AGENDA

WORKSHOP 1: DRAFT SLR ADAPTATION ALTERNATIVES (90 min)

- What we have learned (10 min)
- Guiding Principles & Evaluation Criteria (20 min)
- Presentation of draft alternatives + questions for AG (30 min)
- Initial Discussion & Feedback (30 min)

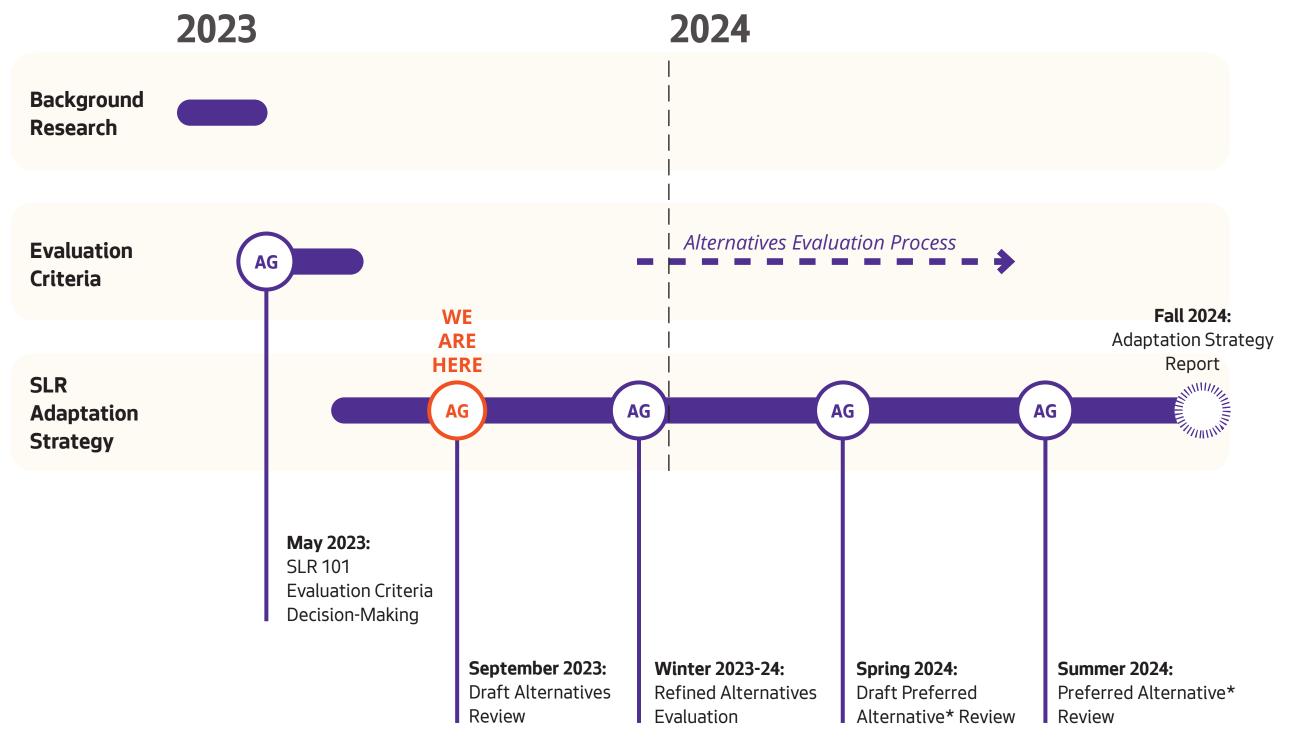
BREAK (15 min)

WORKSHOP 2: REFINING ALTERNATIVES (110 min, including a 15 min break)

Collaborative refinement of each alternative

SUMMARY & NEXT STEPS (5 min)

PROJECT TIMELINE

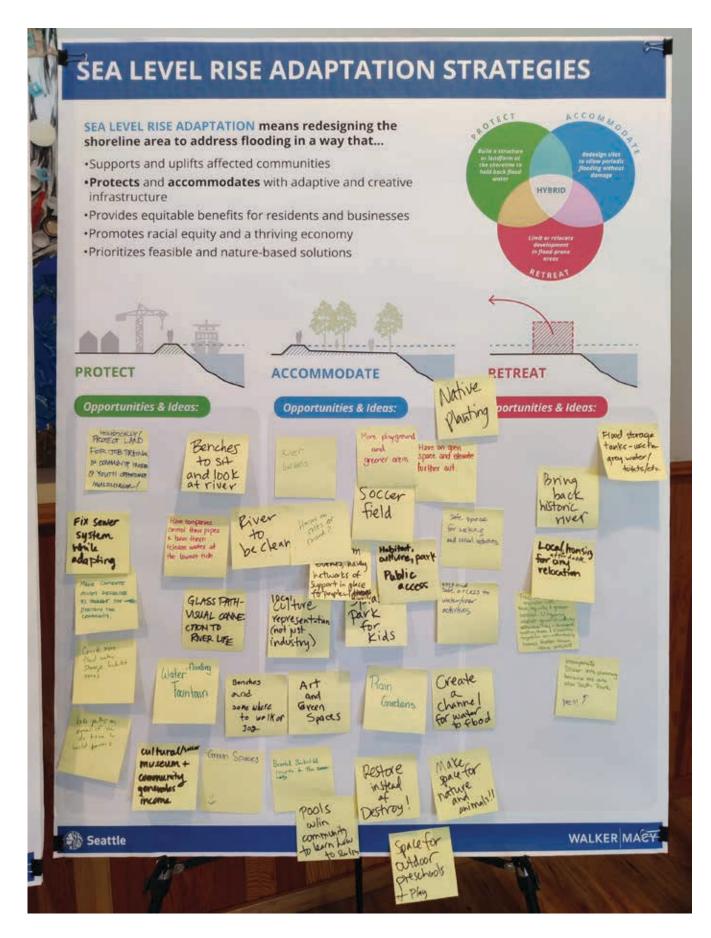


*The "Preferred" Alternative will reflect a shared vision of community and City based on our current understanding. It will be a starting point for continued analysis, reviews, and consultations.

MEETING GOALS:

- Review the approach to SLR adaptation alternatives
- Discuss feedback, concerns, opportunities
- Work together to **refine / strengthen** the alternatives (not choosing today!)
- Summarize clear direction to the SLR team to create three refined alternatives

JUNE 3RD COMMUNITY OPEN HOUSE



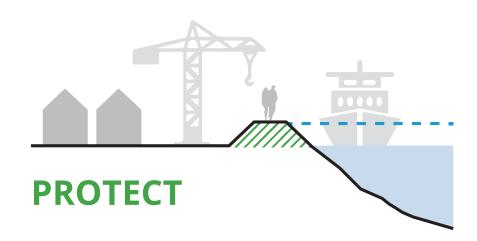


GENERAL INPUT & IDEAS

- Benches to sit and look at the river
- · Fix sewer system while adapting
- Have companies control their pipes and have them release water at the lowest tide.
- Glass path / visual connections to river life
- Water-flooding fountain
- Benches and somewhere to walk or jog
- River to be clean
- Native planting
- Local cultural representation (not just industrial history/culture)

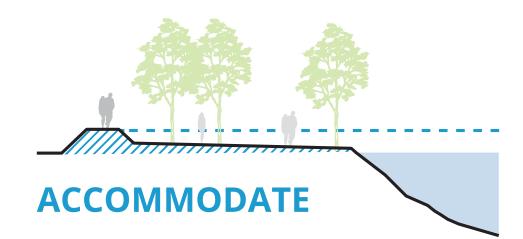
- Incorporate Sliver by the River into planning because we are also South Park
- Tree-cutting moratorium tree equity & green spaces. Urgency about gentrification/affordability – developers cutting trees & slapping together unaffordable homes faster than this project

JUNE 3RD COMMUNITY OPEN HOUSE COMMENTS



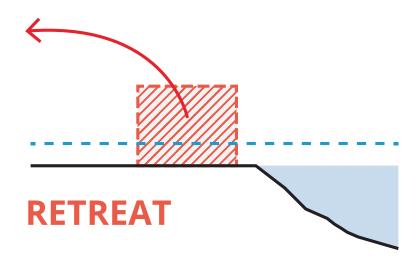
Opportunities & Ideas:

- Holistically protect land for multilingual job training, community projects, and youth opportunities
- Make concrete river defenses to prevent the water destroying the community.
- Cultural/soccer museum and community generates income
- Green spaces :)
- Bike paths on areas if you do have to build berms



Opportunities & Ideas:

- Create more flood water storage habitat areas
- River gardens
- More playground and greener areas
- Soccer field
- Have an open space and elevate further out
- Houses on stilts or raised?
- Habitat, culture, park, public access
- Splash park for kids
- Rain gardens
- Art and green spaces
- Easy and safe access to water/river activities
- Elevated basketball courts for the community
- Pools within community to learn how to swim
- Restore instead of destroy!
- Space for outdoor preschools and play
- Make space for nature and animals!!
- Create a channel for water to flood
- Safe space for walking and social activities
- Flood storage tanks use for grey water / toilets



Opportunities & Ideas:

- Local affordable housing for any relocation
- Bring back historic river
- For storm events, having networks of support in place for people with disabilities

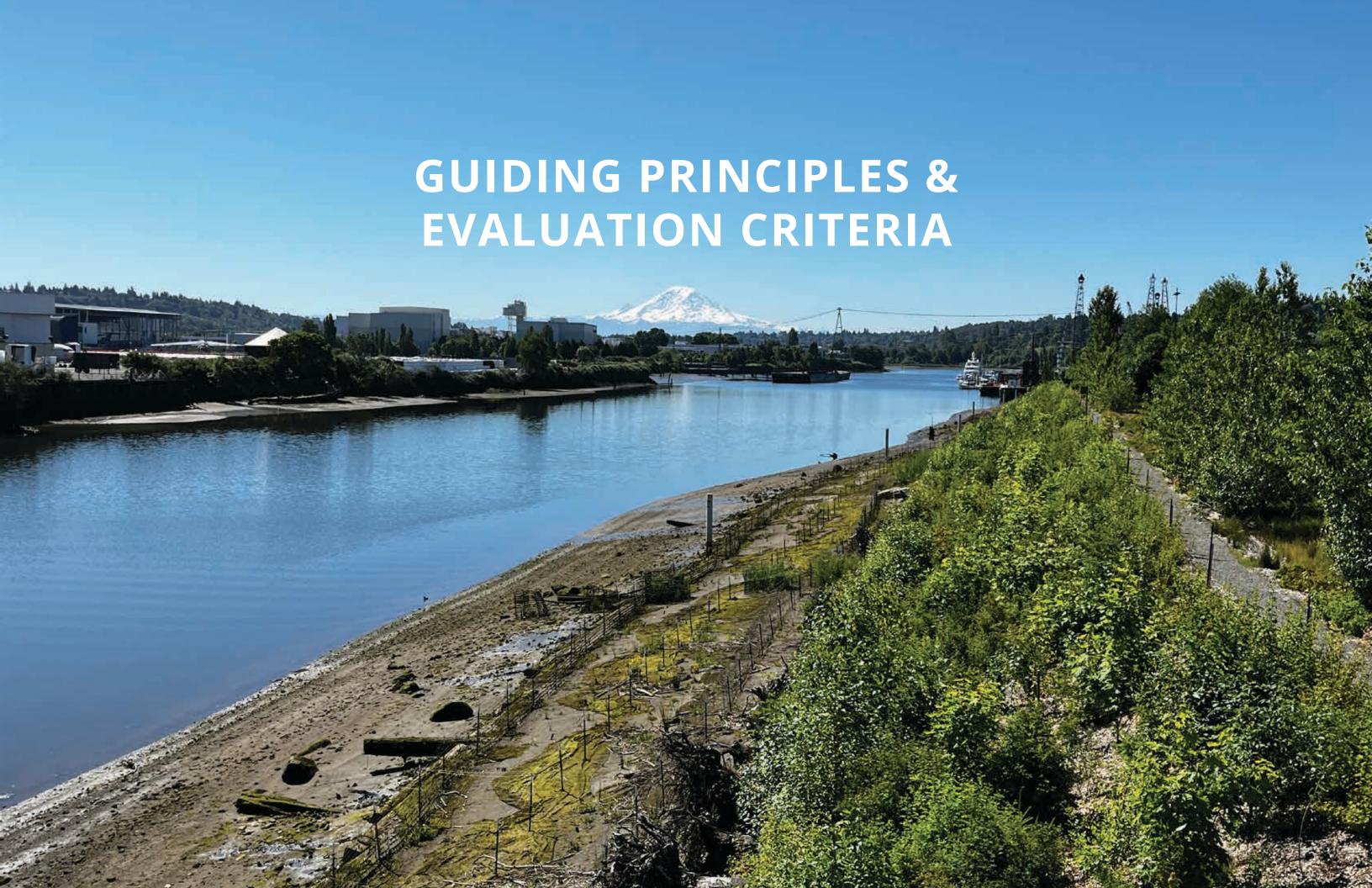
YOUR INPUT & IDEAS

"Can we build flood berms/ sea dikes that introduce the public space, yet build dock structures overtop that would still allow for marine industry?"

"I would like the proposed solutions to also generate an economic impact for the community, such as the generation of work both during the project and after the project." "Relocate and rebuild... incentivize relocation for businesses that can, raise land up, build more supportive community uses on higher ground, affordable housing, parks and open space etc."

"Community owned spaces along the river with green infrastructure"

"As part of Access and Recreation it would be great to incorporate walking/ biking trails for low carbon transportation."



DRAFT EVALUATION CRITERIA COMMENTS

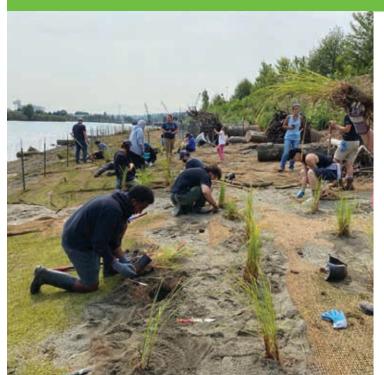


FINAL EVALUATION CRITERIA

| Improved habitat quantity and qualityRestoration of tree canopy |
|---|
| Support of anti-displacement and minimized harm to residents and businesses Addition of local jobs/employment |
| Direct and indirect economic benefits between residential and business communities Direct and indirect economic costs between residential and business communitie and implementers |
| Quality and functionality of public access to shoreline areas Support for health and wellness Addition of green space |
| Speed of implementation Mitigation of flooding issues Mitigation of other extreme events |
| Potential for community participation throughout design, permitting, and construction |
| Level of effort for long-term maintenance Level of effort for full implementation |
| |

EVALUATION CRITERIA: EXAMPLES

HABITAT & ECOLOGY





PUBLIC ACCESS & CO-BENEFITS













EXISTING CONDITIONS

industrial / maritime







EXISTING CONDITIONS

public / community







EXISTING CONDITIONS:

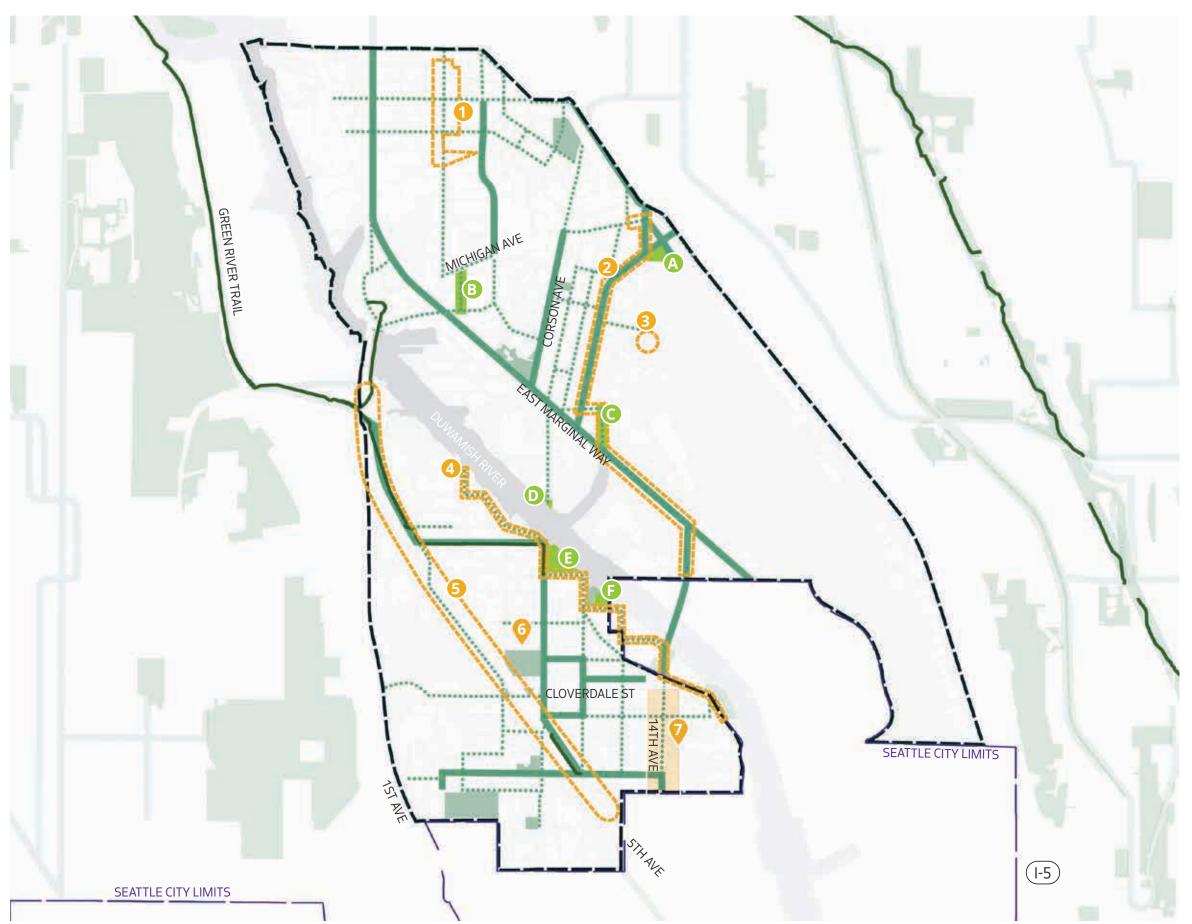
habitat / floodable open space







EXISTING COMMUNITY PLANS



LEGEND

- CITY LIMITS
- **EXISTING WALKING/BIKING ROUTES**
- EXISTING TRAILS
- PROPOSED IMPROVE WALKING/BIKING ROUTE
- EXISTING PUBLIC OPEN SPACE
 - Community Gathering Places

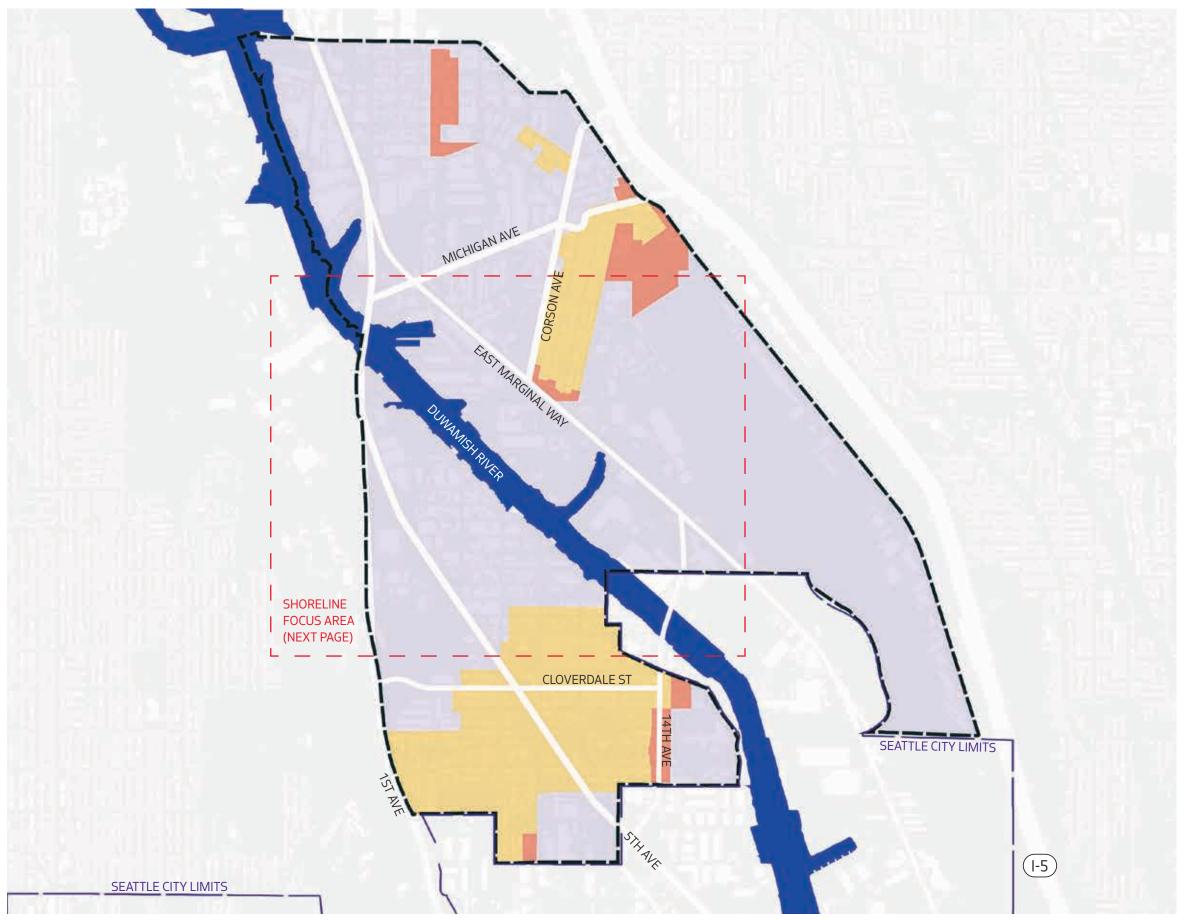
Community Actions

- 1. Georgetown Live/Work District
- 2. Georgetown-South Park Connector
- 3. Georgetown Steam Plant Programming
- 4. South Park Riverwalk
- 5. Reconnect South Park
- 6. South Park Community Center
- 7. South Park Business District
- Future Public Open Space
 - A. Ruby Chow Park Improvements
 - B. 5th Ave Festival Street
 - C. Georgetown Flume
 - D. Gateway North Park
 - E. Potential Water Quality Facility
 - F. Unity Electric Site

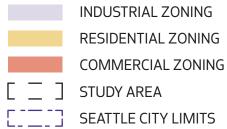
Existing community plans inform the draft SLR alternatives, including the South Park and Georgetown Open Space Vision Plans and current community initiatives.



EXISTING ZONING



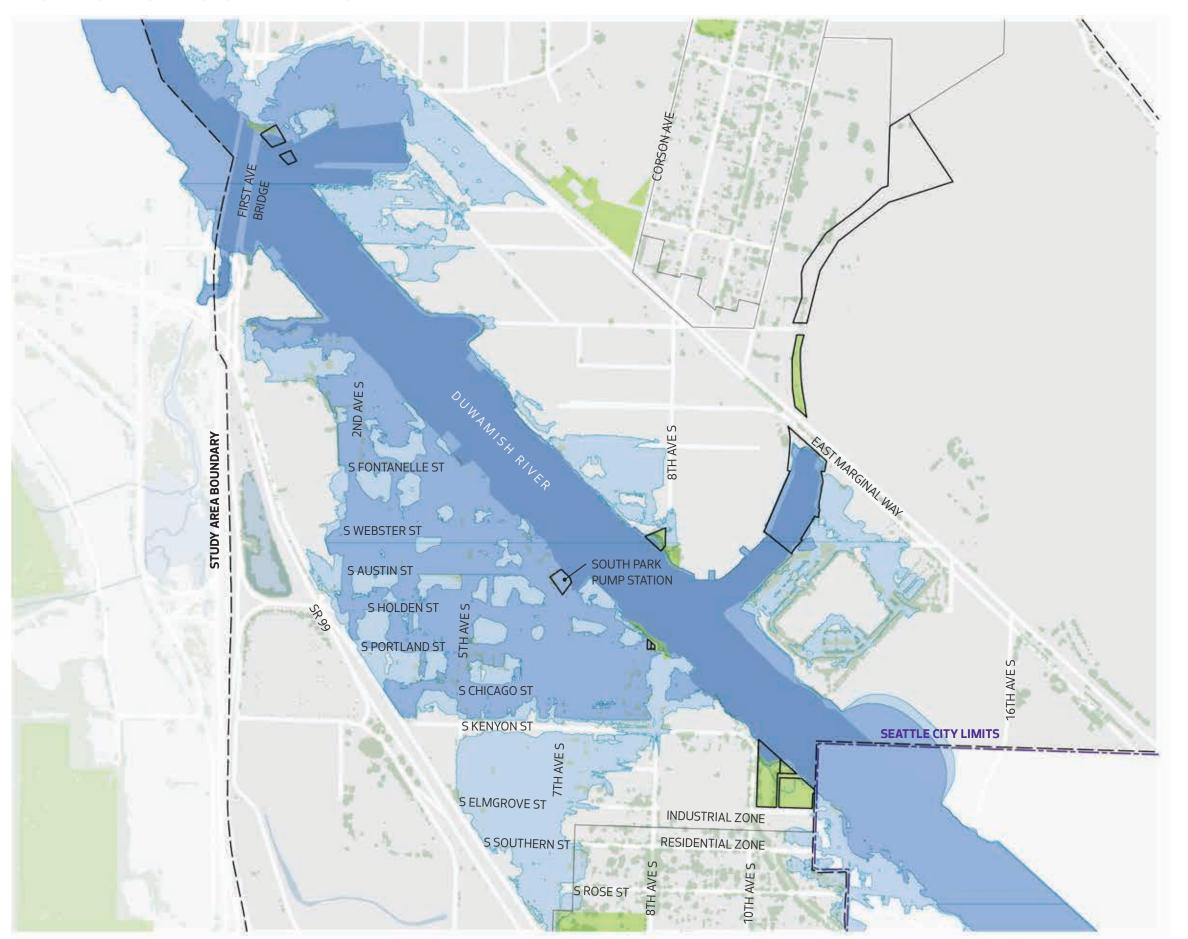
LEGEND



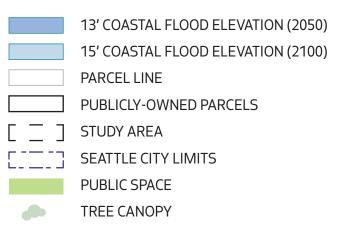
The neighborhoods of South Park and Georgetown are mostly zoned for industrial use, and each neighborhood includes residential and commercial areas that are adjacent to industrial areas. The sites along the shoreline in both neighborhoods are zoned for industrial use.



NO ACTION SCENARIO



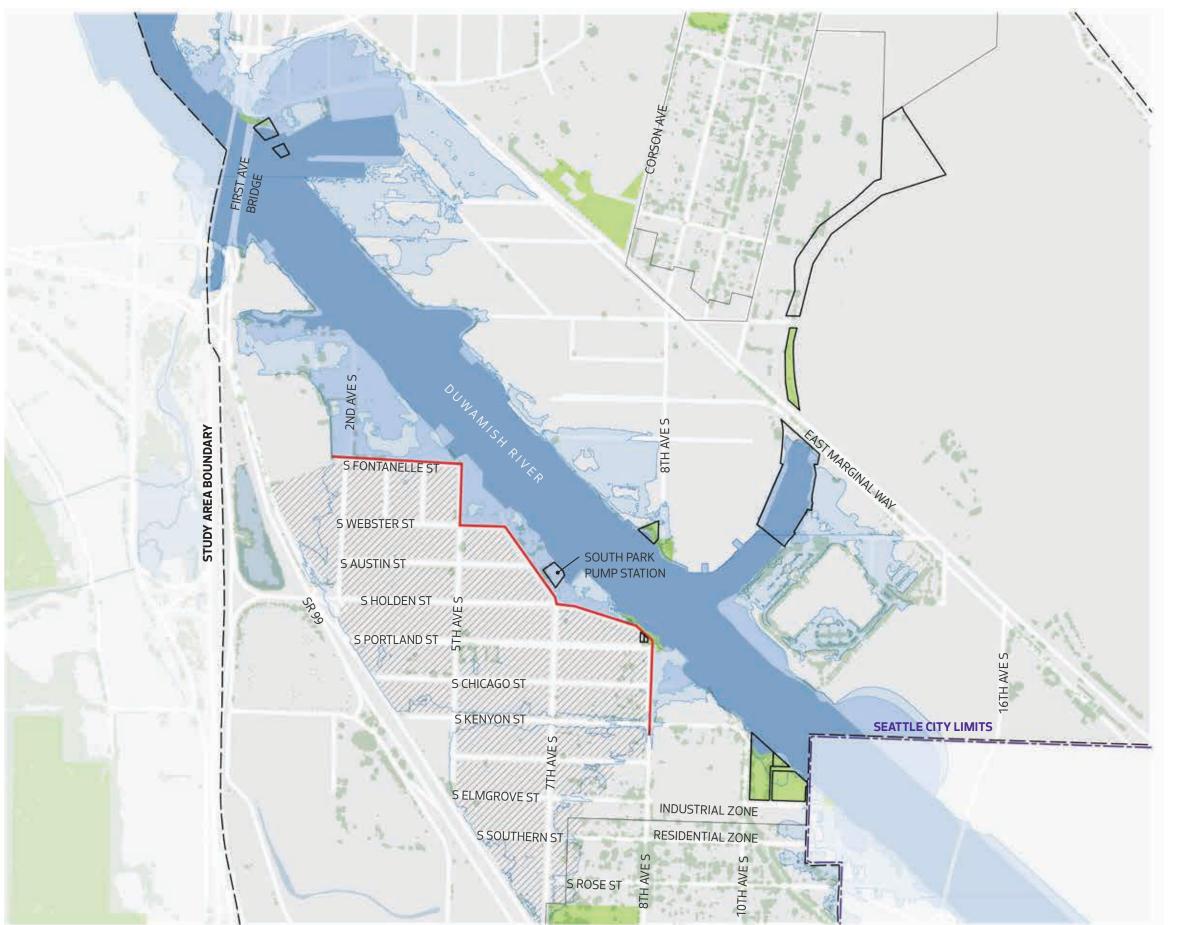
LEGEND



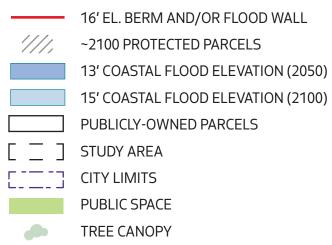
If no action is taken, by 2100, much of the South Park industrial area and several sites in the Georgetown industrial area would be regularly flooded by high tides and King Tides, creating ongoing health, safety, and displacement risks. In addition to coastal flooding, inland stormwater flooding would be worsened by SLR. In Georgetown, coastal flooding from the river would mostly impact individual private properties, while inland areas would experience worsened urban flooding. In South Park, coastal flooding from the river enters from private properties and public street-ends, but this flooding also extends to many other properties that are not located on the shoreline.



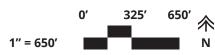
PUBLIC STREETS APPROACH - BERM OR FLOOD WALL



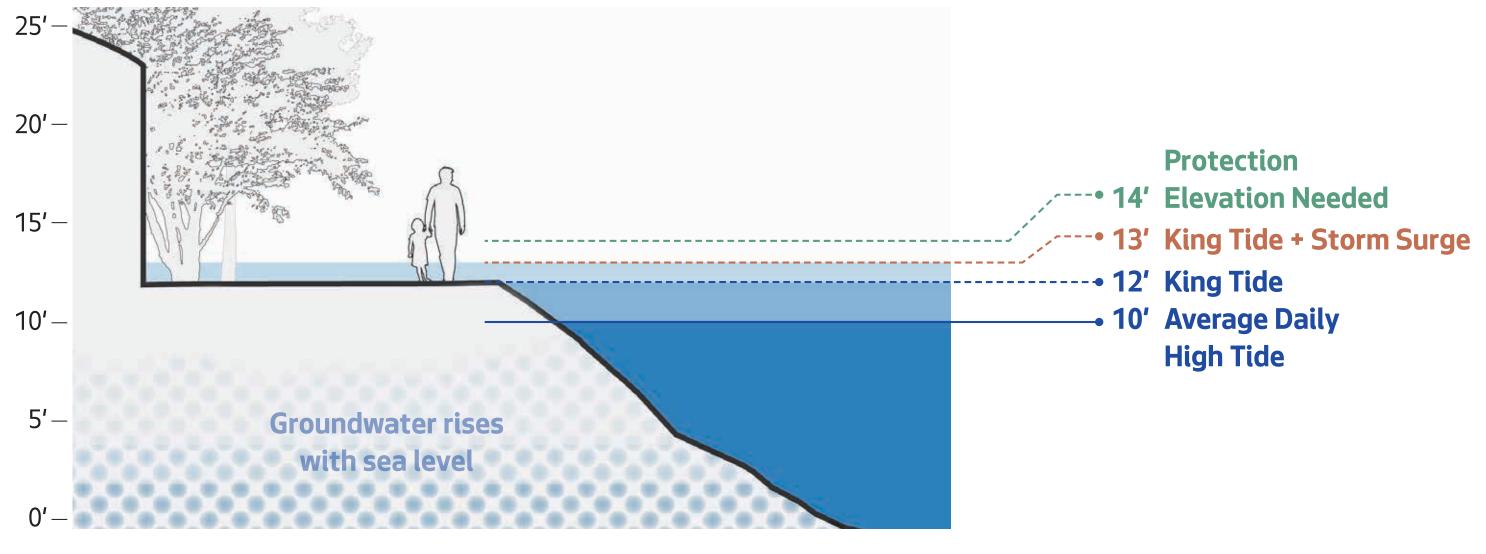
LEGEND



If flood protection was built only using public streets, then private properties along the river would need to protect themselves or retreat. This approach would limit river access, views, and would limit co-benefits from SLR adaptation. The draft alternatives explore more holistic, long-term options for adaptation.



REFRESHER: PROJECTED 2050 FLOOD ELEVATIONS

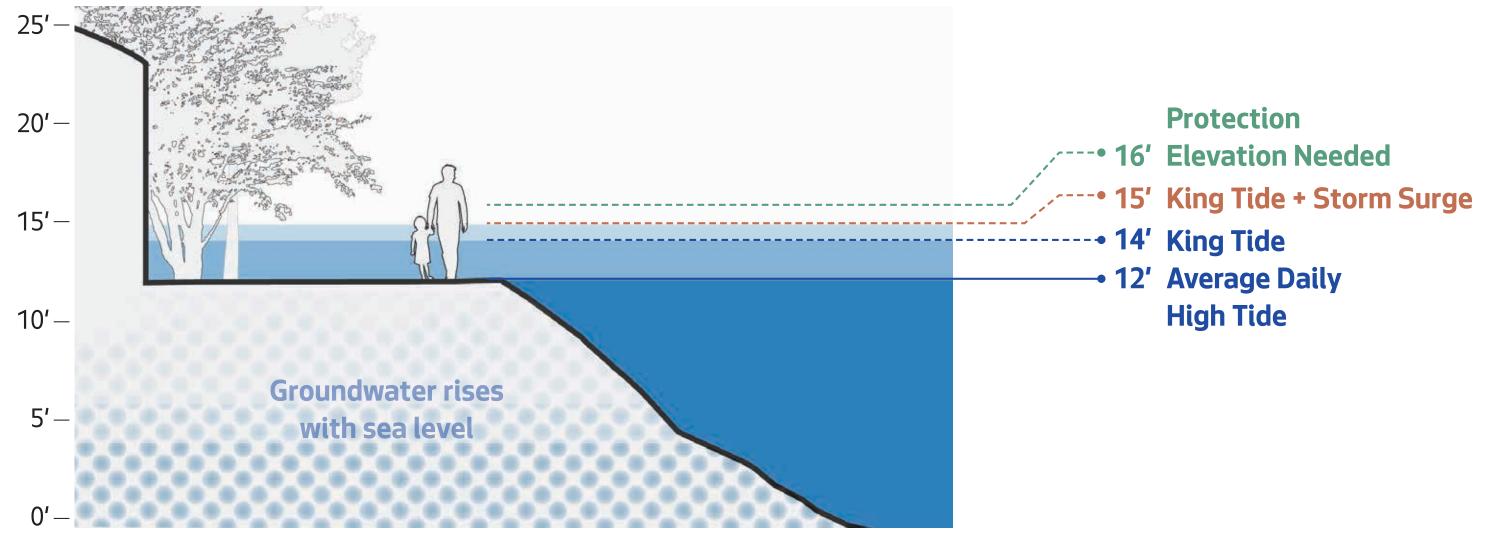


Flood elevations based on SLR projections for the City of Seattle. Source: Miller et al., 2018.

Notes: A "king tide" is an annual high tide that occurs approximately three times per year.

Average High Tide refers to Mean Higher High Water (MHHW). Elevations are shown in North American Vertical Datum of 1988 (NAVD88)

REFRESHER: PROJECTED 2100 FLOOD ELEVATIONS



Flood elevations based on SLR projections for the City of Seattle. Source: Miller et al., 2018.

Notes: A "king tide" is an annual high tide that occurs approximately three times per year.

Average High Tide refers to Mean Higher High Water (MHHW). Elevations are shown in North American Vertical Datum of 1988 (NAVD88)

REFRESHER: SANDBAG EXAMPLE

The sandbags provide a visual example of elevations needed for future protection from coastal flooding. For a 15' flood elevation, 16' of protection elevation would be needed.

~2100 Protection Elevation Needed: 16'

Sandbag Elevation: up to about 15'

Ground Elevation: •-

Average Daily High Tide: about 9'



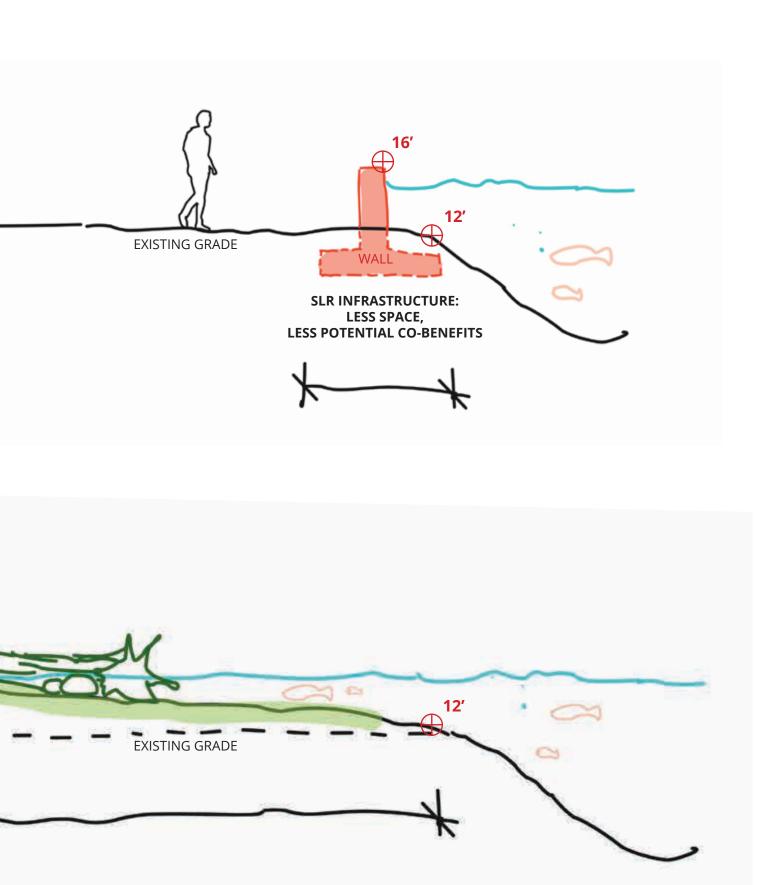
SHORELINE DESIGN INFLUENCES NEIGHBORHOOD DESIGN

That is why it's important to start by thinking **big-picture** and long-term before diving into the details of the phasing and design of infrastructure.

The draft SLR alternatives we will present are intended to start this conversation. They will show three examples of how different approaches to infrastructure would each create different experiences for the neighborhoods by the year 2100.

BERM

SLR INFRASTRUCTURE: MORE SPACE, MORE POTENTIAL CO-BENEFITS



As we present the draft alternatives, consider:

What potential benefits or concerns do you see within each alternative for different communities in the Duwamish Valley?

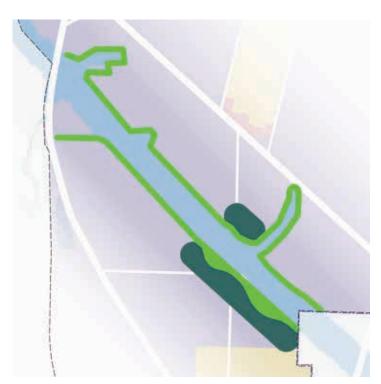
For example, throughout South Park and Georgetown (listed in no particular order):

- Residents
- Small and micro businesses
- Community groups
- Local tribes
- Industrial/maritime businesses
- Fish and wildlife
- Others?

DRAFT ALTERNATIVES

ALT 01: FOCUSED

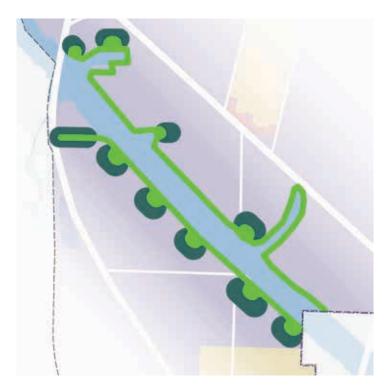
Focuses industrial & maritime use and multiple benefit elements within distinct areas.



- + prioritizes industrial efficiency
- + green space near homes
- less habitat
- less public access

ALT 02: NODES

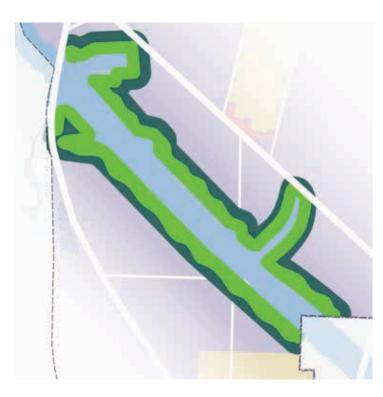
Strategically locates nodes of industrial & maritime activity and habitat/other multiple benefits along shoreline.



- + prioritizes clear acquisition strategy
- + distributed habitat / green space
- discontinuous habitat
- discontinuous public access

ALT 03: CONTINUITY

Invests in a continuous living shoreline, improving the environment and community access, while establishing maritime access at strategic locations.



- + river health
- + continuous habitat
- + continuous public access
- constrained maritime access
- challenging acquisition strategy

existing residential zones existing industrial zones



potential multiple benefit areas potential habitat / floodable open space

Note: The alternatives and associated images do not represent City of Seattle policy or proposals. The descriptions and associated images are intended to facilitate conversations with community, agencies and decision makers. This work will be refined over multiple phases including: further community engagement, technical and financial analysis; consultations with Tribes and agencies; permitting and environmental reviews; and City Mayoral and Council decisions.

ALT 04: RETREAT

(NOT STUDIED)

Retreat from low-lying industrial land bolsters river health and flood resiliency.



- + maximizes river health
- + continuous habitat
- + continuous public access
- + works with nature
- major loss of industrial land
- major acquisitions / relocations
- major remediation of contamination
- conflicts with prosperity in place

existing residential zones existing industrial zones

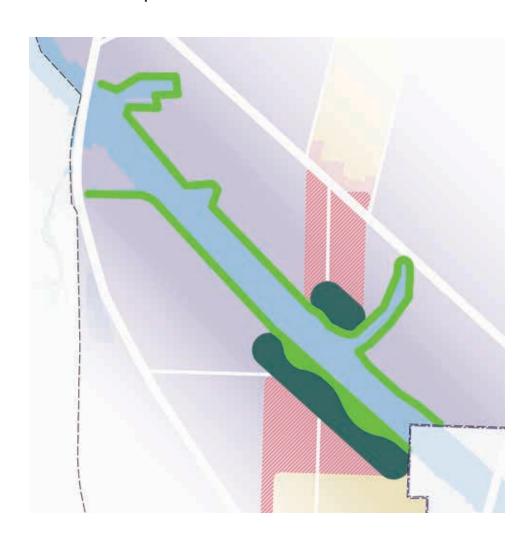


potential multiple benefit areas potential habitat / floodable open space

DRAFT ALTERNATIVES + INLAND IDEAS

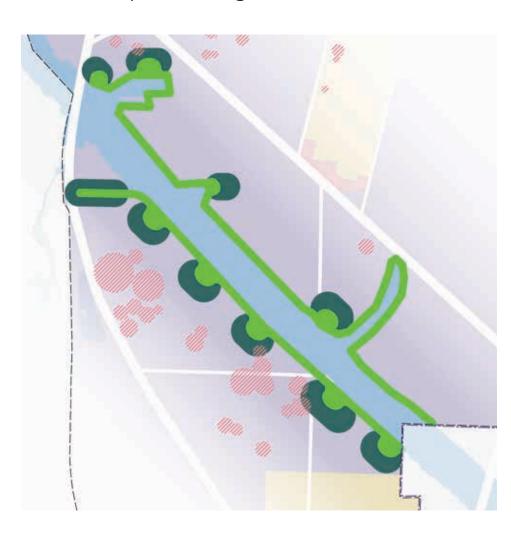
IDEA 1: SHARED VITALITY

Industrial areas linking residential areas to public shoreline areas can be prioritized for creative hubs.



IDEA 2: POCKETS OF GREEN ELEMENTS

Low-elevation spots within the neighborhoods can be prioritized for pockets of green elements.



IDEA 3: SHARED MARITIME ACCESS

Consolidated maritime access points could be managed by a central authority and shared by multiple users.





ALT 01: FOCUSED

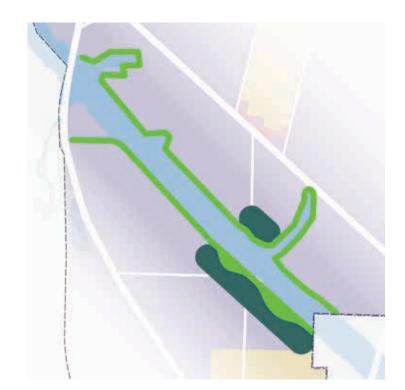
Focuses industrial & maritime uses and other multiple benefit elements in distinct areas.

ALT 02: NODES

Strategically locates nodes of industrial & maritime activity and habitat/other multiple benefits along shoreline.

ALT 03: CONTINUITY

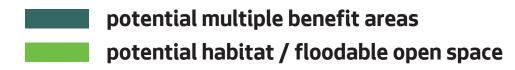
Invests in a continuous living shoreline, improving the environment and community access, while establishing maritime access at strategic locations.



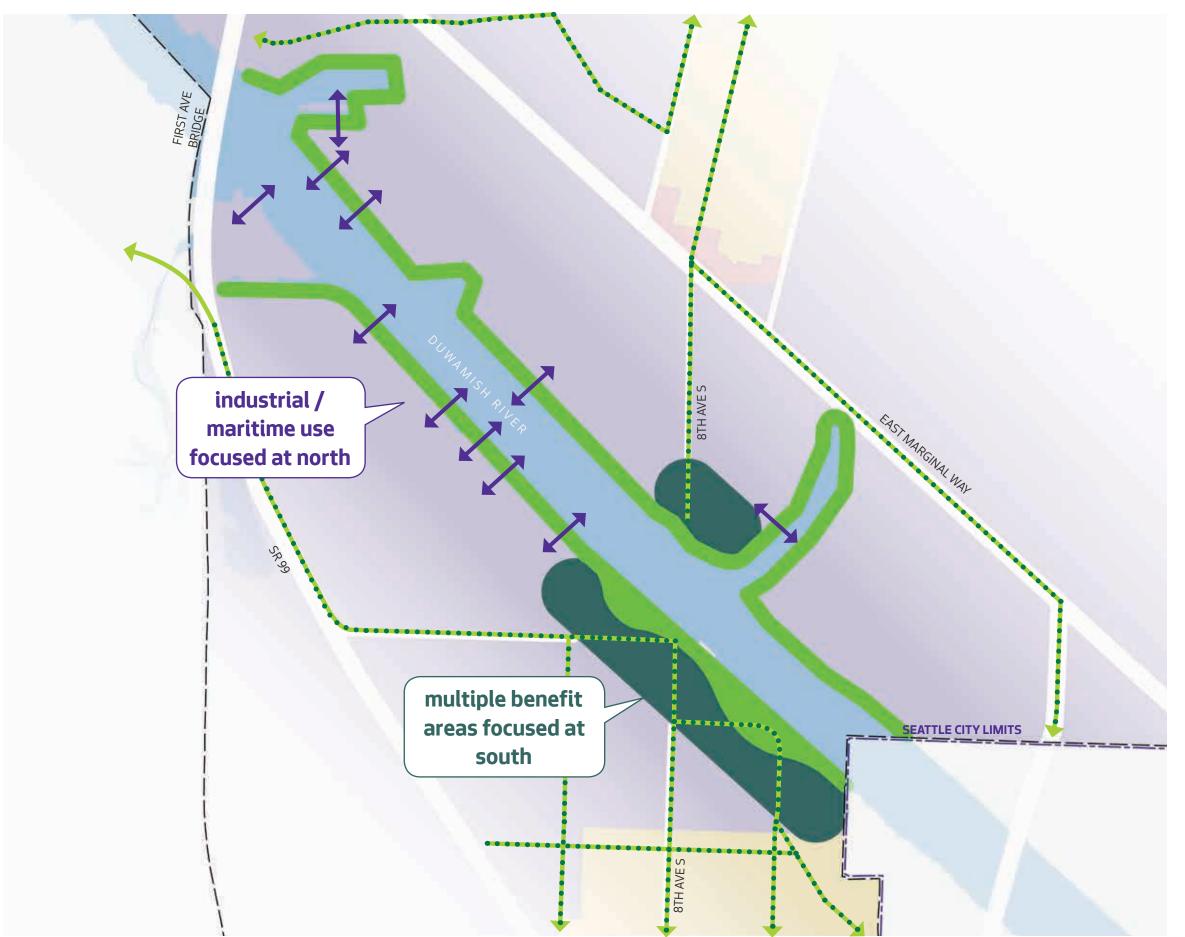




existing residential zones existing industrial zones



ALT 01 - FOCUSED



LEGEND

SHORELINE USES:

INDUSTRIAL / MARITIME



MULTIPLE BENEFIT AREAS



HABITAT / FLOODABLE OPEN SPACE



IMPROVED COMMUNITY CONNECTION

MARITIME ACCESS



STUDY AREA

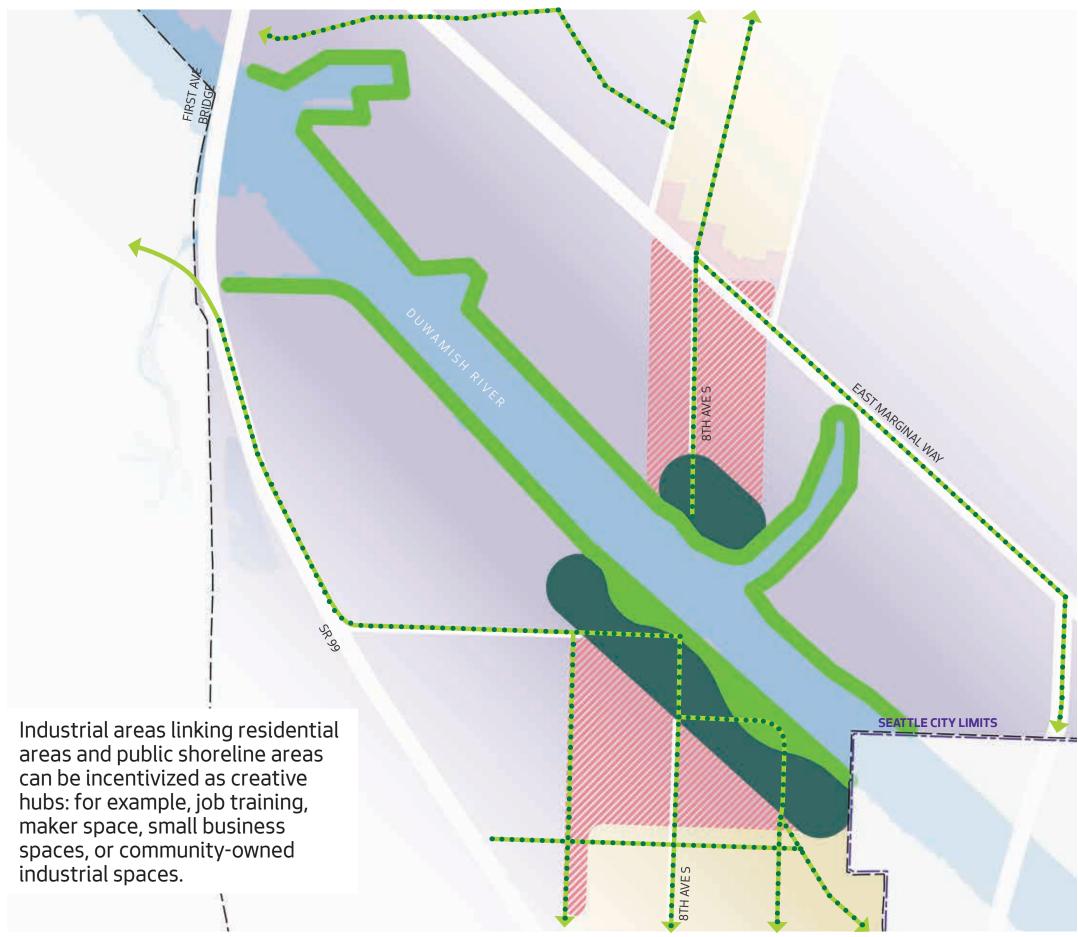
FOCUSED:

Aggregate uses to increase compatibility of investments. For example - maritime and heavier industrial uses are generally clustered. Habitat, open space, and lighter industrial uses such as maker spaces and training facilities are located closer to existing residential areas.



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INLAND IDEA: SHARED VITALITY



LEGEND

PROPOSED:



IMPROVED COMMUNITY CONNECTION



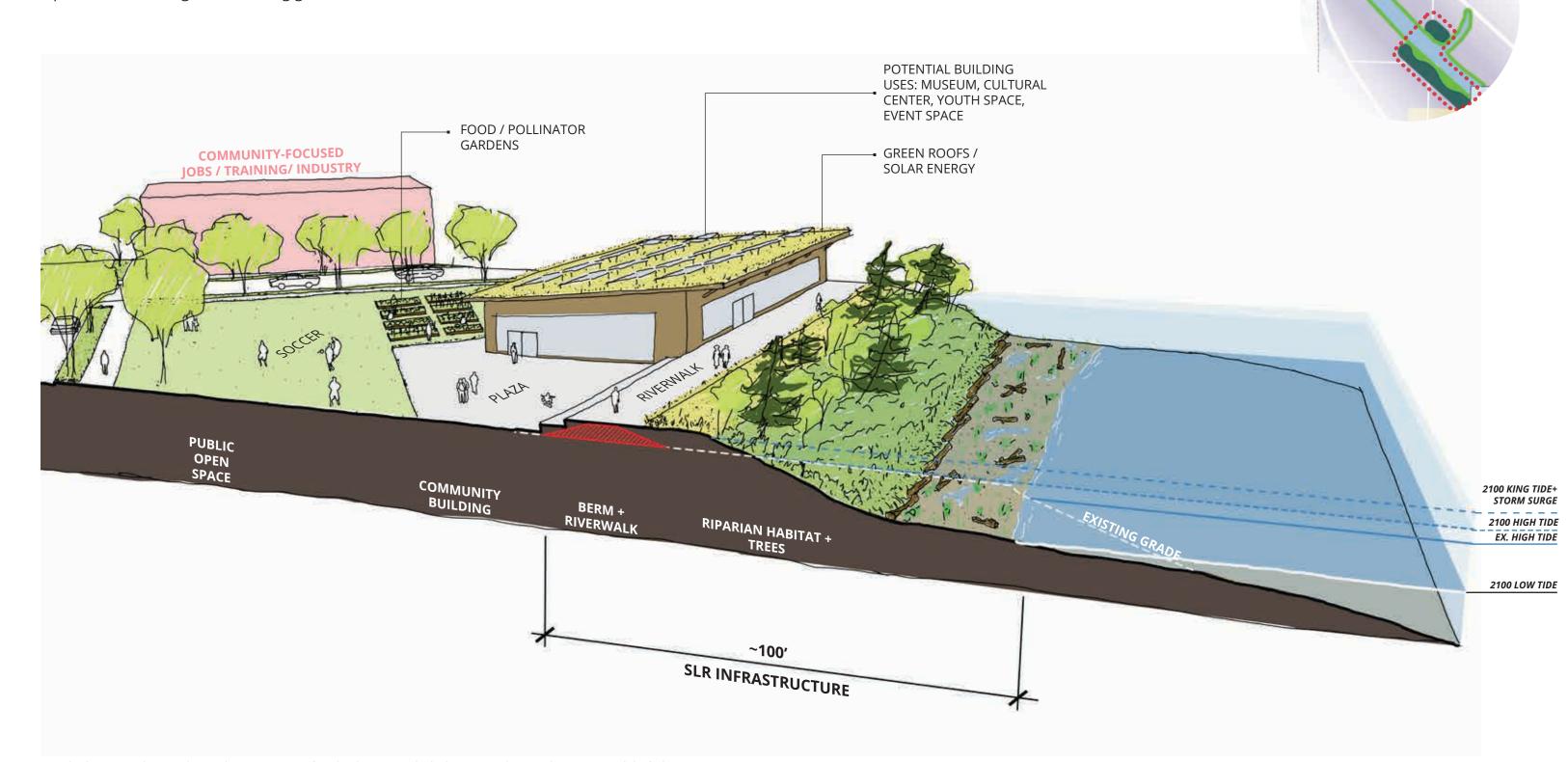
EXAMPLE 01-A: FOCUSED PUBLIC USE - SHORELINE BERM

PROS

- + protects space for community programs
- + public access/views to river
- + space for riparian habitat & trees
- + potential to manage inland rising groundwater

CONS

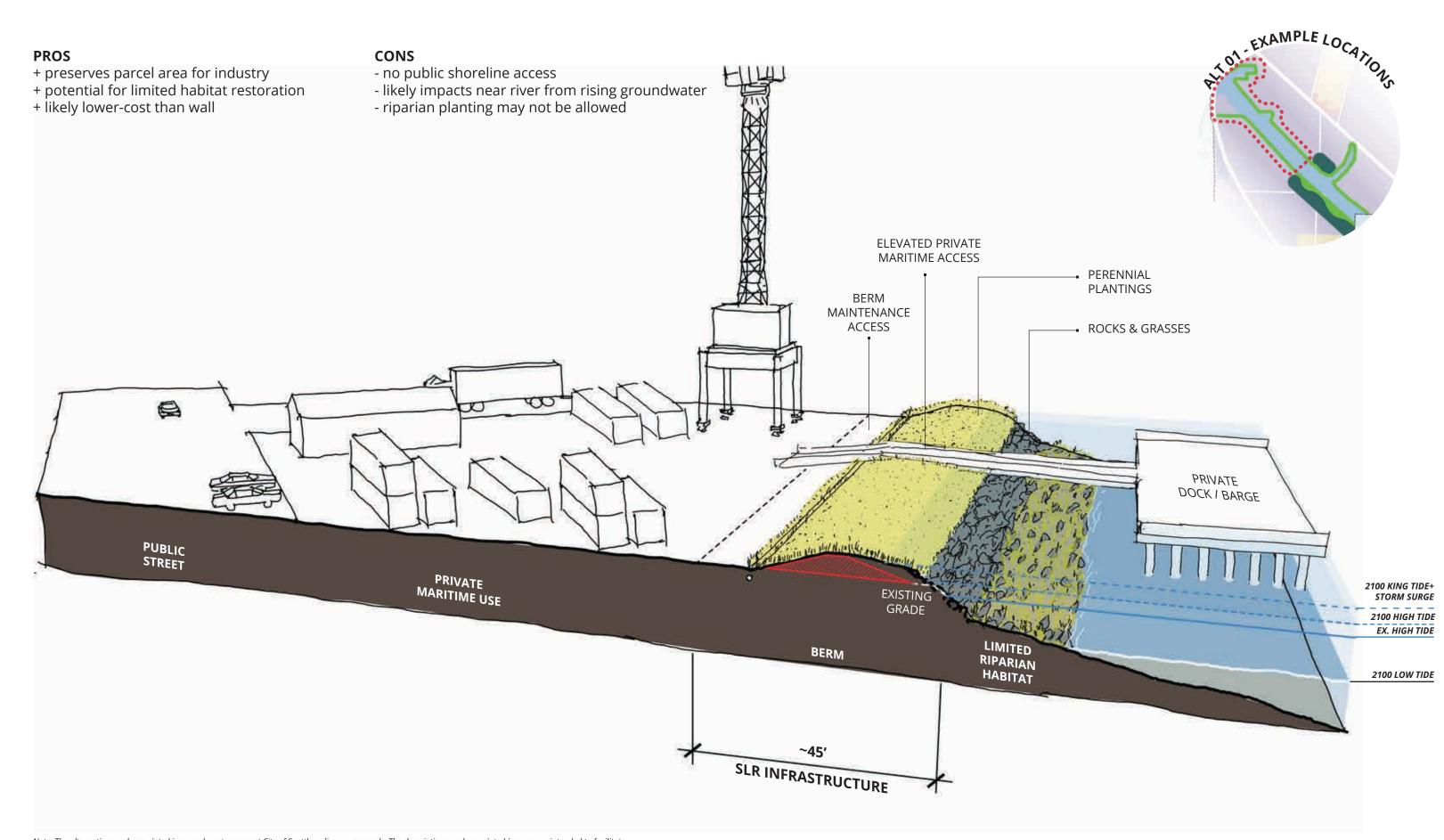
- less space for habitat
- cost/complexity of large land acquisition



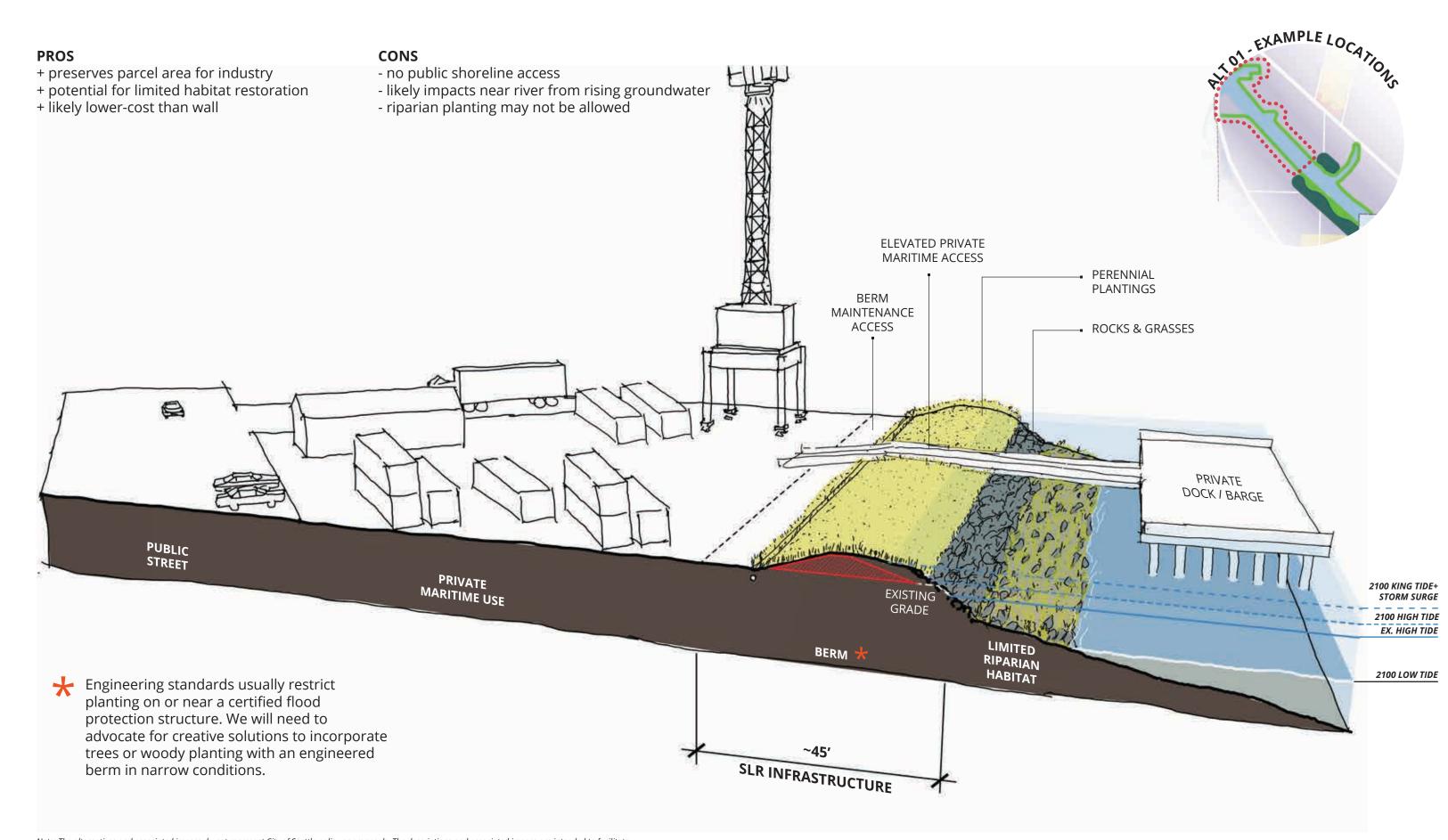
ATON. EXAMPLE LOCATIONS

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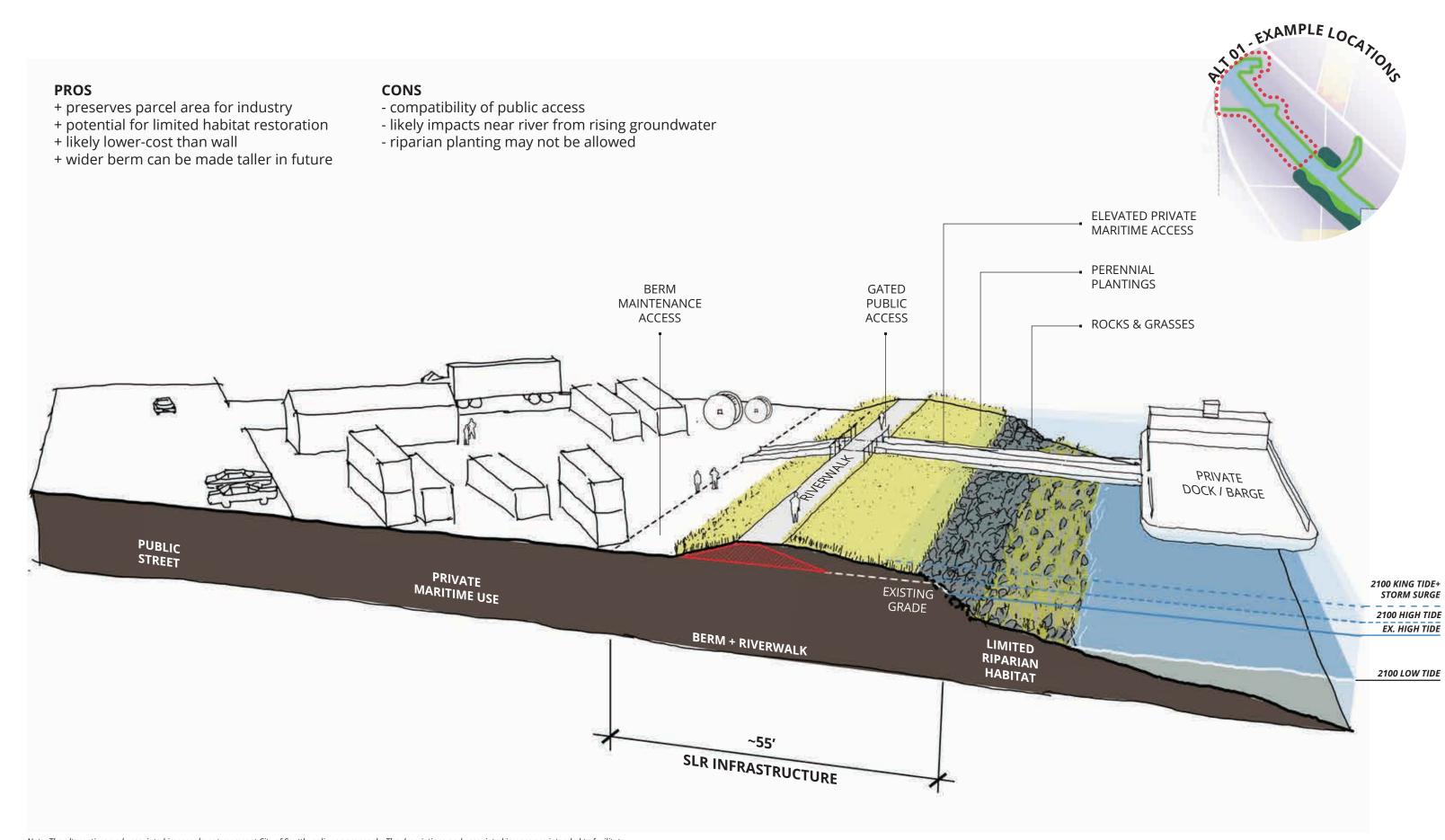
EXAMPLE 01-B: FOCUSED MARITIME USE - SHORELINE BERM



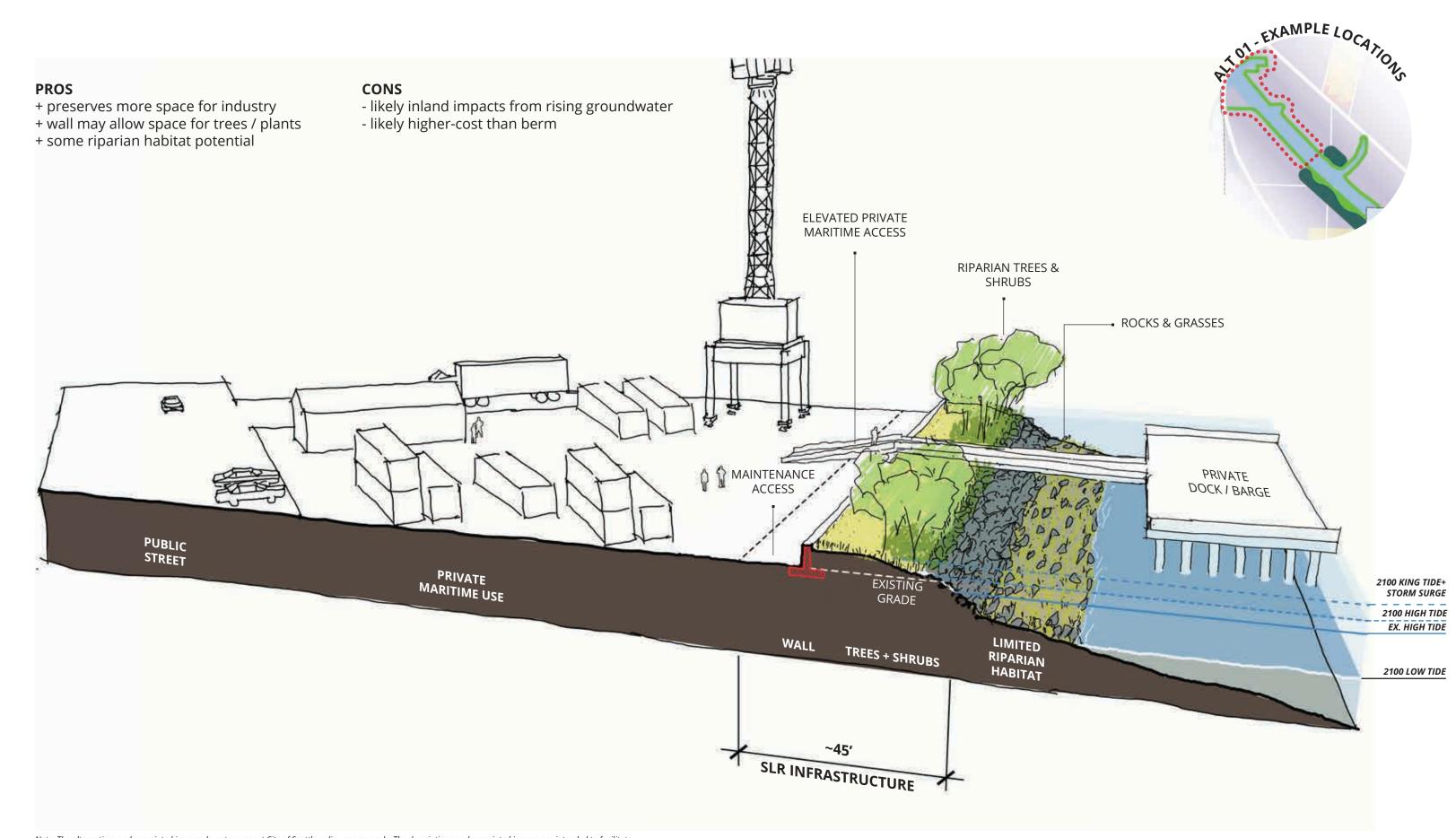
EXAMPLE 01-B: FOCUSED MARITIME USE - SHORELINE BERM



EXAMPLE 01-C: FOCUSED MARITIME USE + PUBLIC ACCESS - SHORELINE BERM



EXAMPLE 01-D: FOCUSED MARITIME USE - SHORELINE WALL



ALT 01: FOCUSED

Focuses industrial & maritime uses and other multiple benefit elements in distinct areas.

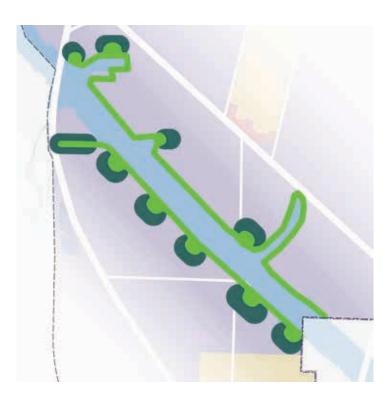
ALT 02: NODES

Strategically locates nodes of industrial & maritime activity and habitat/other multiple benefits along shoreline.

ALT 03: CONTINUITY

Invests in a continuous living shoreline, improving the environment and community access, while establishing maritime access at strategic locations.



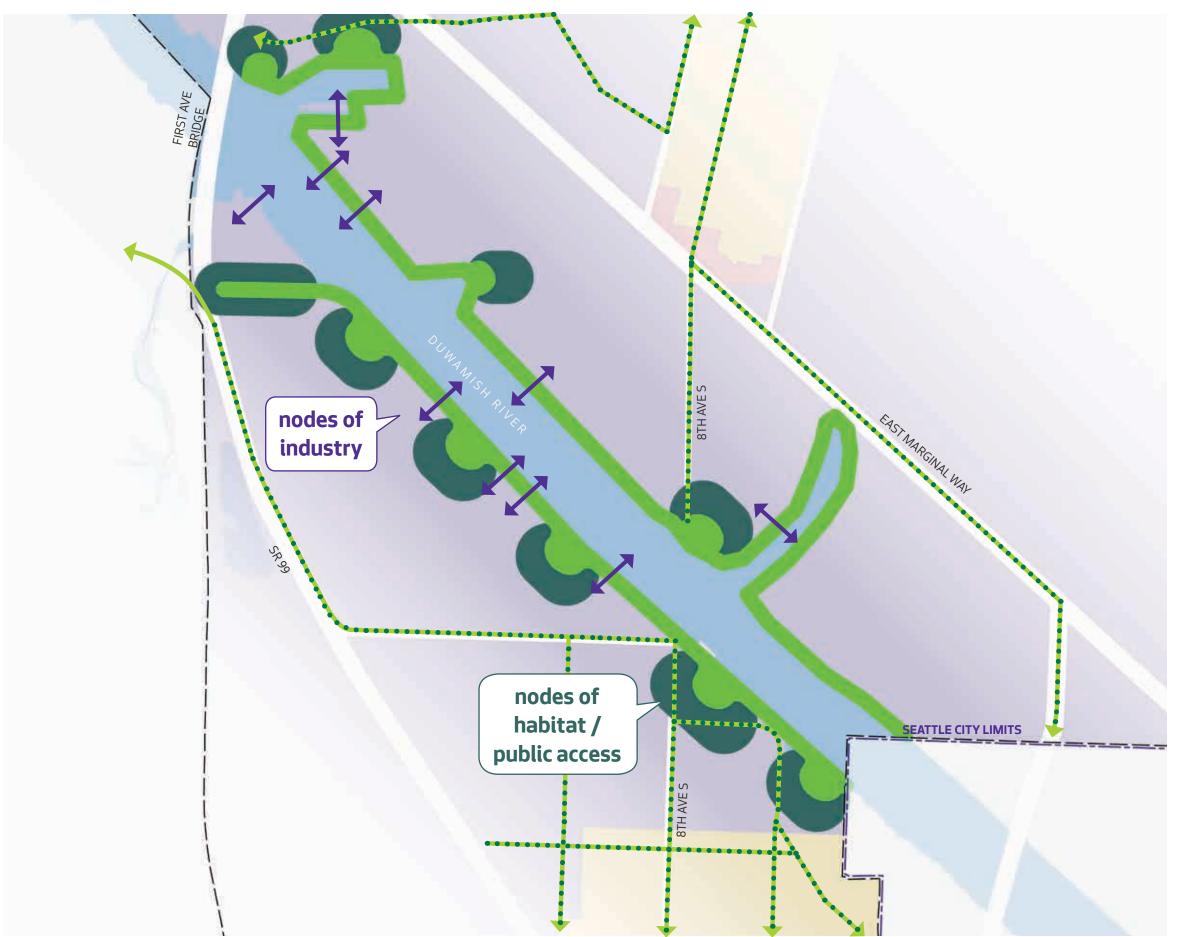




existing residential zones existing industrial zones



ALT 02 - NODES



LEGEND

SHORELINE USES:

INDUSTRIAL / MARITIME



HABITAT / FLOODABLE OPEN SPACE



[_] STUDY AREA

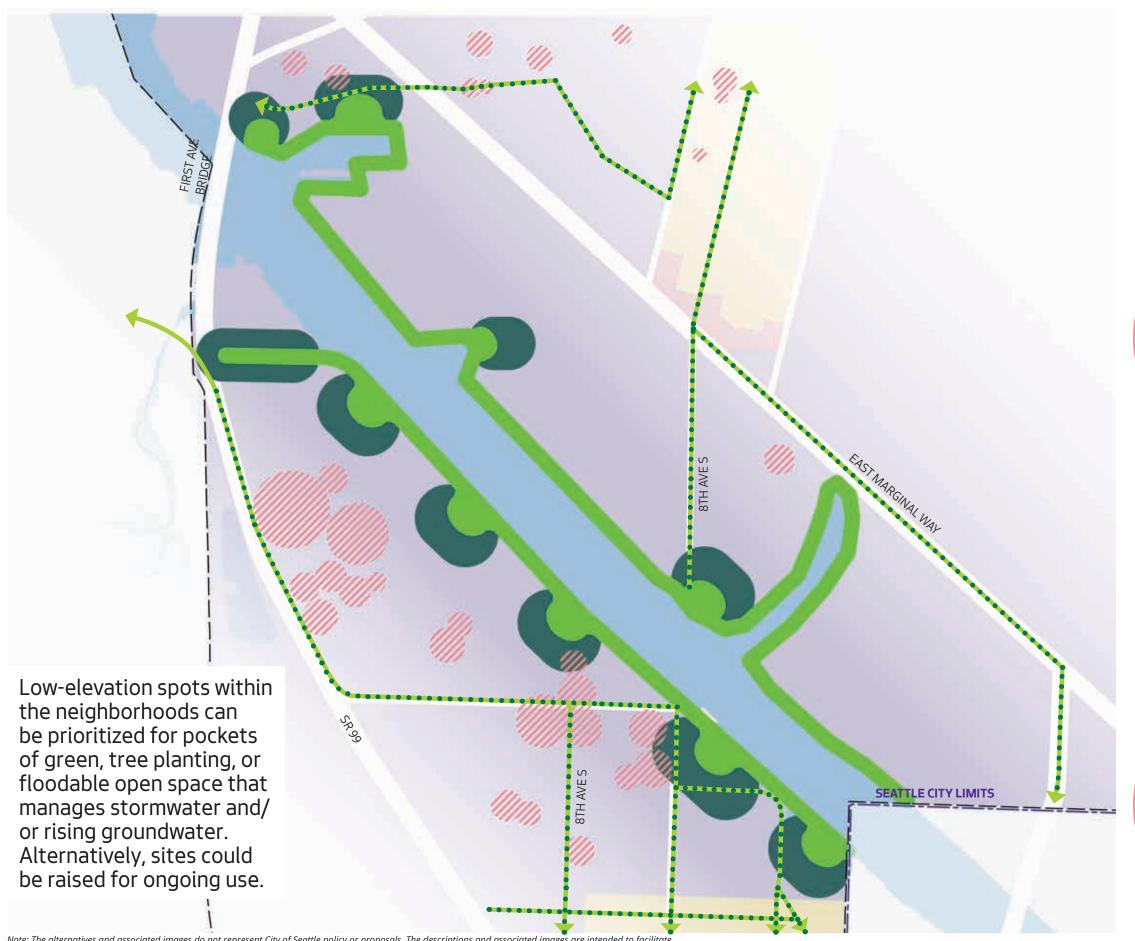
NODES:

Strategically retreat in low areas, folding in co-benefits of SLR mitigation, creating interspersed nodes of maritime industry protection and other benefits (habitat, access, and community-supportive investments).



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INLAND IDEA: POCKETS OF GREEN ELEMENTS



LEGEND

PROPOSED:



INLAND IDEA: POCKETS OF GREEN ELEMENTS



IMPROVED COMMUNITY CONNECTION





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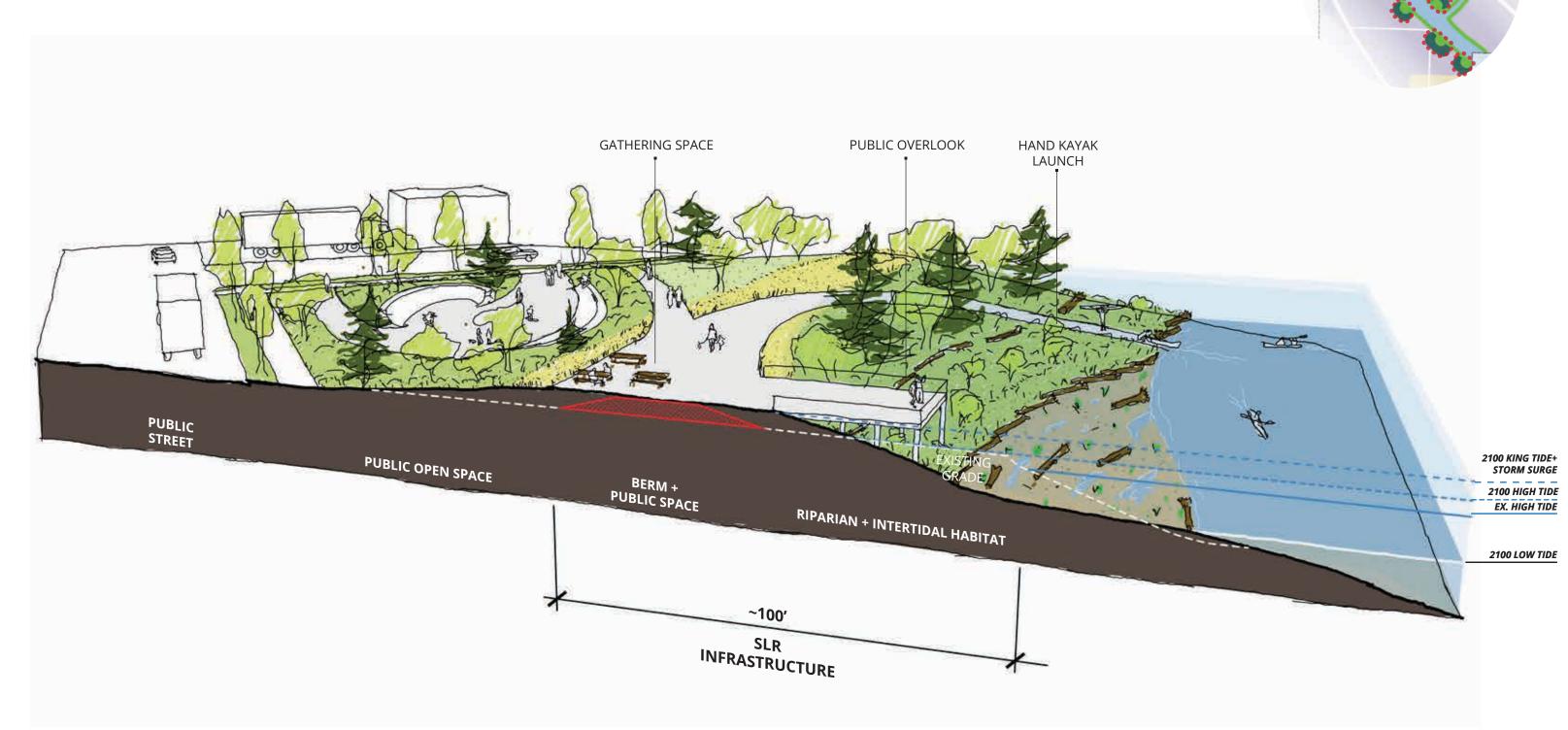
EXAMPLE 02-A: NODE OF PUBLIC USE - CENTRAL BERM

PROS

- + public space & river access
- + adds needed mudflat habitat

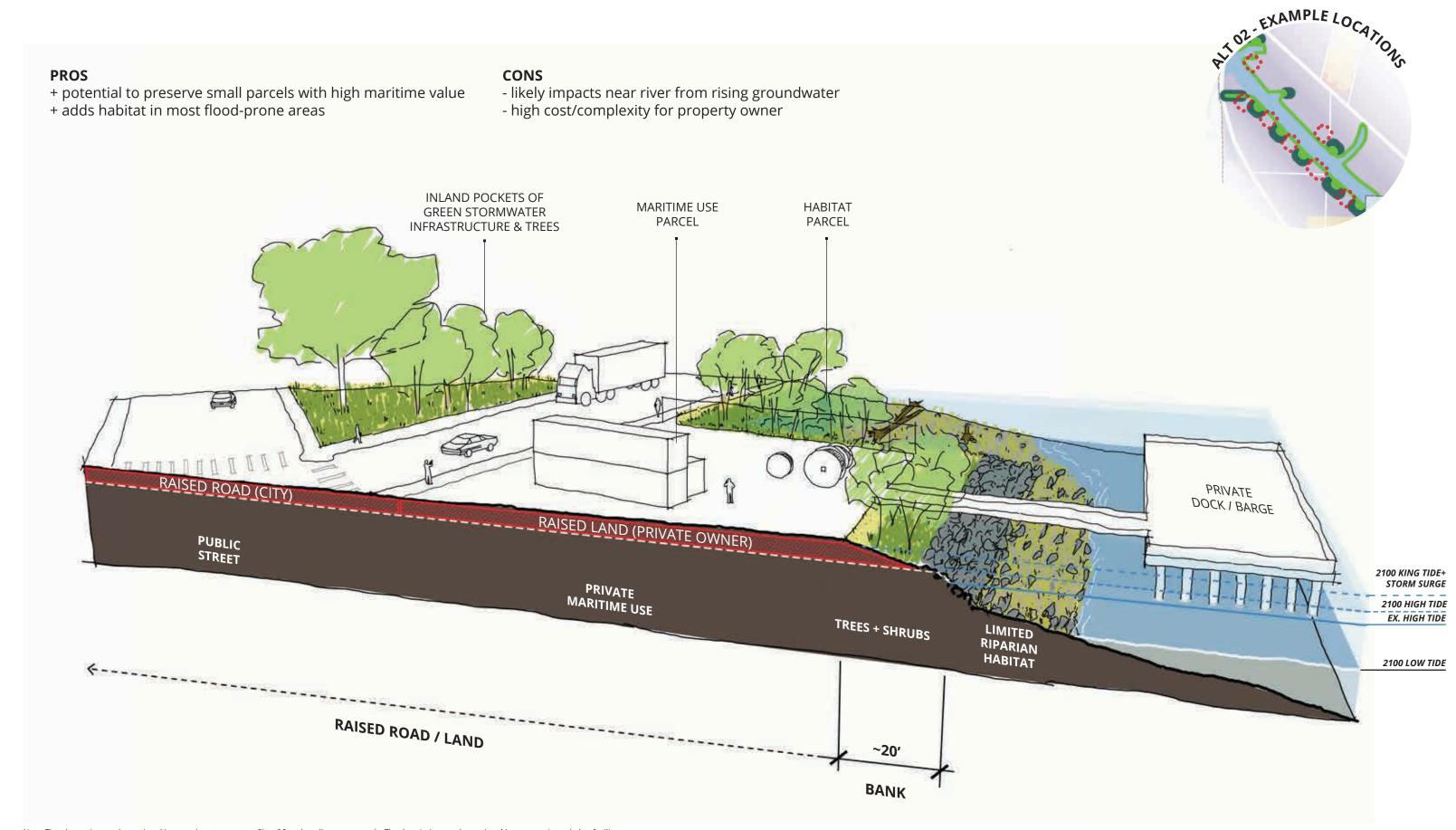
CONS

- requires parcel acquisition
- compatibility of public access & neighboring industry

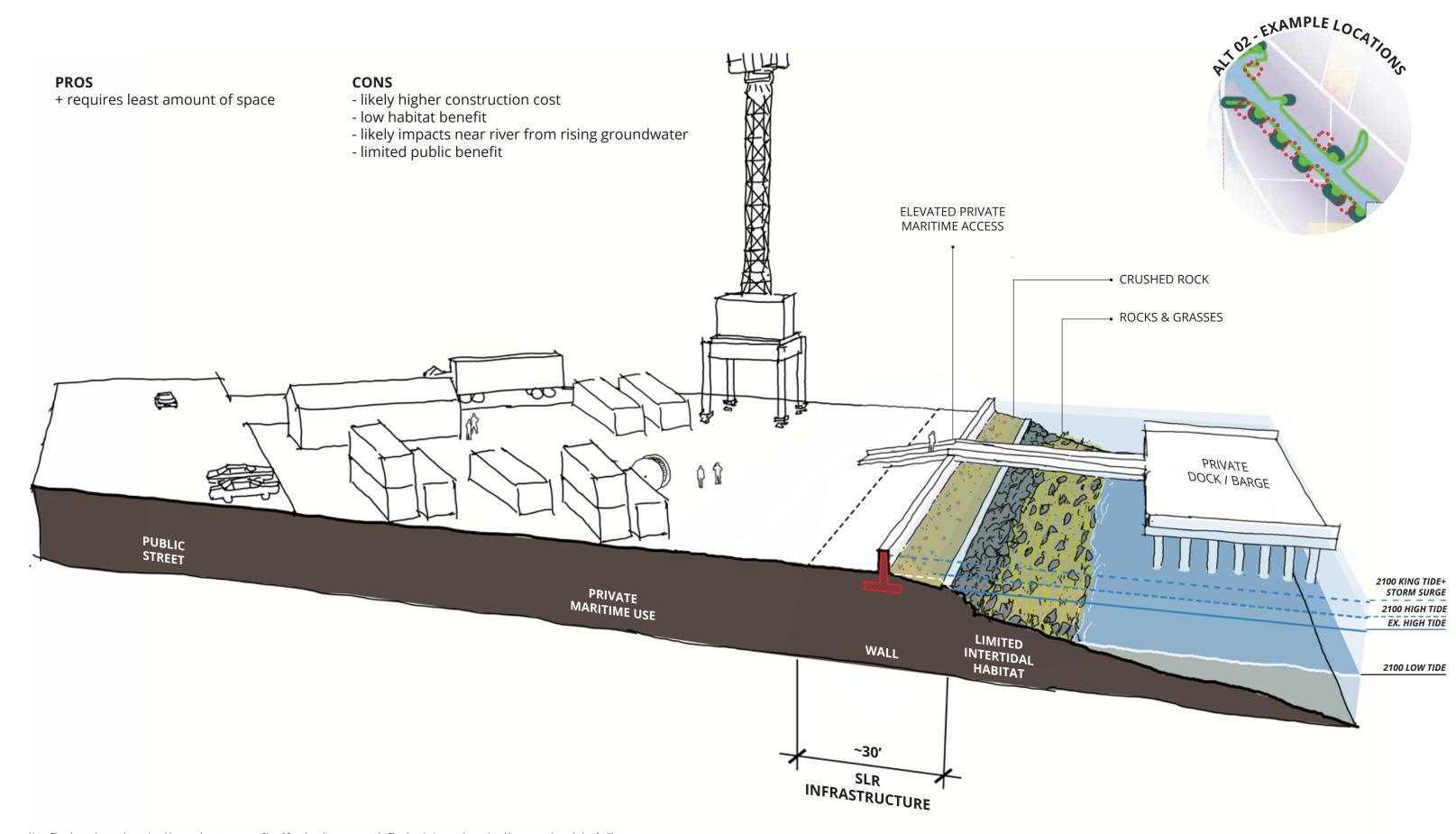


PTO2. EXAMPLE LOCATIONS

EXAMPLE 02-B: NODE OF MARITIME USE - RAISED ROAD / LAND



EXAMPLE 02-C: NODE OF MARITIME USE - NARROW WALL



ALT 01: FOCUSED

Focuses industrial & maritime uses and other multiple benefit elements in distinct areas.

ALT 02: NODES

Strategically locates nodes of industrial & maritime activity, and habitat/other investments along shoreline.

ALT 03: CONTINUITY

Invests in a continuous living shoreline, improving the environment and community access, while establishing maritime access at strategic locations.



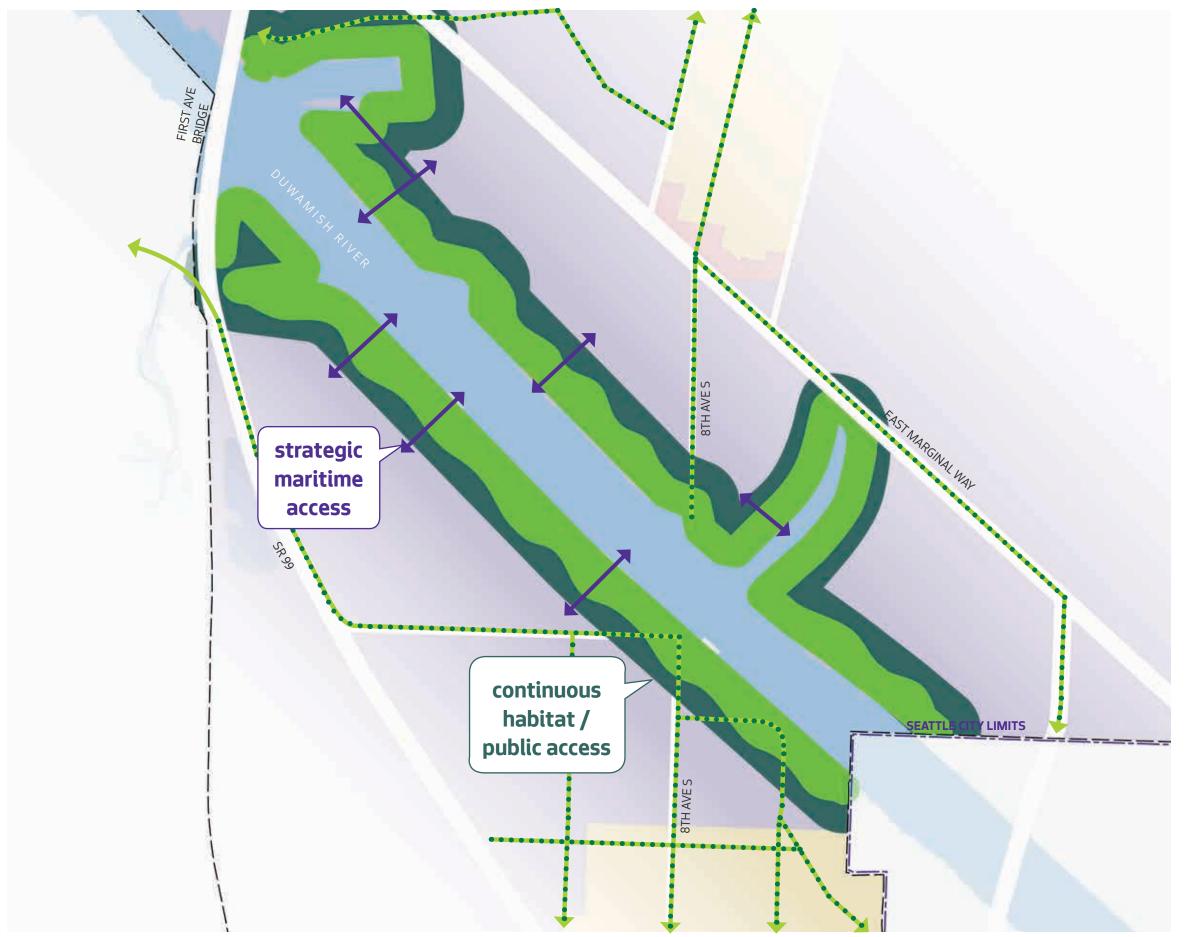




existing residential zones existing industrial zones



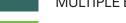
ALT 03 - CONTINUITY



LEGEND

SHORELINE USES:

INDUSTRIAL / MARITIME



MULTIPLE BENEFIT AREAS HABITAT / FLOODABLE OPEN SPACE



IMPROVED COMMUNITY CONNECTION

MARITIME ACCESS

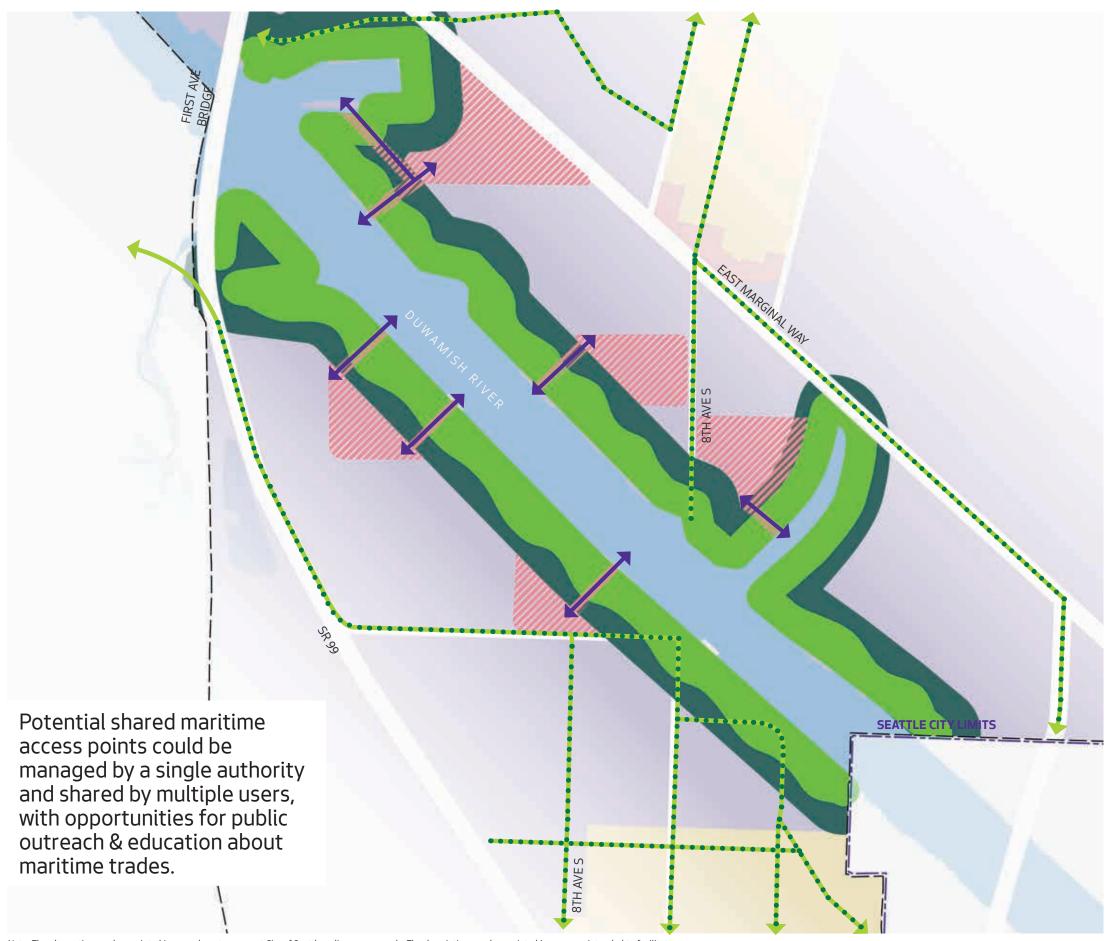
[_] STUDY AREA

CONTINUITY:

Create a continuous living shoreline to increase connection to a healthy river and strategically focus industrial maritime access.



INLAND IDEA: SHARED MARITIME ACCESS



LEGEND

PROPOSED:

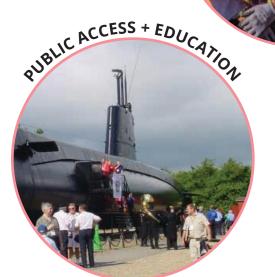


INLAND IDEA: SHARED MARITIME ACCESS



IMPROVED COMMUNITY CONNECTION





EXAMPLE 03-A: CONTINUOUS PUBLIC ACCESS - SET-BACK BERM

PROS

- + adds critical mudflat habitat
- + continuous public river access

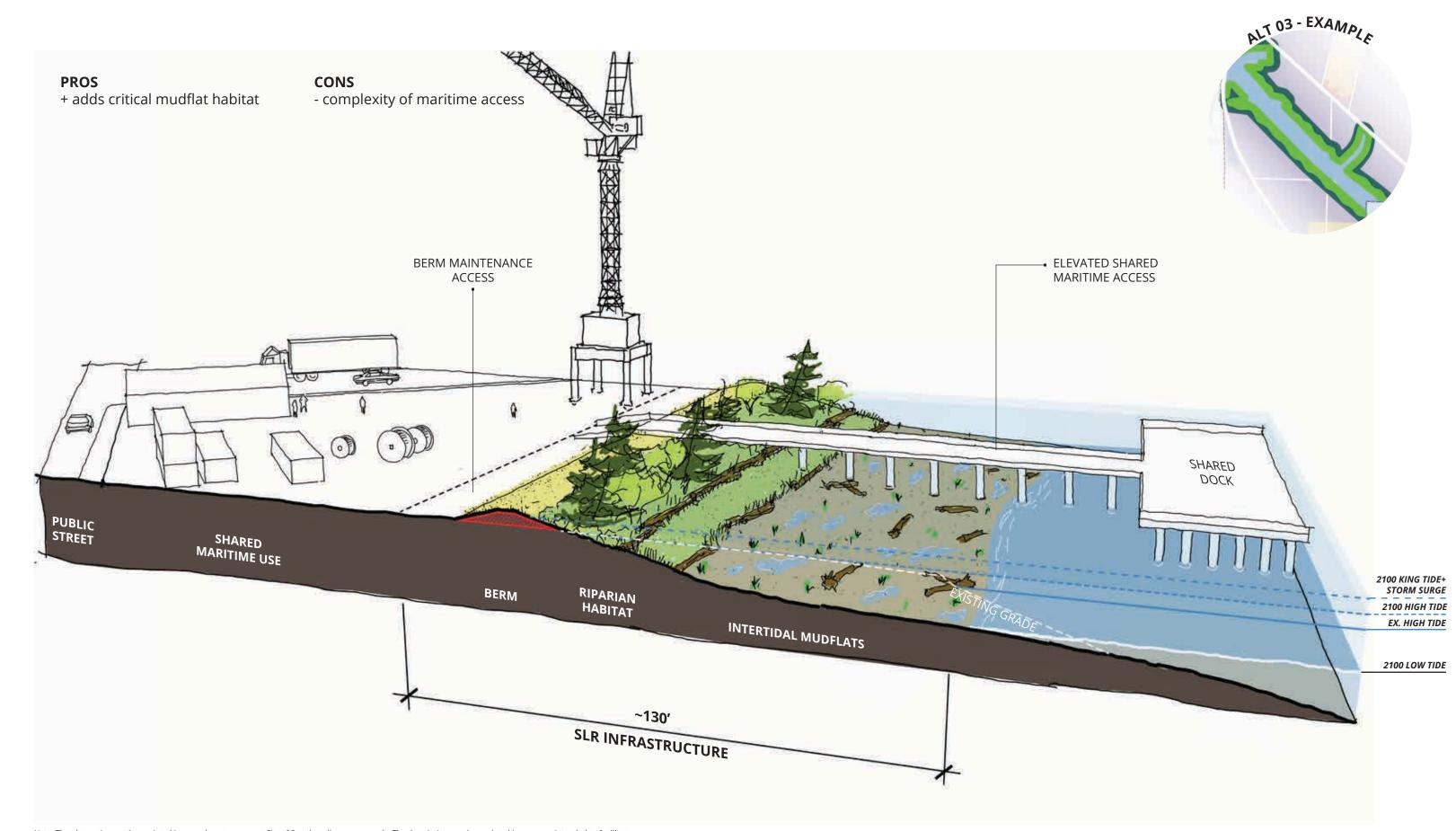
CONS

- less space for community use
- cost/complexity of large land acquisition

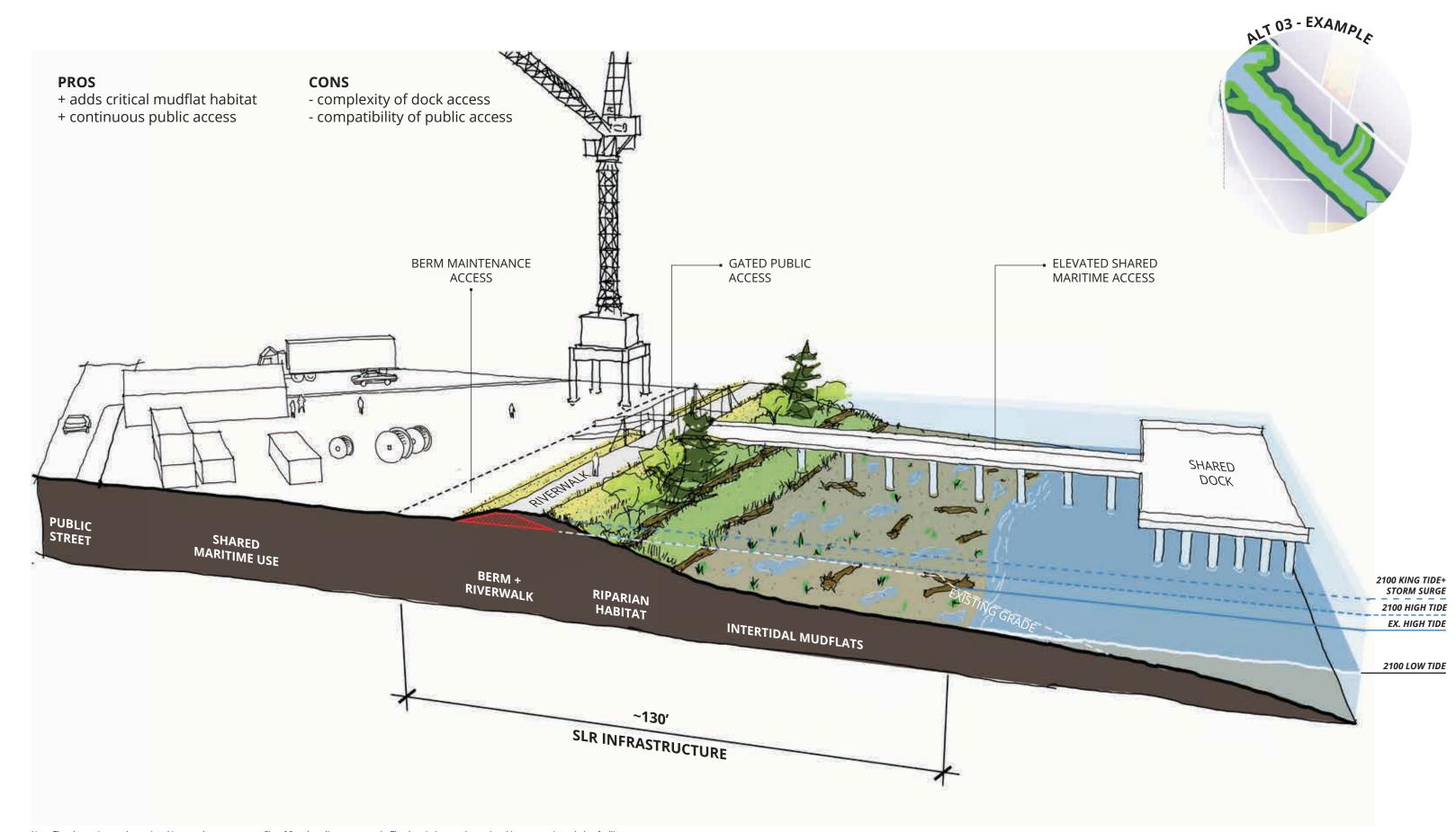


ALT 03 - EXAMPLE

EXAMPLE 03-B: STRATEGIC MARITIME USE - SET-BACK BERM



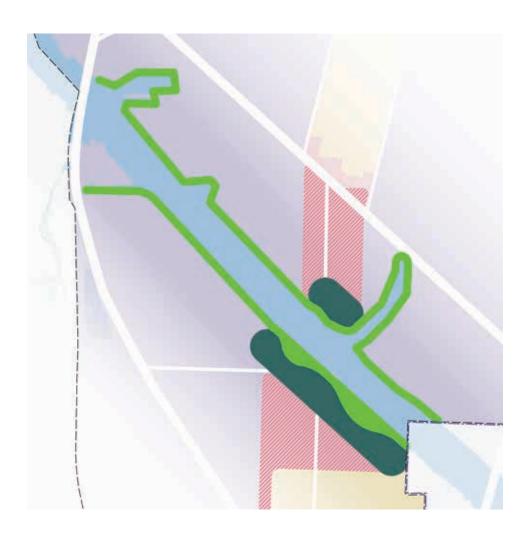
EXAMPLE 03-C: STRATEGIC MARITIME USE + PUBLIC ACCESS - SET-BACK BERM



DRAFT ALTERNATIVES

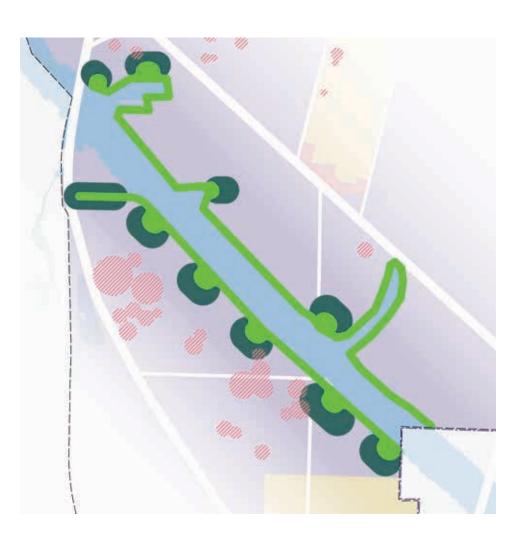
ALT 01: FOCUSED

Focuses industrial & maritime uses and other multiple benefit elements in distinct areas.



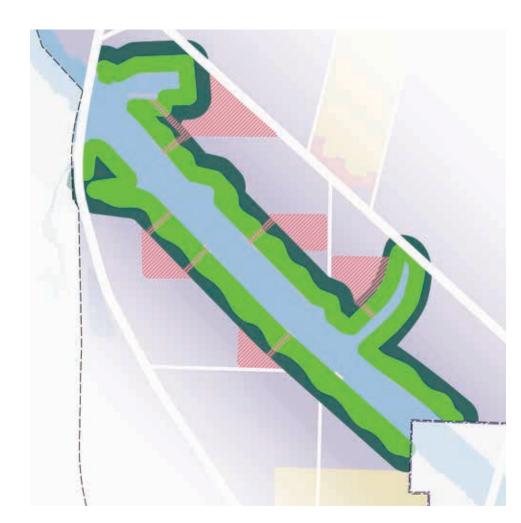
ALT 02: NODES

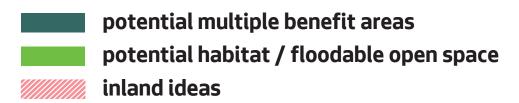
Strategically locates nodes of industrial & maritime activity and habitat/other multiple benefits along shoreline.



ALT 03: CONTINUITY

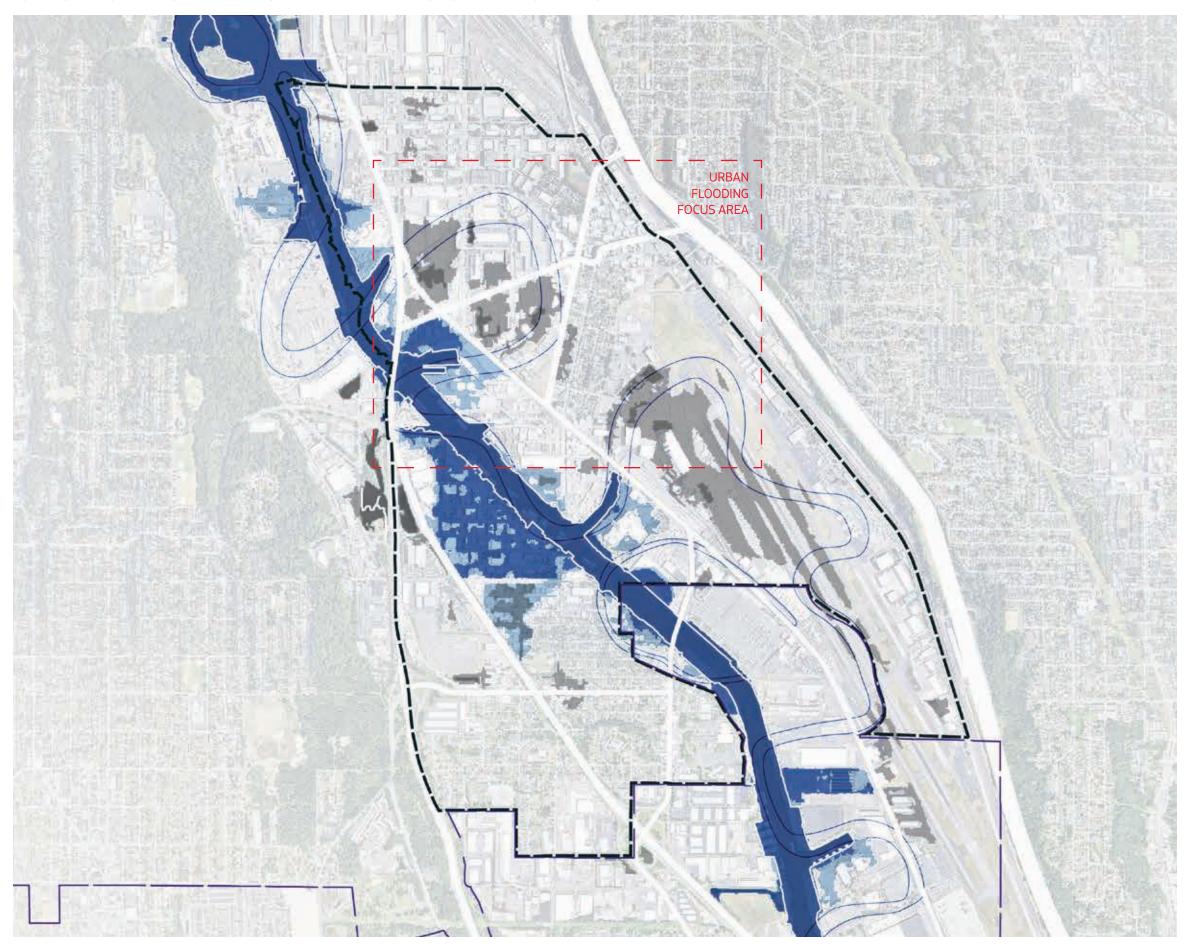
Invests in a continuous living shoreline, improving the environment and community access, while establishing maritime access at strategic locations.





existing residential zones existing industrial zones

GEORGETOWN: URBAN FLOODING & SLR



LEGEND

— STUDY AREA BOUNDARY

— CITY LIMITS

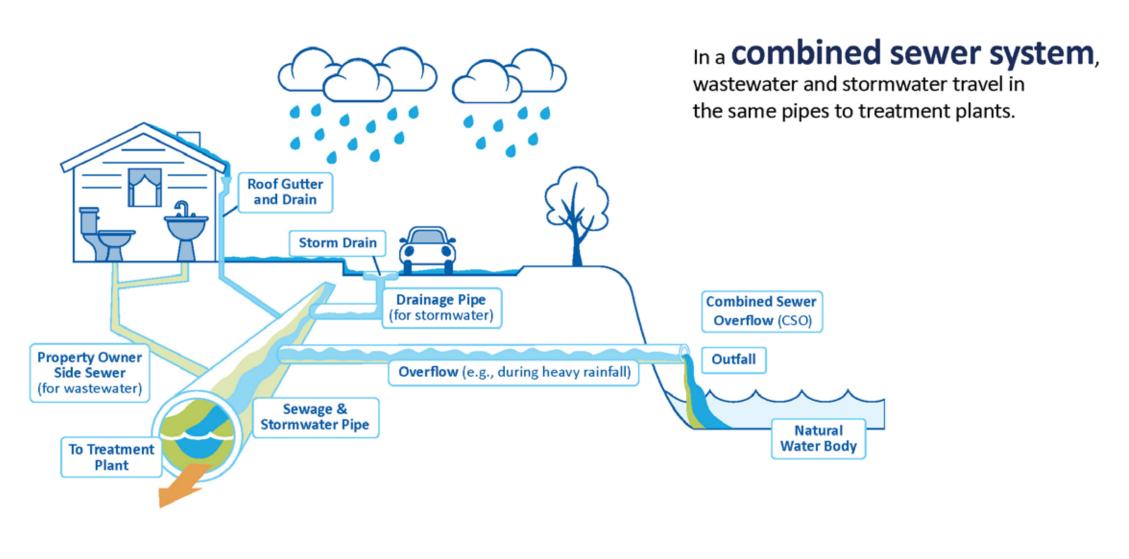
2050: 13' COASTAL FLOOD ELEVATION

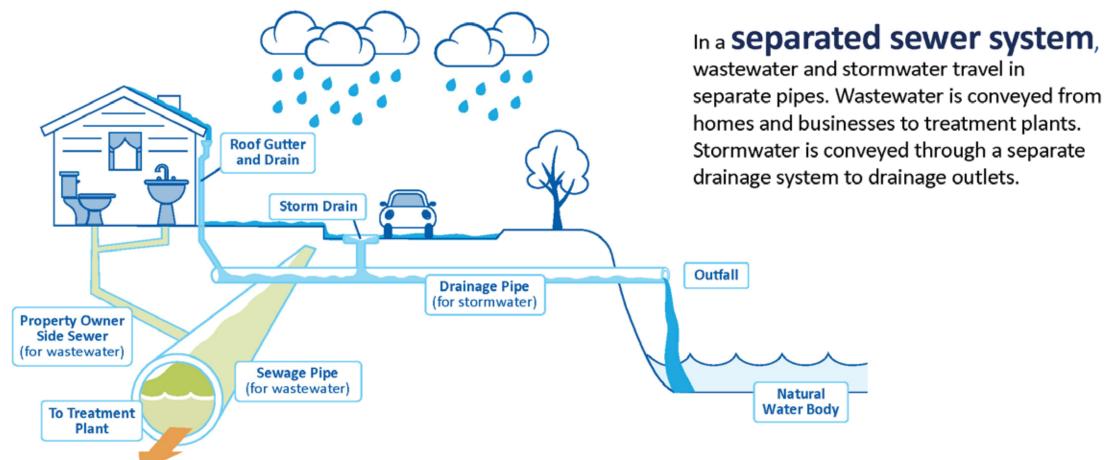
2050 AT-RISK LOW LYING AREAS

2100: 15' COASTAL FLOOD ELEVATION

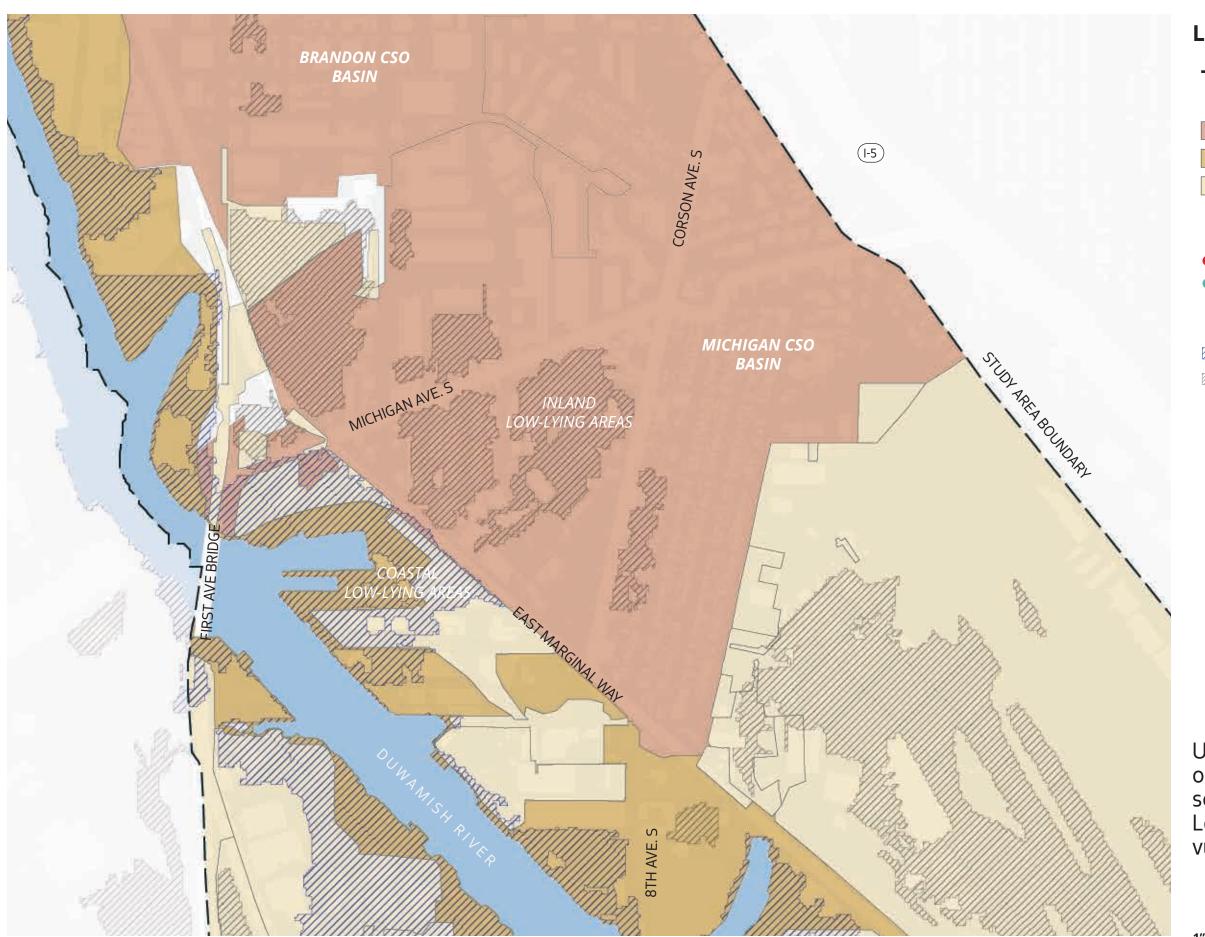
2100 AT-RISK LOW LYING AREAS

— SEATTLE SHORELINE





GEORGETOWN: DRAINAGE BASINS & LOW-LYING AREAS



LEGEND

-- STUDY AREA BOUNDARY

DRAINAGE BASINS

- KING COUNTY COMBINED SEWER BASIN
- SPU DIRECT DISCHARGE BASIN (SEPARATED)
- SPU DRAINAGE BASIN (SEPARATED)

OUTFALLS

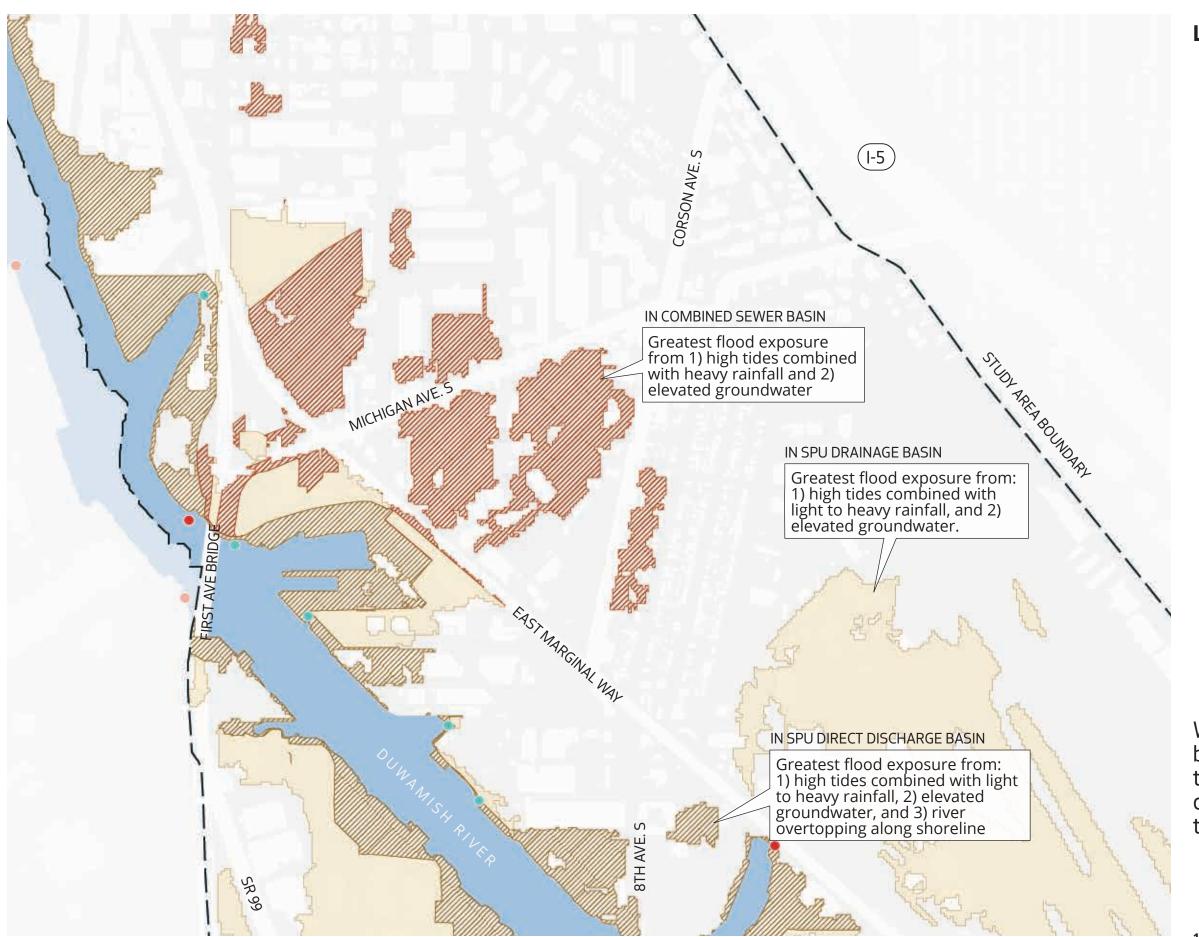
- COMBINED SEWER OUTFALL
- STORMWATER OUTFALL

LOW-LYING AREAS

Urban flooding in Georgetown occurs in both combined and separated stormwater systems. Low-lying areas are particularly vulnerable to urban flooding.



GEORGETOWN: URBAN FLOODING EXPOSURE



LEGEND

— STUDY AREA BOUNDARY

LOW-LYING AREAS

IN KING COUNTY COMBINED SEWER BASIN

IN SPU DIRECT DISCHARGE BASIN (SEPARATED)

IN SPU DRAINAGE BASIN (SEPARATED)

OUTFALLS

- COMBINED SEWER OUTFALL
- STORMWATER OUTFALL

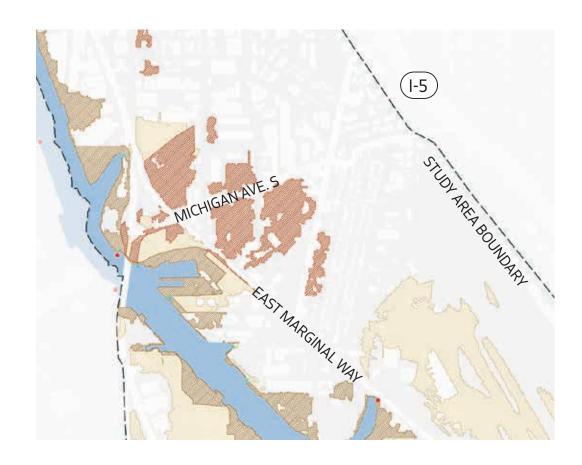
With SLR, low-lying areas will become increasingly vulnerable to flooding for various reasons depending on what kind of basin they are located in.



GEORGETOWN: HIGH-LEVEL URBAN FLOODING POTENTIAL WITH SLR

KING COUNTY COMBINED SEWER BASIN

| | LIGHT/MODERATE WET WEATHER | HEAVY WET WEATHER |
|-----------------|-------------------------------|-----------------------|
| 2100 LOW TIDES | Flooding Unlikely | Flooding Unlikely |
| 2100 HIGH TIDES | Flooding Unlikely | POTENTIAL FLOODING |





SPU DIRECT DISCHARGE BASIN (SEPARATED)

| | LIGHT/MODERATE WET WEATHER | HEAVY WET WEATHER |
|-----------------|-------------------------------|-----------------------|
| 2100 LOW TIDES | Flooding Unlikely | Flooding Unlikely |
| 2100 HIGH TIDES | POTENTIAL FLOODING | POTENTIAL FLOODING |



SPU DRAINAGE BASIN (SEPARATED)

| | LIGHT/MODERATE WET WEATHER | HEAVY WET WEATHER |
|-----------------|-------------------------------|-----------------------|
| 2100 LOW TIDES | Flooding Unlikely | Flooding Unlikely |
| 2100 HIGH TIDES | POTENTIAL FLOODING | POTENTIAL FLOODING |

GEORGETOWN: POTENTIAL SOLUTIONS

| | LOW-LYING AREAS IN KING COUNTY COMBINED SEWER BASINS | LOW-LYING AREAS IN SPU DIRECT DISCHARGE BASINS | LOW-LYING AREAS IN SPU DRAINAGE BASINS |
|----------------------------------|--|--|--|
| | | | |
| LEVEE/BERM/FLOOD WALL | | | |
| RAISED ROADS & BUILDINGS | | | |
| GREEN STORMWATER INFRASTRUCTURE* | * | * | * |
| GRAY STORAGE | | | |
| PUMPING | | | |
| FLOODABLE OPEN SPACES | | | |
| BACKFLOW PREVENTERS | | | |
| SEWER SEPARATION | | | |

^{*} Elevated groundwater may impact feasibility of GSI

NOT EFFECTIVE to address flooding in this area

EFFECTIVE to address flooding in this area

PARTIALLY EFFECTIVE to address flooding in this area

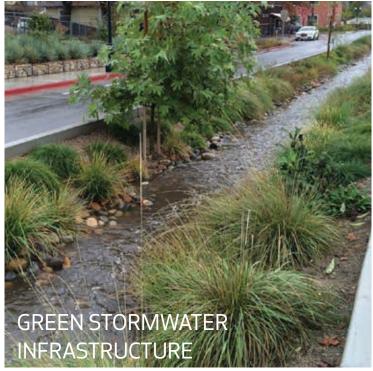
POTENTIAL CO-BENEFITS



- PUBLIC ACCESS + VIEWS
- HABITAT + TREE CANOPY
- OPEN SPACE
- CONSTRUCTION + MAINTENANCE JOBS



- CONSTRUCTION + MAINTENANCE JOBS
- PROTECTION INSIDE HOMES/BUSINESSES



- HABITAT
- COOLING
- INSTALLATION + MAINTENANCE JOBS



- FABRICATION + CONSTRUCTION JOBS
- TREE PLANTING ALONG ROADS



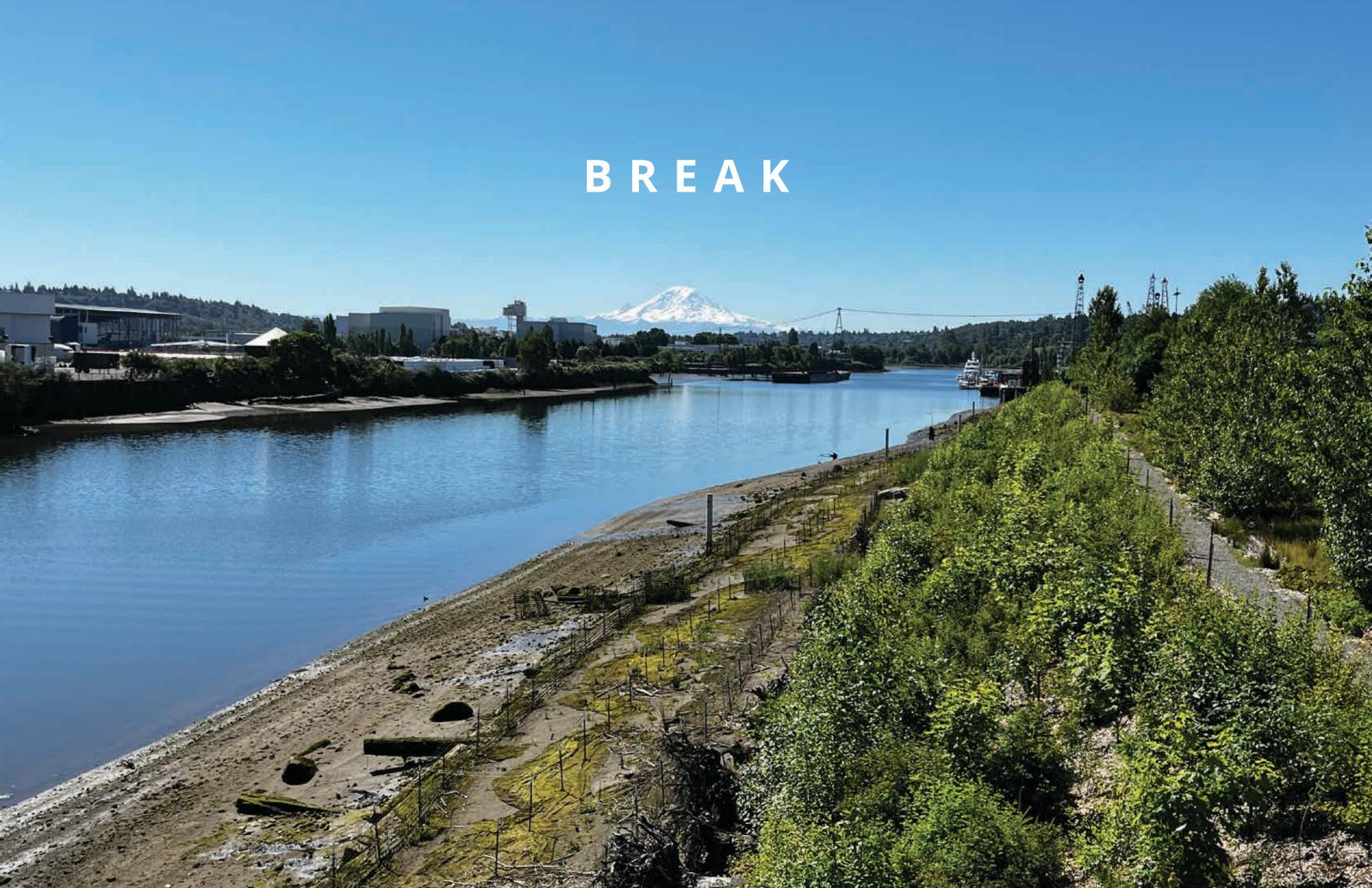


- STORMWATER FLOOD STORAGE
- PUBLIC OPEN SPACE
- RECREATION
- COOLING
- HABITAT + TREE CANOPY

Briefly share one question or one reflection about the alternatives.

Example communities throughout South Park and Georgetown (listed in no particular order):

- Residents
- Small and micro businesses
- Community groups
- Local tribes
- Industrial/maritime businesses
- Fish and wildlife
- Others?

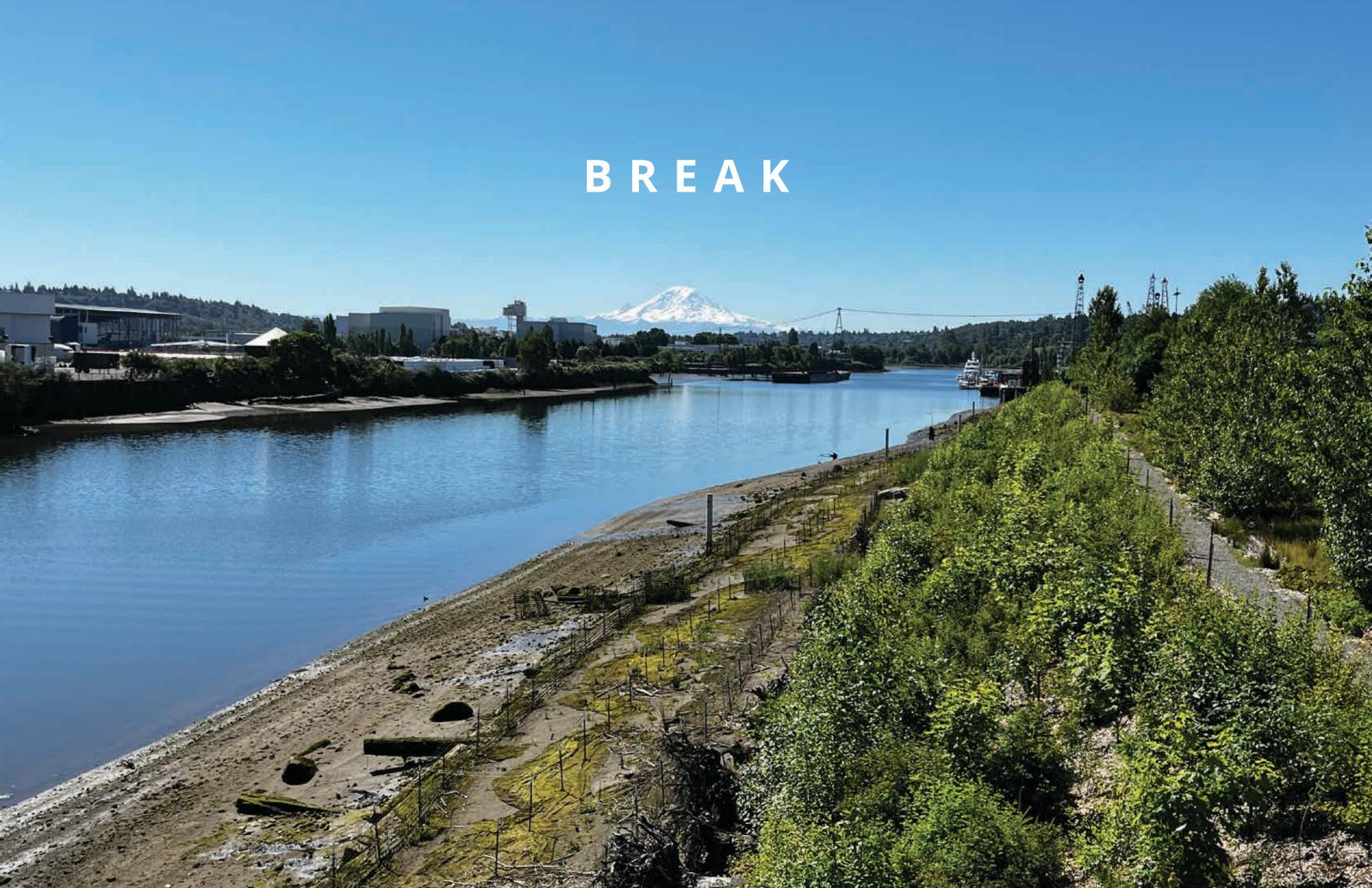


What would make this alternative better?

- How can the benefits better align with our Evaluation Criteria?
- Consider whether these benefits apply to residents (South Park or Georgetown), small businesses and community groups, Local Tribes, and/or maritime or other industrial businesses.

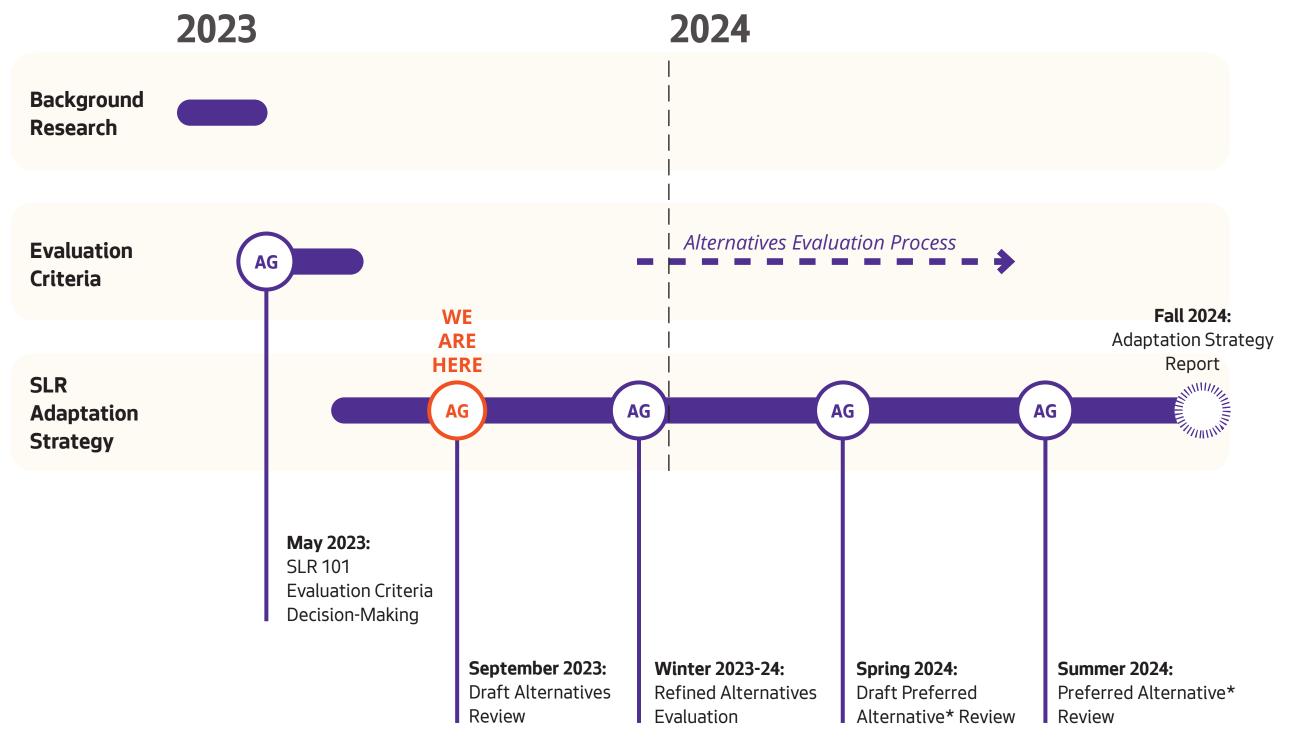
How does this alternative miss the mark on the draft Guiding Principles and evaluation criteria?

- How can we minimize any concerns you have about this alternative?
- Consider whether these concerns apply to residents (South Park or Georgetown), small businesses and community groups, Local Tribes, and/or maritime or other industrial businesses.





PROJECT TIMELINE



*The "Preferred" Alternative will reflect a shared vision of community and City based on our current understanding. It will be a starting point for continued analysis, reviews, and consultations.