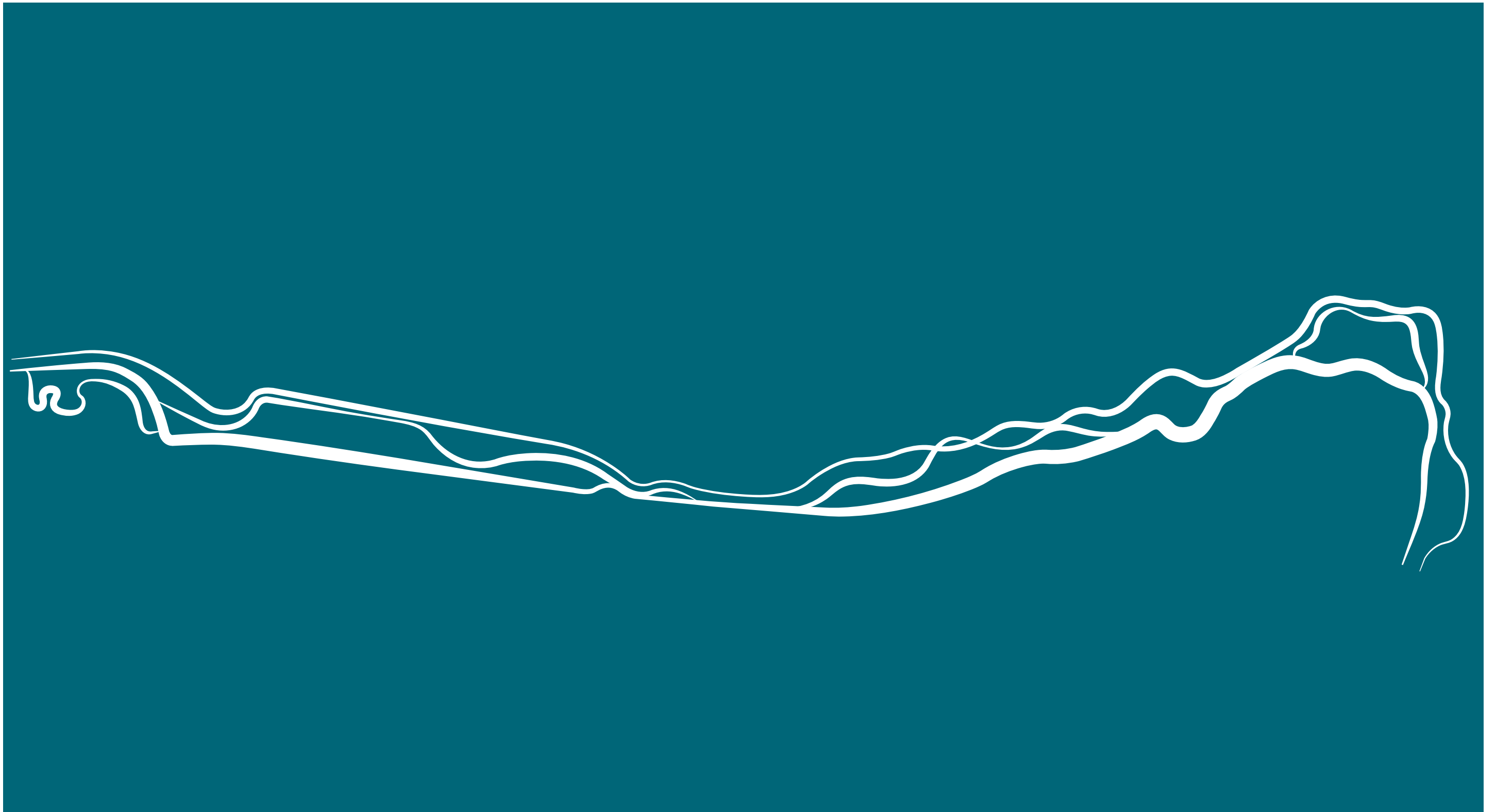




Woy Woy Foreshore

Concept Design Report - 100%

Prepared for
Central Coast Council

Project Number
2464

Revision	Date	Author (s)	Checked	Comment
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We at Moir Studio acknowledge the traditional custodians of the lands and waters of Australia - most notably the Awabakal Nation in which our office resides and the Darkinjung, on whose traditional land this Project resides. As a practice, we recognise First Nations' ongoing contribution to Country and deep spiritual connection to Place. We pay our respects to Elders both past and present.



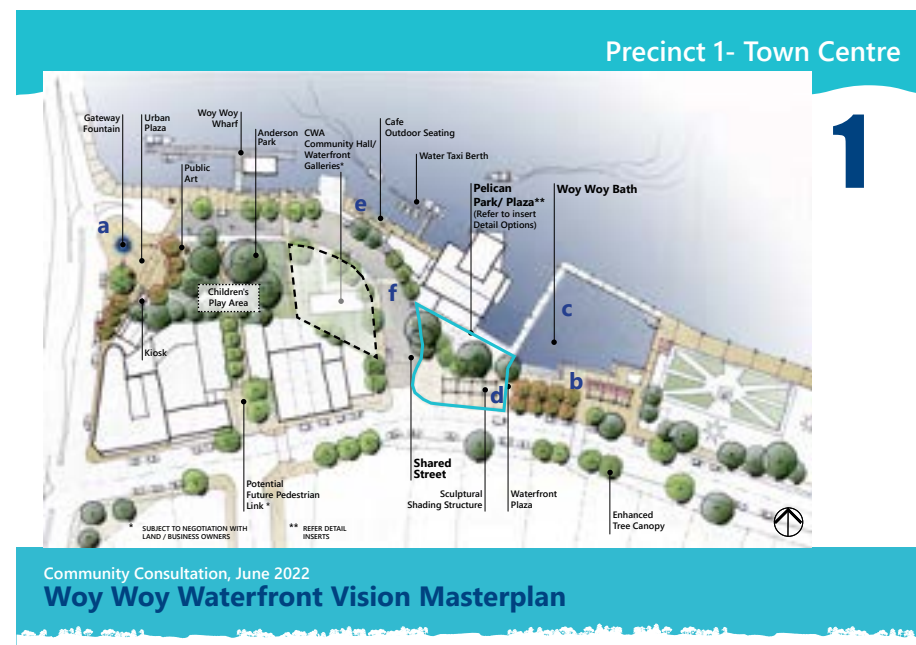
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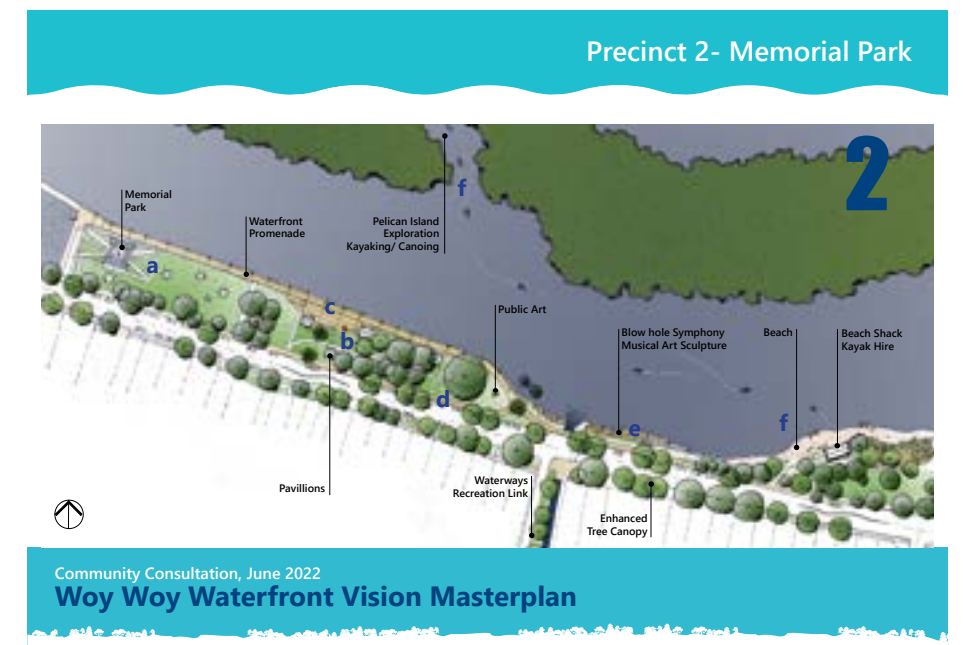
1.0 Project Overview

1.1 2020 Woy Woy Foreshore Masterplan

In 2020, the Central Coast Council developed the Draft Woy Woy Foreshore Masterplan using feedback from the 2019 Let's Talk Woy Woy campaign. The Draft Masterplan presents an overall vision for the open space along the waterfront and offers a conceptual layout to guide future growth and development. From June 2 to July 3, 2022, it was made available for public consultation, during which CCC gathered feedback from the community.



Precinct One - Town Centre. Located in the heart of Woy Woy off Brisbane Waters Drive, the Town Centre invites visitors and the community alike inward from both the streetscape and the water. The area's proposed reactivation is aided by new and rehabilitated places to pause, gather, and play—treasuring the waterfront. In addition, the town centre will boast a revitalised Woy Woy Bath.



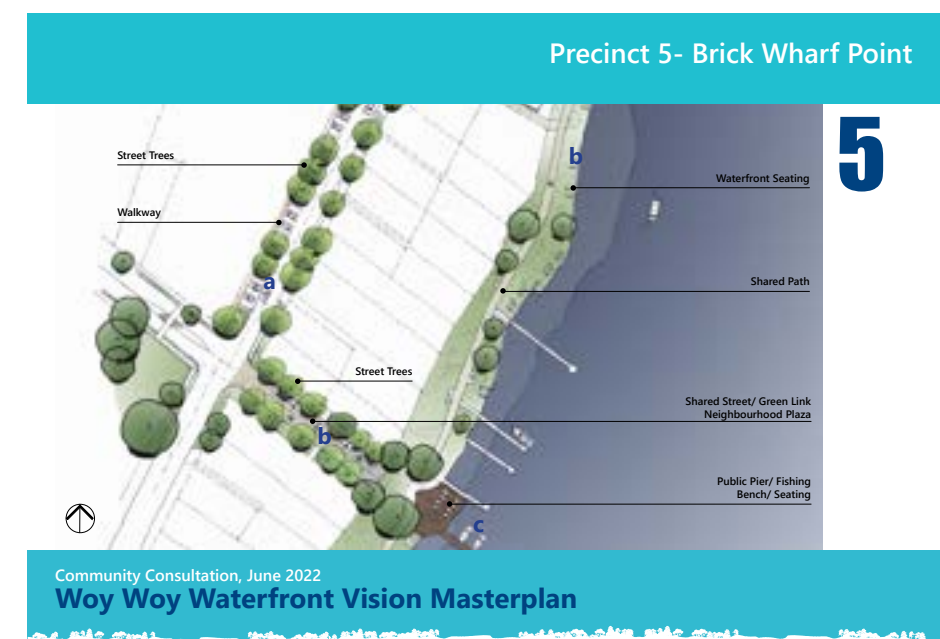
Precinct Two - Memorial Park. The space exhibits homage to the ANZACs embedded in a memorial and garden framed by a strengthened foreshore edge. The edge seamlessly connects the space for the pedestrian with opportunities for exploratory water sports and acoustic invigoration, all via the waterfront promenade. Onlookers will be presented with an array of public art spread throughout the space, with Pelican Island as the backdrop.



Precinct Three - Coastal Wetland. The proposal of the Coastal Wetlands hosts an important opportunity to enhance local biodiversity - creating a nature corridor that extends beyond the Site's borders. An exploration trail and adjacent shared path encourage the continuity of activation with places to pause and observe.



Precinct Four - Lions Park. It proposes an expansion of the existing children's playground, family picnic, and active spaces embellished by the seamless continuity of the foreshore edge. The arrival plaza defines the space between the street and the park, enhanced by new tree plantings. The sundial to be featured at Lookout Point provides a unique asset to the space, highlighting Mount Pleasant and accompanying horizon scenery. The park is accessible via the proposed promenade, adjacent street or the shore.



Precinct Five - Brick Wharf Point. The revitalisation of Brick Wharf Point introduces convenient connectivity between the southeastern foreshore and the neighbourhood via the shared accessibility of Brick Wharf Road. The space encourages passive use, with the continuity of the shared path linking to the public pier for recreation, such as fishing. New street trees along North Burge Road will strengthen nature's connectivity beyond the precinct.

1.2 Document Review

Using these documents has created a framework and informed strategic directions that aim to achieve the overall goals outlined in the frameworks.

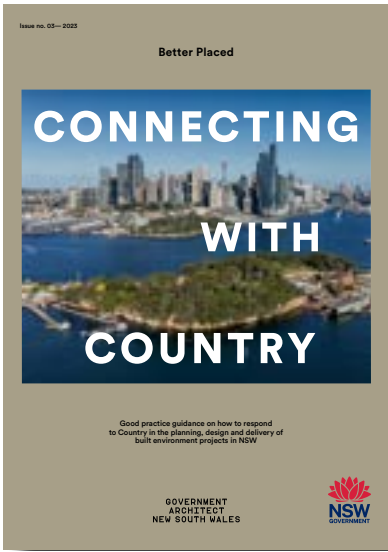


Better Placed

The Government Architect NSW (GANSW) has prepared Better Placed as an overarching policy that guides the planning and design of the built environment across NSW.

The Policy outlines key priorities for good design in NSW regarding current issues, including climate change, population growth and health. The document outlines key design objectives driven by an iterative, comprehensive design process.

Better Placed sits alongside other GANSW policies, guides, manuals, and case studies, including the Connecting with Country framework and the Draft Greener Places Design Guide. The guidance provided by these documents will inform the design approach for the landscape strategy, ensuring the delivery of a high-quality design in line with State Government principles.



Connecting with Country Framework

The Connecting with Country document is a framework for understanding the value of First Nations knowledge and experiences in the design and planning of the built environment in NSW. GANSW prepared the framework in collaboration with Traditional Custodians, community representatives, consultants, and other government staff.

The framework outlines the term ‘Country’ as “Country encompasses everything. It includes both living and non-living elements. It holds everything within the landscape, including Earth, Water and Sky Country, as well as people, animals, plants, and the stories that connect them” (p.20).

The document guides developing connections with Country to inform project planning, design and delivery. It includes key principles and strategies for consideration, supported by case studies of existing projects across design disciplines.



Public Open Space Strategy for NSW

The Public Open Space Strategy for NSW is a significant initiative to enhance public open spaces across the state. The document aims to create vibrant, accessible, and sustainable open spaces that improve our quality of life. It’s a step toward healthier, happier communities.

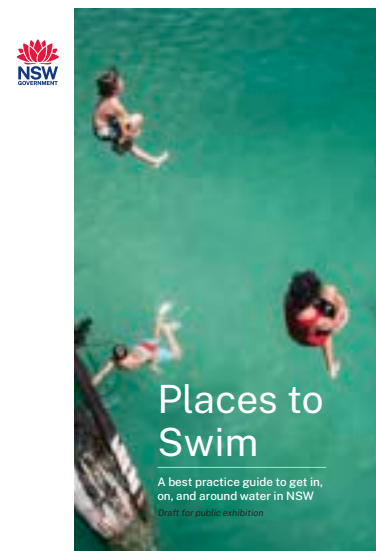
These spaces include parks, natural areas, waterways, sports grounds, historical sites, and recreation trails. The strategy aims to create more effective and accessible open spaces contributing to ecological, economic, social, and cultural well-being. Projects such as the Parks for People program, the Open Spaces Program, and the Everyone Can Play program are part of this effort to improve public open spaces in NSW. Access to these spaces promotes physical and mental health, making them essential for our communities.

It provides a collaborative, coordinated, and evidence-based approach for government agencies to plan, invest, and deliver public open spaces.



Everyone Can Play

Prepared by the NSW Department of Planning and Environment, Everyone Can Play is a guideline for the planning and design of inclusive play spaces. The document defines an inclusive play space as somewhere that “invites people of all ages, abilities and cultures to come together”



Places to Swim

The Places to Swim document is a framework by the NSW government that outlines an easy-to-understand approach to planning, designing, delivering, and managing natural swim sites for everybody. Determining the swim setting is key in determining the level of activation and requirements the site may require specifically, for example, whether the swim site is natural, highly modified or partly modified. Creating accessible places to swim includes but is not limited to community, environmental, economic health and well-being benefits.

The key principles outlined in the document include:

- People: who will be using the space, what are their needs and their preferences?
- Place: design with the place’s unique context - its natural, cultural, historical and environmental values.
- Purpose: design with intention for functionality, reflecting the local needs and desires of the community.



Environmentally Friendly Seawalls

A Guide to Improving the Environmental Value of Seawalls and Seawall-lined Foreshores in Estuaries.

There are a number of options for both improving the environmental value of existing seawalls

and creating new seawalls that have greater habitat potential than traditional designs. In addition,

consideration of some basic guiding principles for building new seawalls will minimise impacts on

estuarine processes and improve the environmental value of seawalls. This guideline describes

these options and guiding principles using a number of examples of seawall projects.

1.3 The Site

The Woy Woy foreshore park extends approximately 1.2km along the waterfront, from the Anderson Memorial Reserve in the west to Lions Park in the east.

This established park provides a range of facilities and recreational opportunities. A prominent feature is the continuous active route, facilitating pedestrian and cycle access along the shoreline.

The park also includes picnic areas with tables and barbecues, a children's playground, and public amenities such as toilets and showers. Designated parking areas are available.

The foreshore itself offers opportunities for activities such as fishing and swimming. The park is a popular destination for locals and visitors, resulting in higher usage, particularly during weekends and holiday periods. Adjacent to the park are commercial areas offering cafes, restaurants, and retail services.



- | | | | | | |
|--|---------------------|---|--------------------------|---|----------|
|  | Project Area | 1 | Woy Woy Oval |  | Car Park |
|  | Main Road | 2 | Woy Woy Tennis Club | | |
|  | Commercial District | 3 | Austin Butler Oval | | |
|  | Ex. Railway | 4 | North Burge Road Reserve | | |
|  | Ex. Ferry Route | 5 | Deepwater Plaza | | |
|  | Ex. Shared Path | 6 | Terrill Point | | |





LEGEND

- 1 Anderson Park
- 2 Pelican Park
- 3 Woy Woy Baths
- 4 ANZAC Memorial Park
- 5 Wetlands Precinct
- 6 Lions Park



2.0 Precedent & Bench Marking

These precedent encompass a range of relevant projects and research, offer valuable insights into successful strategies and potential challenges. By examining existing examples, we can identify key design principles, material applications, and functional layouts that have proven effective in similar contexts. This analysis allows us to ground our design decisions in established knowledge, ensuring that the proposed work is both innovative and practically sound.



Toronto Baths

Toronto Baths is situated on the foreshore of Lake Macquarie, NSW. With a rich history dating back nearly 100 years, it is a cherished local swimming spot.

Recently, it underwent a major upgrade as part of the Toronto Foreshore Masterplan, which was supported by the NSW Government's Places to Swim program.

The improvements includes extended jetty, expanded amenities, shade pavilion with BBQ, and netting for swimmer safety. However, an accessible ramp was not included in the final construction of the baths, which shall be improved in the future.



Belmont Baths

A great example of a contemporary amenities building

Belmont Baths, located on the eastern shore of Lake Macquarie in NSW, is a popular recreational spot known for its scenic beauty and family-friendly atmosphere.

This historic swimming enclosure was recently redeveloped by the Lake Macquarie City Council, with the project completed in December 2018.

The upgrades included a new 70m jetty, netted swimming area (70m long and 45m wide), and modern amenities.

The design features multiple entry points including stairs and an accessible ramp, enhancing its appeal as a safe, inclusive, and enjoyable swimming destination.



Glebe Foreshore

Glebe Foreshore is a 2.5 kilometre pathway circulating along the foreshore of Sydney Harbour from Pyrmont Bridge Road to Rozelle Bay. The section between Glebe Point Rd and Blackwattle Bay is used for benchmarking.

The project incorporates Mangrove habitats, resting/viewing decks, ramps, boardwalks, and pontoons within a context rich in industrial archaeology and maritime industry remnants. It creates a clear identity in counterpoint to the existing heritage values.



Warners Bay Esplanade

Warners Bay is a vibrant hub for water sports and outdoor activities with an eclectic sculpture trail featuring contemporary works by contemporary Australian artists.



Tuggerah Lakes Foreshore Restoration Works

Central Coast Council undertook a series of projects around the Tuggerah Lakes estuary and catchment to maintain environmental resilience, restore the quality of ecosystems and improve the water quality of the catchment.

These projects focused on environmental estuary zones such as foreshores, saltmarsh, riparian zones, wetlands and streambanks.



Pelican Foreshore Park Boat Ramp

Pelican boat ramp features two boat lanes with twin wave-attenuating pontoons that provide berthing amenity for launching and retrieval of boats.

3.0 Connection to Country

"Country encompasses everything. It includes both living and non-living elements. It holds everything within the landscape, including Earth, Water and Sky Country, as well as people, animals, plants, and the stories that connect them."

Connecting with Country (2023) Government Architect NSW

Country is an acknowledgment of the interconnected systems that surround us and the recognition that humans are part of a more extensive system that values everything equally. Therefore our approach to design is deeply rooted in a respect for Indigenous cultures, the natural environment, and the interconnected systems of physical, spiritual, and cultural elements.

The connection is about a profound sense of belonging to the land beneath our feet. It's about acknowledging and responding to the sensory world around us and understanding the rhythms of nature, the ebb and flow of seasons, and the delicate balance of the ecosystems that sustain us.

This connection informs our work ethic at Moir Studio. We strive to design landscapes that are deeply rooted in place, that respond to the unique characteristics of each site – its topography, its micro-climate, its existing vegetation. We seek to create spaces that nurture a sense of wonder and awe, that encourage exploration and discovery, and that foster a deeper connection between people and the natural world.

True success lies in creating places that are not just beautiful but also meaningful, places that resonate with the spirit of the land and enrich the lives of those who inhabit them. Connection to Country, for us, is not just a philosophical concept; it's a guiding principle that informs every aspect of our work.

The proposed design will celebrate the rich cultural heritage and natural systems of the Darkinjung & Kuringai tribes and land. This will include opportunities to integrate story-telling, education and concepts throughout the design process and design outcomes.



Woy Woy is believed to be a corruption of the Aboriginal 'Wy Wy', which means 'much water' or 'big lagoon'—referencing Brisbane Water.

The Guringa tribe was the first inhabitants of Woy Woy. Signs of habitation in the region include many rock shelters, shellfish middens, and rock engravings.

Imagery Source: Artist - Letitia Barty Coasties Magazine (2022)



Brisbane Water originates at the confluence of the Narara and Corumbine Creeks and travels south to the mouth at Broken Bay.

It is known that the tribe wore possum hair belts and occasionally possum skin clothing. The men hunted large prey such as kangaroos and fish they speared. The women collected most of the food, including fish (caught on fishing lines) and shellfish. When the fish migrated in winter, tribes moved inland.

Imagery Source: Brisbane Water (1901) Upload - Ciaran Lynch



The abundant marine life in Brisbane Water was an important food source for Aboriginal people, and the seasonal availability of marine species greatly influenced the pattern of Aboriginal occupation within the area.

Tribes could easily go between the mainland and islands in bark canoes, and the plants, fish, and plantlife, likely animals, are rich food sources for people in the area. Tidal ranges within Brisbane Water range between 0.1m - 1.0m.

Imagery Source: Artist - Dee Huxley You & Me: Our Place Leonie Norrington & Dee Huxley 2007



Many Aboriginal people have a strong relationship with the oceans and inland waterways that form part of their Country and are integral to their identity.

Much coastal indigenous fishing is done on the shoreline or in shallow pools. Shellfish were dug up from under the sand, with rock pools working as natural tidal fish traps to ensure the fish are caught ready to be speared when the tide goes out. Basket traps and hand-held nets made of woven fibres could be placed along these creek systems.

Imagery Source: AIATSIS Collection NUGENT. A01.BW-N04124_04 (1979-1980)



Pelican Island is a broad sandbank, perhaps only a half metre above water level at medium tide, and is mostly inundated at high tide. The reserve comprises three islands separated by mangrove channels.

Pelican Island Nature Reserve also protects some small fragments of salt marsh and swamp oak forest, but it is most valuable as one of the largest mangrove stands in Brisbane Water.

Imagery Source: Historical Imagery (1976); NSW Spatial Data Historical Imagery Viewer (August, 2024)



Mangroves, seagrasses and salt marshes are associated with high diversity rates and abundant fish, birds and invertebrate fauna. *Avicennia marina* (grey mangrove) and *Aegiceras corniculatum* (river mangrove) are common in Brisbane Water.

As noted in the Coastal Zone Management Plan for Brisbane Water Estuary, degradation and loss of estuarine vegetation are due to various factors, including boat washing, soil compaction, weed invasion, unauthorised removal by community members, and water pollution.



Saltmarsh environments consist of high-intertidal to supra-tidal halophytic vegetation. Saltmarshes and associated vegetation proved habitat for a wide range of bioturbating infaunal and epifaunal invertebrates and low-tide and high-tide visitors, such as fish and water birds. Before the large-scale development of the Brisbane Water estuary, the foreshores and shallow intertidal areas were dominated by *Casuarina* forests, salt marsh and mangrove habitats. Within the site, areas of saltmarsh and *Casuarina* forests exist and are to be incorporated into the design.



The sandstone surrounding Brisbane Water was formed from ancient sediments laid down by rivers and creeks millions of years ago. These sediments became rocks through uplift and erosion. Over time, natural forces like water and wind reshaped these rocks into the striking landscape we see today. This ongoing geological process has influenced soil types, local vegetation, and habitats.

Within the local region, the Hawkesbury sandstone provided an ideal 'canvas' for Aboriginal artists, with hundreds of rock engraving sites through Brisbane Water National Park.



The surrounding region's geology comprises sandstone and shales, with these vegetated ridgelines surrounding Brisbane Water being a key visual landscape feature.

Areas within Brisbane Water National Park consisting of soft sandstone formations allowed for substantial rock shelters along the riparian corridors, canvasses for rock engravings, and suitable for tool making.

4.0 Design Approach

Our design approach is grounded in an understanding and respect for the local environment and community. We aim to establish a strong connection to Country, ensuring the design reflects and honours the indigenous of the area. Crucial to this is fostering respect and connection to the estuarine environment, prioritising ecological sensitivity and sustainable practices.

We envisage the space as a place of social connection, encouraging community interaction and inclusivity. Recognising the regional climate, we will create a place of respite from heat, incorporating natural shading and cooling strategies.

Finally, we are dedicated to delivering improved regional recreation opportunities, enhancing the area's appeal and accessibility for both residents and visitors.



Connection to Country

Celebrate the rich cultural heritage of the local area and collaborate with the First Nations community to investigate ways to acknowledge the history of the Darkinjung & Kuringai tribes.

Opportunities to integrate story-telling, education and concepts throughout the design process and design outcomes.



Respect and Connection to the Estuarine Environment

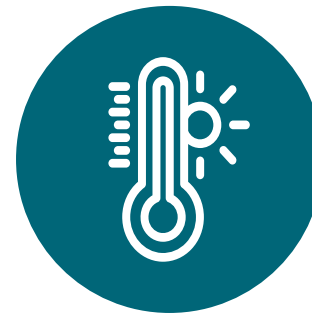
Protection of this terrestrial and marine environment is a central driver for the development. The ability to protect, observe, interact and be educated about the local environment is an important element in connecting to Country. Managing access to the water's edge by controlling movement through the salt marsh areas will protect these sensitive environments. Opportunities to provide interpretation and education are harnessed.



A Place of Social Connection

The design outcomes will provide a range of spaces that can be occupied by individuals, small groups and larger groups. The design solutions will foster and encourage social interaction and connection throughout this foreshore precinct.. A wide range of activities will be catered for with active and passive recreation encouraged.

Facilities for social gathering and interaction will encourage longer dwell time and will active the public realm.



Providing a place of respite from Heat

Establish areas of shade, shelter and respite from the heat. The project will seek to limit the impact on existing vegetation and wildlife communities. By working with the existing and historical land and water edges - provide shaded areas for gathering and walking, and limit the use of hard surface materials where possible. The design will mitigate the urban heat island effect and provide opportunities for the community to enjoy a series of cooler outdoor spaces.



Improved Regional Recreation Opportunities

Meeting the wider strategic aims of Central Coast Council the Woy Woy foreshore development will enhance the existing local links for locals as well as provide improved regional links to Gosford and Blackwall, as well as possible future connections to Ettalong Beach. The facilities provided will support trail users. The spaces will encourage access to Brisbane Water for both powered and non-powered water craft allowing users to participate in recreational boating and fishing.

5.0 Concept Design

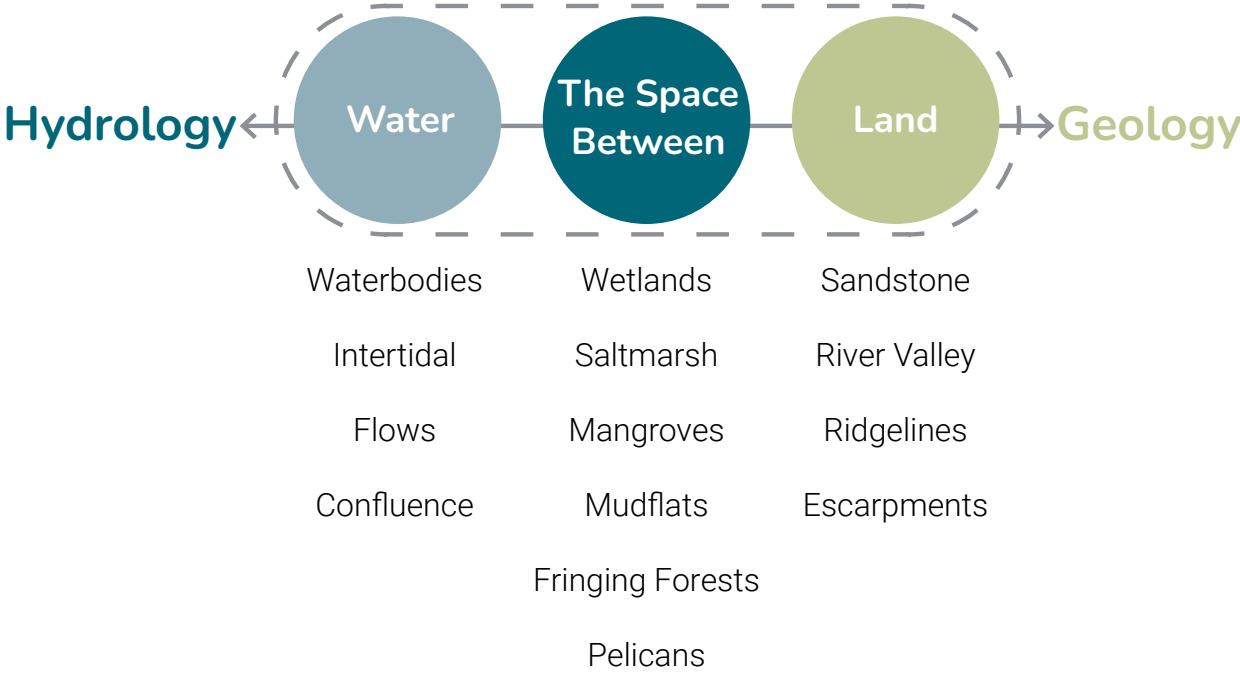
Discover the beauty where worlds meet; land, water, and the space between. Three lines with infinite possibilities to walk, wander and connect.

The concept design follows an ambition to explore where land meets water. This delicate space is a tapestry of experiences that can unfold and transition, inviting a deep connection with nature.

Three distinct lines, yet seamlessly interwoven, will guide visitors on a journey of discovery.

- The landward path invites you to explore panoramic vistas, offering breathtaking views of the surrounding landscape.
- The 'space between' beckons with boardwalks, waterside strolls, and opportunities to connect with the water – a place to wander through wetlands, dip your toes in the cool water, and breathe in the fresh, salty air.
- Finally, the water itself, the lifeblood of this landscape, defines the boundary and enriches every moment.

These three lines dance together, sometimes side-by-side, sometimes gracefully apart, creating a diverse and unforgettable experience, fostering a deeper appreciation for the environment.



Concept Diagram: Discover the beauty where worlds meet; land, water, and the space between.



Concept Diagram: Three distinct lines, yet seamlessly interwoven, will guide visitors on a journey of discovery.

5.1 Woy Woy Foreshore



- LEGEND
- 1 Anderson Park
 - 2 Pelican Park
 - 3 Woy Woy Baths
 - 4 ANZAC Memorial Park
 - 5 Wetlands Precinct
 - 6 Lions Park



5.2 Anderson Park

The existing space has plenty of deep shade from the existing trees, so our proposal is to focus investment in this area.

We proposed to create a flexible place to wait for a boat, eat some chips, find inspiration and simply hang out.

We have prepared two (2) options for Anderson Park; one with a minimalist approach, that positions a yarning circle to the centre of the park with sandstone block seating walls and additional complimentary seating around the existing trees, maximising views out to the foreshore, and a second option that takes the form of a sculptural composite timber deck that provides formal and informal seating along side explorative play under the shade and shelter of the dense tree canopy.

We also proposed to extend the existing art walk with an acid etched concrete footway that depicts local Darkinjung & Kuringai art.

There is potential to locate a sculpture along the road corridor to mark the gateway to Woy Woy. How this is placed is explored on the following pages.



Sculptural Deck



Yarning Circle



Art Walk



Sculptural Landmark

Anderson Park Option 1

LEGEND

- 1. Existing trees
- 2. Art walk
- 3. Yarning Circle with sandstone block seating
- 4. Sculpture location opportunity
- 5. Custom Bench Seating



Anderson Park Proposed Plan



Anderson Park Option 2

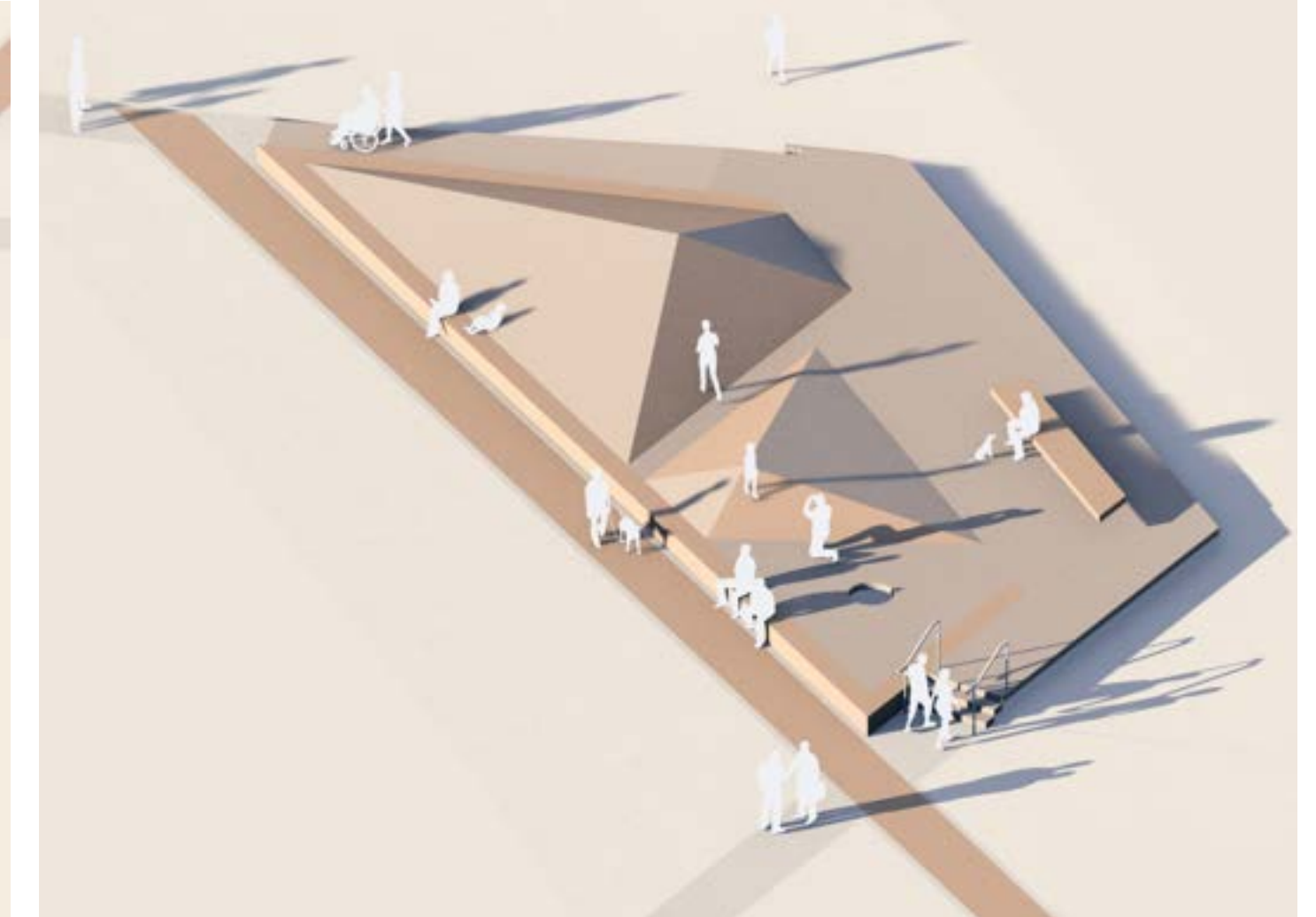
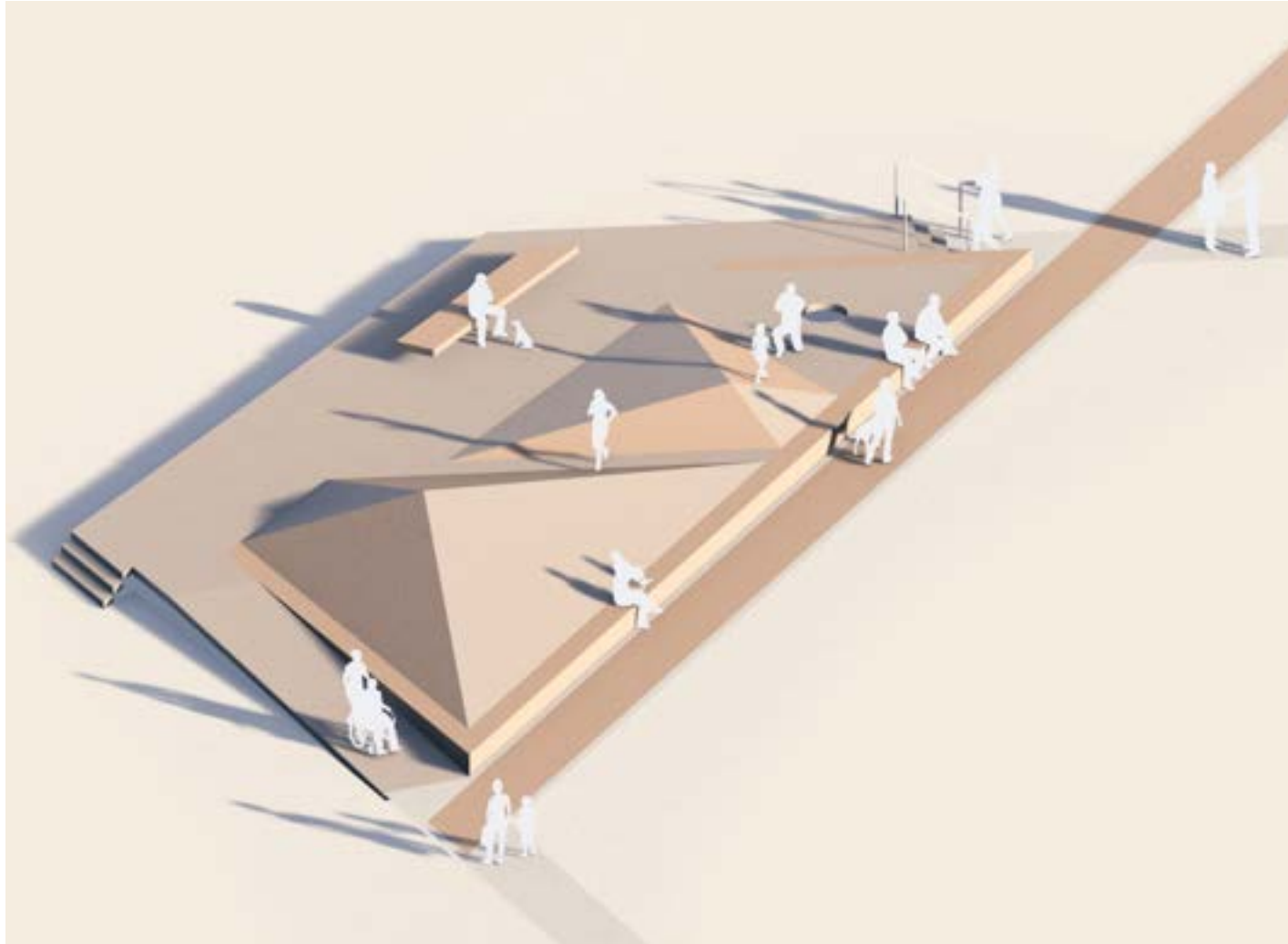
LEGEND

- 1. Existing trees
- 2. Art walk
- 3. Sculptural deck
- 4. Sculpture location opportunity
- 5. Concrete path



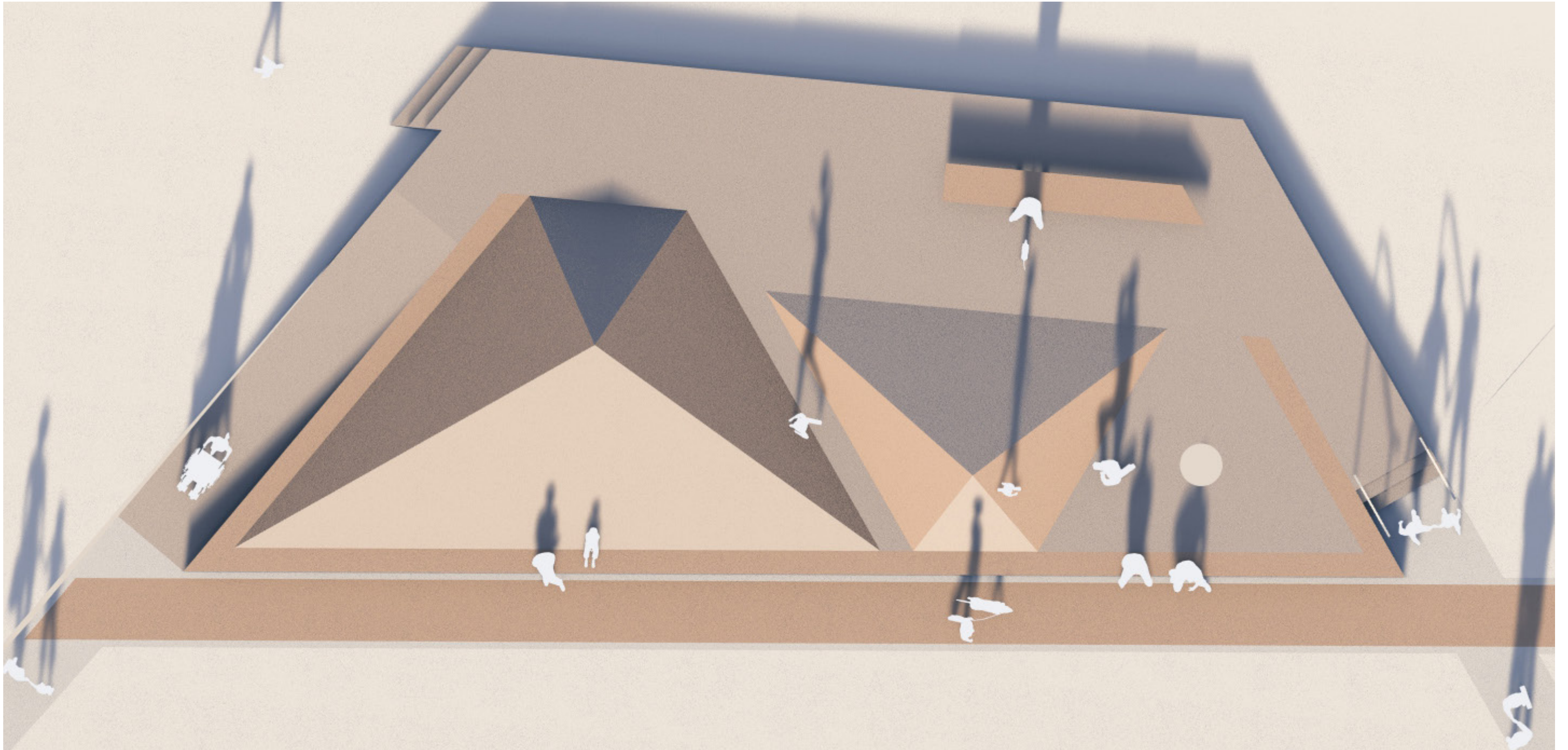
Anderson Park Proposed Plan





Anderson Park Deck Sculpture North-East

Anderson Park Deck Sculpture North-West



Anderson Park Deck Sculpture provides formal and informal seating along side explorative play under the shade and shelter of the dense tree canopy.

5.3 Anderson Park Sculpture Placement

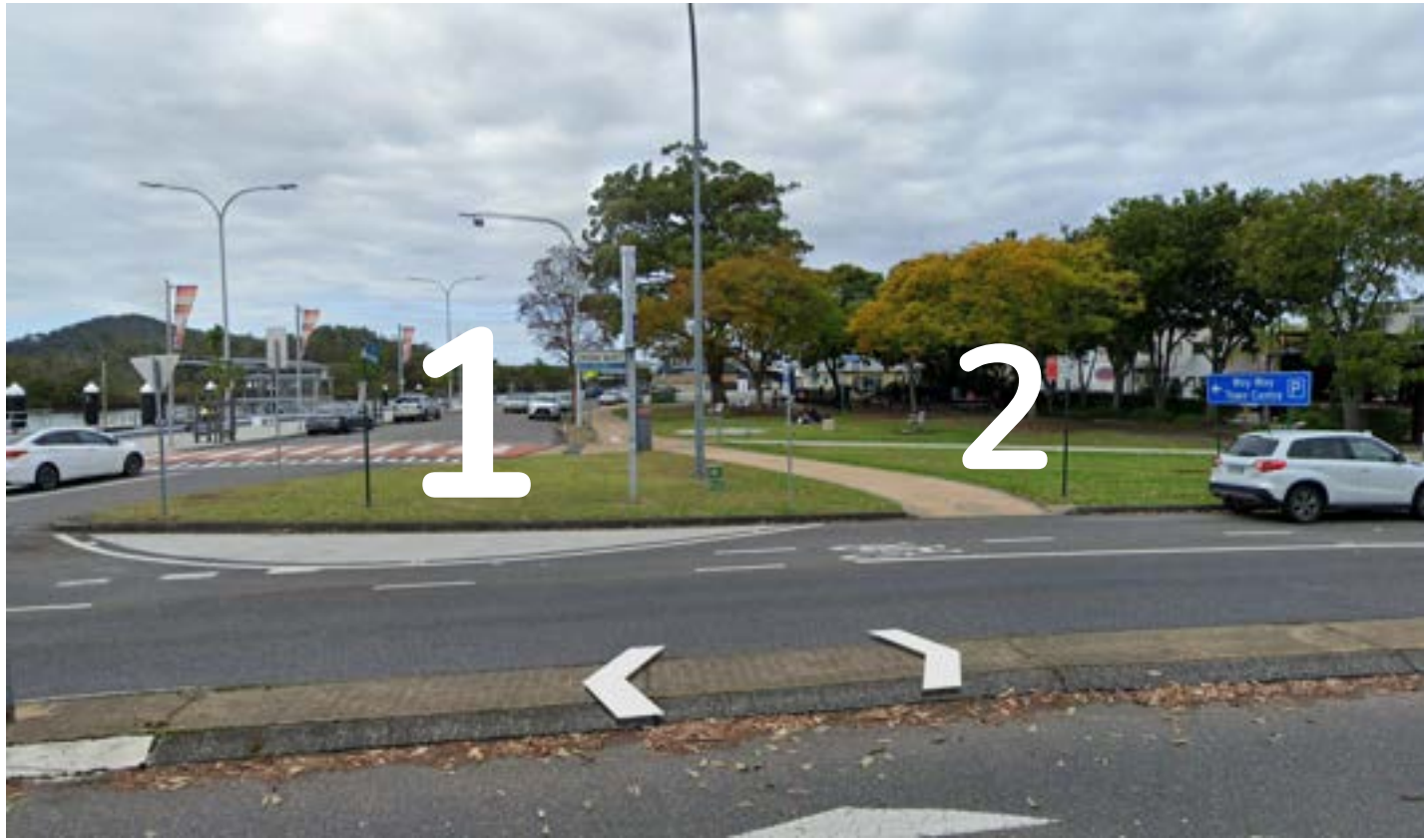
There is an array of existing tall elements that would distract from a sculpture.

The sculpture would need to be 6-7m in height to be reliably seen, and some of the existing signage may need to be relocated.

We have identified 2 locations for consideration.



View Approaching from North



View Passing Along West



View Approaching from South

5.4 Pelican Park and The Swimming Enclosure

The existing baths are a space on the river that needs to become a place in the town.

We proposed to push the seawall out to reclaim some land and create a destination on the Woy Woy Foreshore.

It will also enable the space to have a greener character, with open views from Brick Wharf road through to the water.

A Slipway Garden provides ramp access down to the water level, using a 1:14 maximum gradient. This leads to a terrace just above high tide level, with a 1:21 walkway and steps down to low tide level.

Due to the naturally shallow landform, swimming at high tide will provide approximately 900mm minimum water depth at the point of entry. At low tide this will reduce to 100mm maximum (ie ankle deep). If people want to swim at low tide they would need to walk out to the enclosure boardwalk to the deeper water.

Pelican Park and the amenity building wrap around the Slipway Garden, creating subtle belvedere spaces that project toward the water and provide open views. A variety of seating meets the needs of the diverse community.

Within the Slipway Garden large planters would provide sensory interest with coastal plant species tolerant of seasonal flooding.

The existing baths are over 100 years old and represent a rare piece of Australian historic maritime infrastructure. Our proposed design aims to retain the existing form/ position of the baths and will look to incorporate opportunities for interpretive story-telling elements into the design.



Look-Out Points



Slipway Garden



Water Steps



Deck Hammock

LEGEND

- 1. Slipway garden
- 2. Amenity building
- 3. Tidal terrace
- 4. Deck hammock
- 5. Playground shelter
- 6. FRP Board walk
- Original shoreline



Pelican Park and Swim Area Proposal



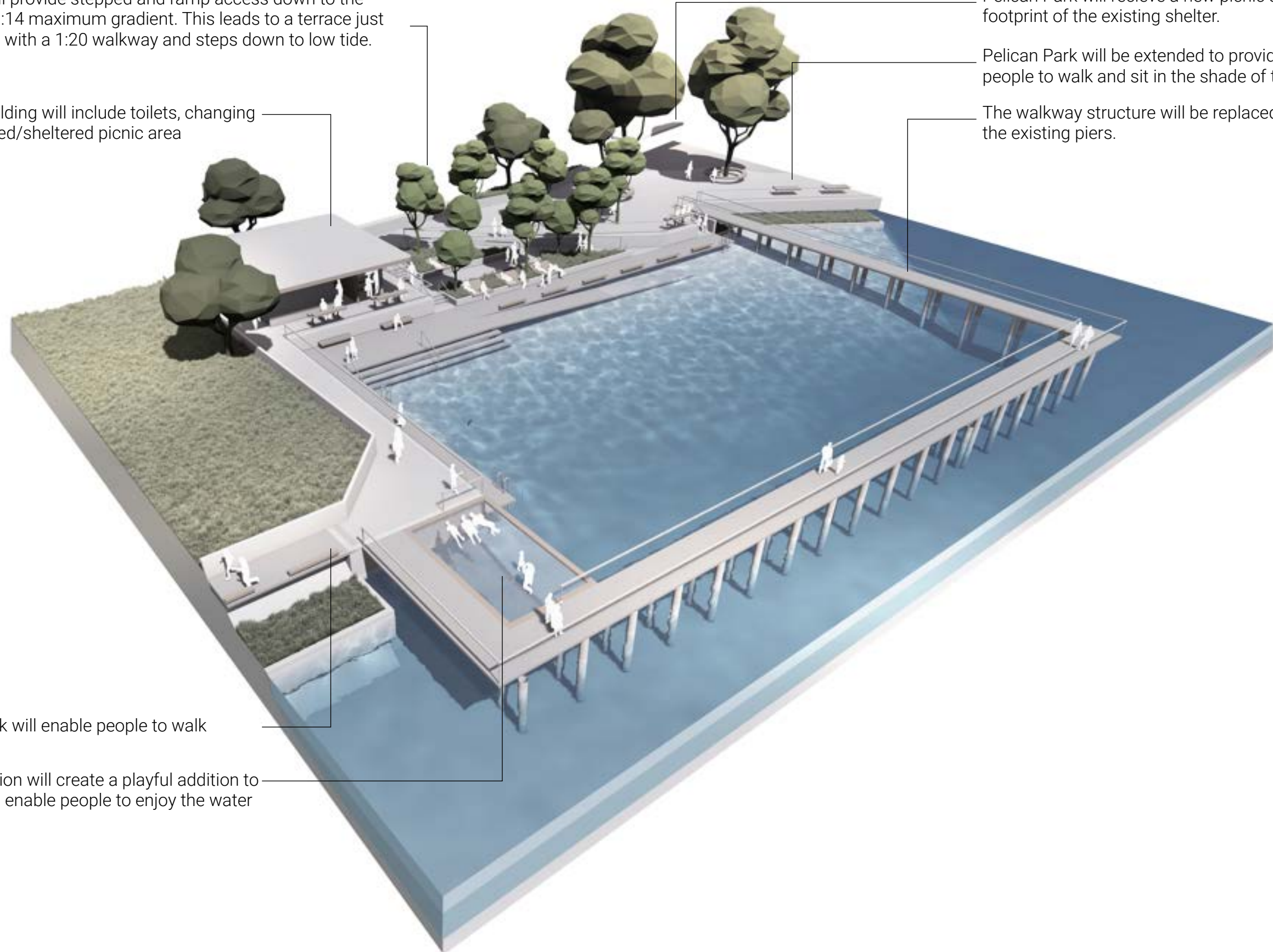
A Slipway Garden will provide stepped and ramp access down to the water level, using a 1:14 maximum gradient. This leads to a terrace just above high tide level, with a 1:20 walkway and steps down to low tide.

The new amenity building will include toilets, changing facilities, and a shaded/sheltered picnic area

Pelican Park will receive a new picnic shelter within the footprint of the existing shelter.

Pelican Park will be extended to provide more space for people to walk and sit in the shade of the existing trees.

The walkway structure will be replaced and widened over the existing piers.



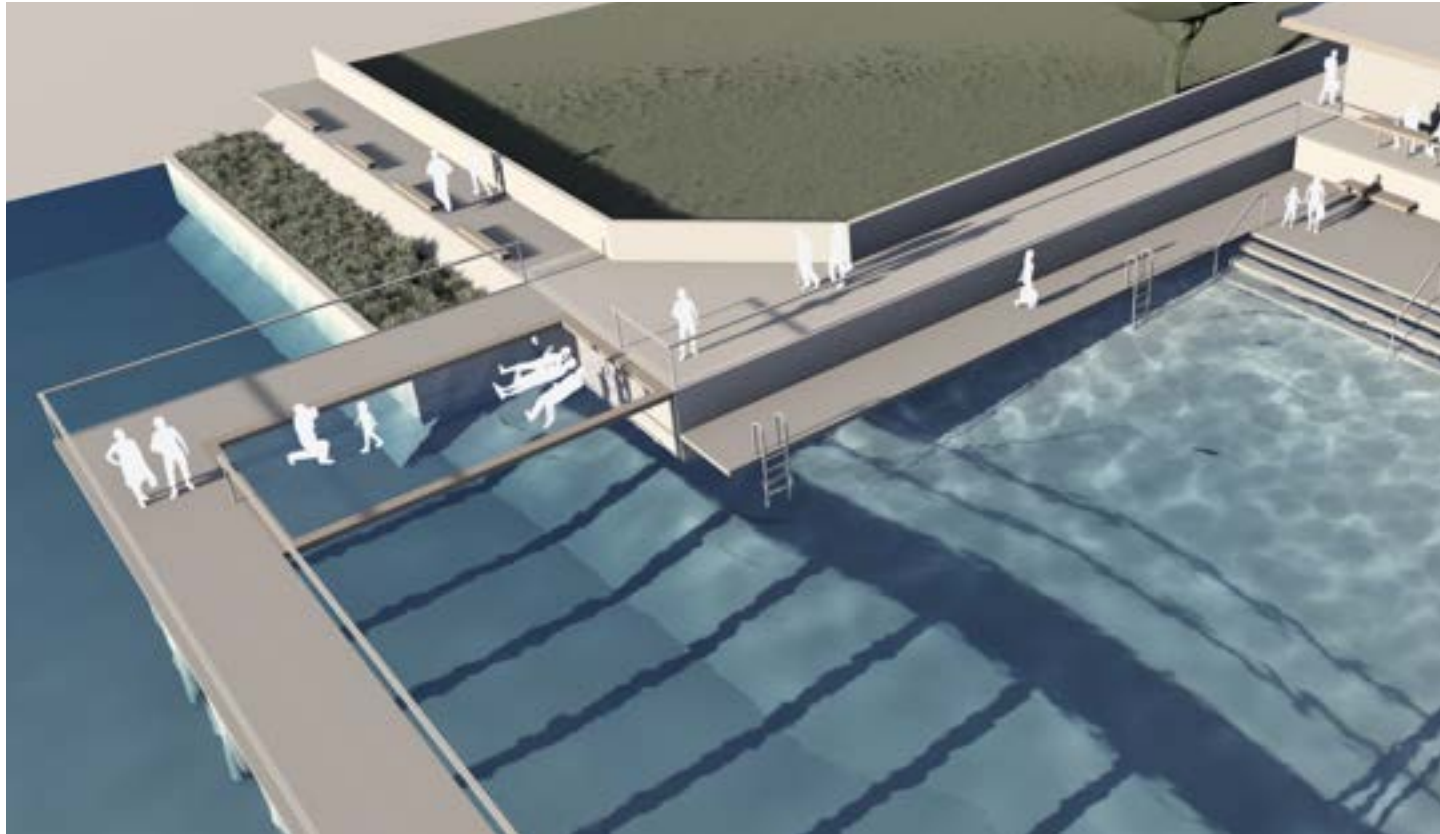
A new Memorial Walk will enable people to walk alongside the water.

A hammock installation will create a playful addition to the public realm, and enable people to enjoy the water without getting wet.

Isometric From North East



View From Perimeter Walk



High Level View of Hammock and Memorial Walk



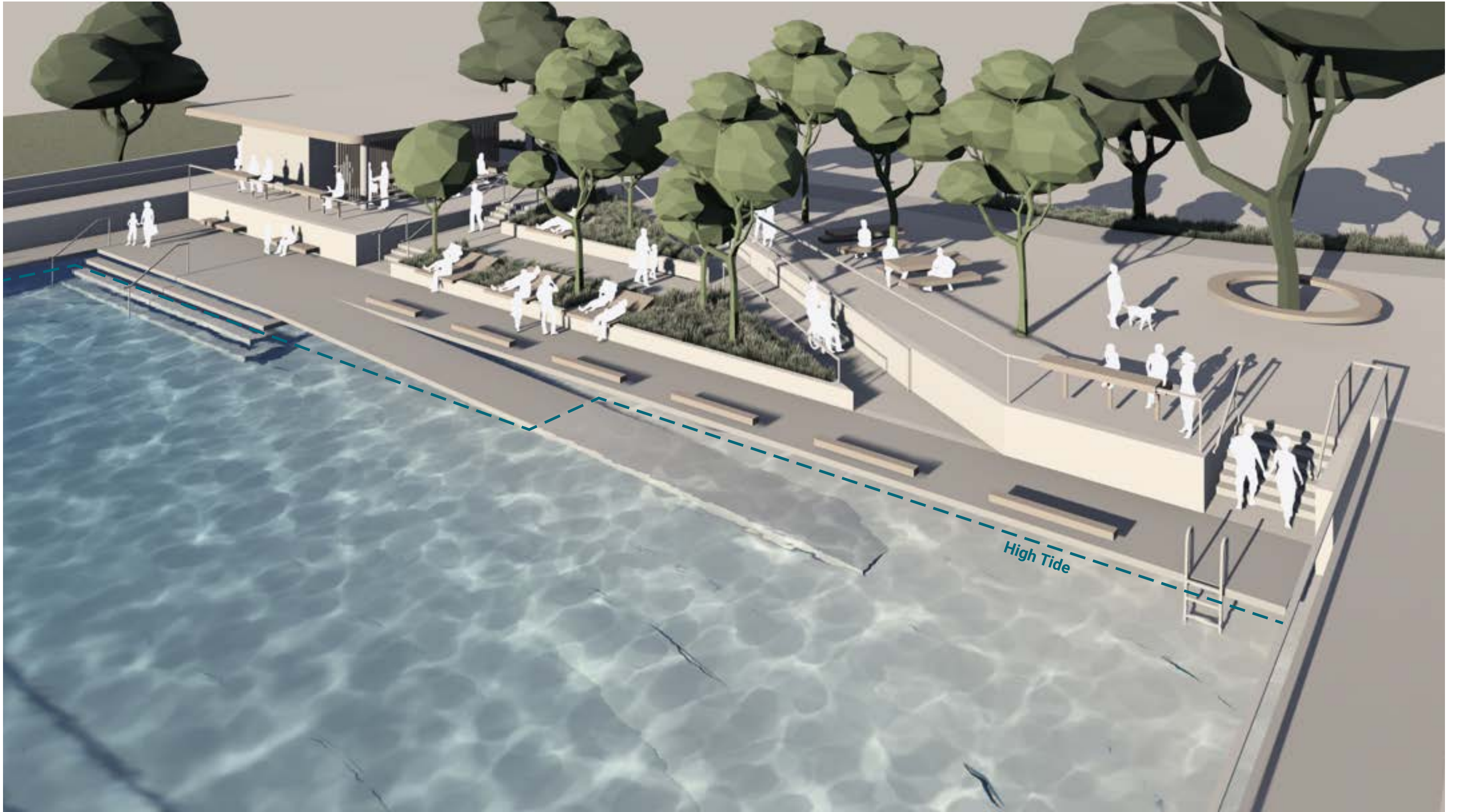
View of Slipway Garden Toward Amenity Building and Shelter



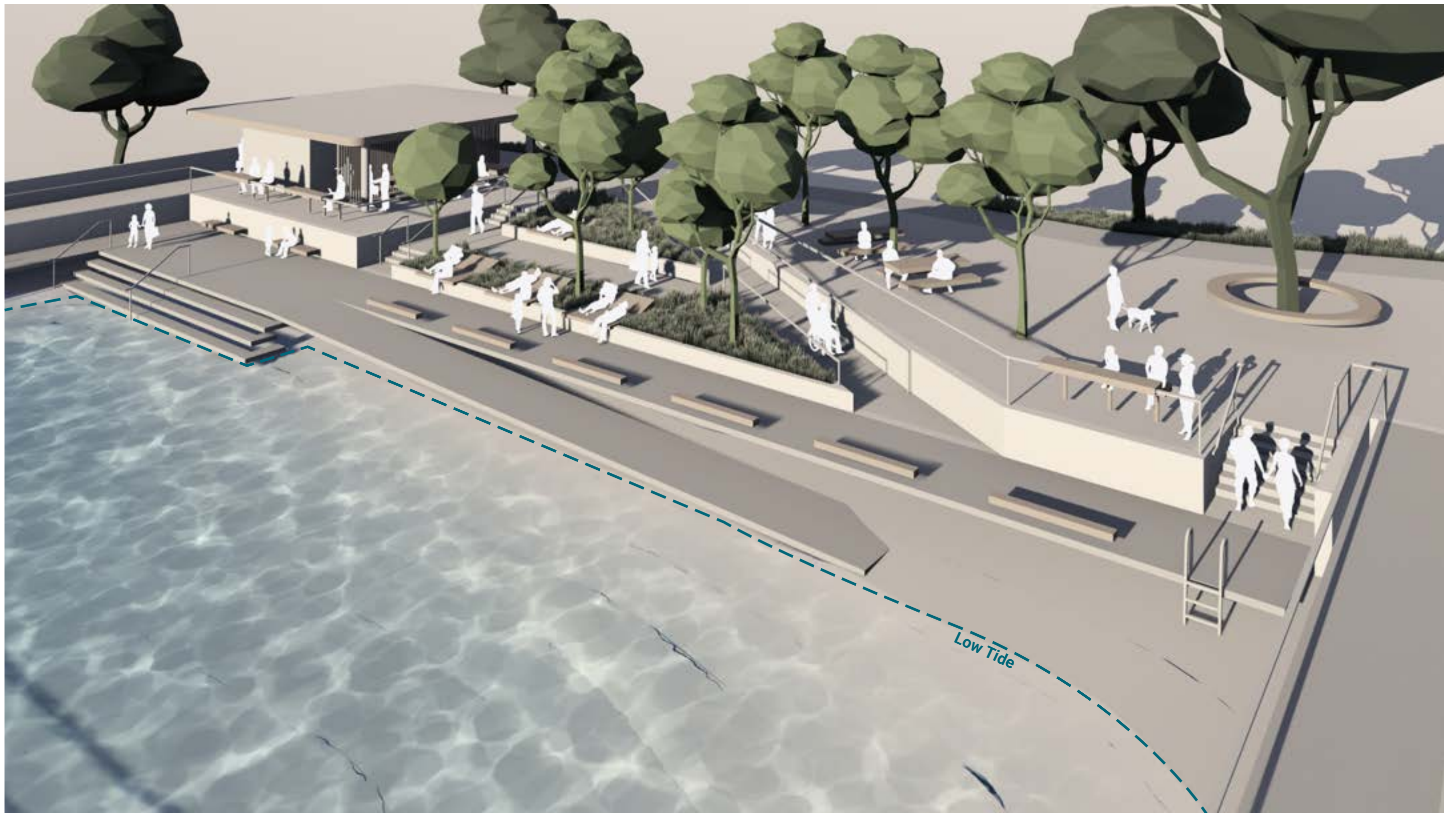
View of Slipway Garden Toward Pelican Park



Open Eye Level View From Brick Wharf Road



Swim Enclosure at High Tide - Approximately 900mm deep at the bottom of the ramp/step



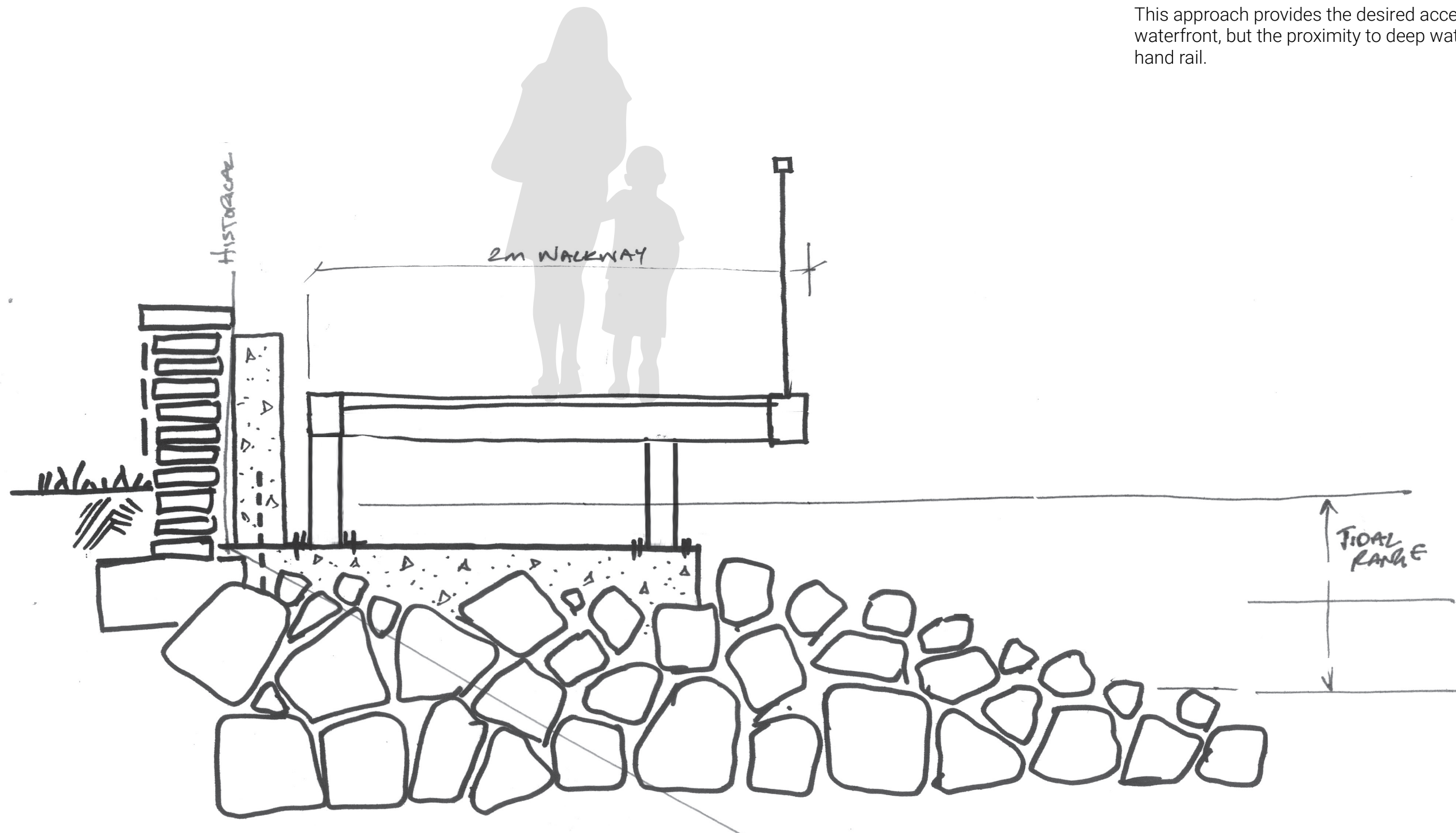
Swim Enclosure at Low Tide - No water at the bottom of the ramp, 100mm deep water at the bottom of the steps

The approach is to create a concrete wall on the waterside of the existing brick wall off the existing revetment concrete pad. This would protect the existing heritage brick wall from further erosion whilst facilitating future works to take place to the wall/garden.

A series of non-return drainage valves would be required in the proposed concrete wall to aid drainage and flood events.

Memorial Walk Option A - Build-out over existing revetment

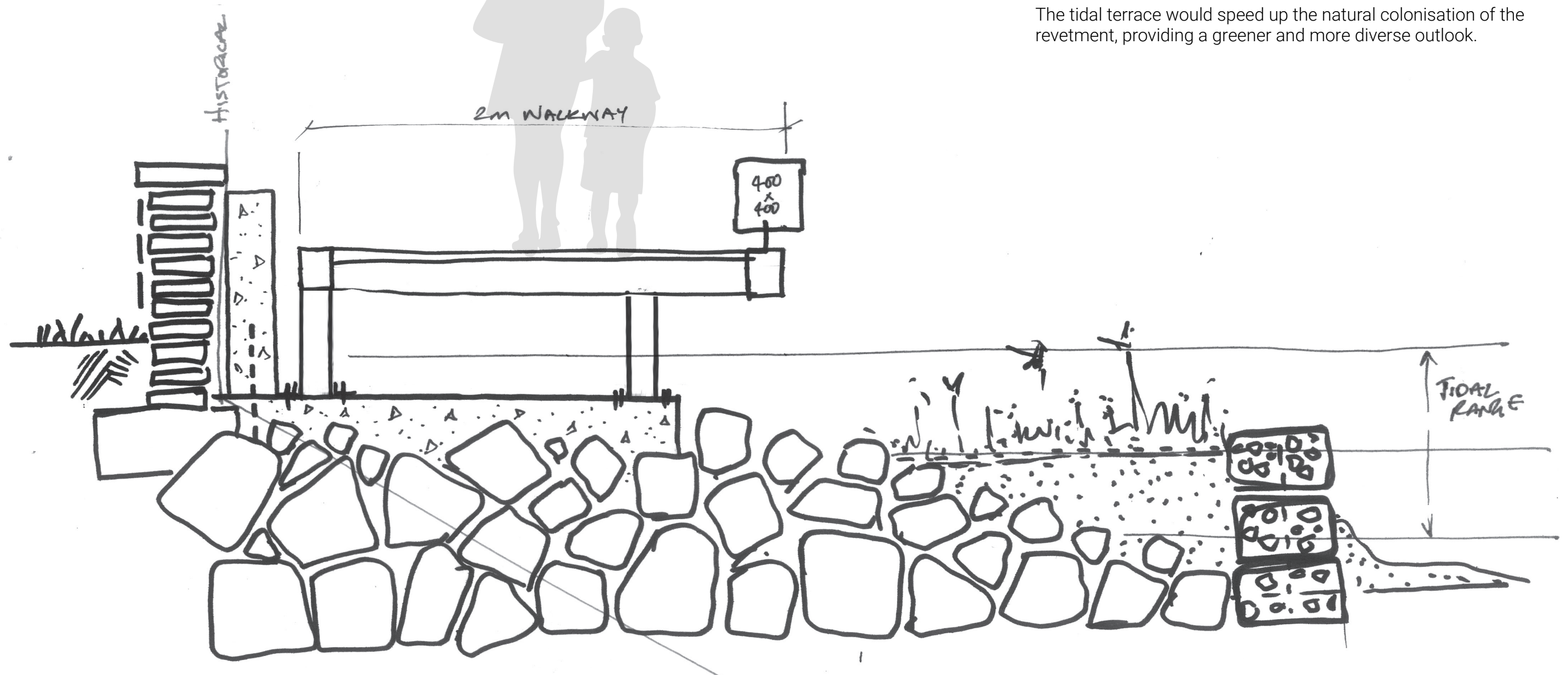
This approach provides the desired access along the waterfront, but the proximity to deep water would require a hand rail.



Memorial Walk Option B - Build-out over existing revetment and create a tidal terrace to diversify inter-tidal zone and reduce water depth alongside walkway

If a tidal terrace is added it reduces the water depth and fall height, potentially negating the need for a hand rail. Which would make the experience more open, and provide close up views of nature.

The tidal terrace would speed up the natural colonisation of the revetment, providing a greener and more diverse outlook.



5.5 Wetlands Precinct

The concept design follows an ambition to explore where land meets water. This delicate space is a tapestry of experiences that can unfold and transition, inviting a deep connection with nature.

Boardwalks and seating areas will help people connect with the world around them, giving them varied and diverse view points.

The route of the boardwalk considers existing trees and structures to optimise the availability of shade and shelter along the route.

Boulders would be used to control movement through the wetlands, protecting the habitat regeneration process.



Boardwalk



Boardwalk



Boulders



Canopy

Brisbane Water is a youthful wave-dominated barrier estuary with high scenic value and areas of pristine vegetation.

The coastal habitats along the foreshore would benefit from some regenerative planting and management to improve aesthetic, resilience and biodiversity.

The Coastal Zone Management Plan for Brisbane Water Estuary 2012 could be used to guide and inform the works.

It consists of a scheduled sequence of activities to achieve the following overarching aims:

- protect, rehabilitate and improve the natural estuarine environment
- manage the estuarine environment in the public interest to ensure its health and vitality
- improve the recreational amenity of estuarine waters and foreshores
- recognise and accommodate natural processes and climate change
- ensure ecologically sustainable development and use of resources.

The plan adopts a list of 183 actions. In recognition that resources are limited, and that some actions are dependent upon the implementation of others, in the first instance implementation focuses upon the top 72 highest priority management actions.



Tuggerah Lake Habitat Restoration Project



LEGEND

1. Existing trees
2. Proposed trees
3. FRP Boardwalk
4. Concrete footpath
5. Amenity lawn
6. Regenerative planting
7. Lookout with shelter
8. Waterside deck A
9. Waterside deck B
10. Waterside deck C with Shelter
11. Landside deck
12. Outdoor Gym

Wetland Precinct West Proposed Plan





Wetland Precinct East Proposed Plan



5.6 Lions Park

The active route that flows along the southern boundary of the park causes conflict with the vehicular access to the boat ramps. We proposed to improve the layout of the western boat ramp junction and close vehicle access to the eastern boat ramp. Both areas would be renewed with hazard demarcation and signage.

The space associated with the amenity block would be formalised into a Gateway Plaza with new tree planting, paving, seating and cycle stands.

The north-eastern waters edge would be redefined by a new waterside walkway and landmark canopies.

The existing carpark could be reconfigured to provide 57 spaces, which is 24 additional car parking spaces. (previously 33 spaces, 21 of which provided flexible trailer parking).



Canopy



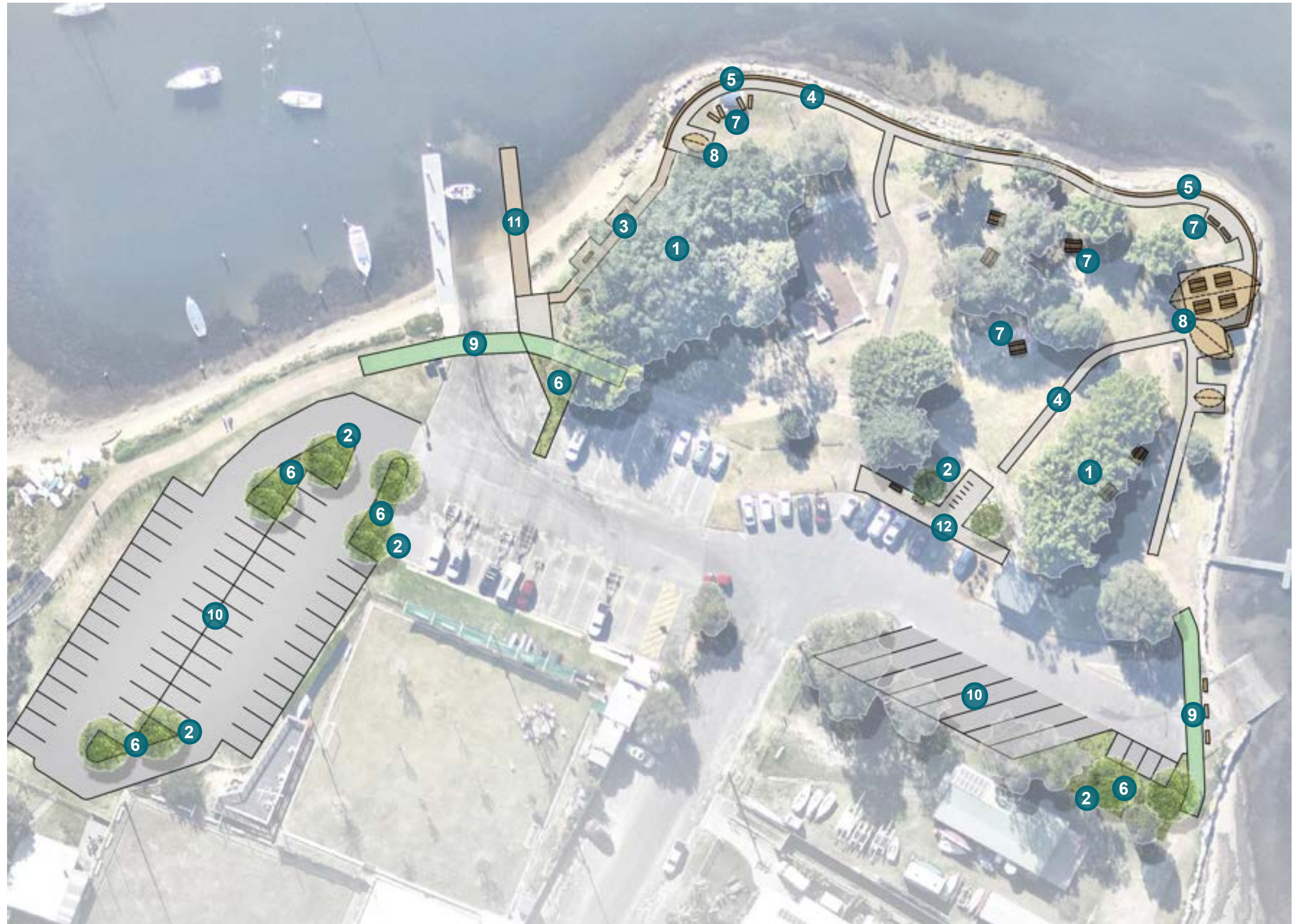
Recliner Seats



Cycle Hazard Markings

LEGEND

1. Existing trees
2. Proposed trees
3. FRP Boardwalk
4. Concrete footpath
5. Raised sandstone edge
6. Mass planting
7. New furniture
8. Canopy/Shelter
9. Cycle lane demarcation
10. Car park
11. Jetty/Pontoon
12. Gateway Plaza



Lions Park Proposed Plan

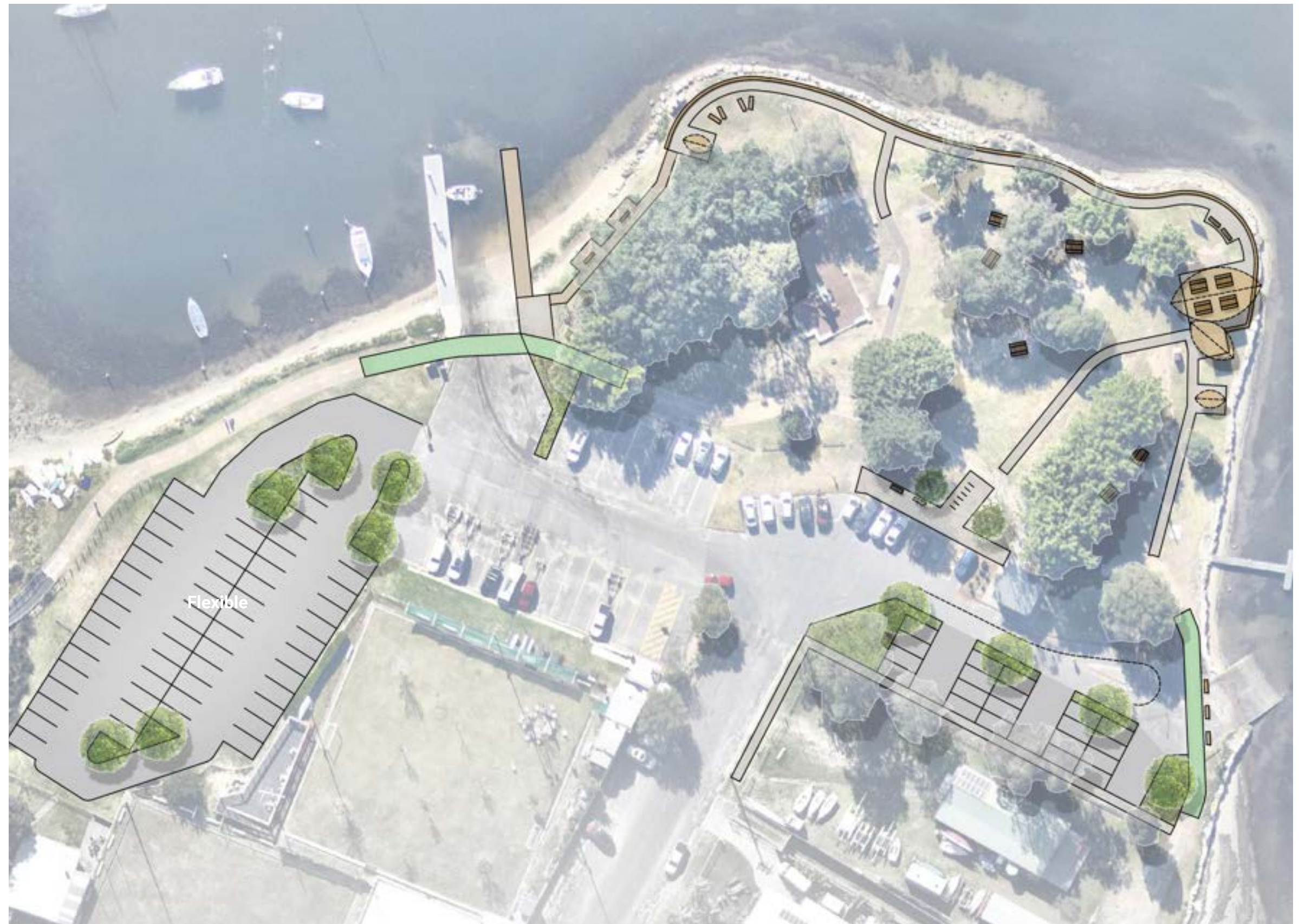


5.7 Lions Park - Alternative Eastern Carpark

With the eastern boat ramp closure, the trailer parking along side it could be replaced with standard vehicle spaces.

Due to the confined space short cul-de-sacs parking bays are proposed, and the turning area would be retained.

The central zone of the western carpark could provide 2 standard vehicle spaces or combine for trailer parking.



Alternative Eastern Car Park Configuration



5.8 Lions Park - Testing Route Alignments

Studies were undertaken to review the points of conflict between pedestrians, cyclists and vehicles using the boat ramps.

Various scenarios were tested, as demonstrated in the adjacent diagrams. All were discounted, as they did not improve the existing situation.



Proposal A

Draw the shared route along the southern boundary of the parking provision, to reduce the amount of pedestrians/cyclist crossing the boat ramps.

Reduce the width of the existing pathways by grubbing out half of the hard surface.

Observations

People want to stay by the waters edge and reach Lions Park, therefore the existing pathway needs to be retained.

This approach increases the points of conflict from 2 to 5.



Proposal B

Draw the shared route from the park before it reaches the western boat ramp, and then take the route along the southern boundary of the parking provision, to reduce the amount of pedestrians/cyclist crossing the busiest boat ramp. And reduce the width of the existing pathways by grubbing out half of the hard surface.

Observations

People want to stay by the waters edge and reach Lions Park, therefore the existing pathway needs to be retained.

This approach increases the points of conflict from 2 to 3. And places the shared route along the back of the parking provision, away from the waters edge and good views.



Proposal C

Draw the shared route around the edge of Lions Park to optimise travel along the waters edge.

Observations

This will prioritise the cyclist and restrict access to the waters edge from the park, increasing pressure on the play environment and potentially cutting the park off from the water.

6.0 Materiality & Composition

A simple and robust pallet of complementary materials.



Brushed Concrete



Composite Timber



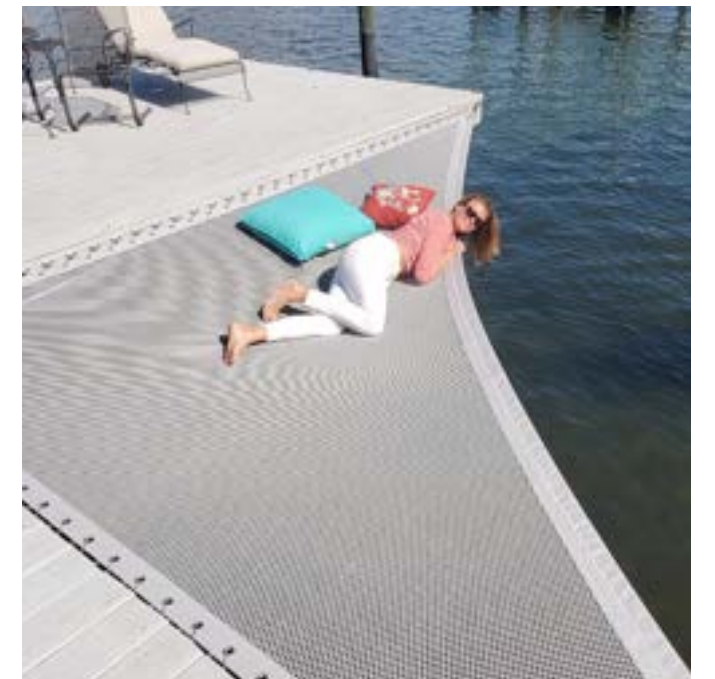
Fibre Reinforced Plastic Mesh



Hazard Demarcation



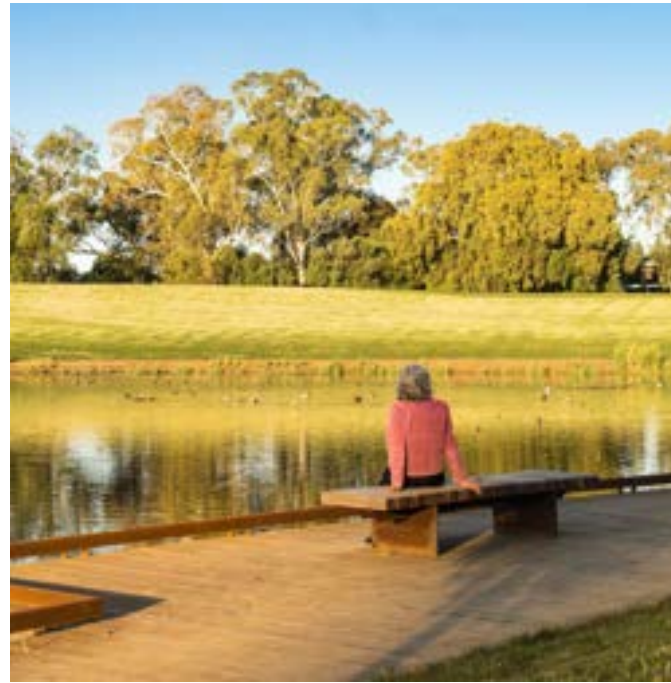
Art Integration



Waterside Hammock/Cargo Net



Benches With Views



Boardwalk Benches



Landmark Shelters



Coastal Habitat Regeneration



Urban Bar Stools



Art Installations



Timber Shelters



Boulders

7.0 Considerations and Next Steps

The following outlines critical points, decisions and considerations for the next work stage (Detail/Tender Documentation) process. Many of which need clarity early in the process to ensure the design proposals can be refined and developed appropriately and to programme.

Design Items

The following design items need review and input to confirm the brief.

First Nations: We had a great engagement process during our Walk on Country and have incorporated the feedback into our 100% Concept Design deliverables. Once the First Nations Consultant is formally appointed and they provide formal reporting, the teams proposals will need to be reviewed to ensure they align.

Memorial Garden: Works associated with the ANSAC Memorial Garden are not part of the Foreshore scope of works. However it is evident the garden needs restoration work and a sensitive approach during Foreshore construction works. The strategy to achieve this needs to be agreed.

Coordination Items

Alongside the standard topics of coordination the following identifies coordination items that need early consideration;

Memorial Garden Wall: How the foreshore works interface with the memorial garden flood considerations needs consideration. A series of non-return drainage valves would be required in the proposed concrete wall to aid drainage and flood events.

Existing Trees: The existing mature trees, with their extensive surface root systems, necessitate meticulous planning to avoid damage during both construction and future park usage. A comprehensive arboricultural survey, conducted by a qualified arborist, is essential to map root protection zones and recommend appropriate construction methods. This report should inform the design team regarding alternative construction techniques,

such as hand excavation or non-invasive piling, to minimise soil disturbance.

Health and Safety: The proposed swimming enclosure has been designed to encourage natural interaction with the water. In places this includes direct entry points without barriers or handrails. CCC needs to review the proposals to ascertain whether they accept the assessment of reasonable risk.

Health and Safety: The approach to lighting has been to retain as much dark sky as possible, for wildlife considerations and to align the the first nations engagement with the night sky. This means the lighting strategy is low lit and uses sensors in certain locations to reduce the light pollution. CCC needs to review the proposals to ascertain whether they accept the assessment of reasonable risk.

Existing Seawall: The variable condition of the existing revetments presents both challenges and opportunities for the project. Works to the coastal defences are not part of the Foreshore scope, but inplaces a structural assessment, undertaken by a coastal engineer, maybe required to determine the extent of necessary repairs or replacements.

Ecology: The existing healthy habitats offer valuable ecological services and should be preserved and enhanced, while the habitats that are struggling present opportunities for ecological restoration and biodiversity improvement. Detailed ecological surveys are necessary to map existing habitats and identify areas for restoration. A habitat enhancement plan, focusing on native species selection and habitat creation (e.g., bird nesting sites, pollinator gardens), should be developed.

Community Engagement: Further community consultation workshops should be conducted to gather feedback on the concept design. There are opportunities for community involvement in the habitat restoration and ongoing management of the regeneration works, alongside the design and implementation of artworks and information points along the foreshore. This approach will increase the sense of stewardship.

8.0 Appendix 1 : Northrop

9.0 Appendix 2 Electrical Projects Australia



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