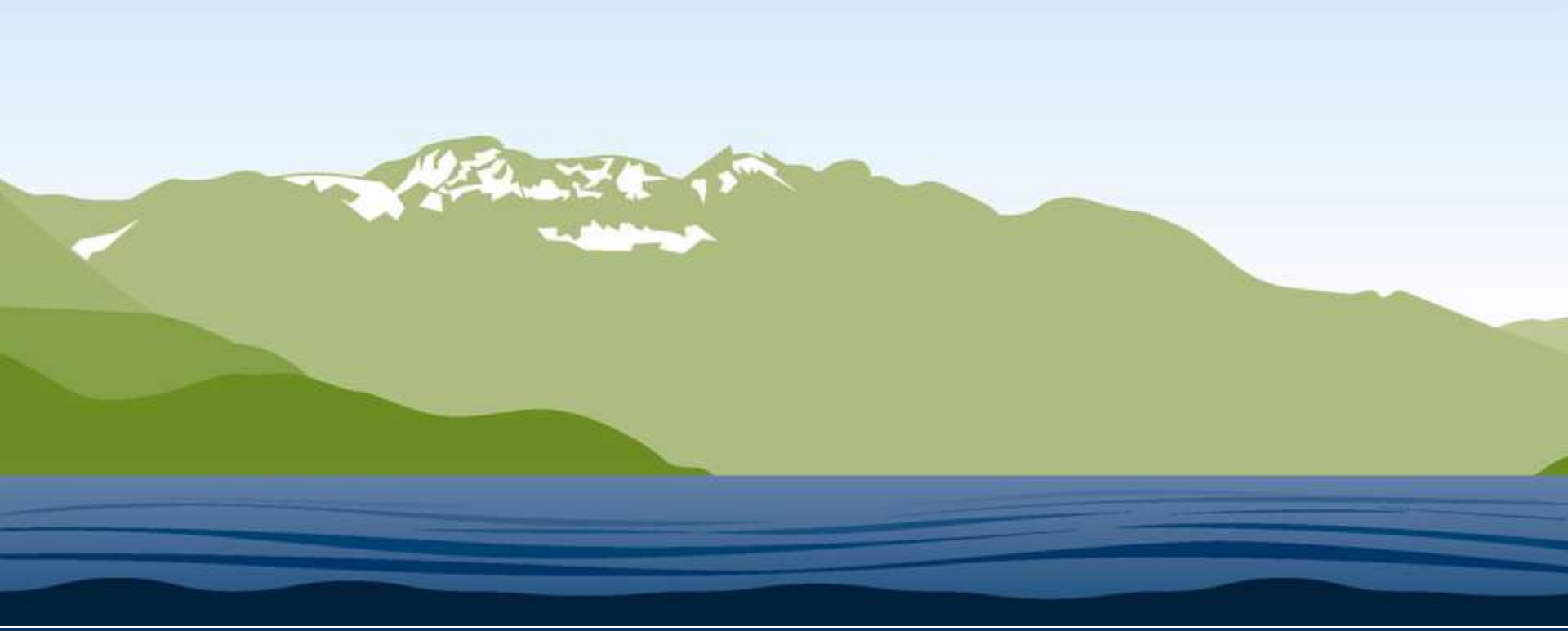


Theme VI – Design – Session B3

Integrating Public Access & Habitat into the Design of Working Waterfronts

Shannon Kinsella, PE, LEED AP, Reid Middleton
Jim Brennan, ASLA, JA Brennan
Willy Ahn, PhD, PE, LEED AP, Reid Middleton
Joe Callaghan PWS, GeoEngineers

ReidMiddleton
GeoEngineers
j.a. brennan associates PLLC

Outline

Introduction – Shannon & Jim

Design Details, Solutions & Project Examples

- Coordination & Conflict Reduction– Shannon Kinsella
  - Interactive discussion – 5 minutes
- Public Access & Education – Jim Brennan
  - Interactive discussion – 5 minutes
- Safety, Security, & Codes – Willy Ahn
  - Interactive discussion – 5 minutes
- Habitat & Environment – Joe Callaghan
  - Interactive discussion – 5 minutes

Summary

Questions

Introduction – *Why*

Why provide public access and improved habitat in working waterfront locations?

- Regulatory Framework
  - Permit & Mitigation Requirements
  - Shoreline Master Program Guidance
- Offsite access and mitigation areas may permit larger contiguous working areas
- Good Neighbor
- Economic & Other Benefits
- Incentives & Planning Tools

Introduction - How

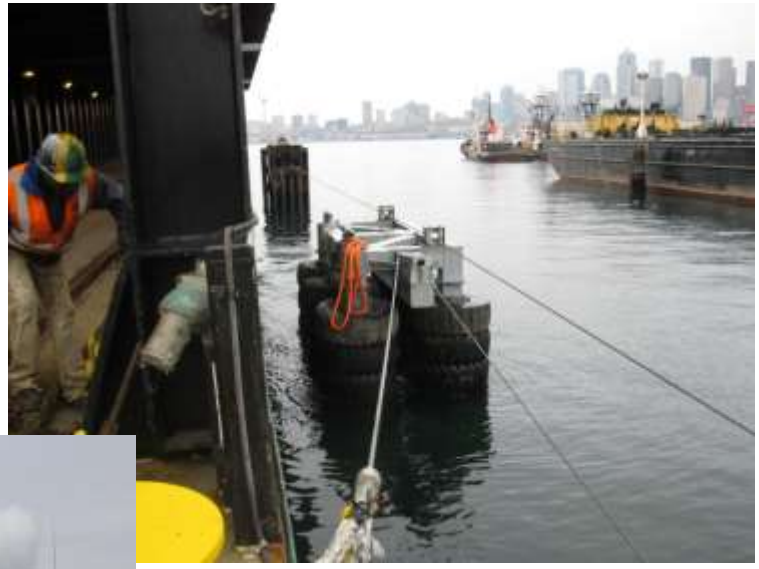
How can we provide public access and passage through working waterfront areas?

How do we strive for better results?

Introduction - Benefits

Working Waterfront Benefits

- Support Maritime Industrial Businesses
- Provide Community & Political Support
- Maintain and/or Enhance Functional Access



Introduction -Scale

Considerations in Providing Public Access & Habitat at Facilities

- Scale & Type of Facilities
  - Large Industrial
  - Medium Size
  - Small Ports
  - Municipalities
  - Private
- Regional Differences
  - Regulations
  - Habitat
  - Economics
  - Industries

Introduction – Key Factors

Key planning and design factors

- Safety
- Costs
- Use Conflicts
- Security
- Functionality
- Minimize Impact to Operations
- Long Term Impacts (i.e. limit expansion)
- Long Term Maintenance
- Experiential Quality
- Aesthetics
- Opportunities for Education

Introduction -Considerations

Consider site conditions and context

Understand shoreline processes

Integrate fish and wildlife habitat needs and resources

Consider access and transportation needs

Team: multi-disciplinary approach with science guided design

Introduction - Stakeholders

Work with owners

Work with partners (Ports, Utilities, Parks Dept., USACE, Non-profits)

Early agency input

Tribes

Public involvement

Environmental groups

Introduction – Planning Process

Planning Process

- Comprehensive Planning Approach
- Incremental approach
- Overall plan versus project specific facilities and actions

Introduction – Access Benefits

Benefits

- Shoreline Access & Recreation Features
  - Develop common acceptance for legally required shoreline access sites
  - Enhance public access on existing public land
  - Consider land purchases or easements for access
  - Select land not well suited to development

Introduction – Environmental Benefits

Benefits

- Improved Environmental Function
  - Enhance environmental conditions
  - Create a framework for off-site mitigation
  - On site mitigation
  - Connectivity
  - Education
  - Minimize over-water structures
  - Science guided design

  - Add image

Introduction – Educational Benefits

Benefits

- Public Appreciation & Education
  - Provide educational opportunities
  - Passive recreation
  - Improve aesthetic quality
  - Improve visibility
  - Provide wayfinding signage
  - Consider community

Introduction –End Products

Working Waterfronts

- Multi-beneficial solutions
- Functional commercial and industrial development
- Habitat AND public access
- Public relation benefits
- Permits & Entitlement

Coordination & Conflict Reduction
– Project Examples

Port Townsend Heavy Haulout & Scott Memorial Trail

Port of Everett Marine Terminals &
Union Slough Mitigation Bank

Fairhaven Industrial & Marine Beach Park &
Fairhaven Shipyard

Port of Seattle Fishermen's Terminal

Coordination & Conflict Reduction
– Project Examples

Port Townsend Heavy Haulout & Scott Memorial Trail

- Overview
  - 300-ton haulout and shipyard facility with a major waterfront trail (Larry Scott Memorial Trail) through the site
  - Six mile long non-motorized tail available for pedestrian, bike, horseback use
  - Shipyard with 300 ton Haulout

Coordination & Conflict Reduction
– Project Examples

Port Townsend Heavy Haulout & Scott Memorial Trail

- Coordination
  - Alternatives to route upland around shipyard were reviewed but not selected
  - Fencing at non-crossing locations provide separation between shipyard activities and trail use
  - Signage, safety gates, bollards, etc provide warning and separation at crossings

Coordination & Conflict Reduction
– Project Examples

Port of Everett Marine Terminals & Union Slough Mitigation Bank

- Marine Terminals – Pacific Terminal, Pier 1, Pier 3, Shipyard
- 20 Acre intertidal mitigation bank and public access trails
- Separate major mitigation and public access from specific marine terminal site

Coordination & Conflict Reduction
– Project Examples

Port of Everett Marine Terminals & Union Slough Mitigation Bank

- Design Details
- Public access at marine terminal
- Mitigation and trail design
- Other design elements
- Puget Sound Partnership stewardship
- Photo of volunteers maintaining union slough

Coordination & Conflict Reduction
– Project Examples

Fairhaven Industrial – Bellingham

- Marine Terminals – Fairhaven Shipyard, Intermodal, USCG, Marine Beach Park, Public Boat Launch

Coordination & Conflict Reduction
– Project Examples

Fairhaven Industrial – Bellingham

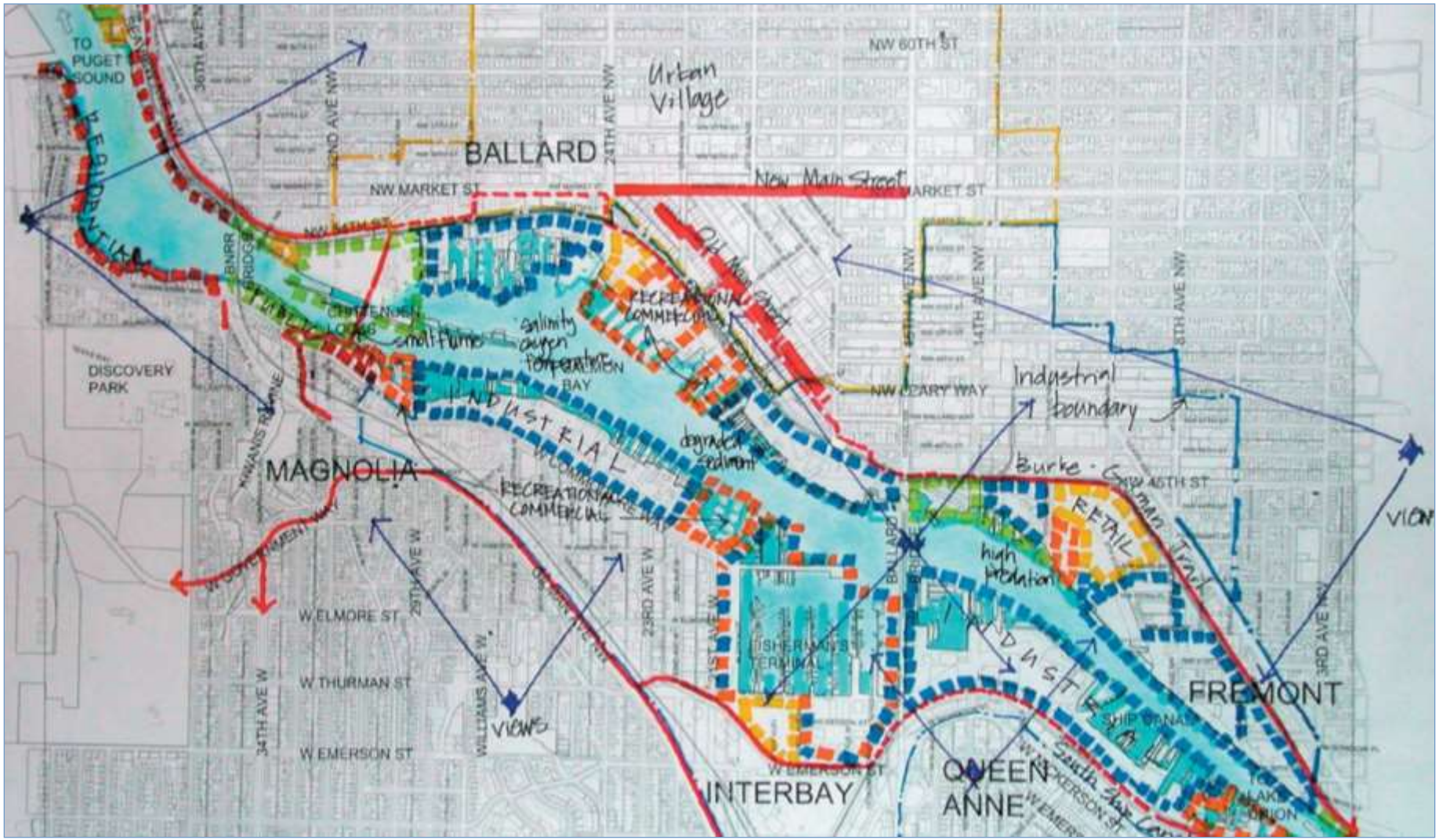
- Marine Beach Park

Coordination & Conflict Reduction
– Project Examples

Fishermen's Terminal – Seattle

- Commercial fishing, off the dock sales, as well as recreational, small cruise, sporting event shuttles, and restaurants

Case Study – Greater Salmon Bay, Seattle



Case Study – Greater Salmon Bay, Seattle

Case Study – Greater Salmon Bay, Seattle

Community driven process (Groundswell N.W.)

17 sites considered

Focus on street ends and public land

Improving access and ecological value

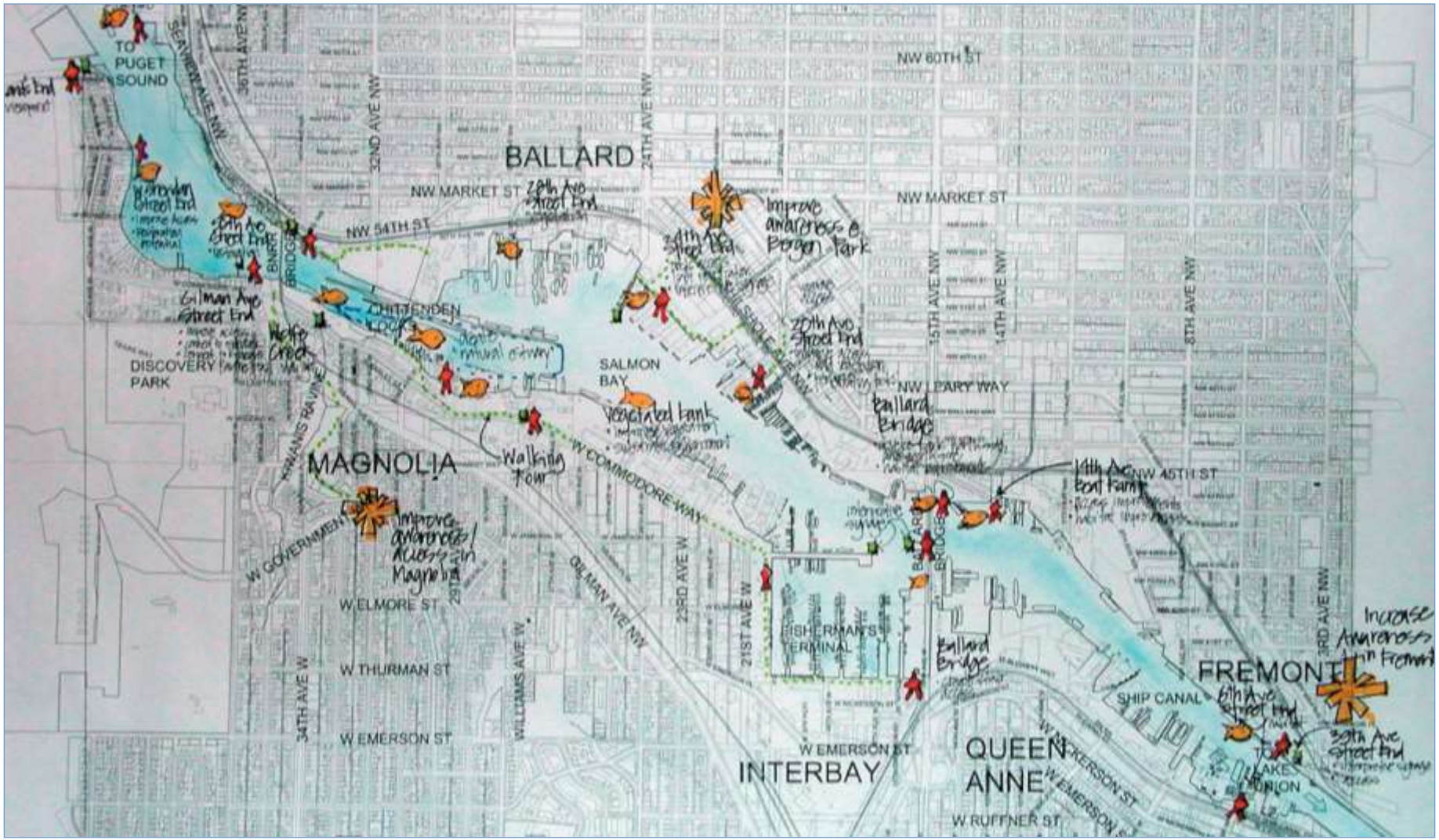
Conceptual ideas from design workshops

Early wins: Street end overlook implemented by Seattle Public Utilities

Trail conflicts: Trucks/Trains/Bicycles/Pedestrians

Work with industrial land use representatives

Case Study – Greater Salmon Bay, Seattle



Goals of Project – Greater Salmon Bay, Seattle

Maintain and/or improve access to businesses

Enhance business visibility

Define load and unload zones

Connectivity along the waterfront

Employee and visitor parking

Ecological value of shoreline

Education opportunities

Case Study – Greater Salmon Bay, Seattle

Provide view points

Develop water access sites

Increase hand carry boat launches

Develop water trails

Add/remove/improve floating docks

Add/remove/improve piers

Case Study – Greater Salmon Bay, Seattle

Case Study – Greater Salmon Bay, Seattle

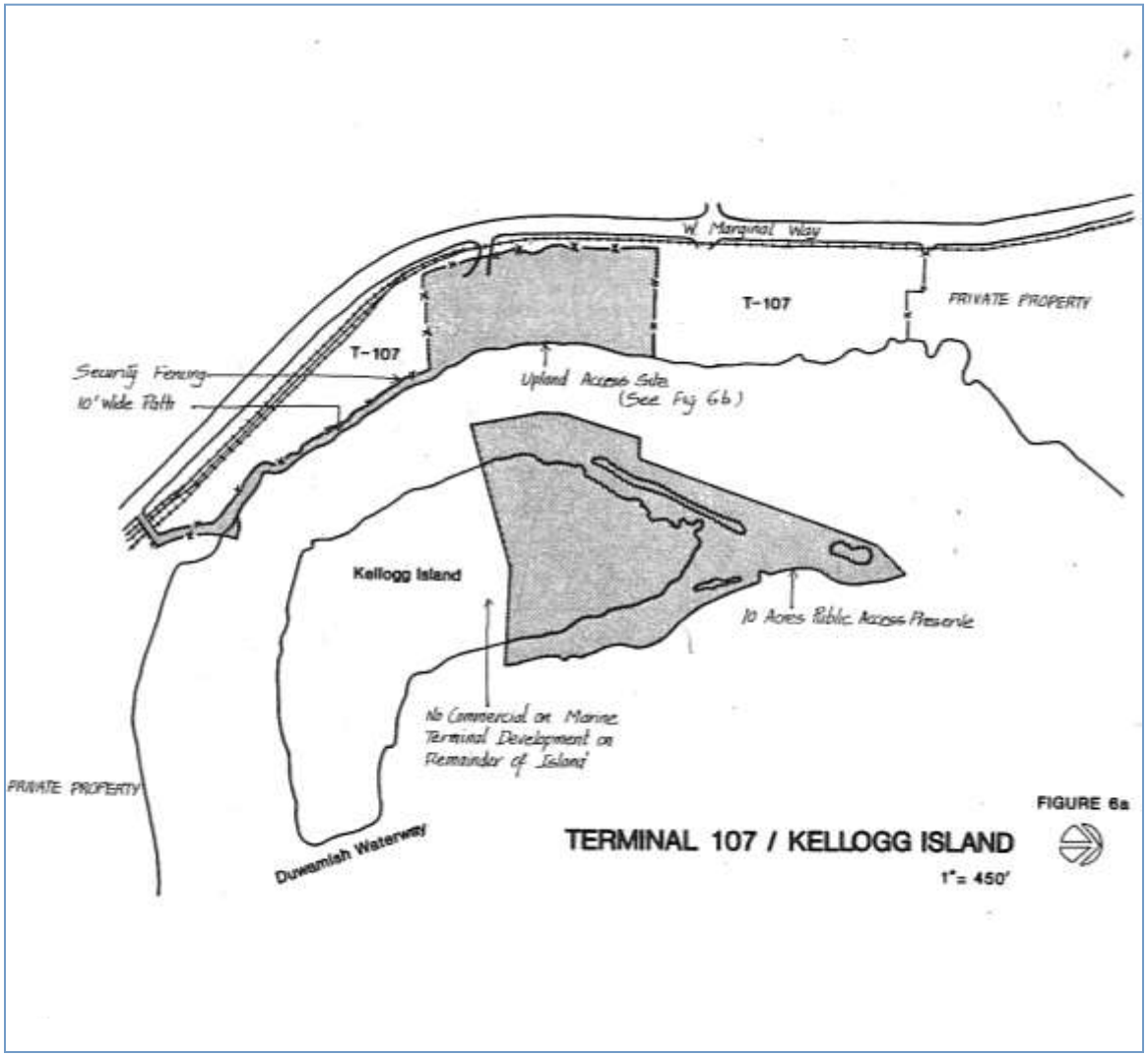
Fish & Wildlife Enhancement & Mitigation Opportunities:

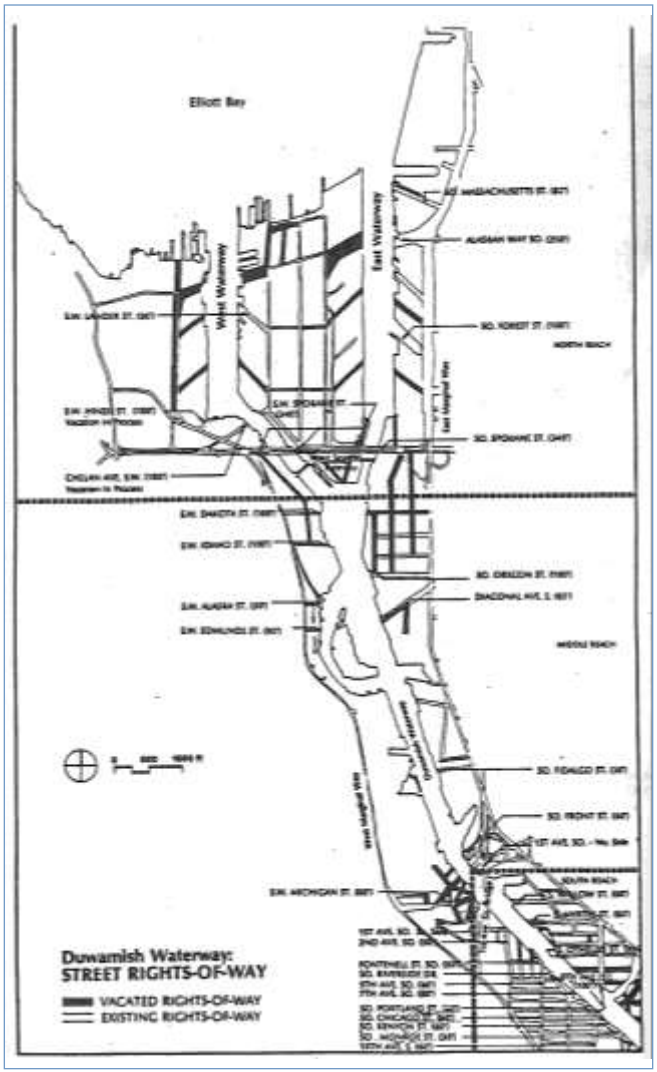
- Increase light-penetrating grating
- Share docks & gangways
- Reduce of over-water structures (predator habitat)
- Improve saltwater / freshwater transition (salinity gradient)
- Increase riparian vegetation
- Reduce water temperature

Case Study – Duwamish River, Seattle

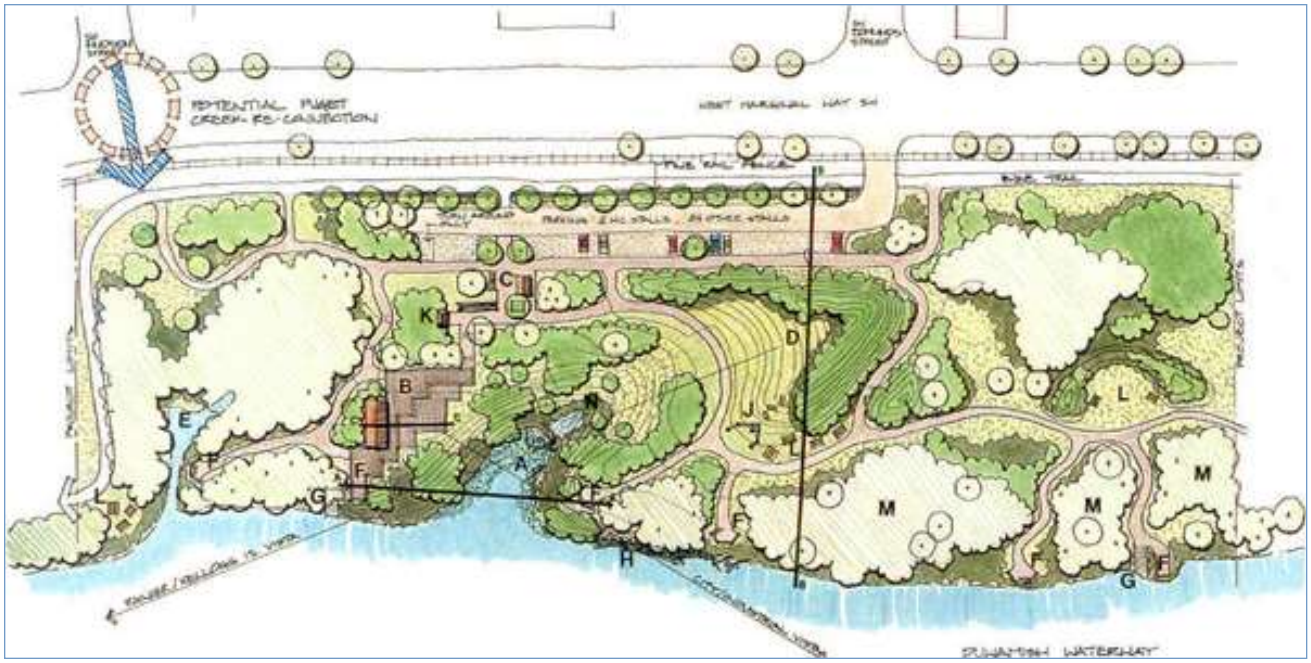
Case Study – Duwamish River, Seattle

Case Study – Duwamish River, Seattle





Case Study – Duwamish River, Seattle

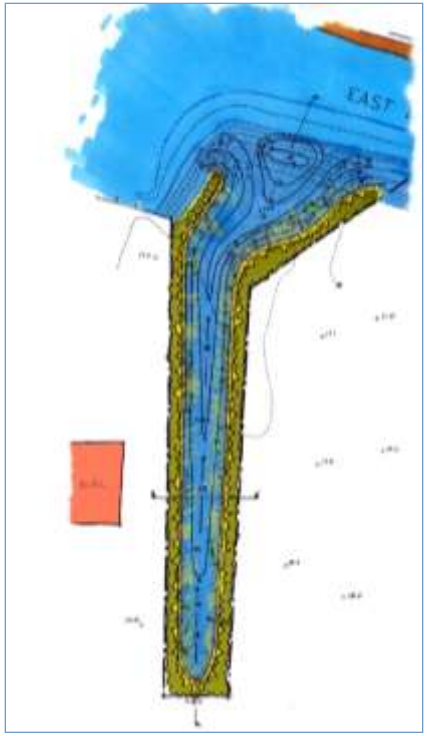


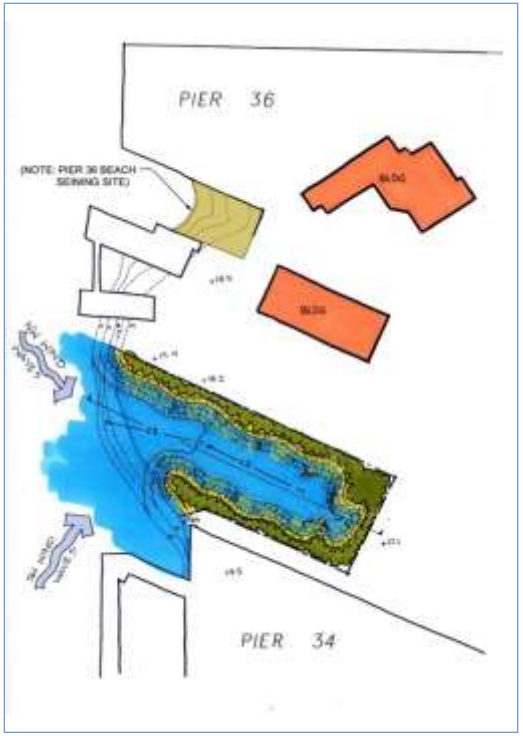
Case Study – Duwamish River, Seattle

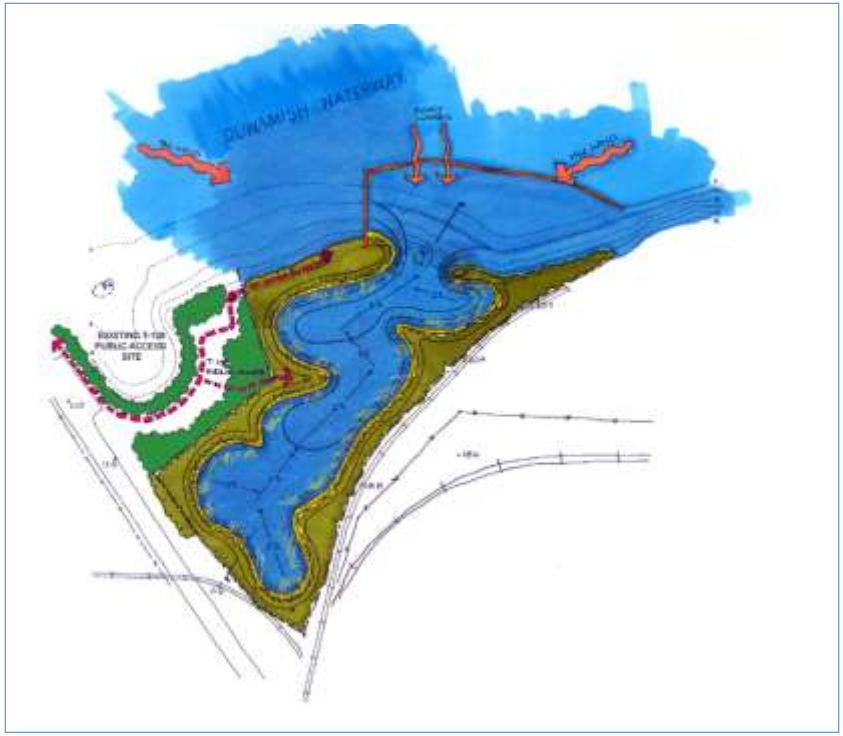
Case Study – Herring's House Park

Case Study – Herring's House Park

Case Study – Duwamish River, Seattle

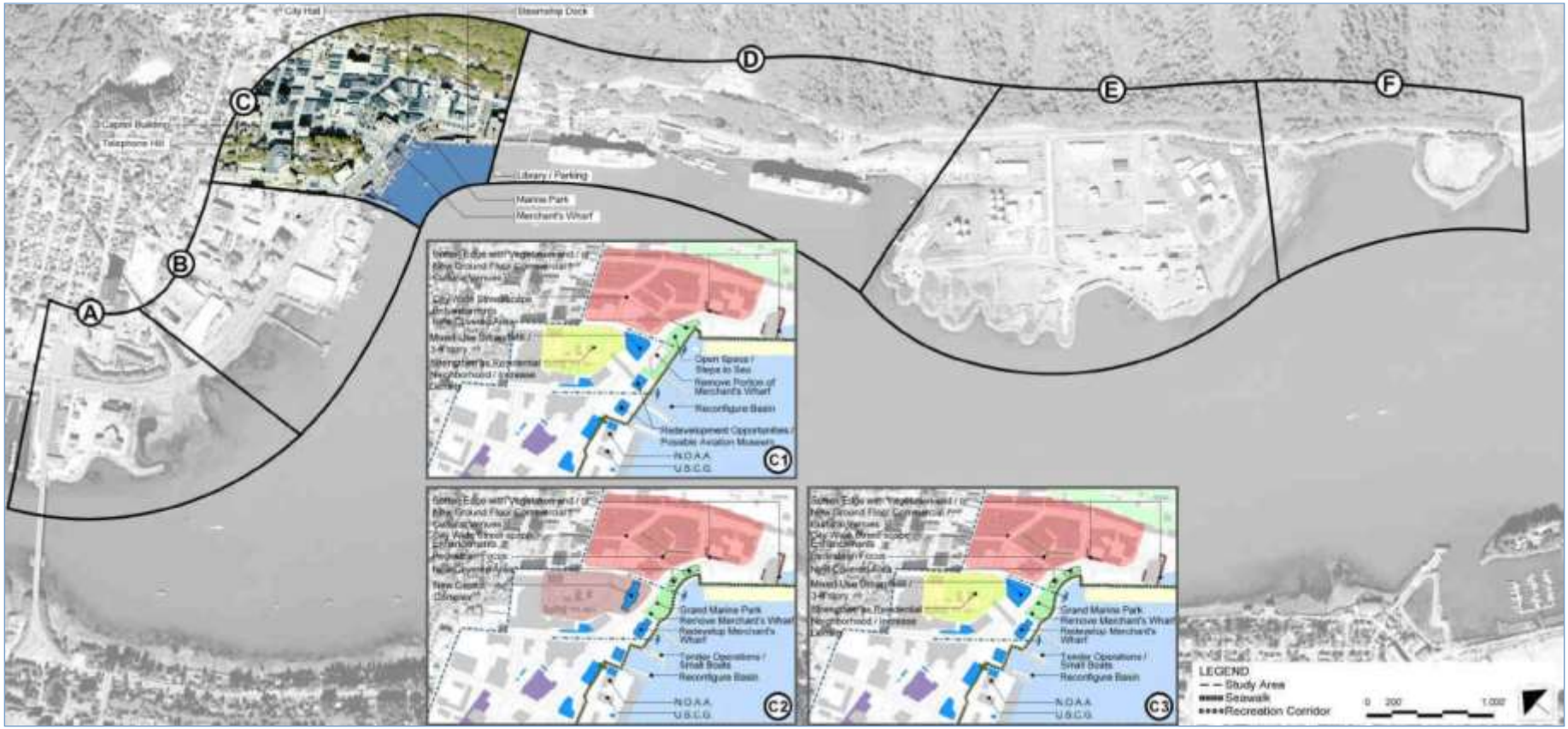






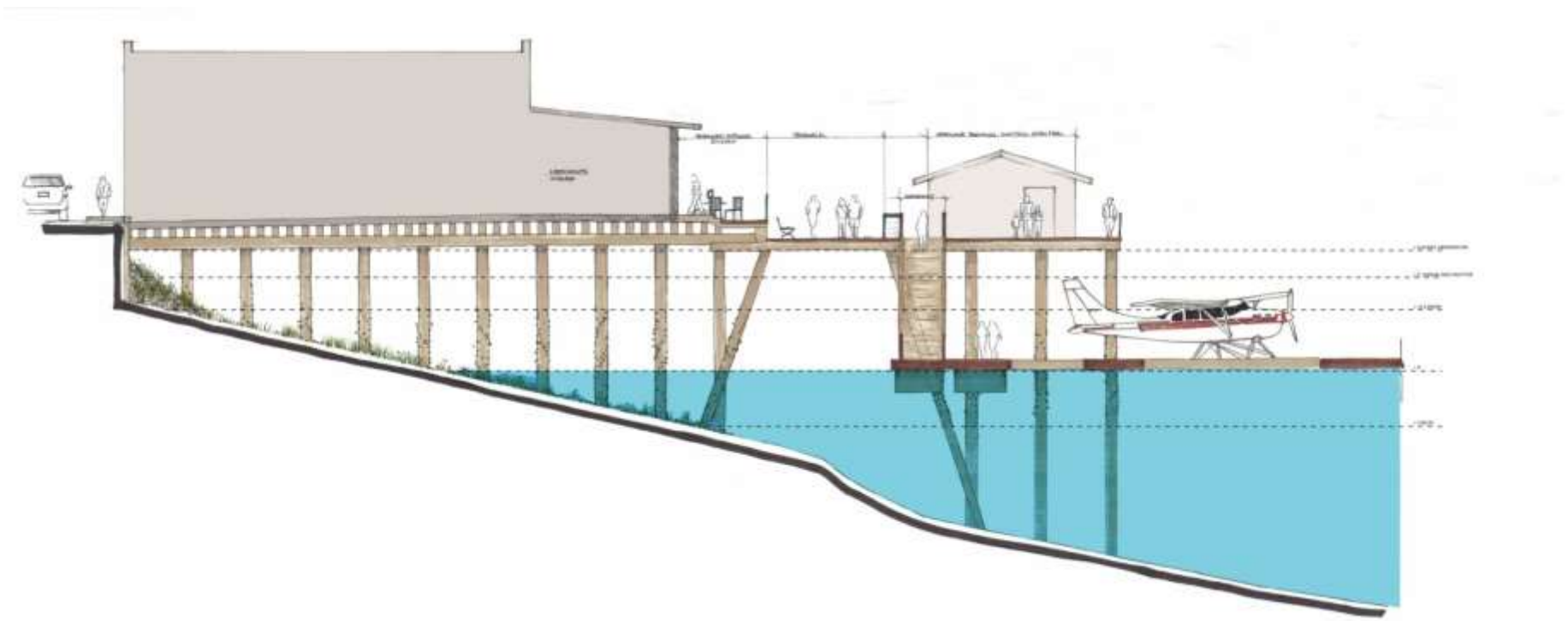
Case Study – Duwamish River, Seattle

Case Study – Juneau Waterfront

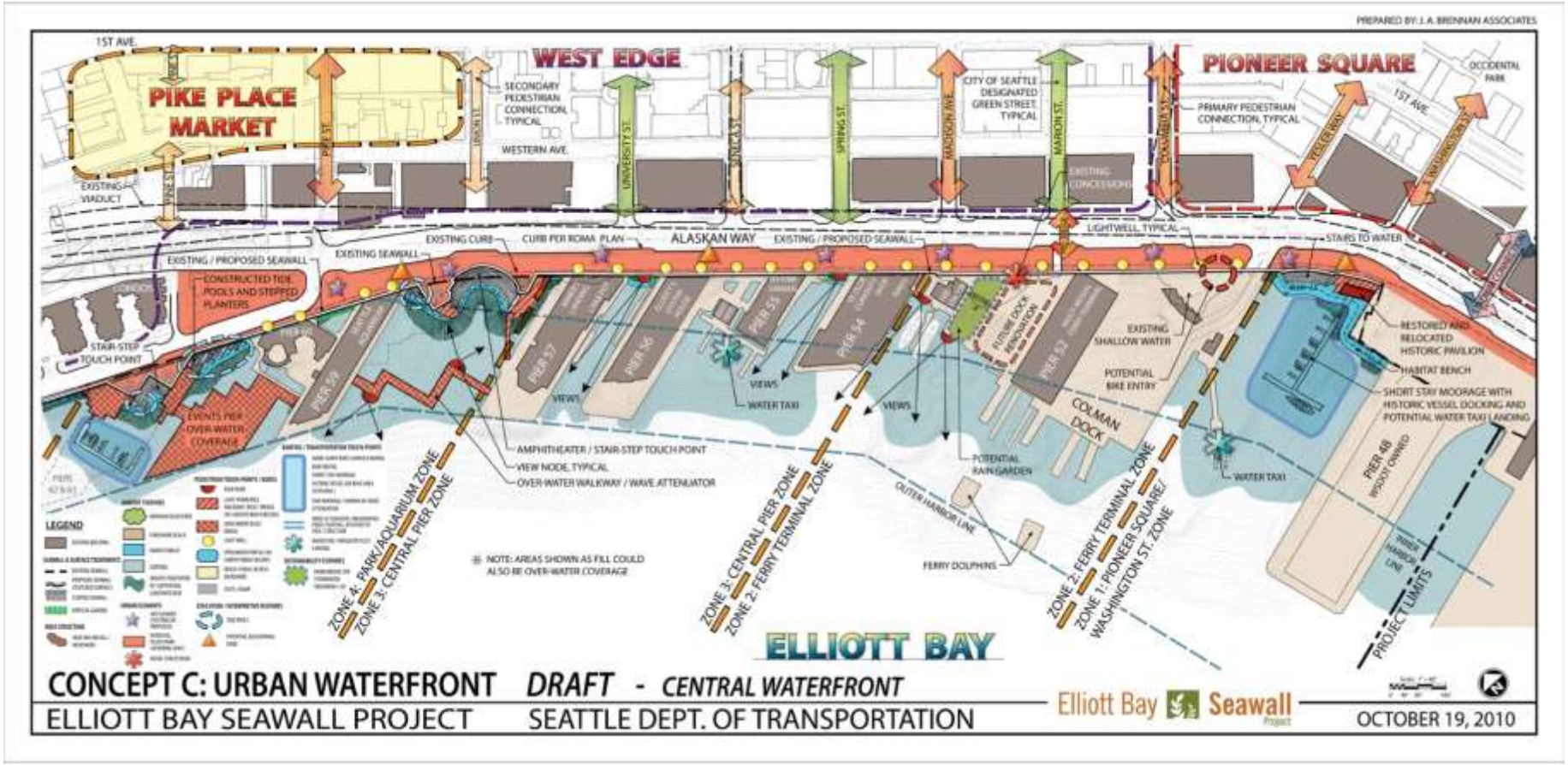


Case Study – Juneau Waterfront

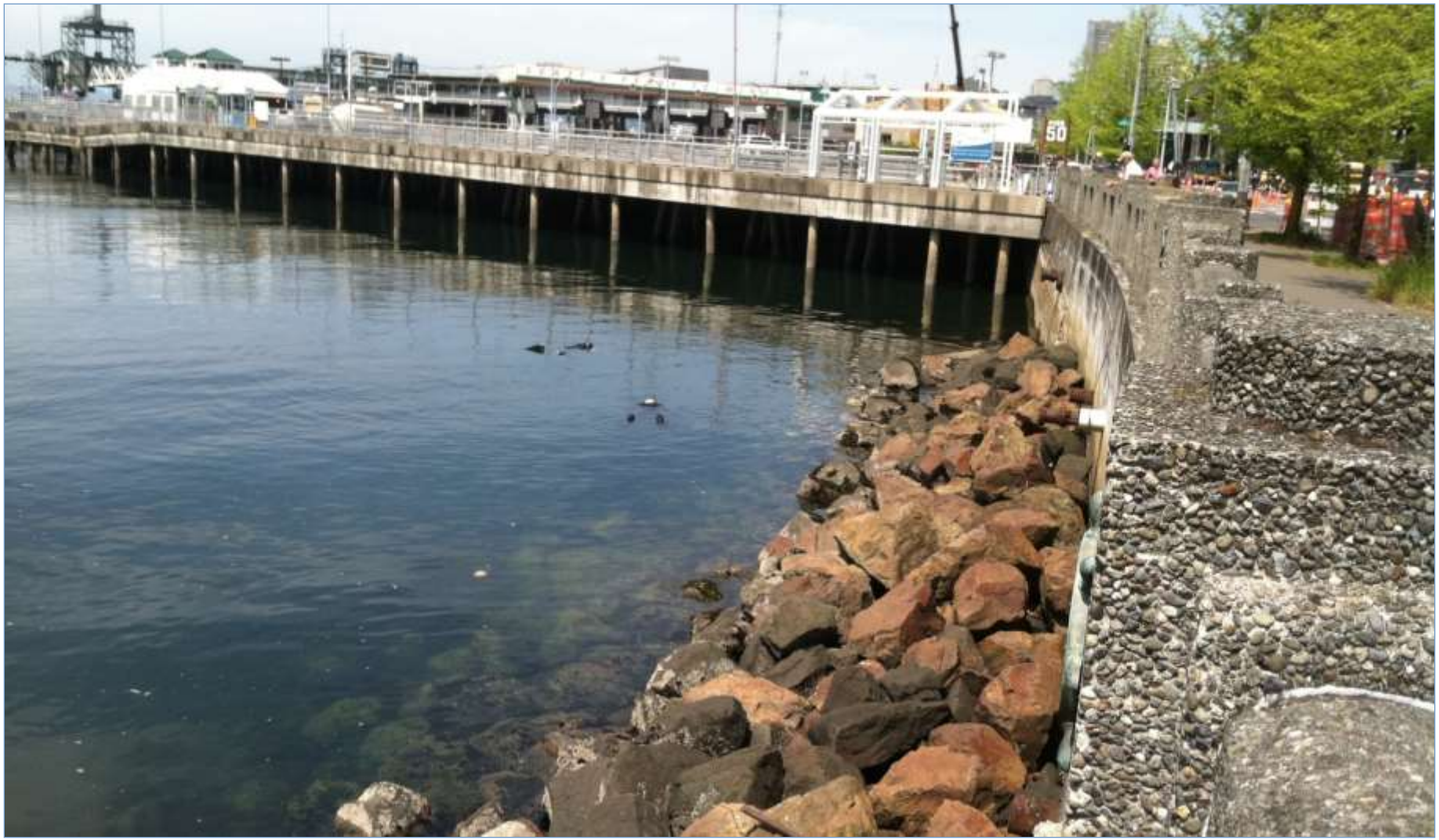
Case Study – Juneau Waterfront



Case Study – Elliott Bay Seawall, Seattle



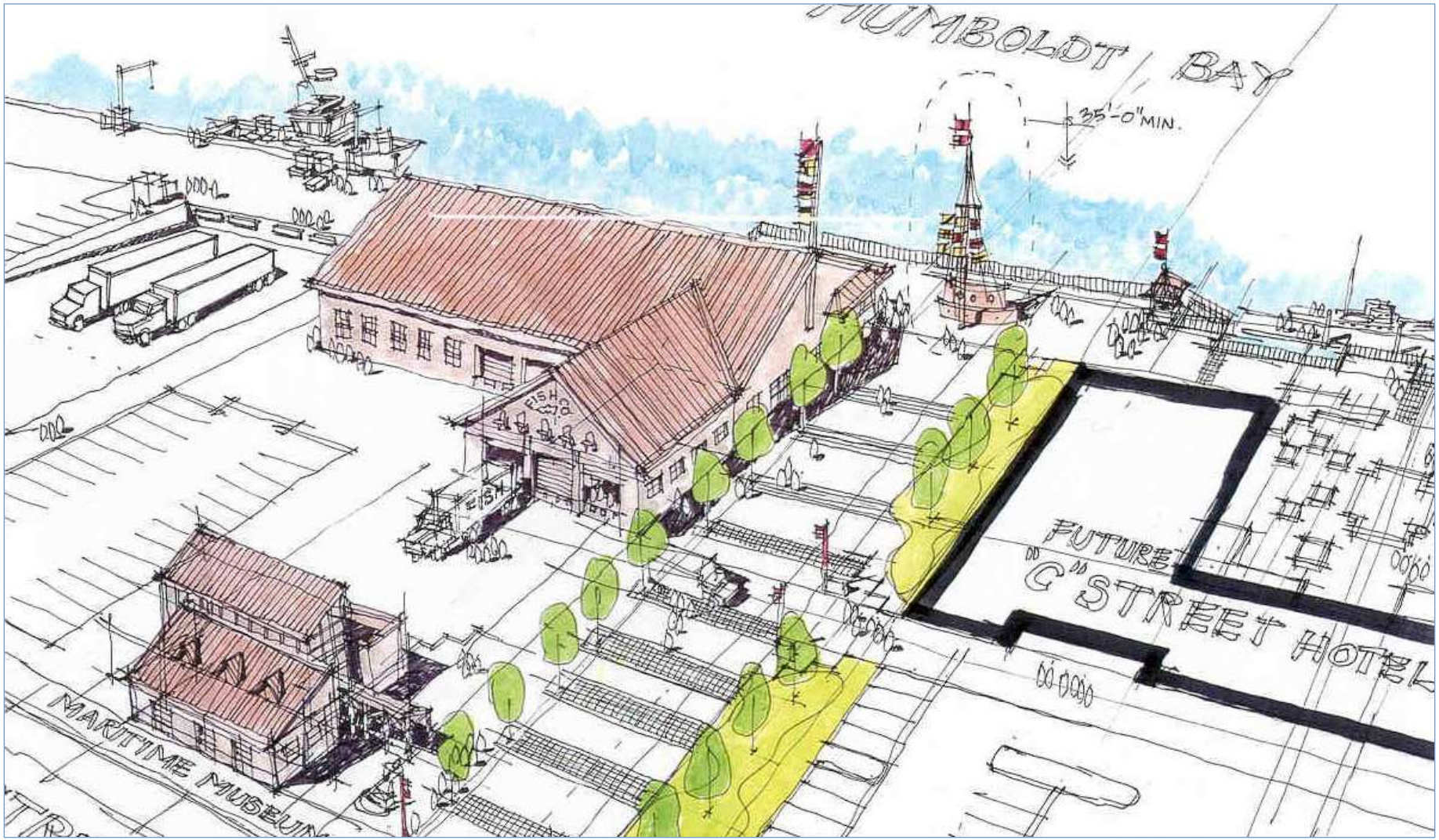
Case Study – Elliott Bay Seawall, Seattle



Case Study – Elliott Bay Seawall, Seattle

Case Study – Eureka Fisherman's Terminal

Case Study – Eureka Fisherman's Terminal



Case Study – Eureka Fisherman's Terminal

Case Study – Eureka Fisherman's Terminal

Safety, Security, & Codes

Rules, Regulations, & Codes

Safety

- ADA (Americans with Disabilities Act)
- OSHA (Occupational Safety & Health Act)
- IBC (International Building Code)
- ANSI (American National Standards)
- Illuminating Engineers Society (IES)

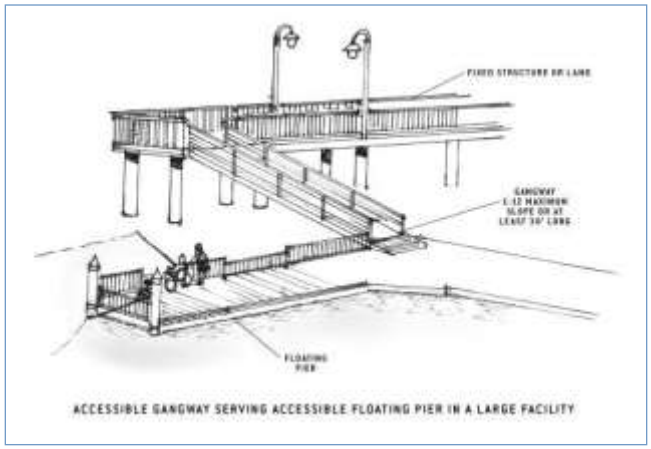
Security

- Coast Guard
- US Customs and Border Protection
- Dept. of Homeland Security
- Local Law Enforcement Agencies & the FBI
- SAFE Port (Security and Accountability For Every Port Act)

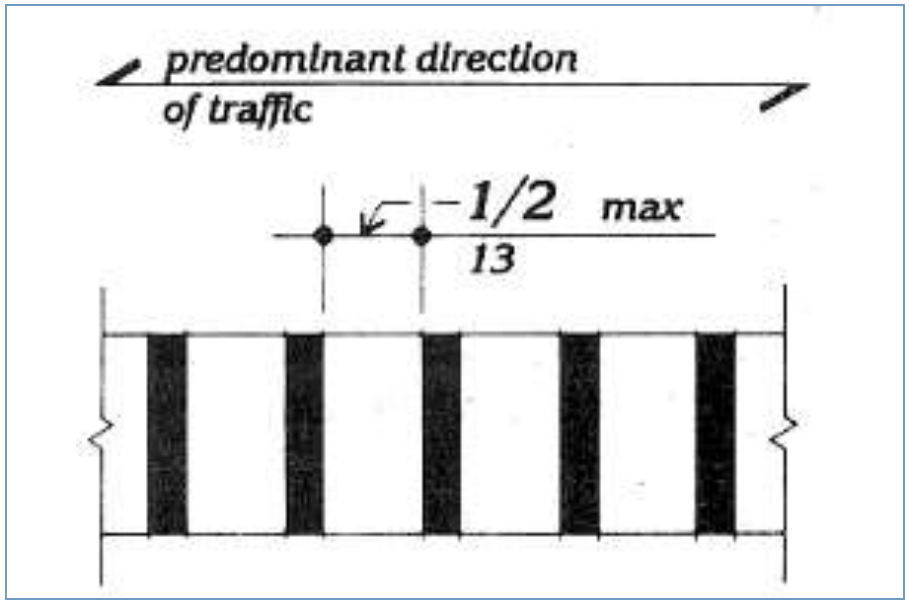
Safety – ADA

ADA Modular Wheelchair Ramp Specifications

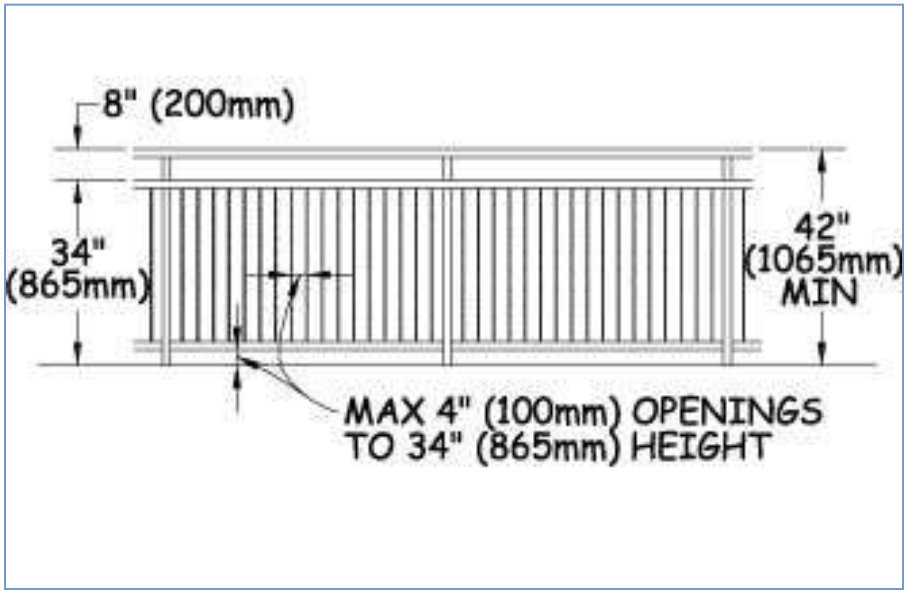
- ADA Requires a Minimum Platform size is 5’ x 5’
- ADA Requires a 1:12 slope ratio

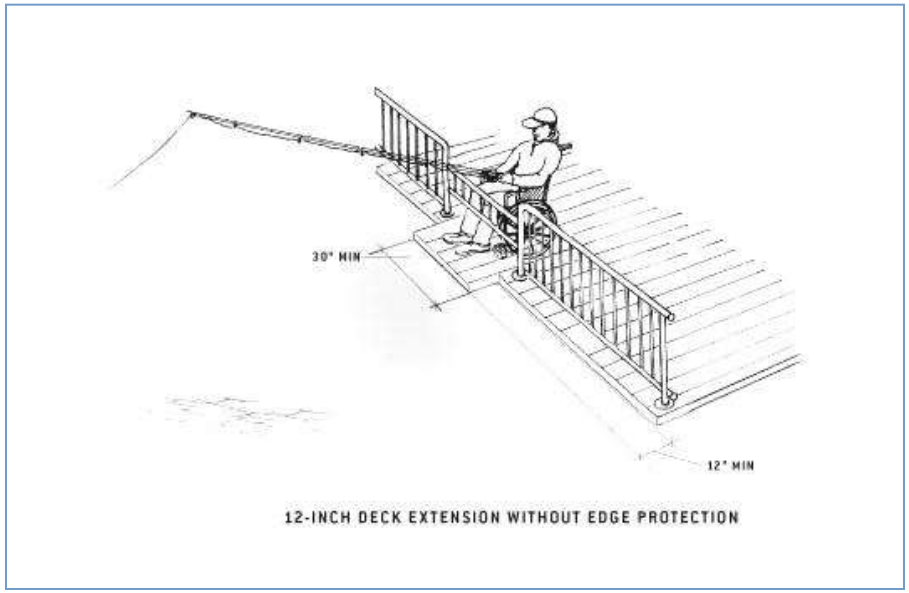


ADA Requirement for Grating



Safety
– ADA and IBC Requirement for Guardrails





Safety
– OSHA, ANSI & ADA Regulations for Walkways & Surface

Surfaces along accessible routes and in accessible spaces including walks, ramps, stairs, and curb ramps, shall be stable, firm, slip-resistant.

Static Coefficient of Friction > 0.5

Safety, Security, & Codes

CPTED (Crime Prevention Through Environmental Design)

Visibility, Safety, & Security

- Lighting, fencing, etc
- Security gate
- Security level of lighting, versus OSHA versus lower levels requested by environmental agencies
- Maintenance and life span of working area versus public access

Safety, Security, & Codes

Separation Public Access Area From Busy Working Area

Signs

Lighting (General)

- Pedestrian walkways: 0.2 to 1.0 foot-candles (fc)
- Working dock: 2 to 5 fc
- Modern LED fixtures with 0-100% dimming with wireless control

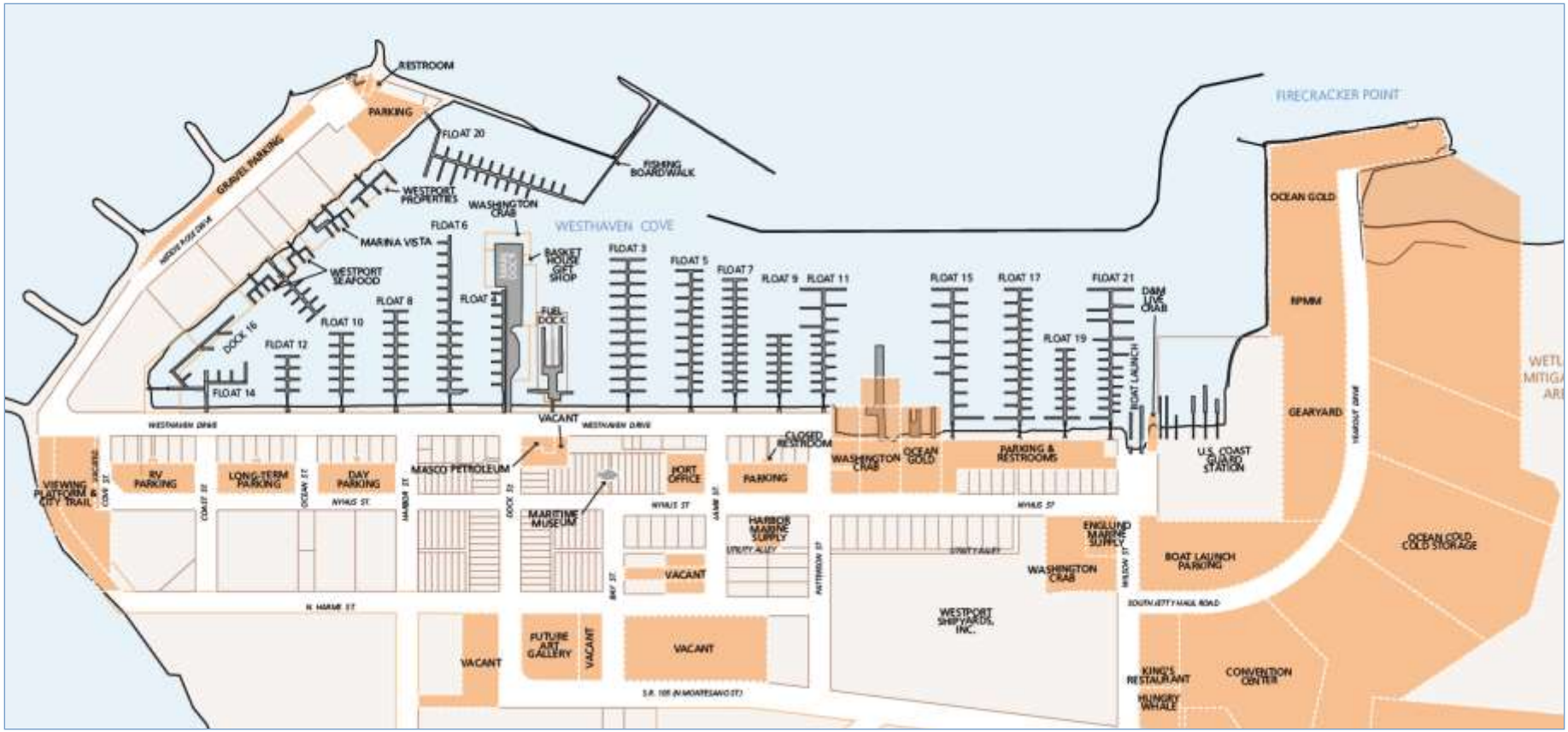
Security lighting (tailored to the owners) recommended illuminance values

- for large open areas – 5 to 20 fc.
- Site entrances – up to 100 fc.
- Perimeter fences – 5 fc.

Safety, Security, & Codes

Project Examples

- Westport Marina



Safety, Security, & Codes

Project Examples

- Bremerton
  - Different access, gateways, ADA, fall protection

Safety, Security, & Codes

Project Examples

- Bremerton
  - Different access, gateways, ADA, fall protection

Safety, Security, & Codes

Project Examples

- San Francisco Exploratorium
- Separation of public area from tug boat and navy vessel berths

New Exploratorium at Pier 15 and Observatory Building - View from the East
Photo Courtesy of ZŪM | zumllc.com

Newly Exposed Bay between Piers 15 and 17 and Connecting Bridges - Facing Cityscape
Photo Courtesy of ZŪM | zumllc.com

Designing Around Habitat
– Planning Stage / Habitat Inventory

Identify/Map habitat types

- Eelgrass
- Macroalgae
- Intertidal – spawning and foraging
- Subtidal – refuge and nursery
- Migratory
- Backshore

Project Scale

Planning Scale

Project Scale Inventory

Project Scale

- Narrow focus
- Specific to project location
- Limited options
- Potential conflict with future development

Planning Scale Inventory

Planning Scale

- Identify mitigation areas
- Identify preservation areas
- Identify advanced mitigation opportunities
- Maximize development

Identify Impacts – Project Scale

Mitigation Sequencing

- Avoid high quality habitat
- Minimize habitat impacts through design
- Mitigate impacts to habitat functions
- ESA and regulatory drivers

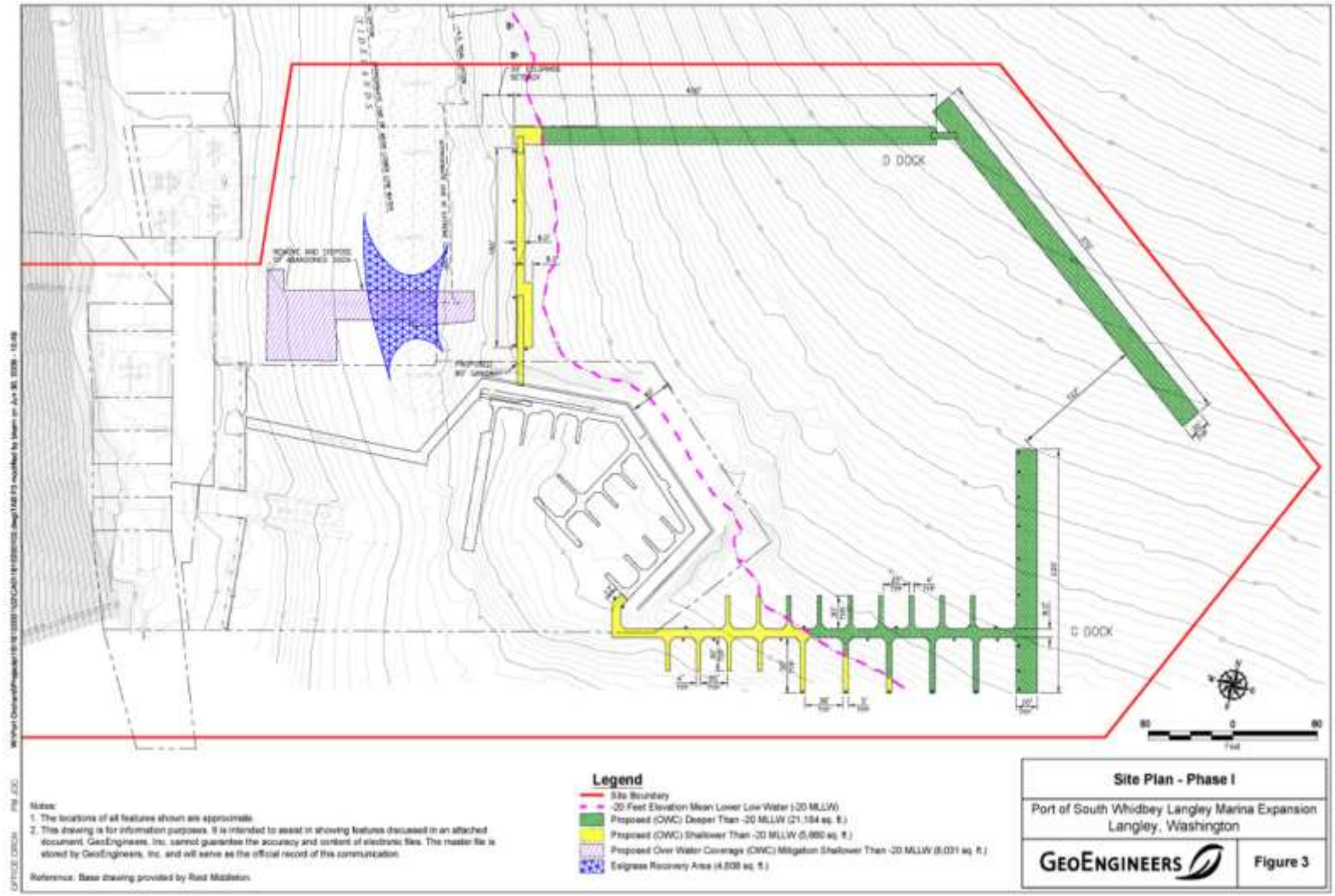
Identify Impacts – Planning Scale

Identify long-term build out

Identify conflicts with habitat and development

Identify opportunities to avoid, minimize and mitigate impacts

Identify Mitigation Options – Onsite
– Port of South Whidbey Langley Boat Harbor Expansion



Identify Mitigation Options – Onsite
– Port of South Whidbey Langley Boat Harbor Expansion

Onsite Mitigation

- Driven by ownership
- May not be enough
- May conflict with future expansion

Identify Mitigation Options – Offsite
– Port of Bremerton Marina Expansion

Identify Mitigation Options – Offsite
– Port of Bremerton Marina Expansion

Offsite mitigation

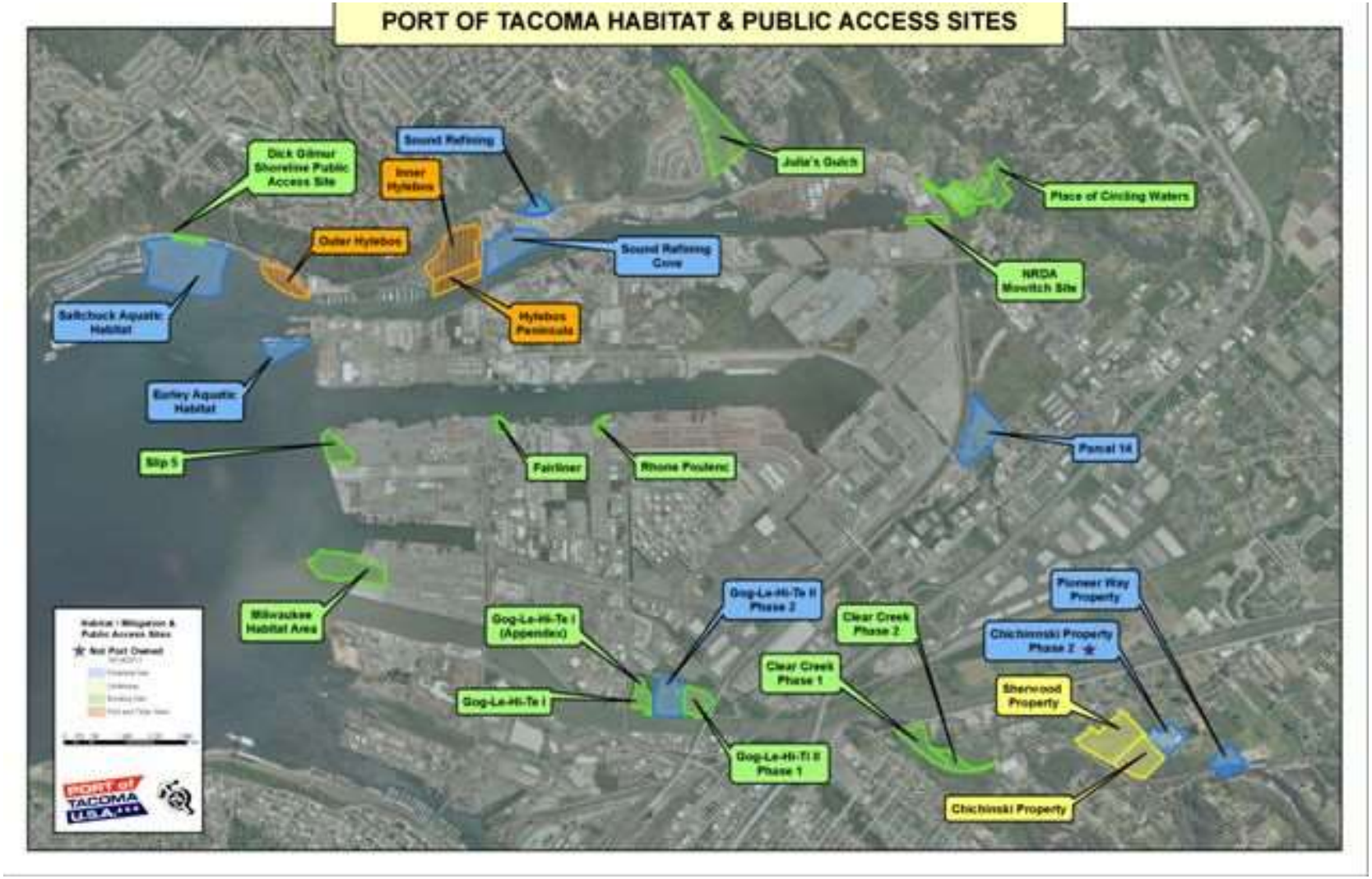
- Onsite mitigation not possible
- Within the same basin
- Maximize onsite development
- Property acquisition expensive

Identify Mitigation Options – Offsite
– US Navy Charleston Beach Gravel Nourishment

Offsite mitigation

- Identify areas of multiple functions
- Reduce conflict with future development
- Increase habitat mitigation value

Identify Mitigation Options – Advanced Mitigation
– Port of Tacoma Advanced Mitigation Planning



Summary

It is feasible to preserve working waterfronts and provide public access and habitat enhancements

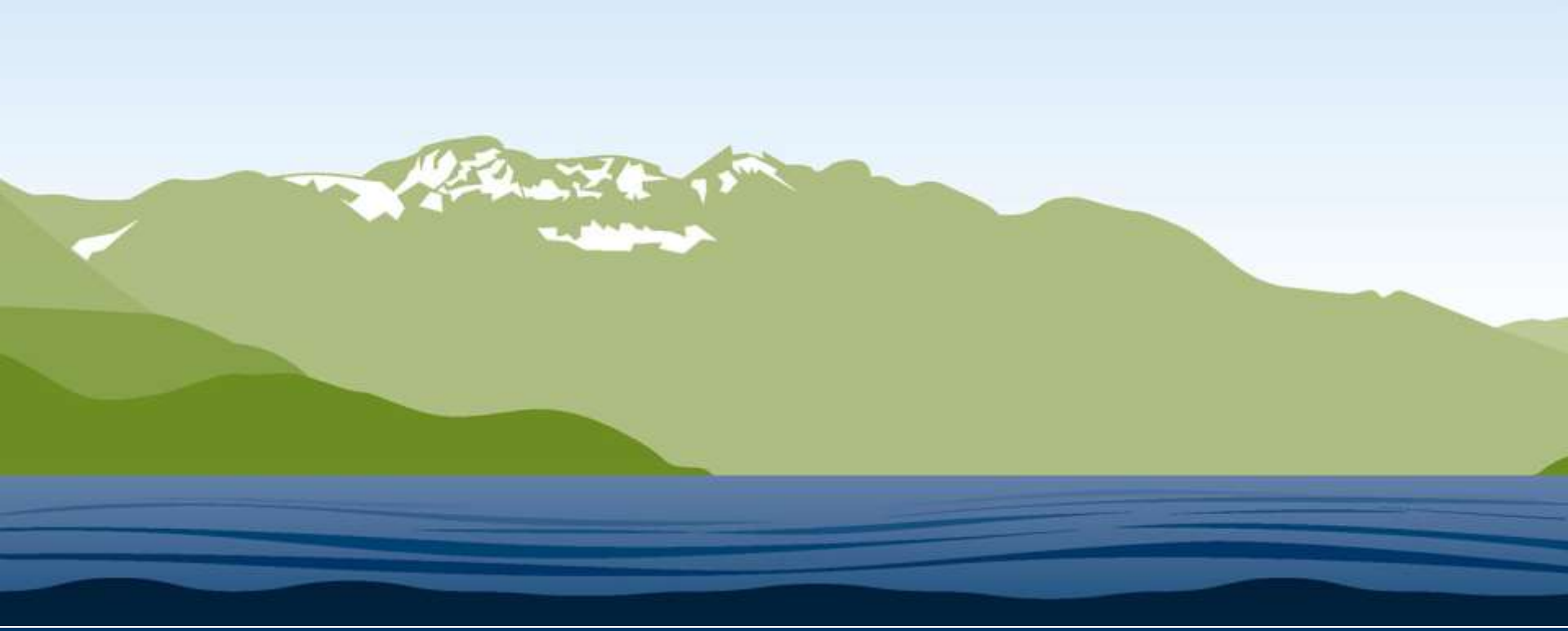
Must identify scale for planning and implementation

Work closely with stakeholders

Look for project site, adjacent, or offsite opportunities

Meet safety and code requirements which may differ between working area and public areas

Highlight benefits to business, community, and environment



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