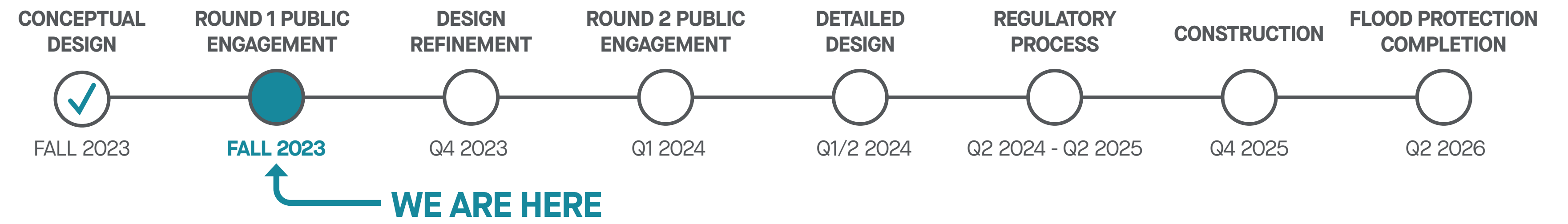


WELCOME

The dike located along the Village's waterfront currently provides flood protection for residents and visitors. This dike was constructed following the 1948 flood at a crest elevation that does not meet current design standards. The Village is undertaking upgrades to the dike to increase protection against inundation from high lake levels. Upgrades will include increasing the dike crest elevation and upgrading the wastewater treatment plant road to better withstand a large flood while allowing for access during emergency situations.

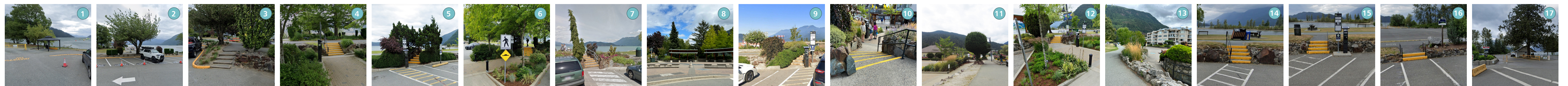
We are looking for feedback on several concepts that could be feasible to provide adequate flood protection for the Village while seamlessly integrating into the adjacent park, commercial and residential surroundings.



PROJECT OBJECTIVES

- Flood-Ready** Protect the Village of Harrison Hot Springs from future flood events.
- Accessible** Enhance the accessibility and safety of access points to the park.
- Functional** Maintain the park's functionality as a space for recreation, play, gathering and community events.
- Flexible & Adaptable** Allow for future infrastructure upgrades to meet changing climate conditions.
- Placemaking** Preserve and enhance the character of the site by integrating new flood protection infrastructure into the existing waterfront park.
- Sustainable** Minimize site disturbance, including the removal of mature trees and the amount of site re-grading.

EXISTING SITE CONDITIONS

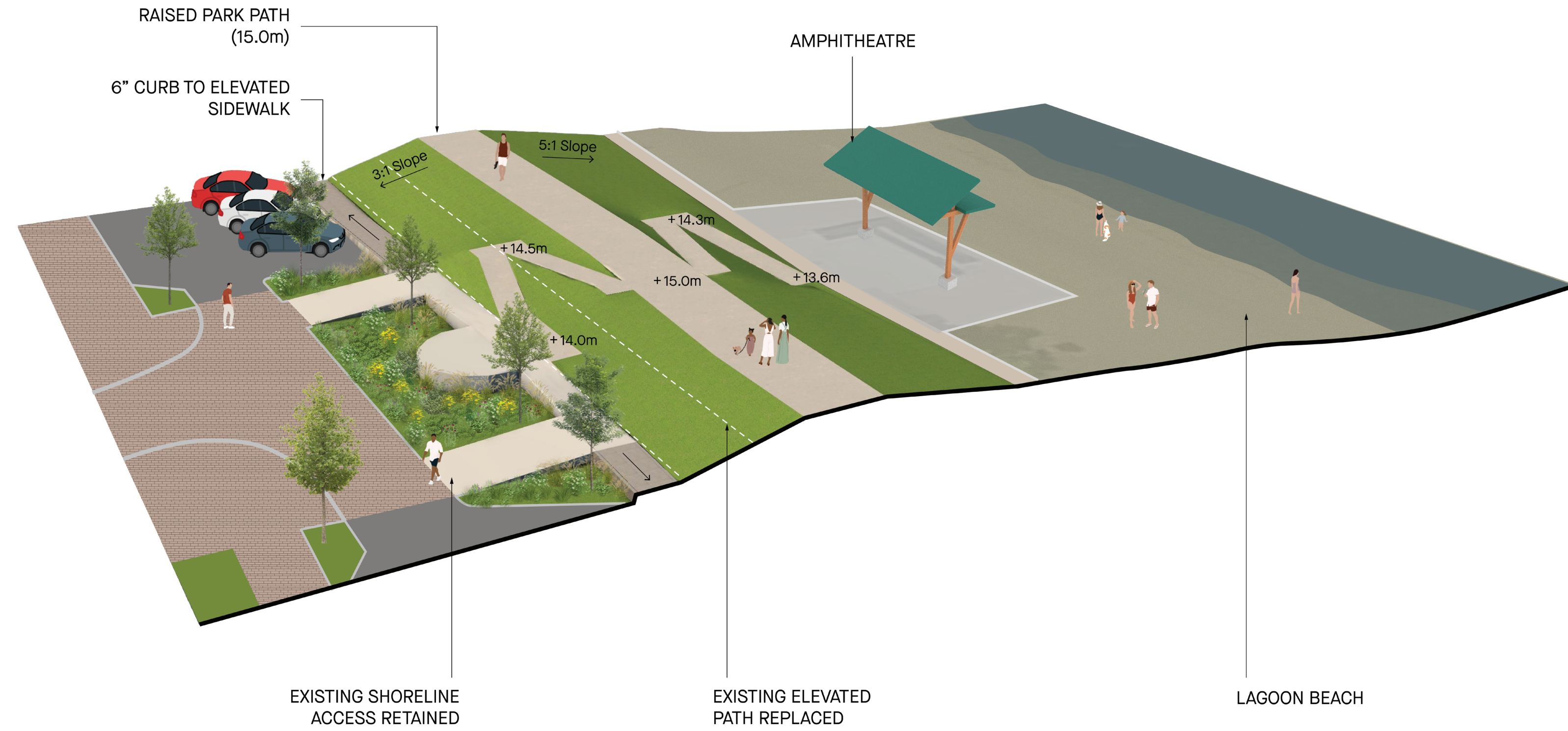


HARRISON HOT SPRINGS WATERFRONT INFRASTRUCTURE UPGRADES PUBLIC ENGAGEMENT

December 2023

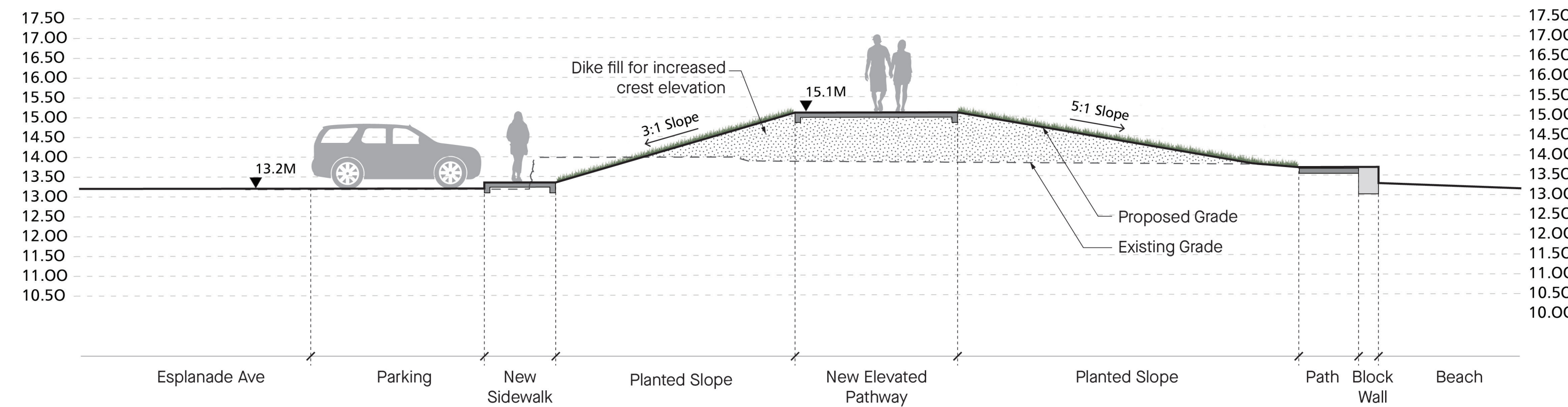
ZONES 4 & 5: CONCEPT DESIGN 1

Earthfill Dike



STUDY SITE IN ZONE 5

Looking West



SECTION A

Looking West

EARTHFILL DIKE PRECEDENTS



Banks of the Saône
Rochetaillée, France



Banks of the Saône
Rochetaillée, France



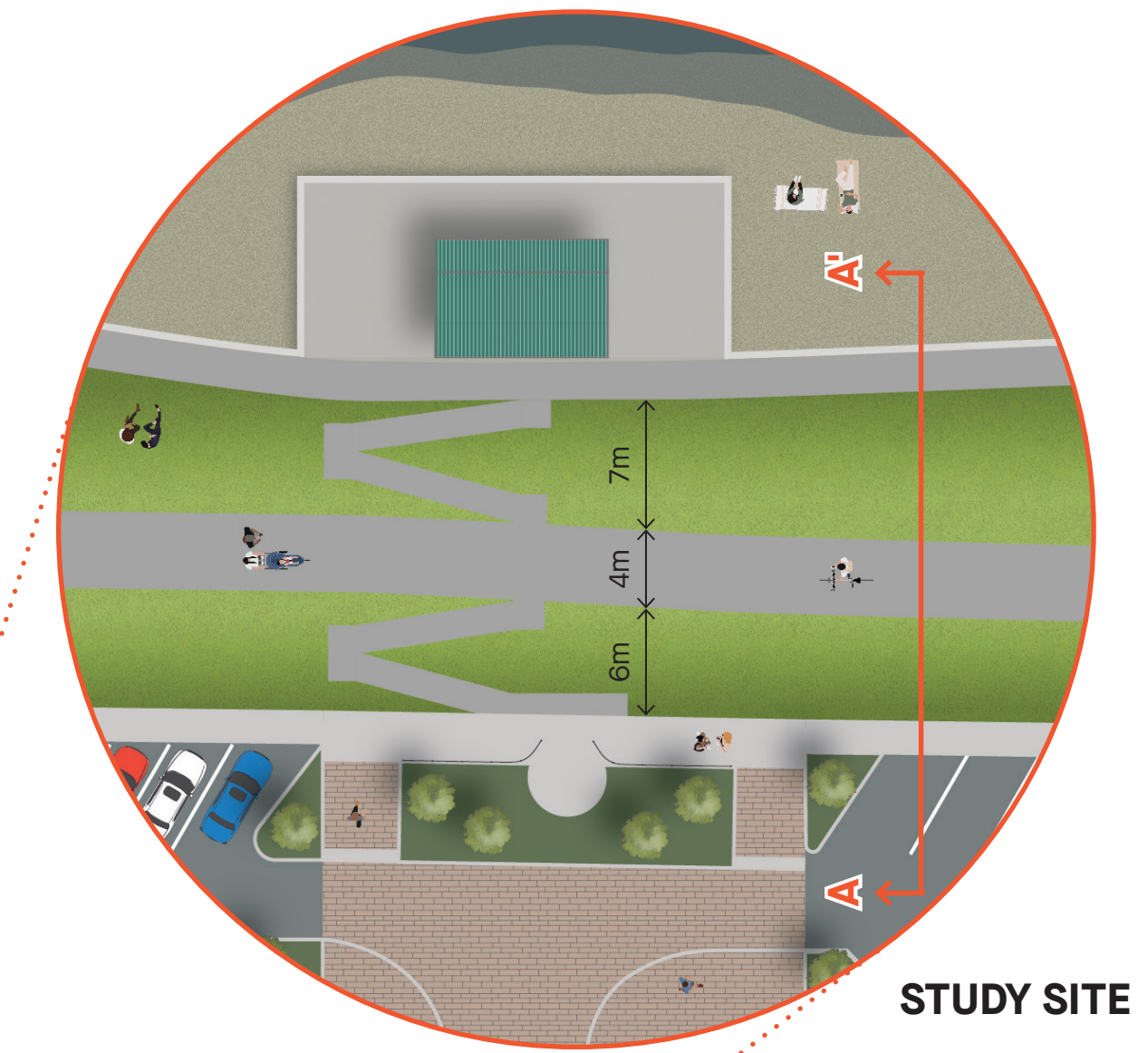
Earthfill dike as flood protection
Netherlands



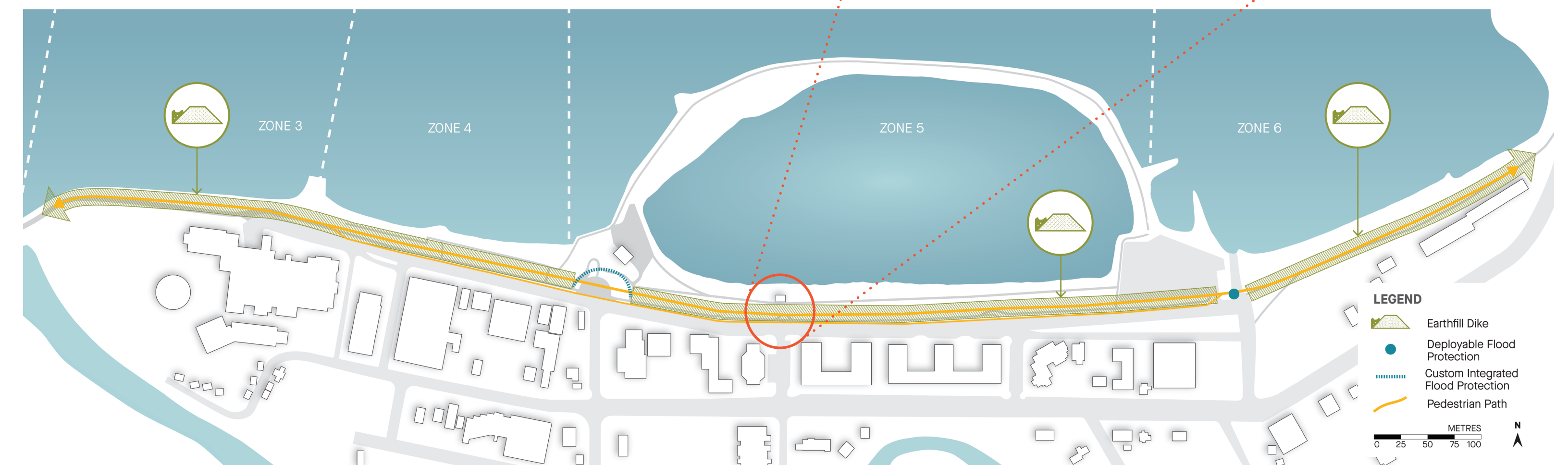
Earthfill dike as flood protection
Netherlands

KEY FEATURES & CONSIDERATIONS

- Dike designed to elevation for current day standards
- Dike has a 3:1 side slope down to the parking lot and a 5:1 side slope down to Lagoon Beach
- 4m wide path on top of dike, placed over the existing path
- Ramps over dike have a 5% slope on the parking lot side and an 8% slope on the beach side
- Deployable flood protection at key locations
- 1.8m wide sidewalk at parking with 6" curb ramping up to existing access points
- Significant tree removal required due to large footprint of dike



STUDY SITE



PRELIMINARY CONCEPT DIAGRAM

HARRISON HOT SPRINGS

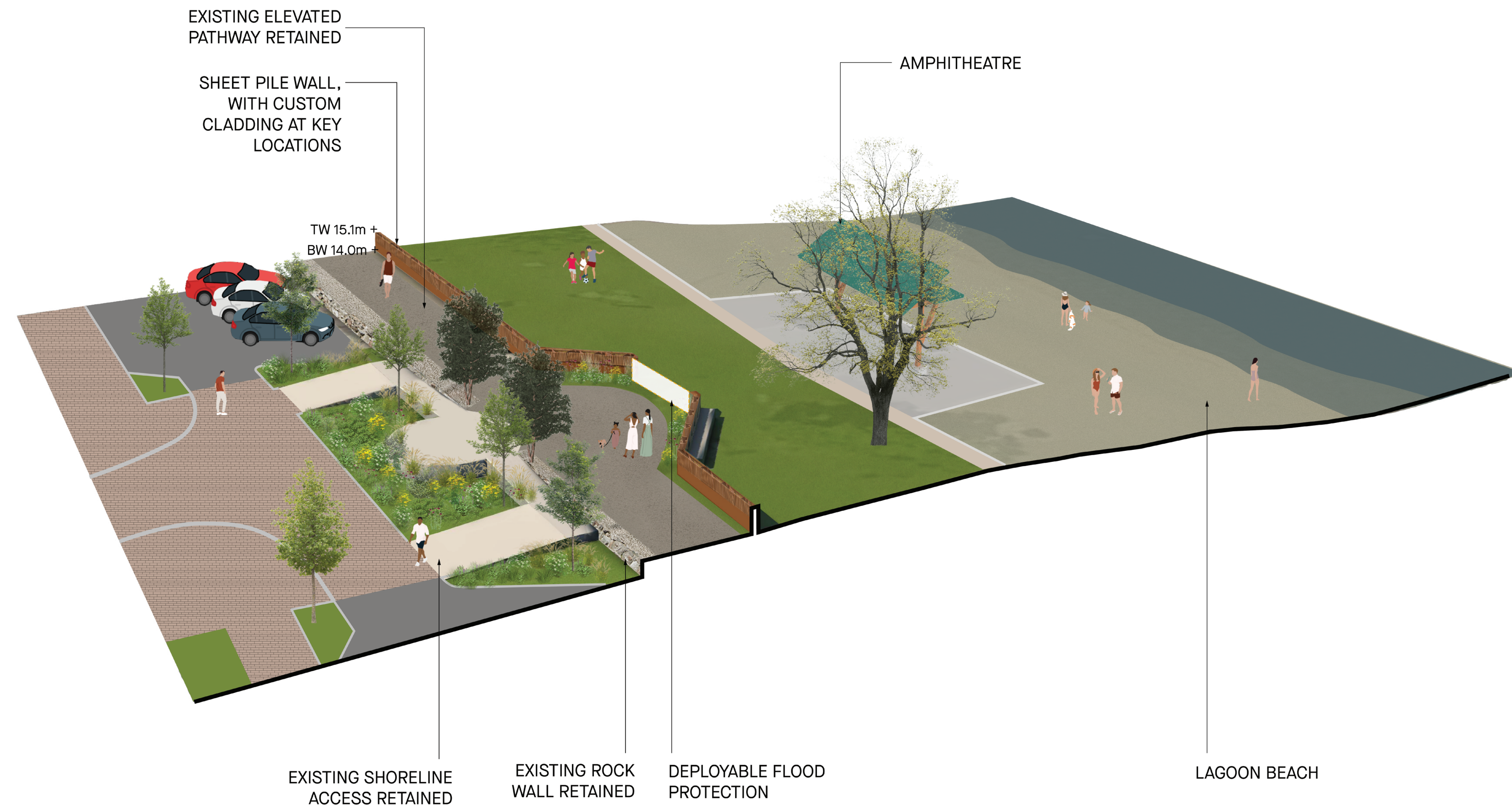
WATERFRONT INFRASTRUCTURE UPGRADES PUBLIC ENGAGEMENT

December 2023



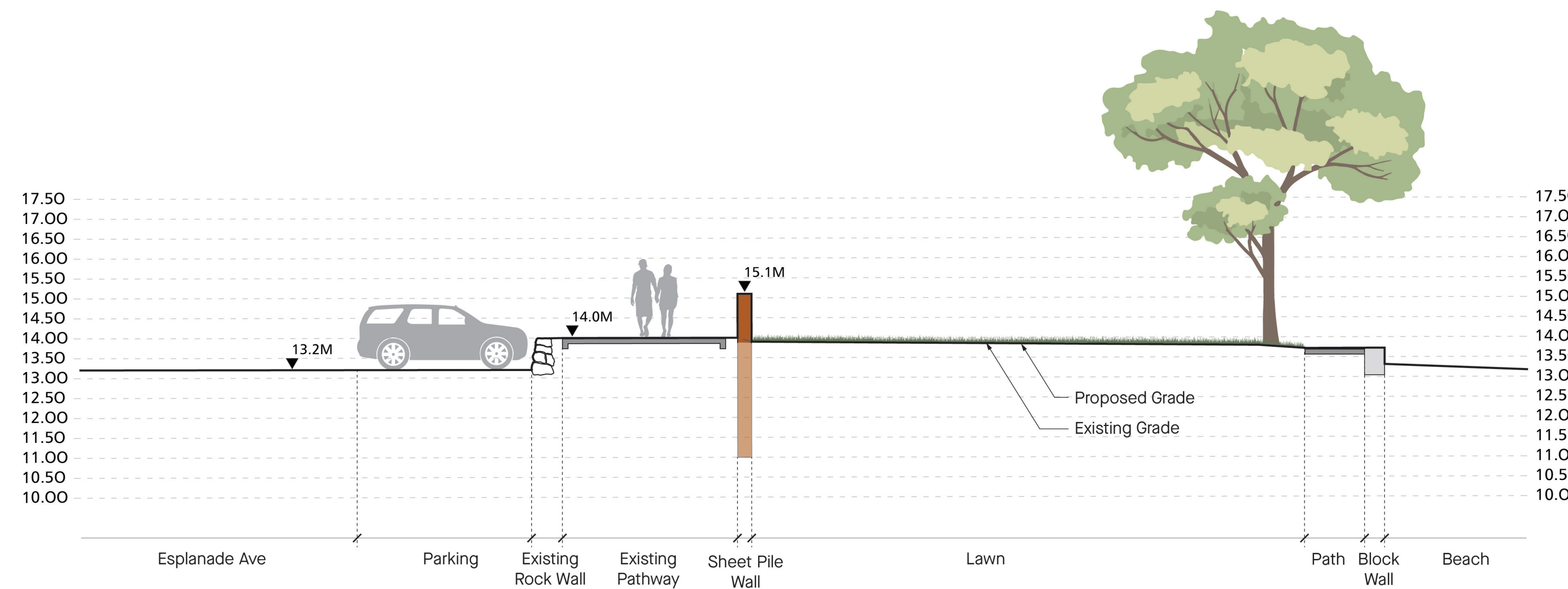
ZONES 4 & 5: CONCEPT DESIGN 2

Flood Wall at Existing Path



STUDY SITE IN ZONE 5

Looking West



SECTION A

Looking West

HARRISON HOT SPRINGS WATERFRONT INFRASTRUCTURE UPGRADES PUBLIC ENGAGEMENT

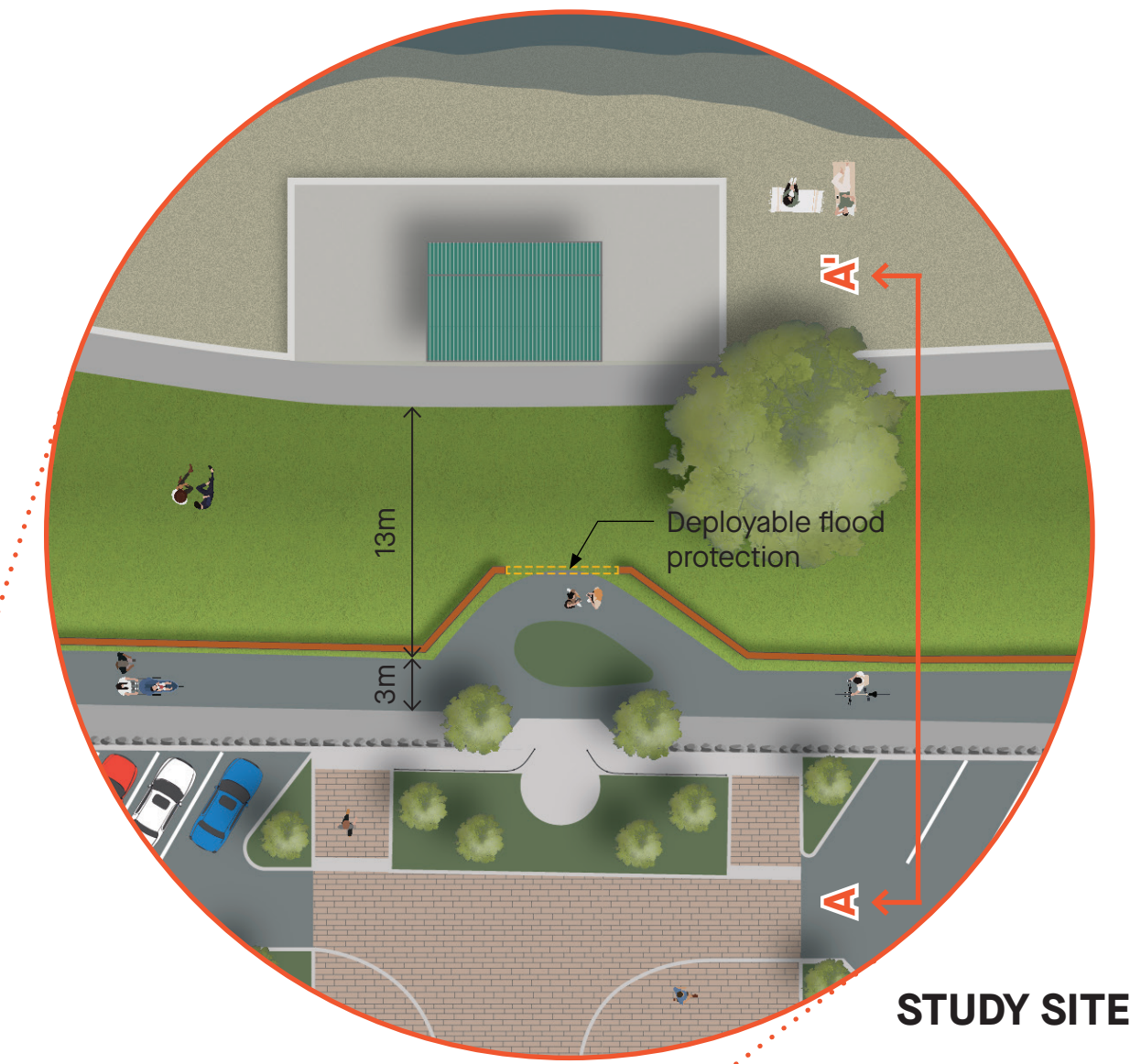
December 2023

FLOOD WALL PRECEDENTS

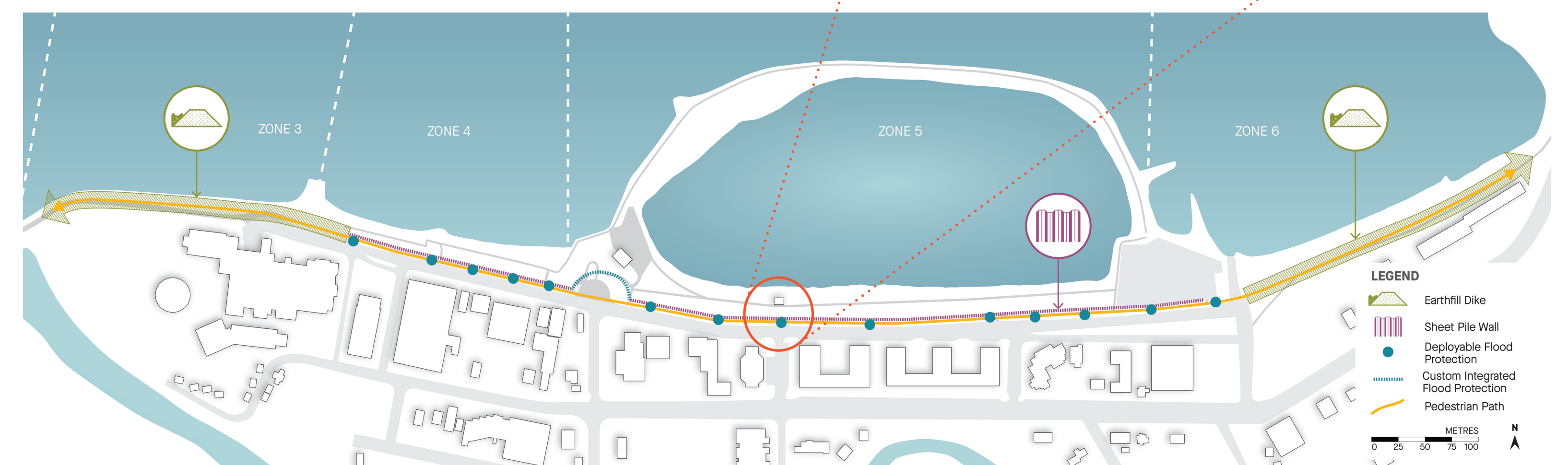


KEY FEATURES & CONSIDERATIONS

- 1.1m high sheet pile wall as flood protection
- Smallest footprint and least overall disturbance to the site
- Existing pathway is retained
- Existing rock wall next to parking is retained
- Deployable flood protection at all access points (stored adjacent to or integrated into wall)



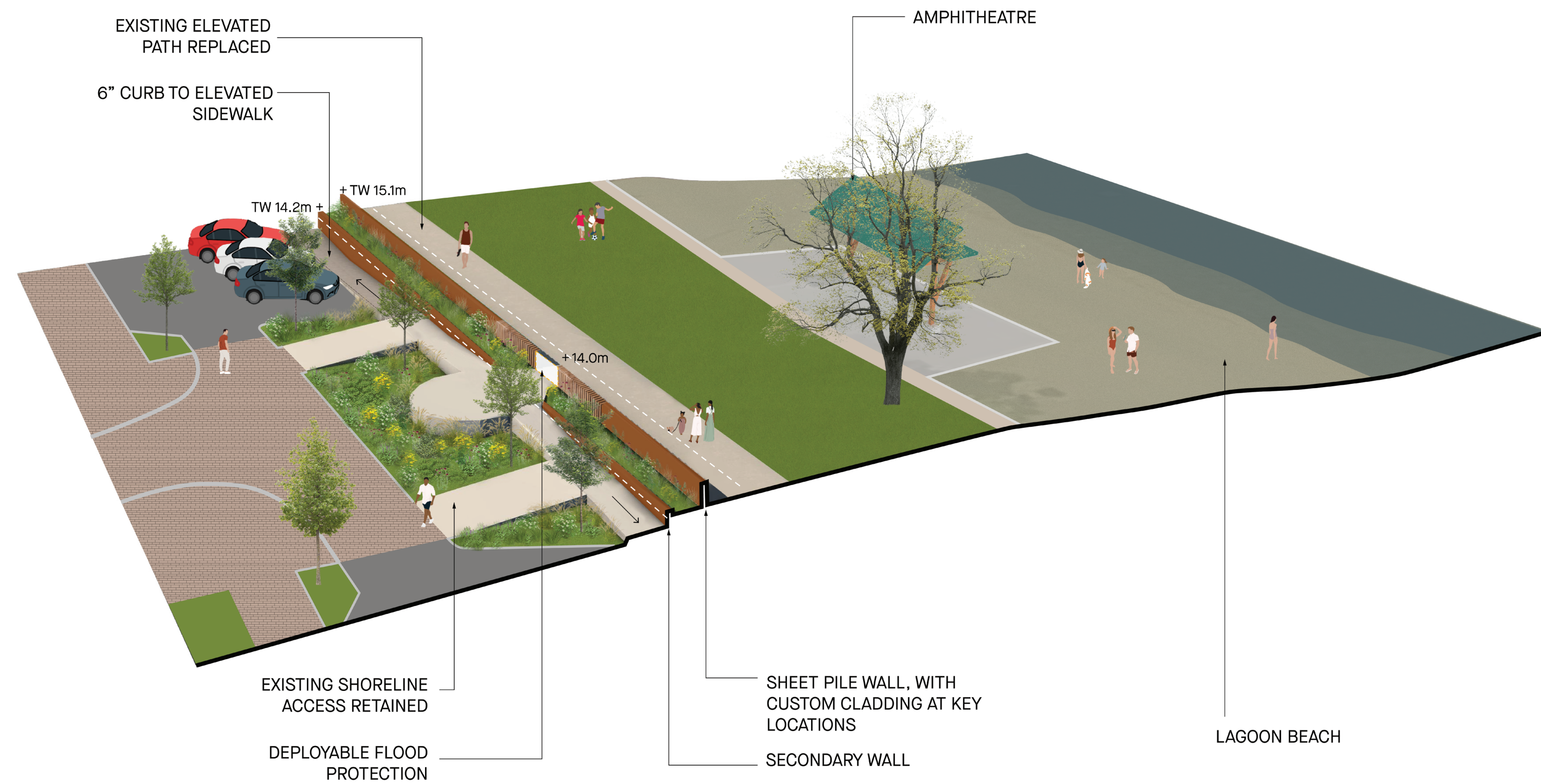
STUDY SITE



PRELIMINARY CONCEPT DIAGRAM

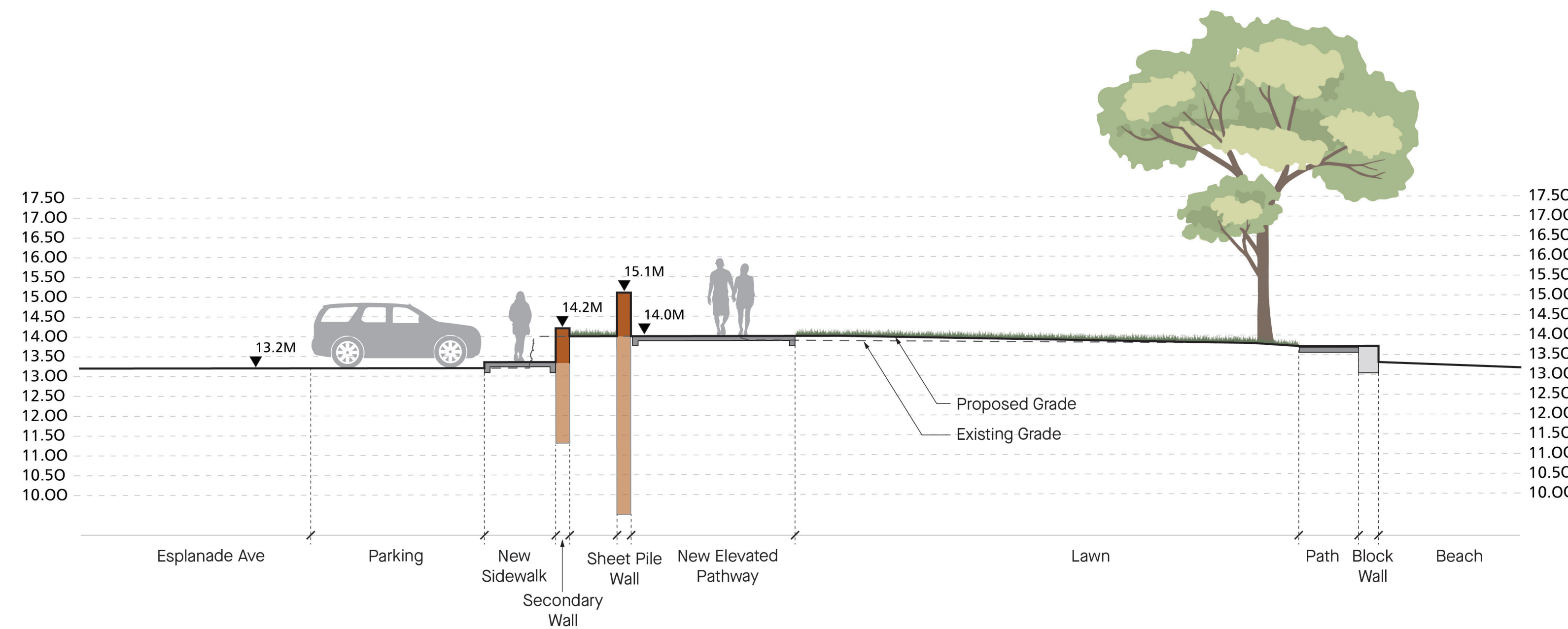
ZONES 4 & 5: CONCEPT DESIGN 3

Flood Wall with New Sidewalk and Elevated Path



STUDY SITE IN ZONE 5

Looking West



SECTION A

Looking West

HARRISON HOT SPRINGS WATERFRONT INFRASTRUCTURE UPGRADES PUBLIC ENGAGEMENT

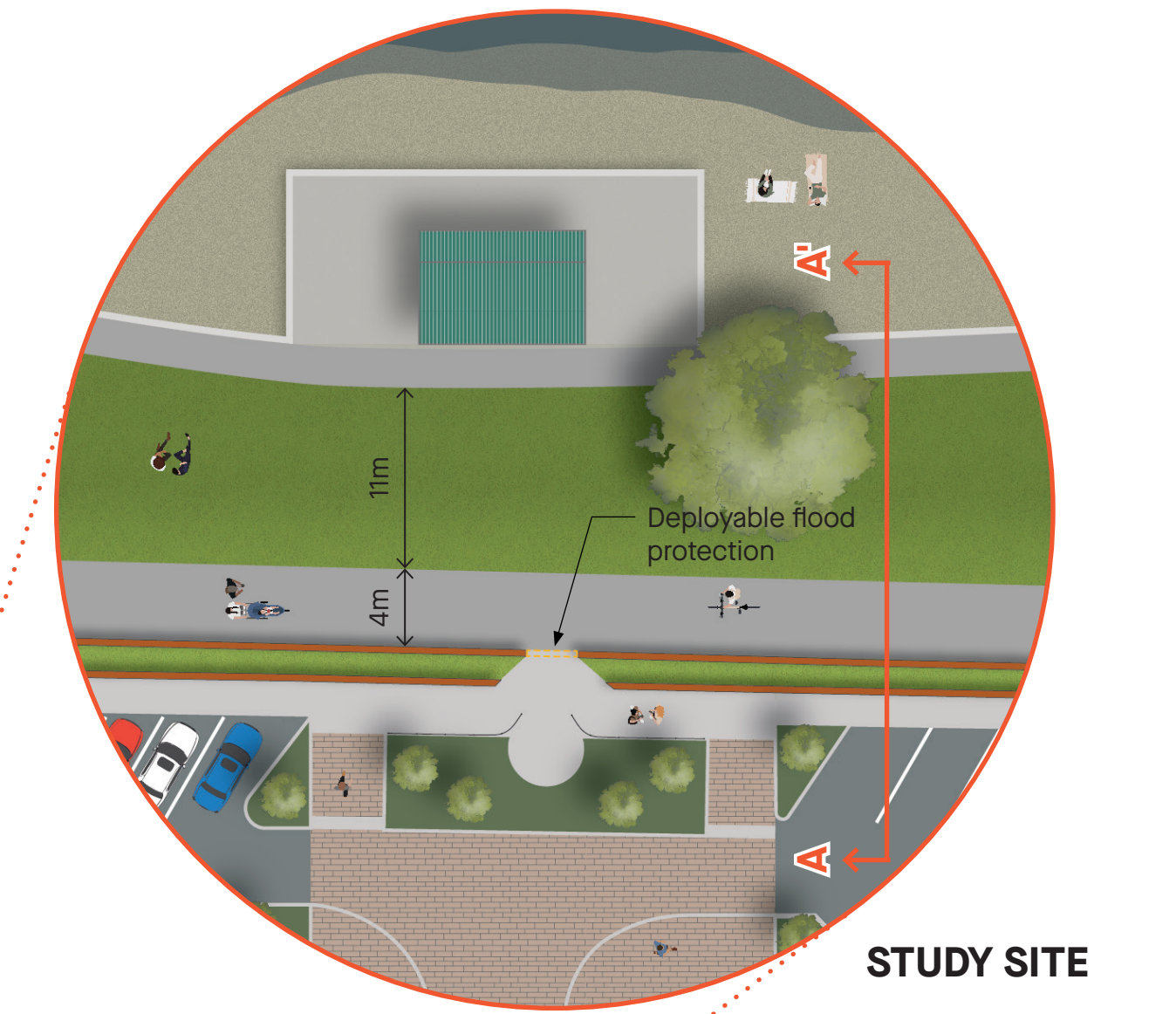
December 2023

FLOOD WALL PRECEDENTS

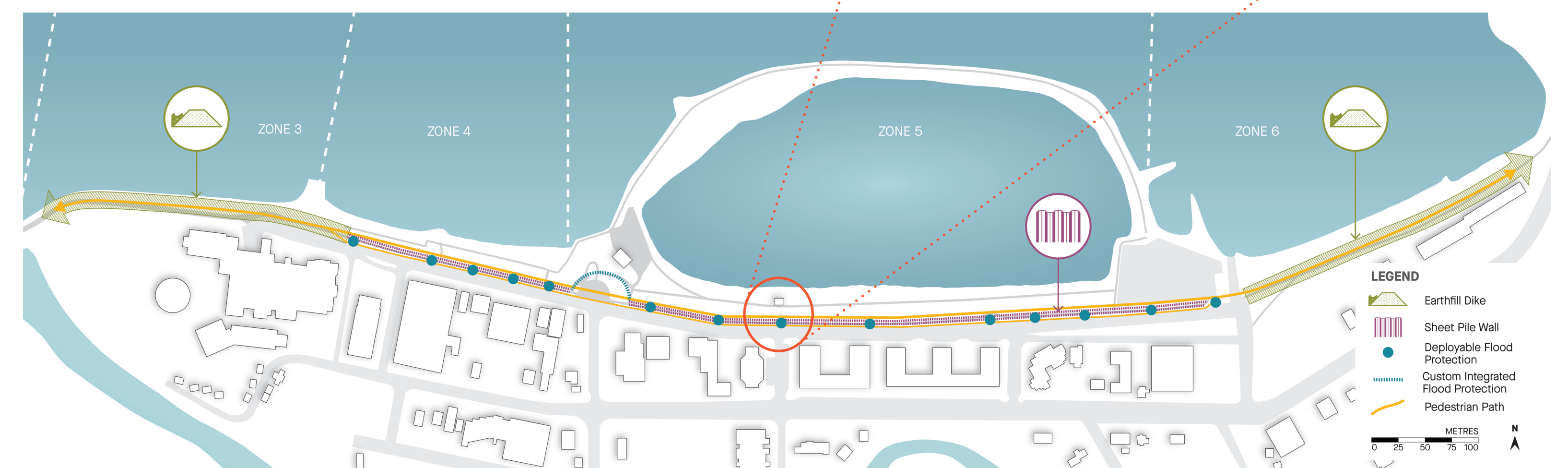


KEY FEATURES & CONSIDERATIONS

- Installation of a primary flood protection sheet pile wall and a shorter secondary wall to improve landscaping
- Deployable flood protection at all access points (stored adjacent to or integrated into wall)
- 1.8m wide sidewalk at parking with a 6" curb, ramping up to existing access points



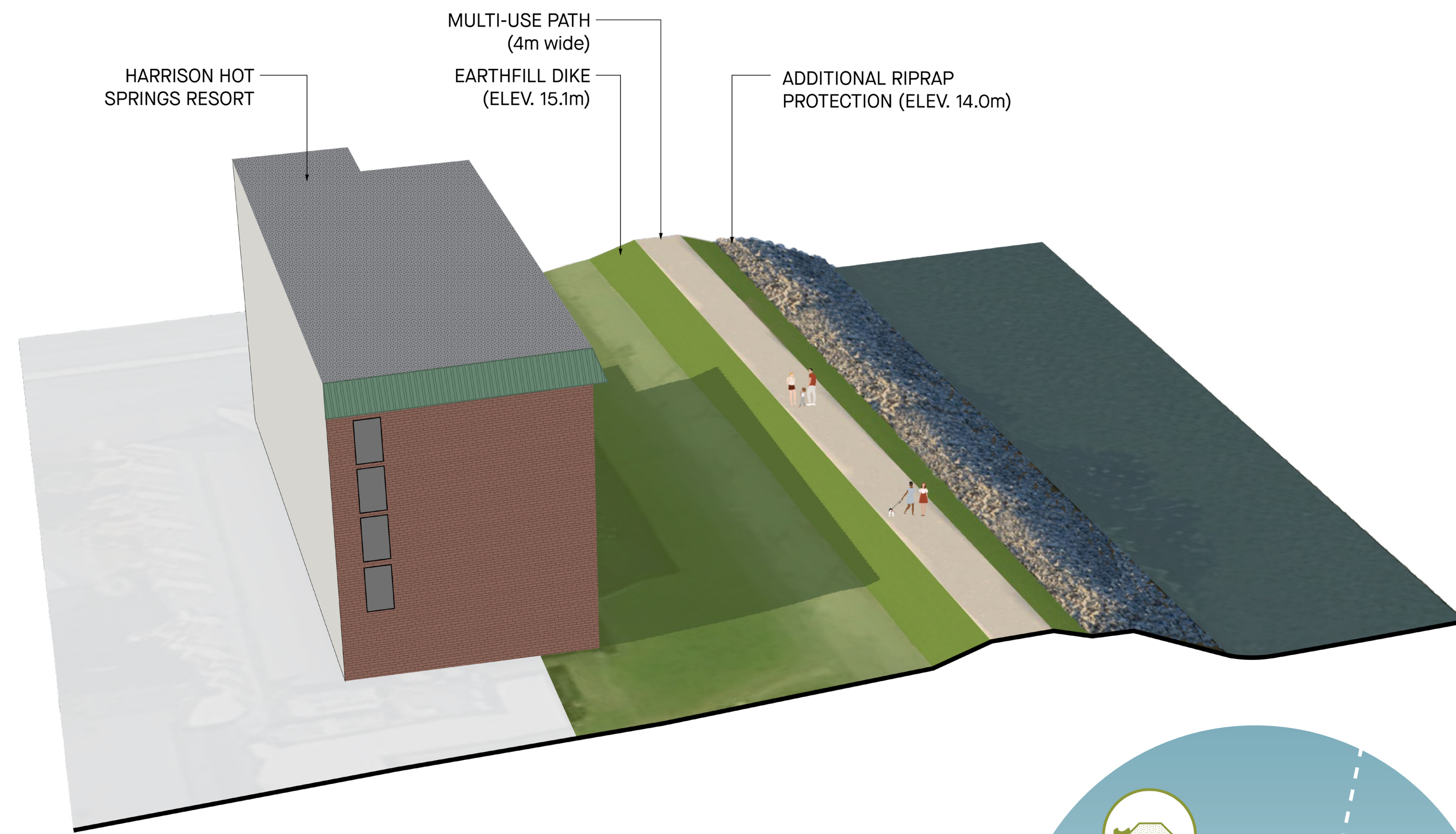
STUDY SITE



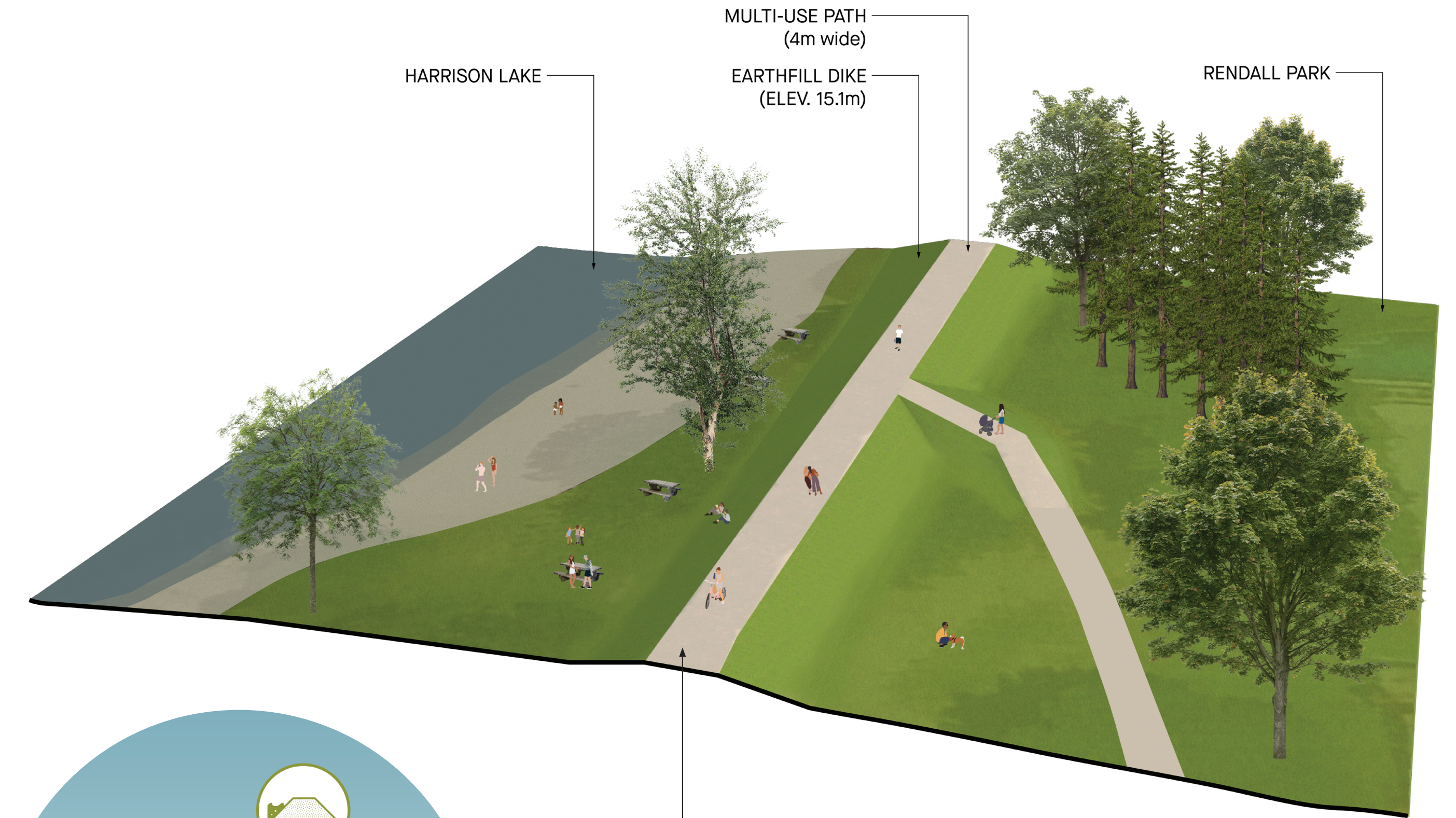
PRELIMINARY CONCEPT DIAGRAM

ZONES 3 & 6: CONCEPT DESIGN

Earthfill Dike

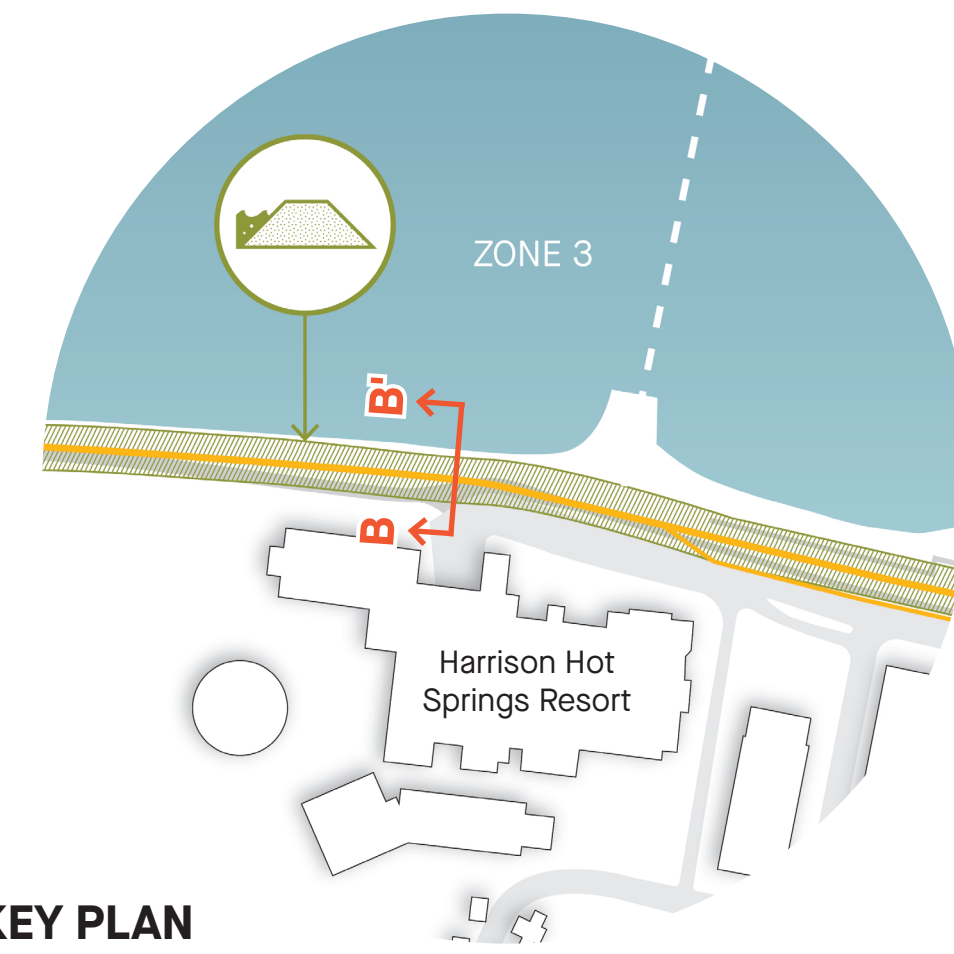


ZONE 3
Looking West

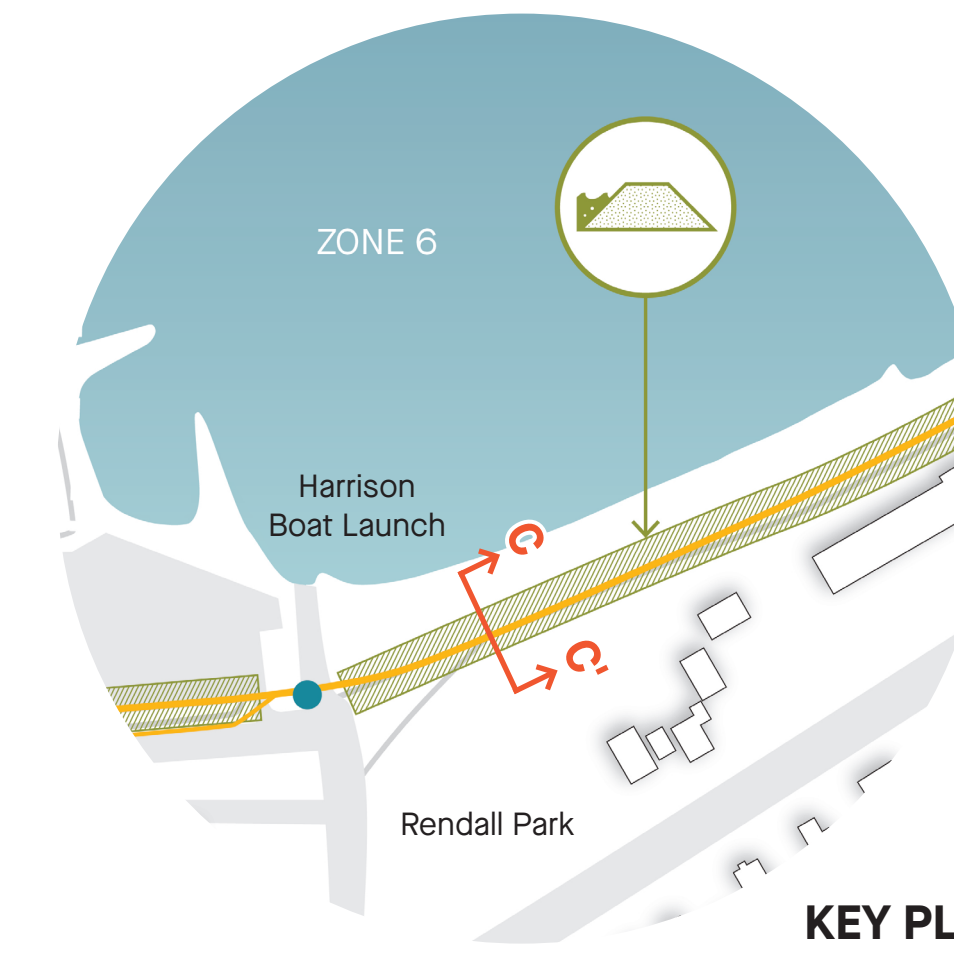


ZONE 6
Looking East

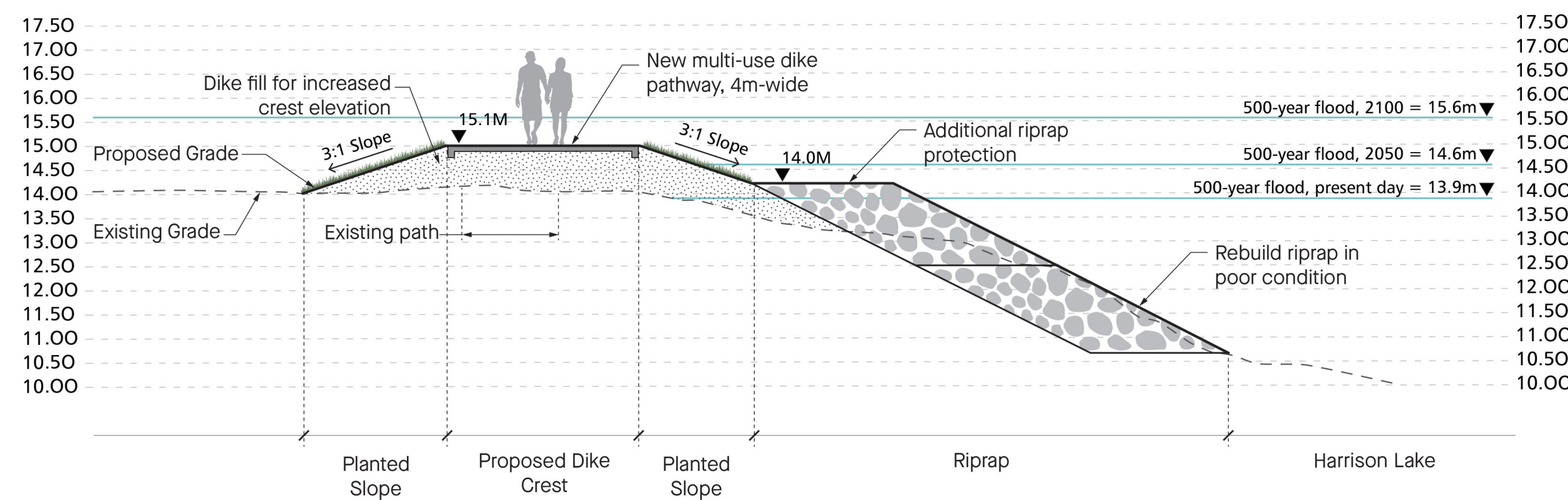
Note: Path and Dike to be aligned to avoid removal of larger trees where possible. Further review is required.



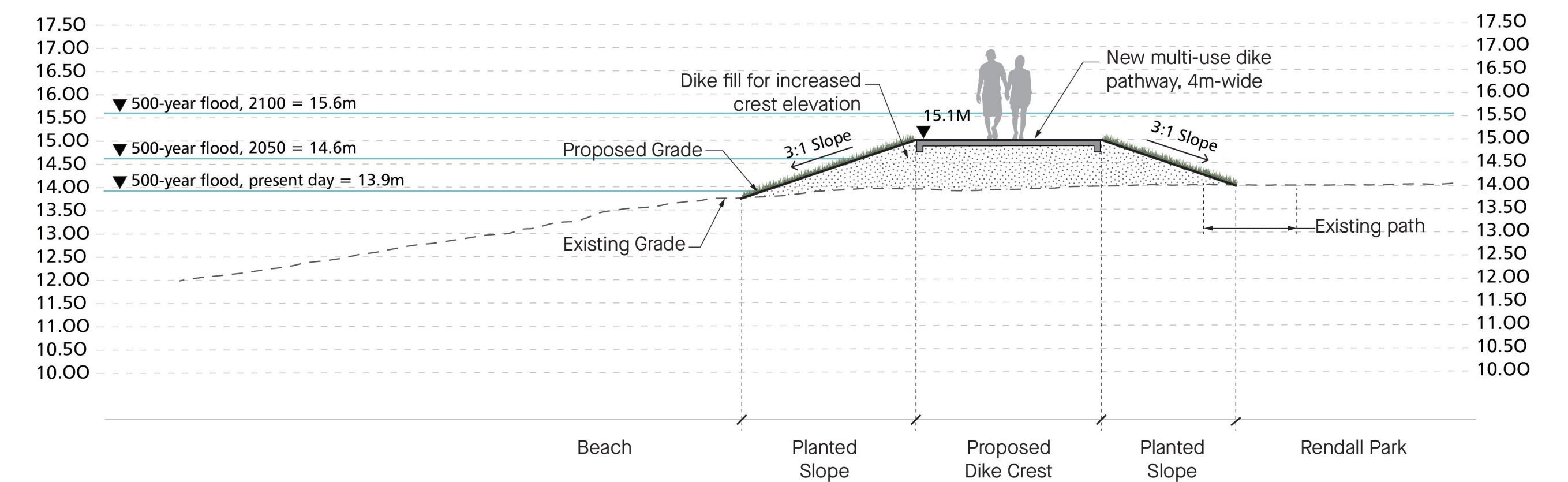
KEY PLAN



KEY PLAN



SECTION B
Looking West



SECTION C
Looking East

HARRISON HOT SPRINGS WATERFRONT INFRASTRUCTURE UPGRADES PUBLIC ENGAGEMENT

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FLOOD PROTECTION PRECEDENTS

Permanent Flood Walls

Flood walls are permanent on-site infrastructure that consist of a raised wall system to mitigate flooding events. Flood walls can incorporate public realm amenities such as seating, interpretive elements, wayfinding signage, and public art.



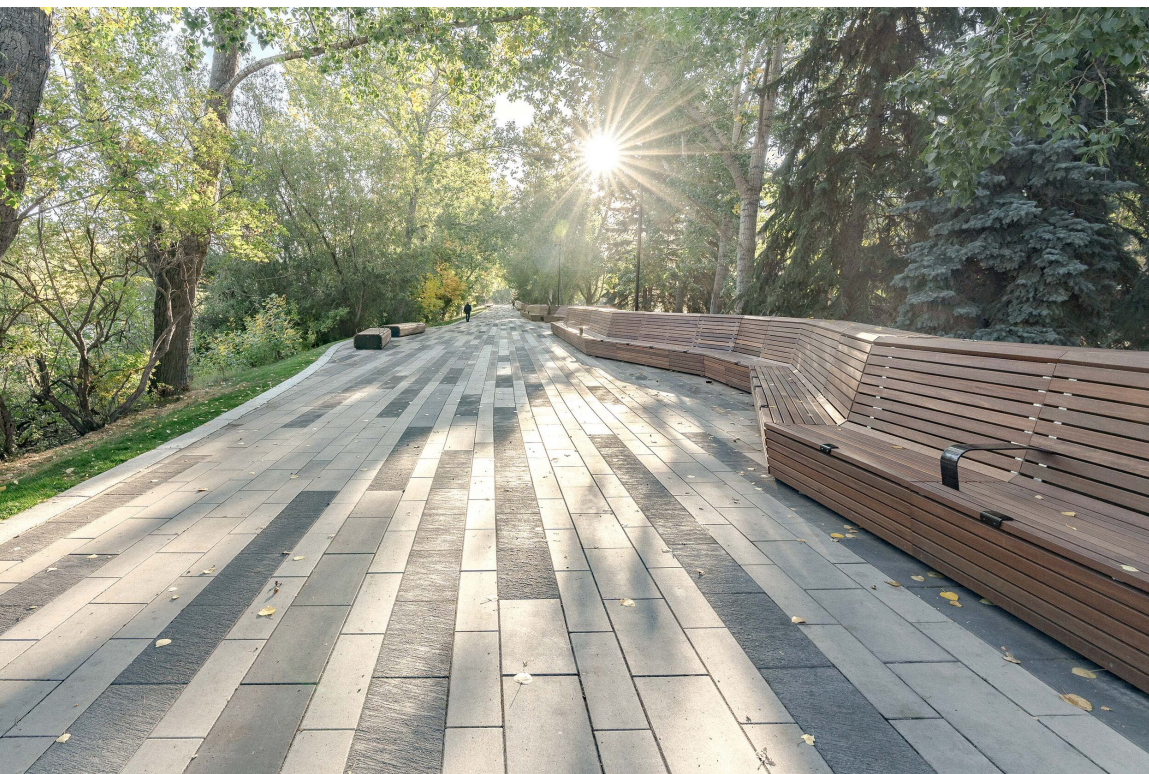
Sheet pile flood wall with custom cladding
RiverWalk - Calgary, AB



Sheet pile flood wall
RiverWalk - Calgary, AB



Two tiers of sheet pile walls
The Steel Yard - Providence, RI



Flood wall clad with custom seating
RiverWalk - Calgary, AB

Temporary Flood Barriers

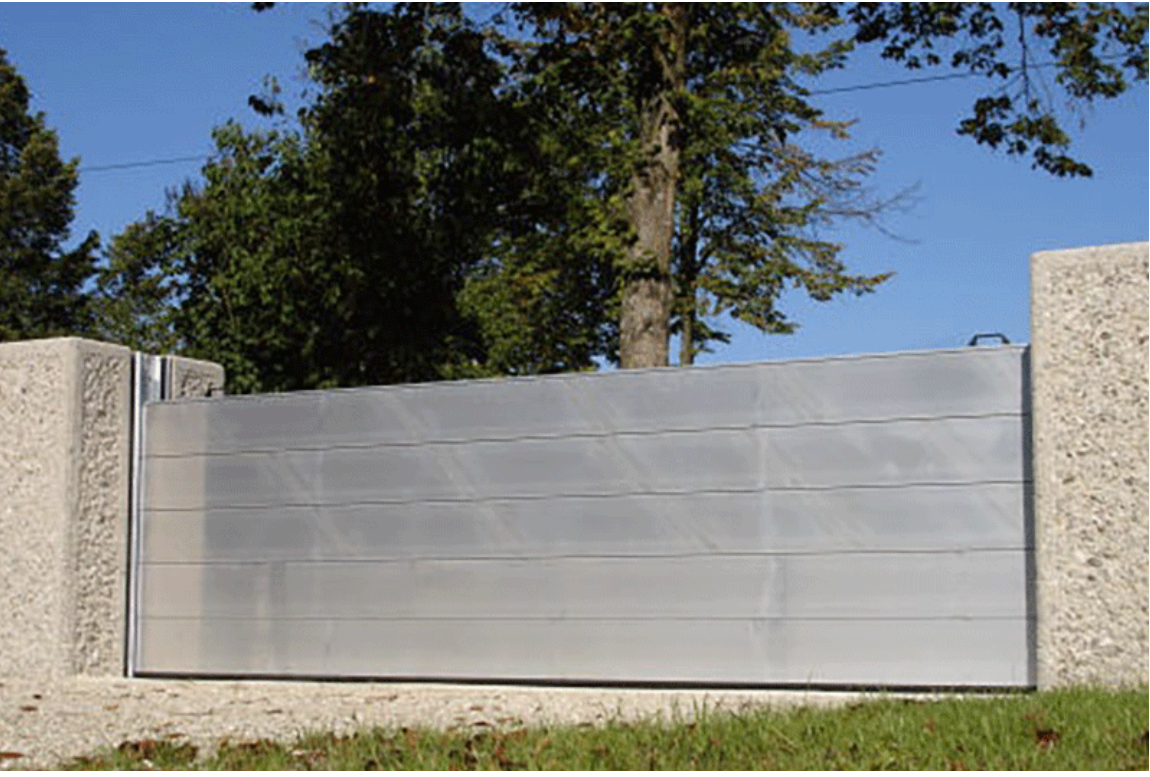
Temporary flood barriers can be an effective flood protection strategy for access points along a flood wall. This type of infrastructure can consist of demountable aluminum flood barriers that are integrated into or stored next to the permanent flood wall. Deployable flood barriers made from engineered fabric are another option. Both options are lightweight, reusable and easy to install with one or two people.



Demountable aluminum flood barrier
RiverWalk - Calgary, AB



Installation of demountable aluminum flood barrier
RiverWalk - Calgary, AB



Demountable aluminum flood barrier



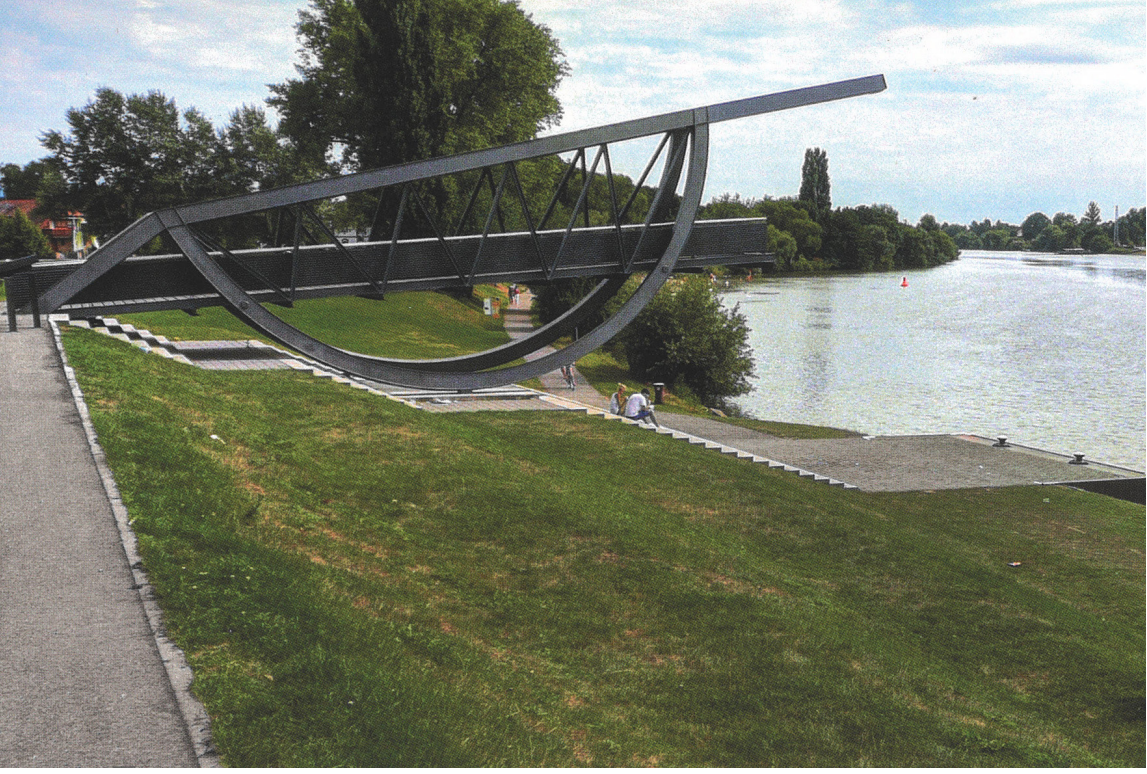
Lightweight, reusable flood barrier made from engineered industrial fabric

Earthfill Dikes

Earthfill dikes are permanent on-site infrastructure, utilizing earthwork and berms to mitigate flooding events. Public space on earthfill dikes can include a multi-use path along the dike crest and terraced seating integrated into the dike's slope.



Seating integrated into dike along the Sàone river
Rochetaillée, France



Dike promenade along the Green Ring
Ladenburg, Germany



Pathway on top of dike
Diemerzeedijk, Netherlands



Pathway on top of dike
Zeedijk, Netherlands

HARRISON HOT SPRINGS WATERFRONT INFRASTRUCTURE UPGRADES PUBLIC ENGAGEMENT

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