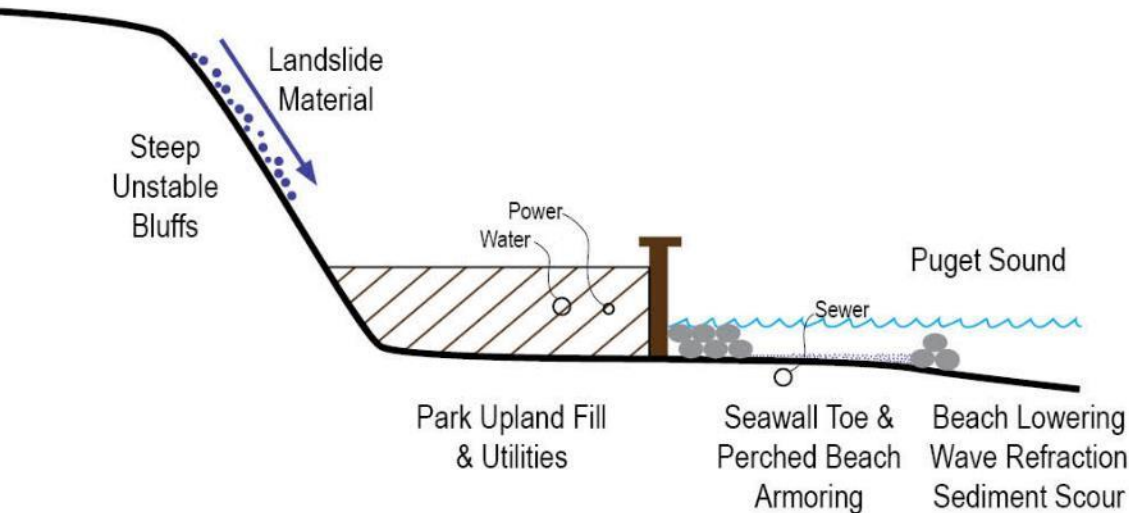
Map Source: Shannon & Wilson 2002

Issue 1: Pre-project Bulkheading



Source: Anchor QEA 2002

Issue 1: Summary Diagram – Pre-project



1: Supporting Habitat
Forming Processes

2: Habitat Diversity and
Connectivity

3: Public and
Stakeholder Priorities

4: Balancing Park Use
and Habitat

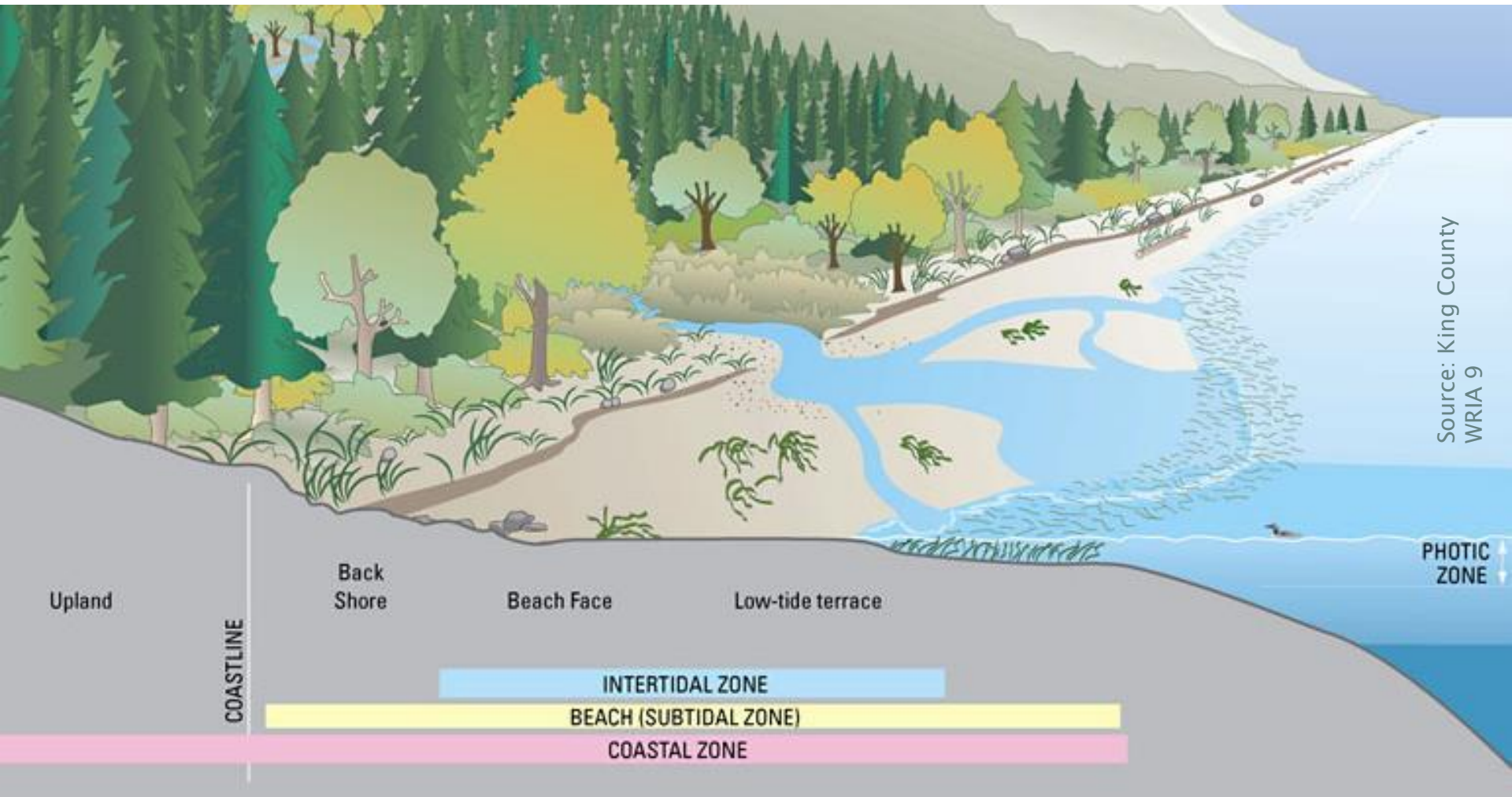
5: Supporting
Educational Use

6: Relocating /
Redesigning Infrastructure

Issue 1: Summary Diagram – Completed Project



Issue 2: Habitat Diversity and Connectivity



1: Supporting Habitat
Forming Processes

2: Habitat Diversity and
Connectivity

3: Public and
Stakeholder Priorities

4: Balancing Park Use
and Habitat

5: Supporting
Educational Use

6: Relocating /
Redesigning Infrastructure