Market Landing Park Expansion

Ad Hoc Committee Meeting 4
07 October, 2021

City of Newburyport, Massachusetts
Mayor Donna D. Holaday
Newburyport City Council
Department of Planning and Development

SASAKI

Agenda

PRESENTATION (30 min)

- Introduction and Design Review (2 min)
- Park and City Response to Sea Level Rise (10 min)
- Service and Access Diagrams (10 min)
- Additional Topics of Feedback (5 min)

MODERATED DISCUSSION (45 min)

NEXT STEPS (10 min)

Goals

- Understand how the park and city can prepare for Sea Level Rise (SLR) at Market Landing
- Review park circulation and access to address previous questions
- Confirm direction on additional points of feedback
- Discuss next steps for creating shovel-ready plans, including approval of the concept plan

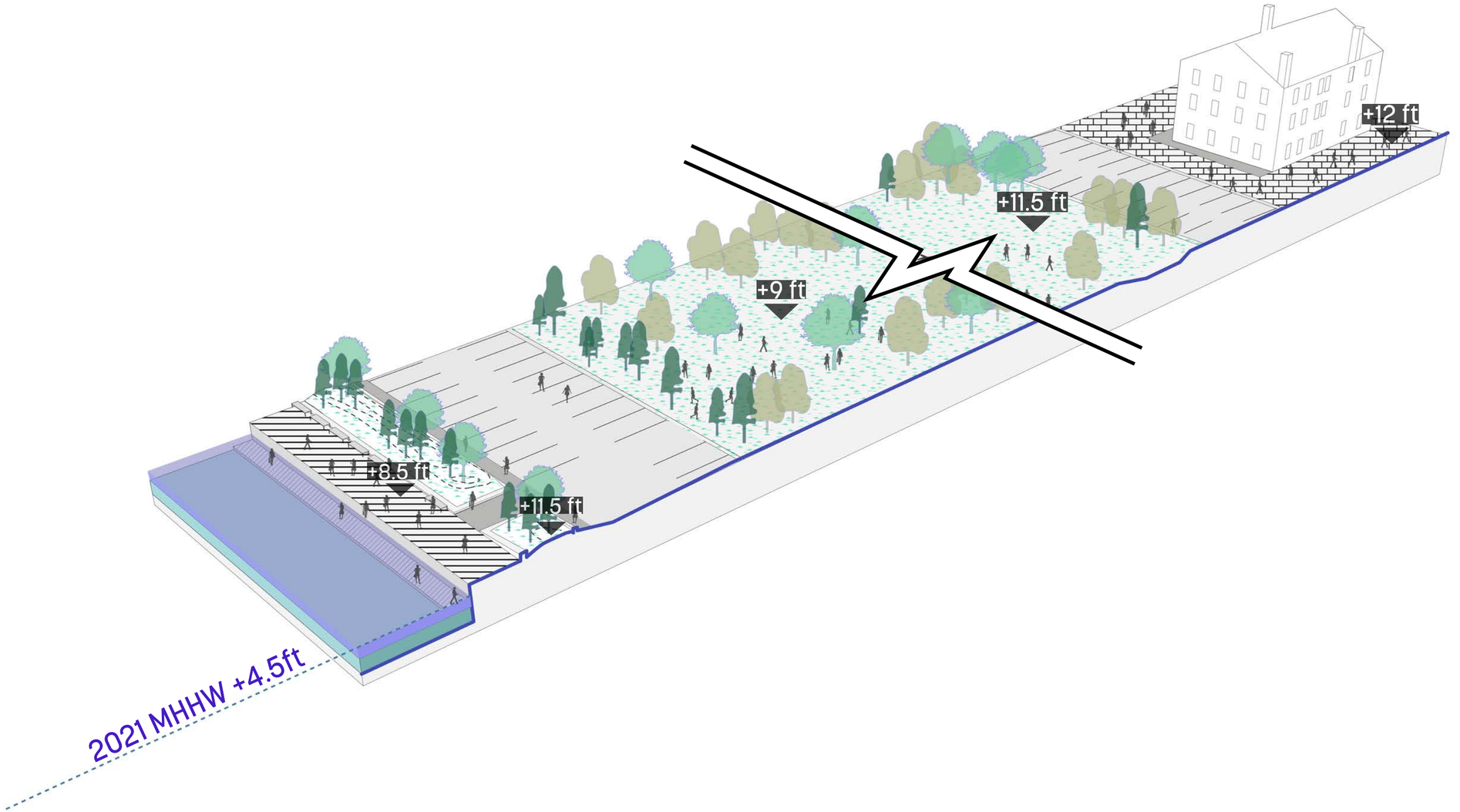
Refined Conceptual Plan

Park and City response to Sea Level Rise (SLR)

Tidal and storm scenarios on existing + future site
Potential improvements adjacent to park
Designing parks to withstand flooding

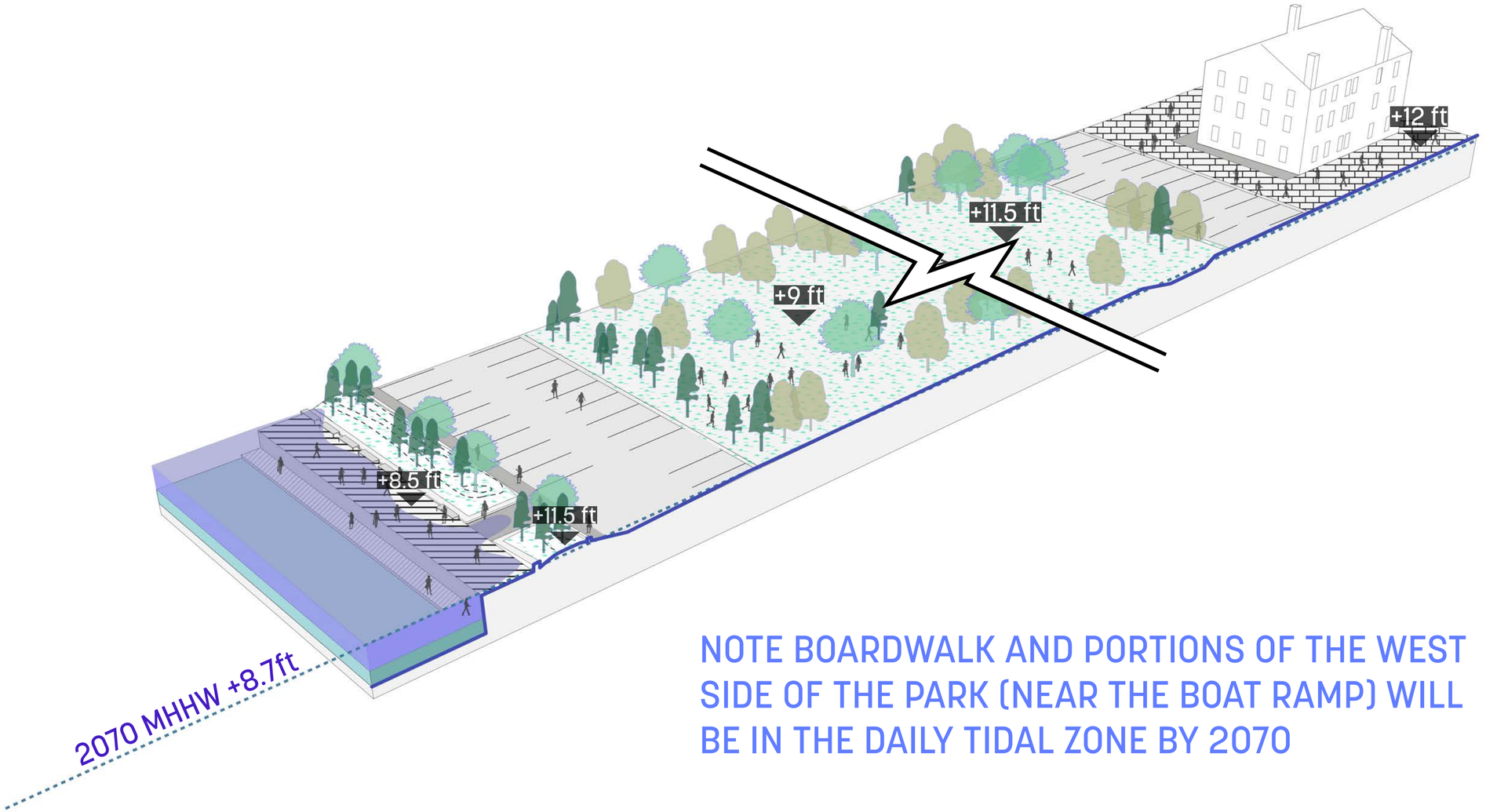
Today's High Tide (2021)

EXISTING PARK/PARKING CONDITION AT EAST



2070 Projected High Tide

EXISTING PARK/PARKING CONDITION AT EAST



NOTE BOARDWALK AND PORTIONS OF THE WEST SIDE OF THE PARK (NEAR THE BOAT RAMP) WILL BE IN THE DAILY TIDAL ZONE BY 2070

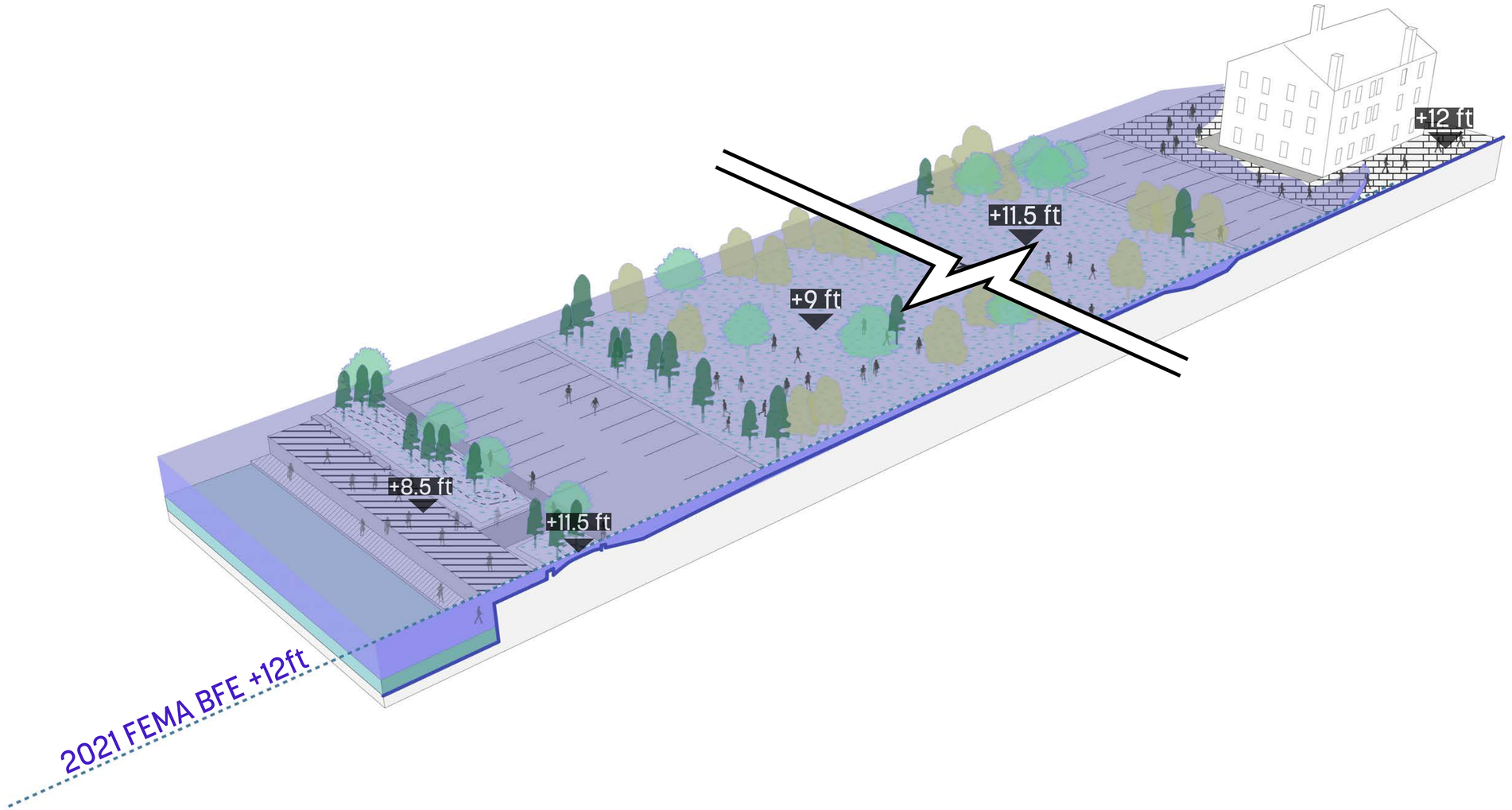
Existing Site Sea Level Rise Tidal Zone Scenarios

- Current Mean High Water
- 1 ft Sea Level Rise (~2030)
- 2 ft Sea Level Rise (~2050)
- 3 ft Sea Level Rise (~2070)
- 4 ft Sea Level Rise (~2080)
- 5 ft Sea Level Rise (~2090)
- 6 ft Sea Level Rise (~2100)

Source: MasGIS NOAA Coastal Servces Center Seal Level Rise Data: 1-6 foot Sea Level Rise Inundation Extent

Today's Storm Flooding (2021)

EXISTING PARK/PARKING CONDITION AT EAST



2070 Projected Storm Flooding

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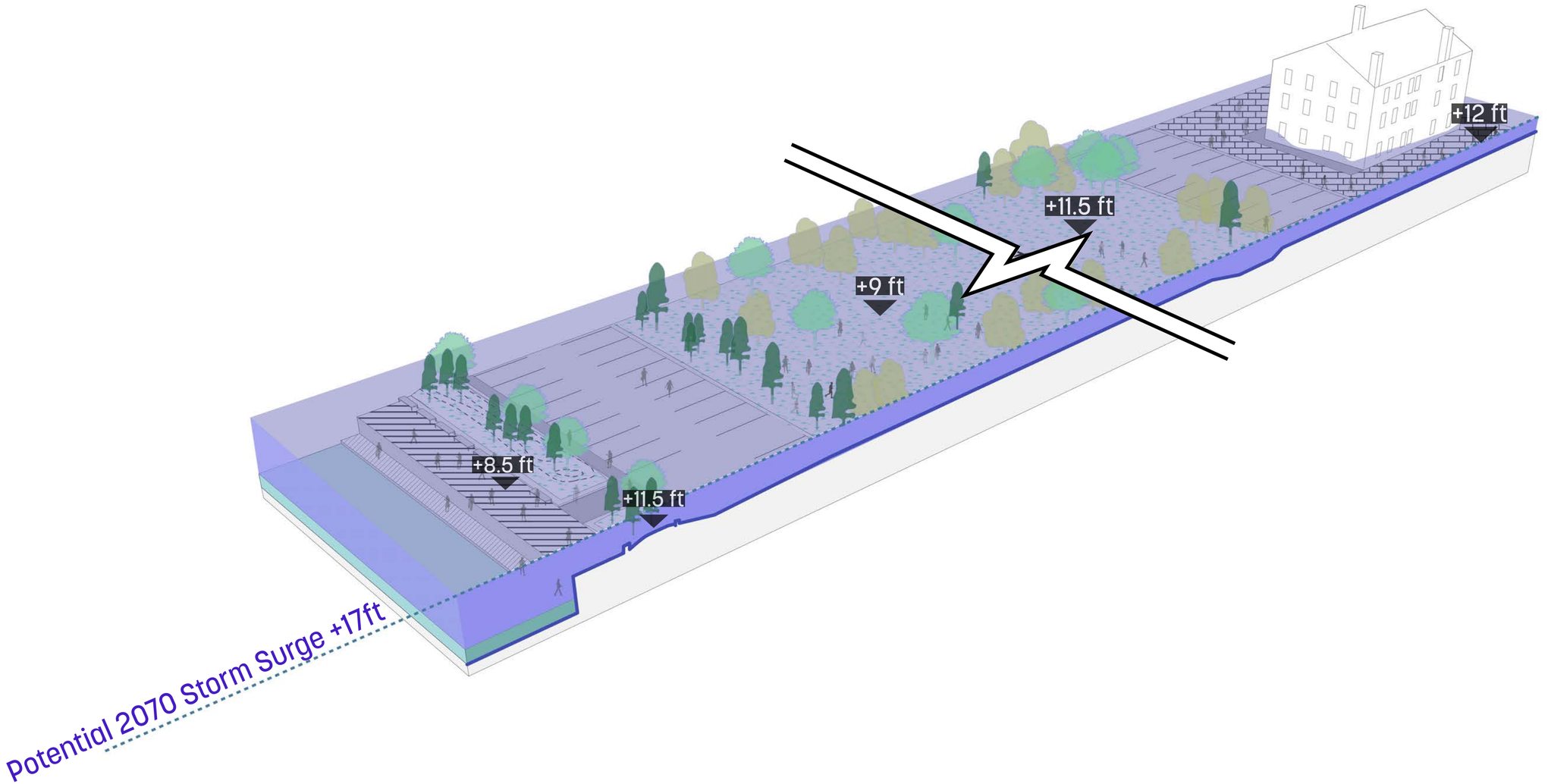


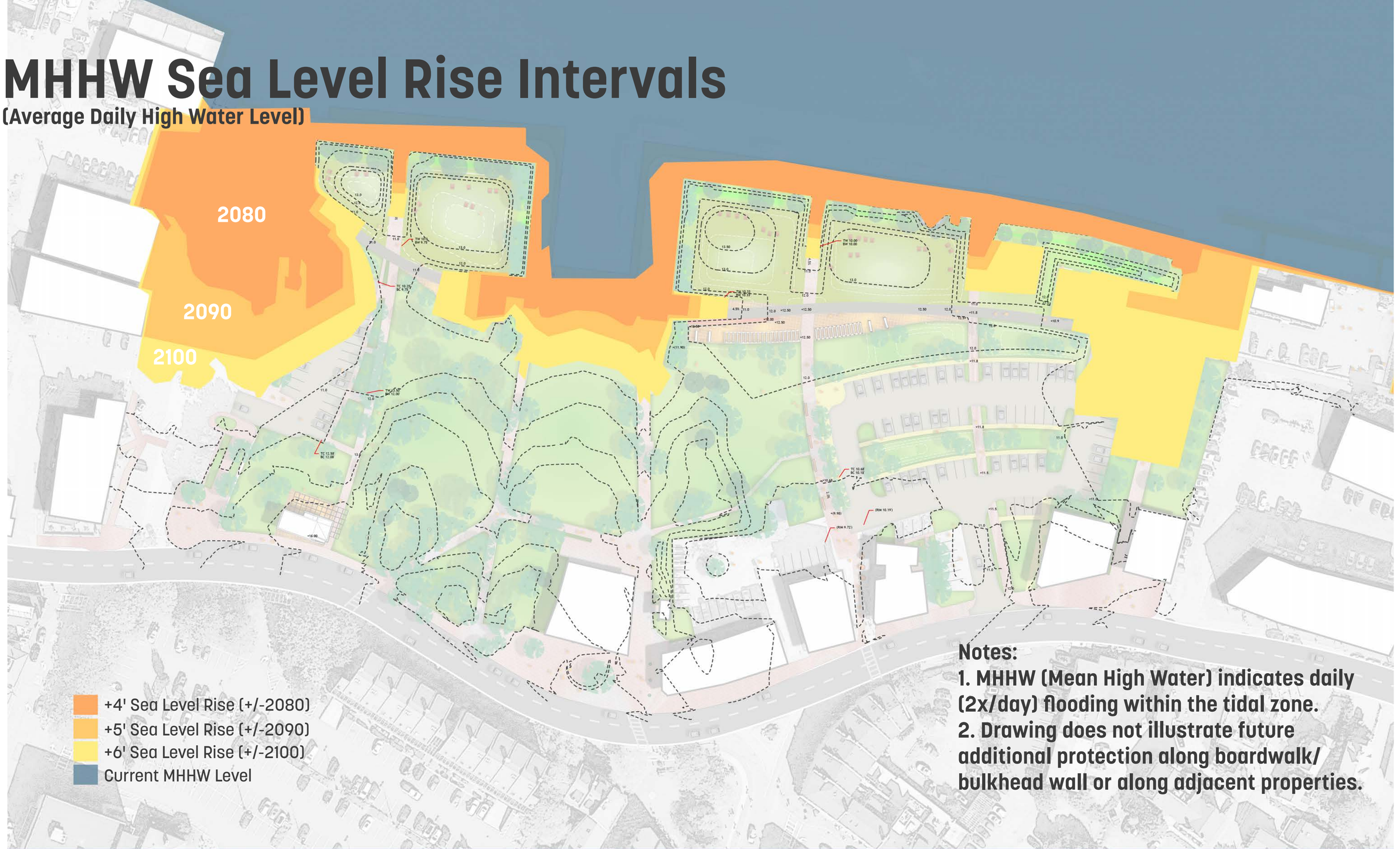
Existing Site Sea Level Rise Storm Scenarios

The figure uses the Massachusetts Coast Flood Risk Model (MC-FRM)4 results to depict the estimated depths and extent of the 1% annual chance flood event in the year 2070, assuming 4.2 feet of SLR.

Refined Conceptual Plan

MHHW Sea Level Rise Intervals

(Average Daily High Water Level)

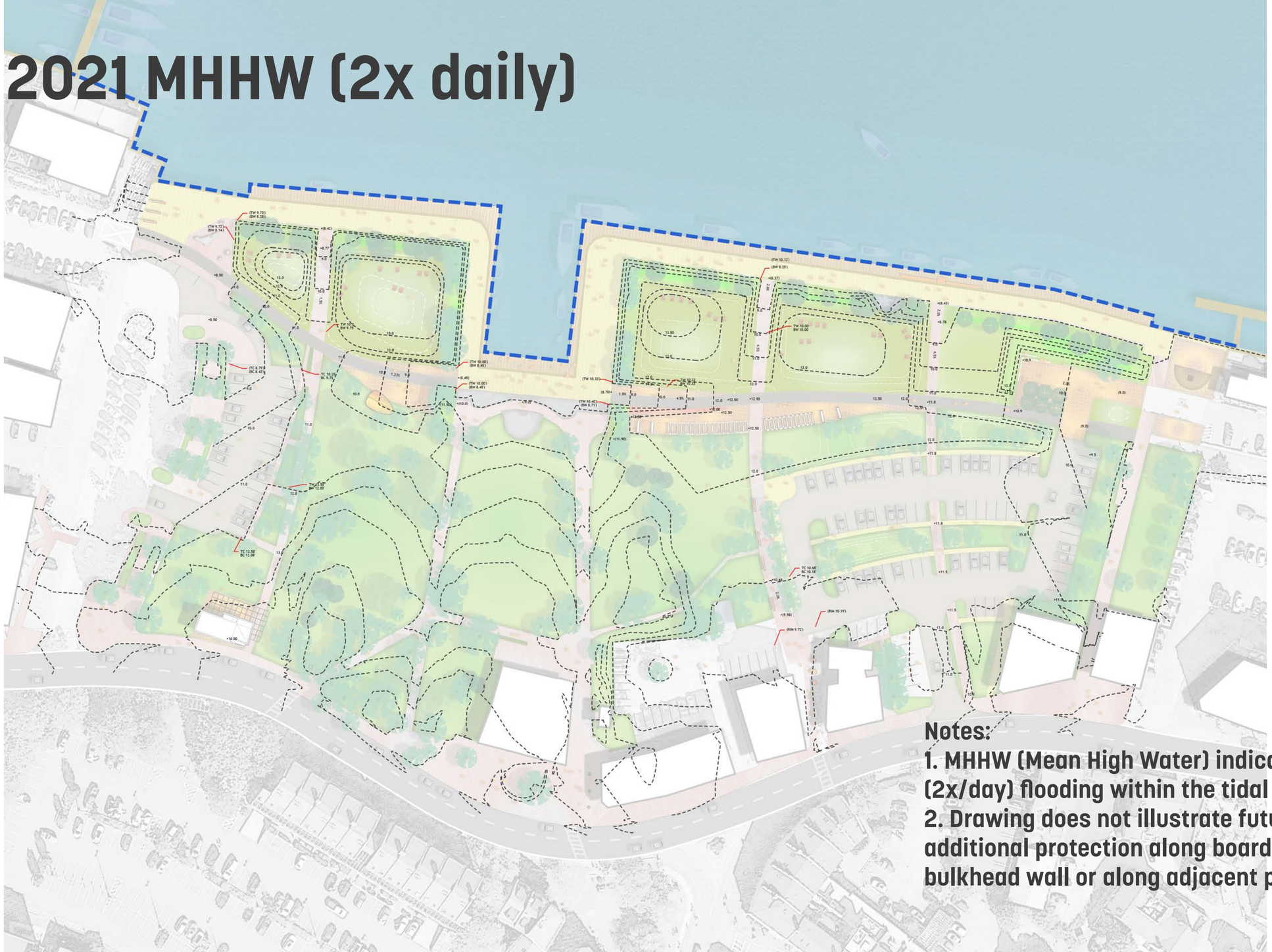


+4' Sea Level Rise (+/-2080)
+5' Sea Level Rise (+/-2090)
+6' Sea Level Rise (+/-2100)
Current MHHW Level

Notes:

1. MHHW (Mean High Water) indicates daily (2x/day) flooding within the tidal zone.
2. Drawing does not illustrate future additional protection along boardwalk/ bulkhead wall or along adjacent properties.

+4.5' 2021 MHHW (2x daily)



Notes:
1. MHHW (Mean High Water) indicates daily (2x/day) flooding within the tidal zone.
2. Drawing does not illustrate future additional protection along boardwalk/ bulkhead wall or along adjacent properties.

+8.7 HAT 2050 (2x/year)
MHHW 2070 (2x/day)

Notes:
1. Highest astronomical tide (HAT) occurs approximately 2x per year. Mean High Higher Water (MHHW) indicates daily flooding within the tidal zone.
2. Drawing does not illustrate future additional protection along boardwalk/ bulkhead wall or along adjacent properties.

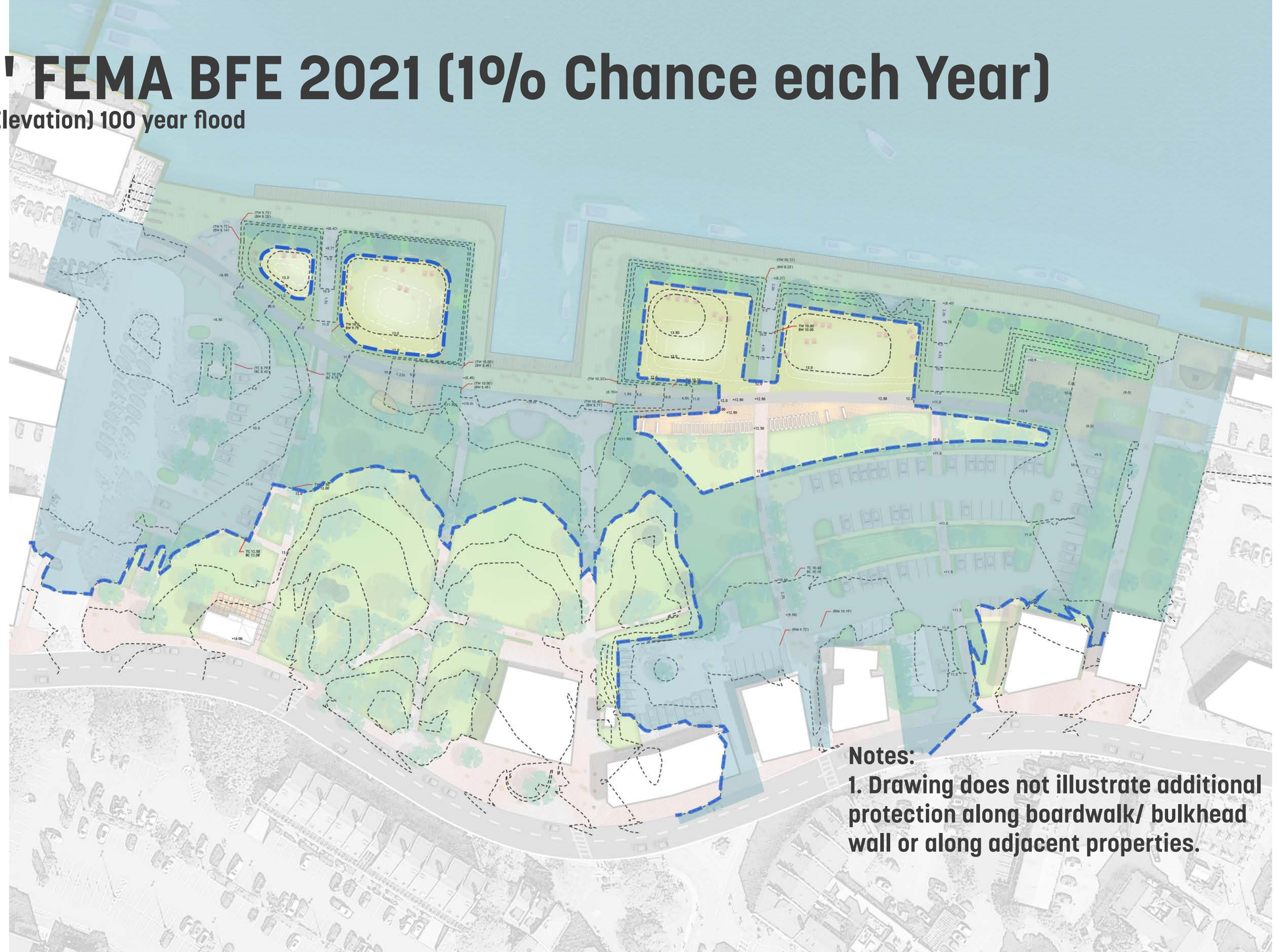
+10.5' HAT 2070 (2x/year)

Notes:

1. Highest astronomical tide (HAT) occurs approximately 2x per year.
2. Drawing does not illustrate future additional protection along boardwalk/ bulkhead wall or along adjacent properties.

+12.0' FEMA BFE 2021 (1% Chance each Year)

(Base Flood Elevation) 100 year flood



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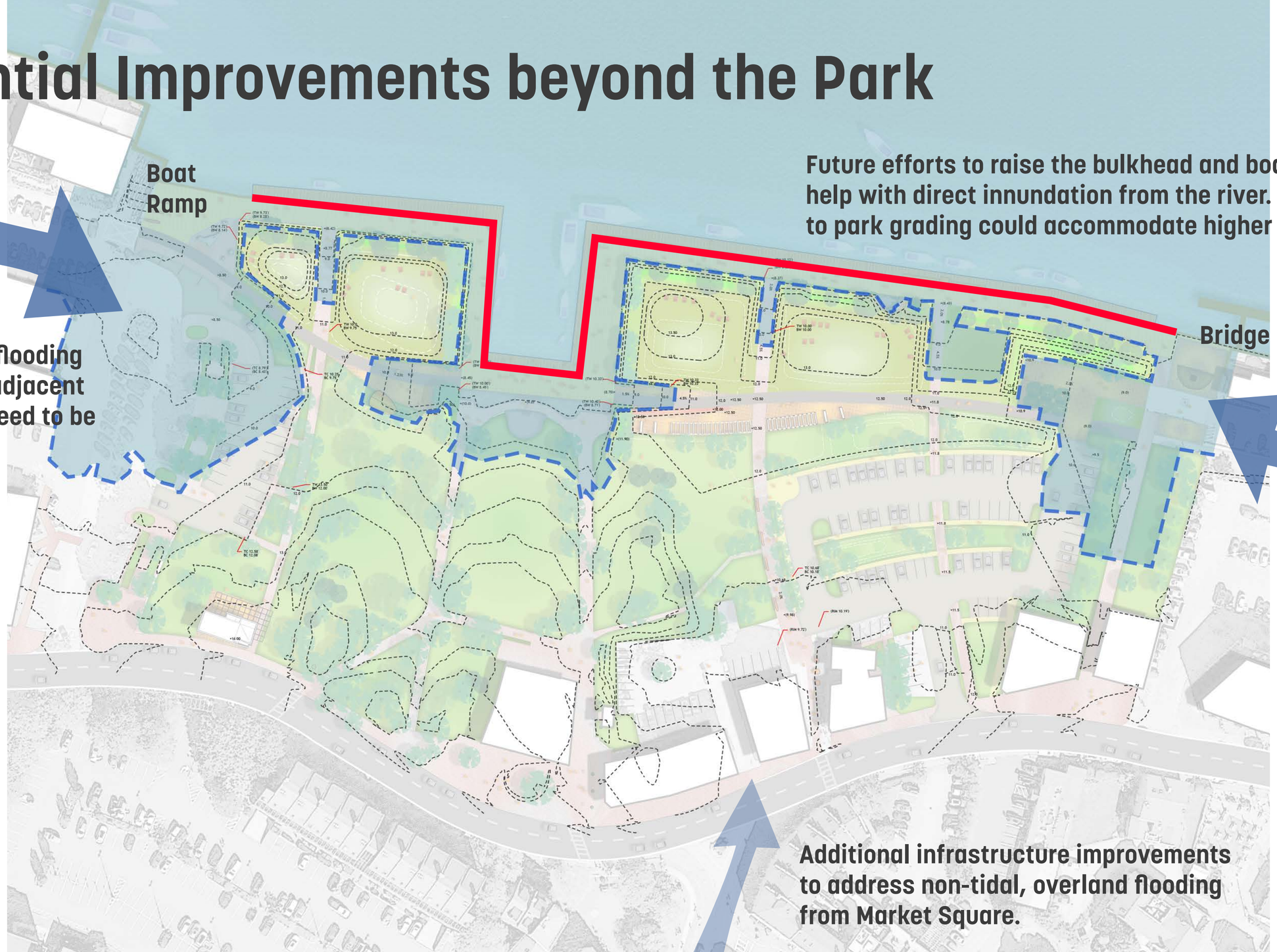
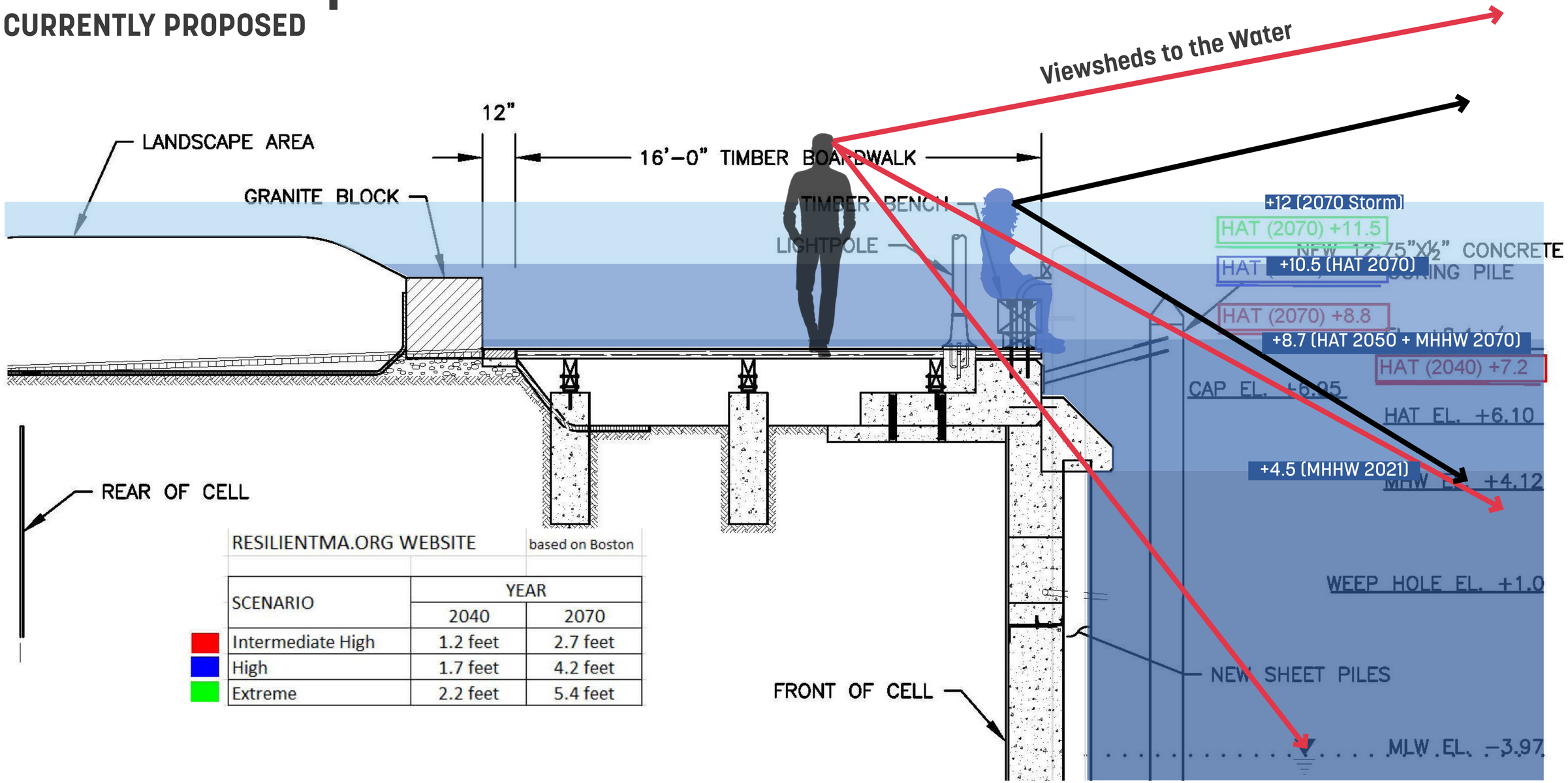
Potential Improvements beyond the Park



Bulkhead Improvements

CURRENTLY PROPOSED

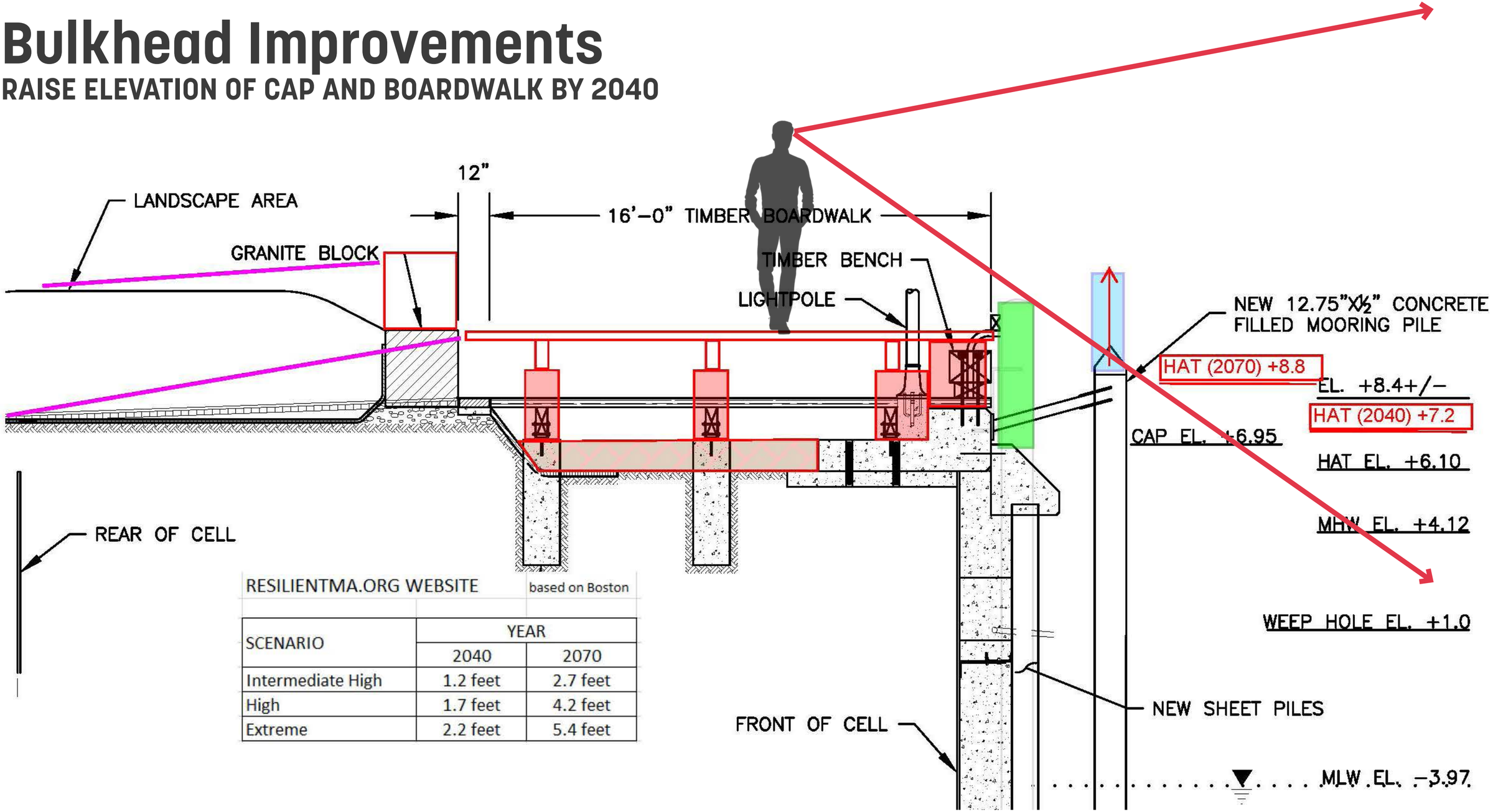


RESILIENTMA.ORG WEBSITE based on Boston

SCENARIO	YEAR	
	2040	2070
Intermediate High	1.2 feet	2.7 feet
High	1.7 feet	4.2 feet
Extreme	2.2 feet	5.4 feet

Bulkhead Improvements

RAISE ELEVATION OF CAP AND BOARDWALK BY 2040



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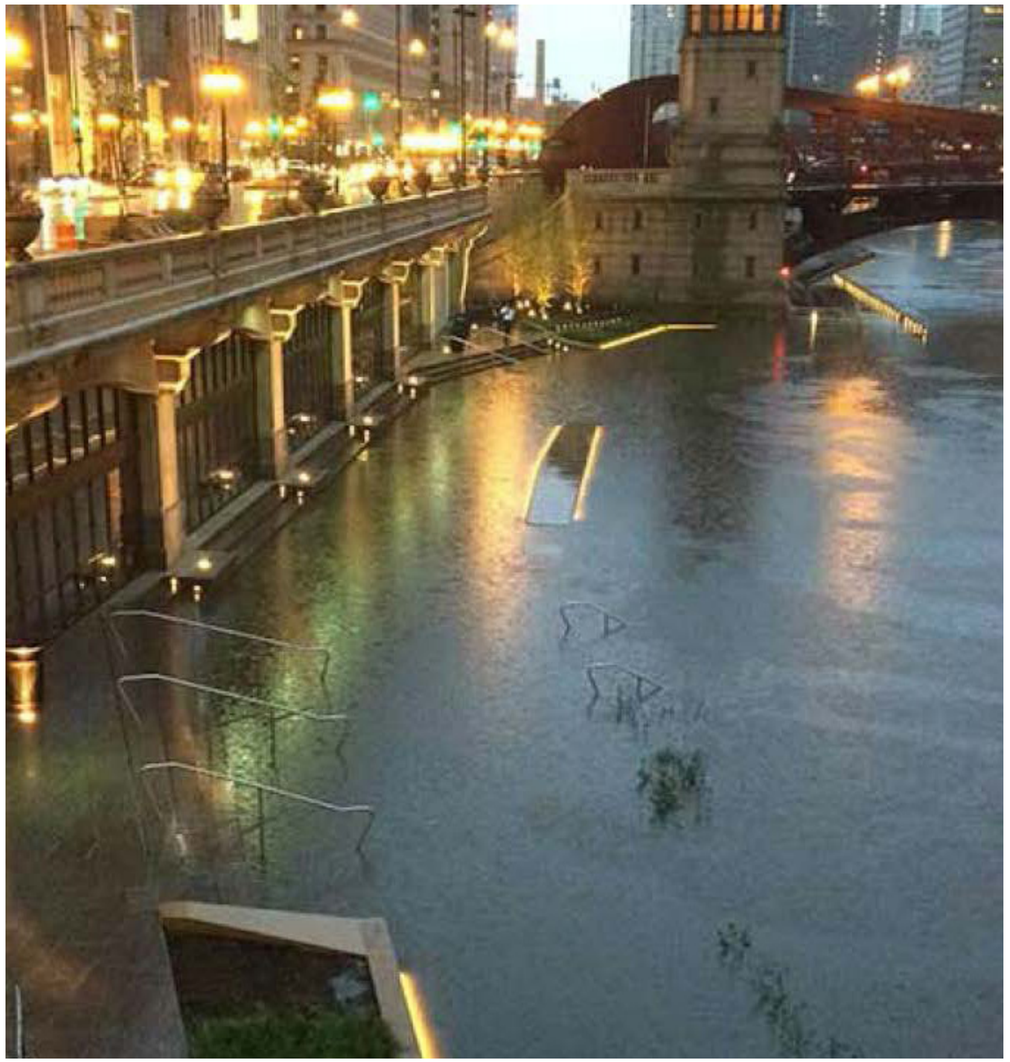
Designing for Flood Resilience

Case Study: Chicago Riverwalk



Record Flood - 2015
Cleaned and re-opened within 12 hours

Key Design Moves: Infrastructure held out of floodplain.
Durable materials that can easily be cleaned.

Designing for Flood Resilience

Case Study: Smale Riverfront Park, Cincinnati OH

Normal Water Pool

Record Flood - February 2018
Cleaned and re-opened within 1 week

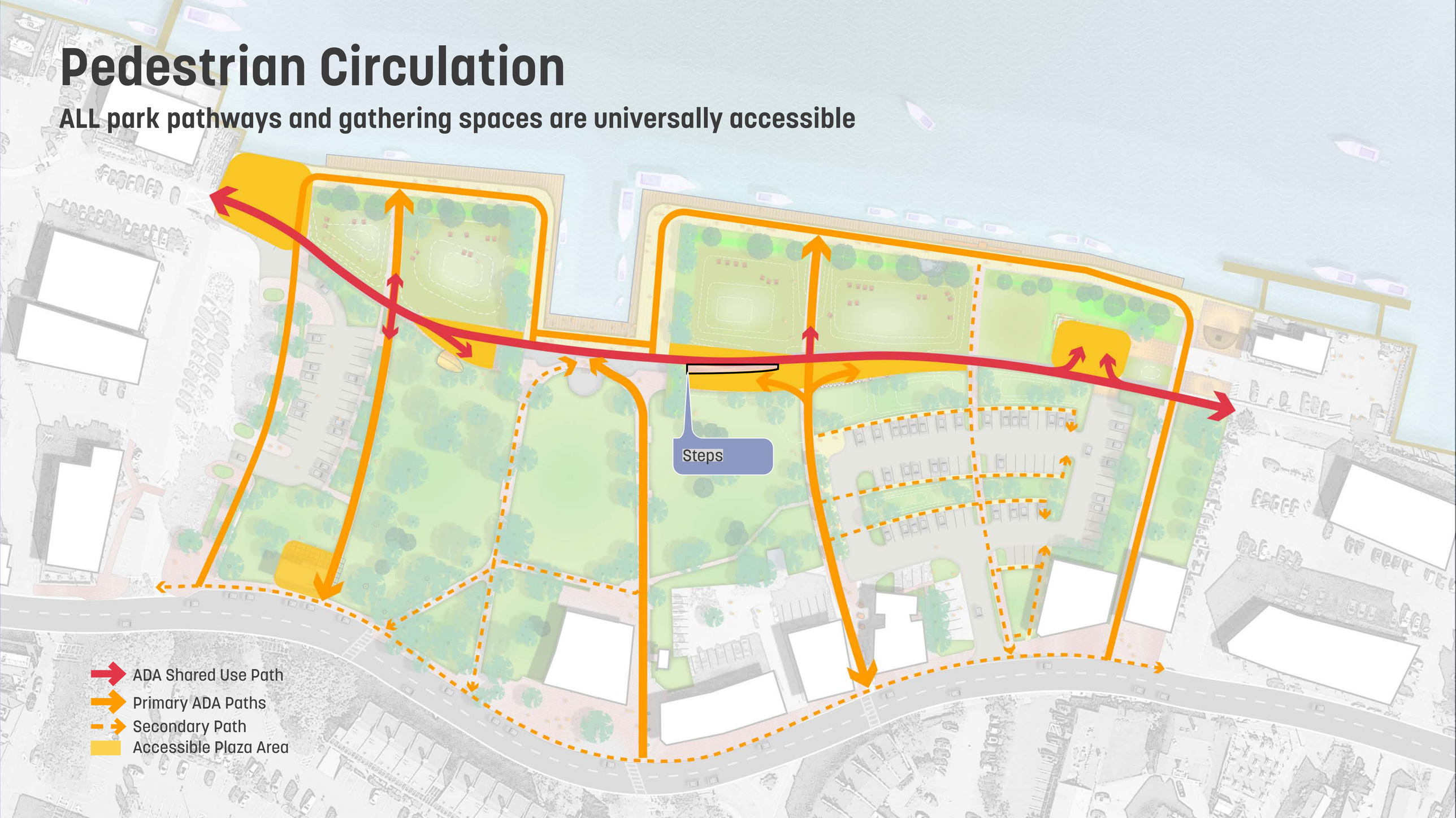
Key Design Moves: Infrastructure held out of floodplain. Durable materials that can easily be cleaned. Protective barriers to prevent flotsame from damaging structures.

Service, Commercial Fishing and ADA Access

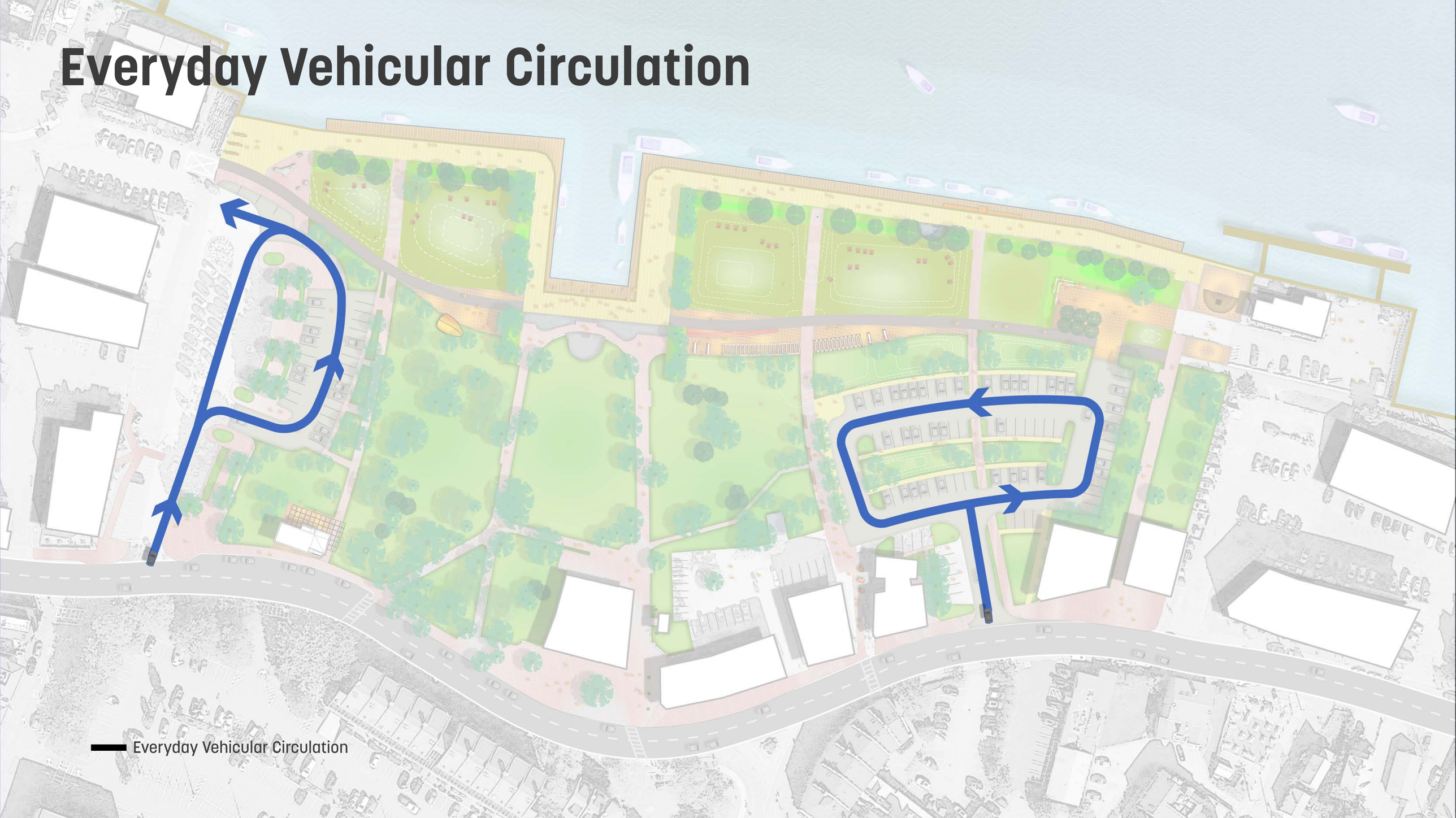
Circulation and access diagrams

Pedestrian Circulation

ALL park pathways and gathering spaces are universally accessible

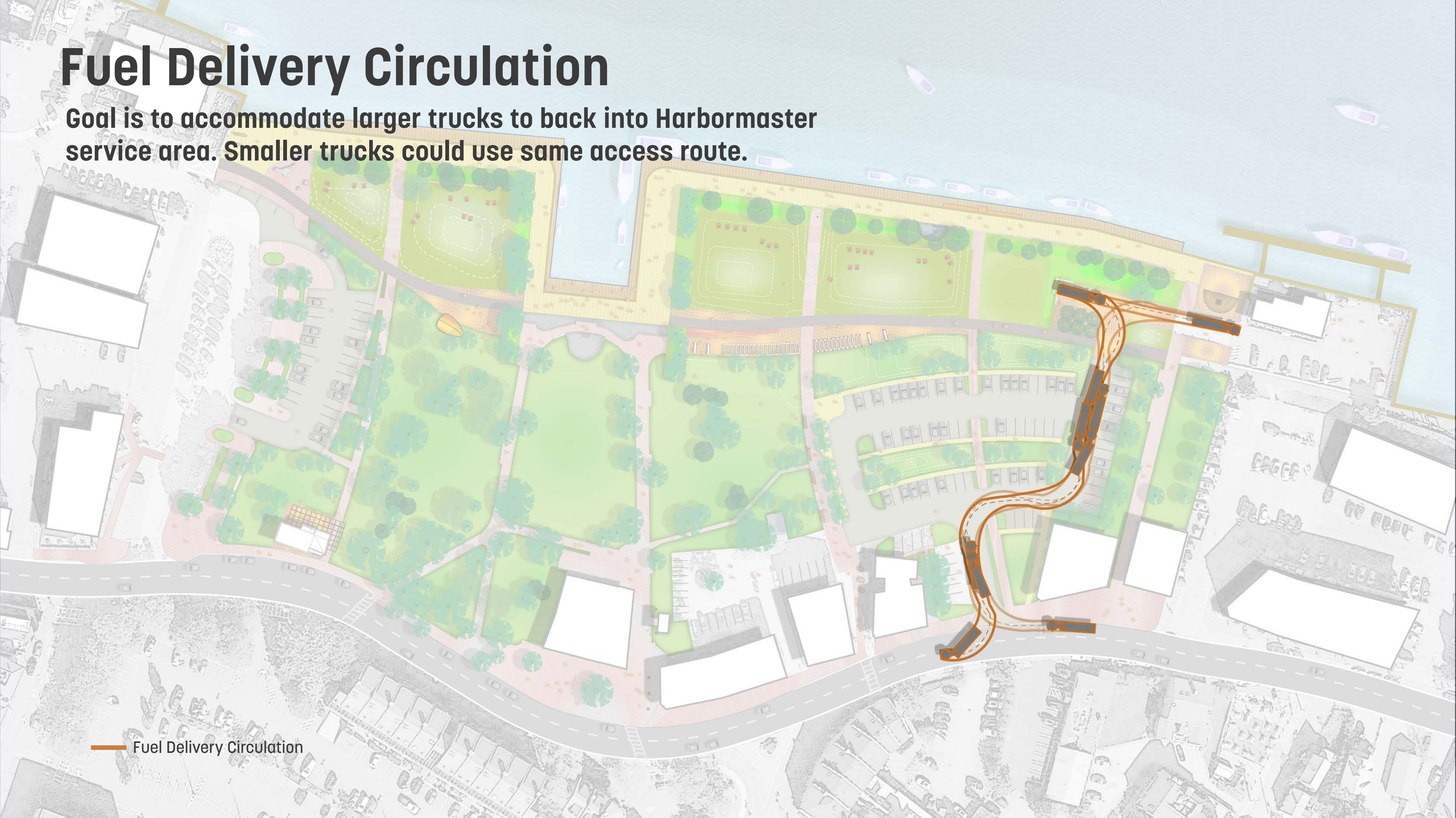


Everyday Vehicular Circulation



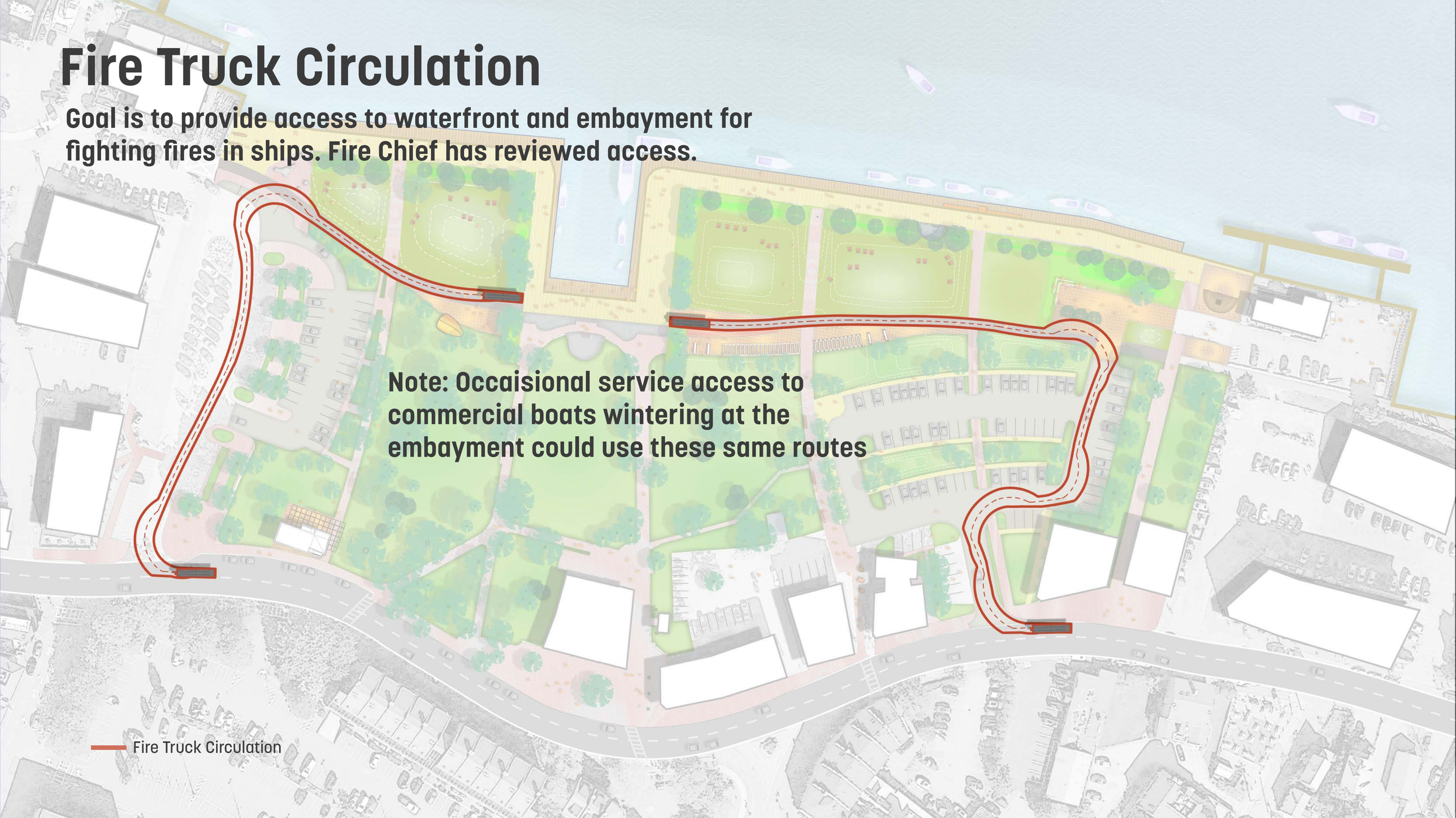
Fuel Delivery Circulation

Goal is to accommodate larger trucks to back into Harbormaster service area. Smaller trucks could use same access route.



Fire Truck Circulation

Goal is to provide access to waterfront and embayment for fighting fires in ships. Fire Chief has reviewed access.



Shared Use Pathway

Doubles as fire access. Ten foot paved section rated for vehicular loading, two foot shoulders on either side, stabilized for vehicular loading.

Additional Detail Topics

Addressing additional comments raised during the refined concept feedback process

Public Comments Summary

24

Comments recieved about the refined plan through the online comment portal.

50%

Positive or neutral.

The other 50% were expressing specific questions/critique about elements of the design

Keywords Used

visionary

fishing

SUPPORT

pervious

THOUGHTFUL

parking

TREES

excited

solar

BIKES

safe

pedestrians

Additional Topic Themes:

BIKE RACKS:
Some comments requested additional bike racks. This can be accommodated within the plan and will be studied in the next design phase.

SUSTAINABILITY + OPERATIONS:
Some comments about including more sustainable features within the architecture, and considering intergrating "smart city", solar elements. Design team to continue exploration.

SHARED USE PATH ALIGNMENT:
Some comments (4) questioned bringing the bike path to the head of the embayment but are balanced by many other comments expressing support for the alignment. It is assumed that the Ad-Hoc Committee's resolution about this being the best location has not changed.

RESTROOM/VISITOR CENTER STYLE:
Some comments about the architectural style of the restroom building. Design team to continue exploration of materials, character and facade detailing.

Annual Maintenance Costs:

LOCAL PRECEDENT:

WFT reports a range from $30K/yr to $85K/yr for existing operations at the park.

This project roughly doubles the existing acreage of parkland so it could be assumed the annual budget would double.

NATIONAL PRECEDENTS:

From other projects Sasaki understands cost/acre of park maintenance to be roughly
$9,800/acre for lawn
$7,622/acre for hardscape
$15,000/acre for ornamental planting beds

These figures pencil out to around $30K/year for the new areas of Market Landing Park.

RESTROOM FACILITY:

As the scope and scale of this existing element will not change, it is assumed that there is no additional cost to the city related to maintenance of this building.

Market Landing Park Design Process: Next Steps

CURRENT WORK
OCTOBER 2021
COMPLETION

FUTURE WORK

We are here!

SITE INVENTORY
(TASKS 1,2 & 3)
APRIL-MAY 2021

- Inventory existing documents
- Conduct site survey
- Gather stakeholder input

Ad-Hoc Committee Meeting (Public)

LISTEN

CONCEPT + SCHEMATIC DESIGN
(TASKS 4,5 & 6)
JUNE - SEPT 2021

Concept Alternatives

1
2
3

Refined Conceptual Plan

Ad-Hoc Committee Meeting (Public)

Online Survey

TEST CONCEPTUAL IDEAS

DESIGN DOCUMENTATION
(TASKS 7,8 & 9)
2021-2022

Design Development

REFINED PLAN (SOME DETAIL)

Construction Documentation

ENOUGH DETAIL TO BUILD THE PROJECT

Ad-Hoc Committee Meeting (Public)

CONFIRM REFINED PLAN

BIDDING
WINTER 2023

CONSTRUCTION
SPRING 2023 THROUGH 2024

Thank You

Q+A