

CAUSEWAY PEDESTRIAN AND CYCLIST BRIDGE URBAN AND LANDSCAPE DESIGN FRAMEWORK

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DA SUBMISSION

REV A1



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1. INTRODUCTION

PROJECT OVERVIEW

This updated '15%' Causeway Pedestrian and Cyclist Bridge Project Urban and Landscape Design Framework (ULDF) identifies a high quality bridge design that integrates with the surroundings, celebrates the historic and cultural significance of the Swan River crossing, and forms a well-integrated gateway and link within the City of Perth and Town of Victoria Park. The new bridge replaces the existing Causeway pedestrian/cyclist crossing to meet the needs of some 1,900 pedestrians and 1,400 cyclists per day.

The ULDF objectives include:

- _ Acknowledging the spiritual and cultural importance of the Swan River (Derbal Yerrigan) to Perth's first nations peoples and ensuring a culturally sensitive design response.
- _ Improving connections to and across the Swan River, including to and around the site and bridge structure.
- _ Enhancing the environment by maximising the retention of vegetation and planting of native species. Addressing modifications to drainage.
- _ Augmenting amenity through increased levels of shade for users of the bridge structure and the parks, locally relevant and culturally engaging art work, and foreshore park amenities.
- _ Attractive visual amenity through an iconic structure, removing redundant infrastructure and reducing the visual impact of the structure.
- _ Embed safety outcomes for pedestrians and cyclists as a priority in all design decisions.

This report highlights the design approach for this important site. It identifies the design principles to ensure the urban and landscape design is of its place and authentically integrates with site context and bridge architecture. The intent is to guide design decisions associated with the bridge architecture and engineering, environment, heritage, landscape and public art.

This report illustrates the development of the urban and landscape design through the initial stakeholder engagement process, resolution of 'Interest Points' and coordination to a 15% design stage.



Concept design imagery: ipv Delft international

2. CONTEXT ANALYSIS

CURRENT LAND USE

The site extends across distinctive land use areas. The bridge structure will connect the higher intensity CBD, built form to the north/west with the lower scale residential / suburban context to the south/east. It will be one of four crossings for pedestrians and cyclists across the Swan River, meeting high community demand. The bridge structure will span the spectacular water and lowland environments of the Swan River.

The new structure will be located 90m to the south of the existing crossing at The Causeway.

To the south/east, McCallum Park is a typical regional park with extensive grasslands and a modest number of trees. Separated pedestrian and cyclist paths run parallel with the Swan River.

To the north/west Point Fraser recreation precinct has seen a greater level of development, including paths, car parking, food and beverage options, and recreation and play-ground nodes. There has been significant redevelopment, infrastructure and landscaping investment to enhance the space.

The culturally significant Heirisson Island (Matagarup) is the mid-point for the bridge structure. Originally part of several small islands surrounded by mudflats, the landscape is the result of dredging and reclamation. The island is a natural place with trees and meandering informal paths. The Causeway segregates the island into two parts. The northern area can be accessed via The Causeway with a car park, toilets and BBQs. The southern end has been fenced off to allow kangaroos to roam. The urban and landscape design approach acknowledges significance of Heirisson Island and importance to the local Noongar Whadjuk people.



2. CONTEXT ANALYSIS

HISTORICAL LAND USE

Heirisson Island is located in an important area for Noongar Whadjuk people. The Swan River was formed by the mythological serpent the Wagyl and has continuing cultural importance related to past and contemporary Noongar Whadjuk culture.

Matagarup (Noongar for knee-deep crossing) or Heirisson Island are the names given to the shallow crossing points where The Causeway is now located.

The area is of recognised importance to the Nyoongar Whadjuk people as

- mythological site
- camping
- meeting place
- food and water resource
- hunting ground
- crossing point
- individual significance for both men and women

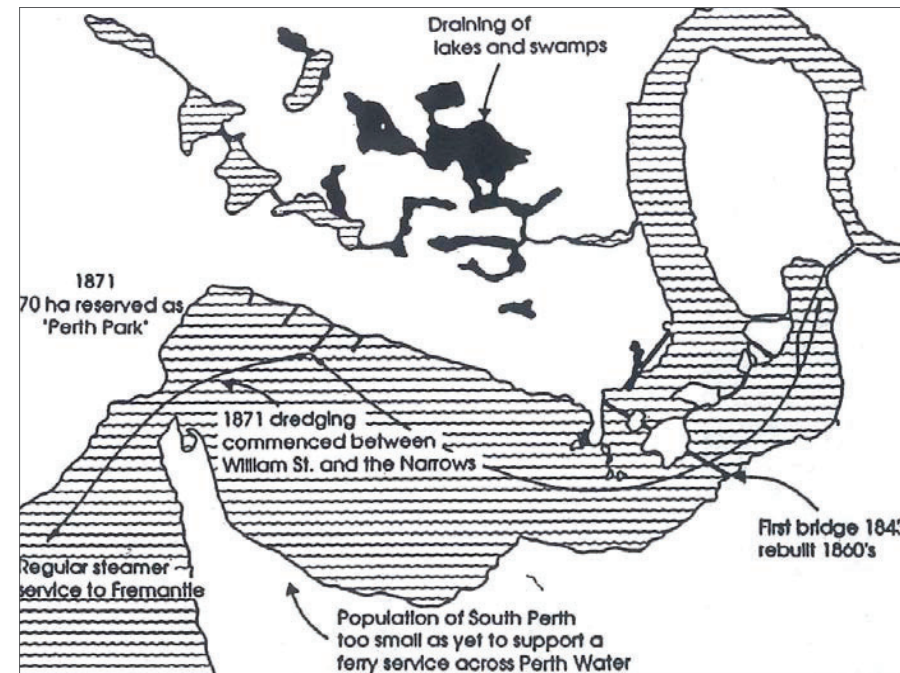


2. CONTEXT ANALYSIS

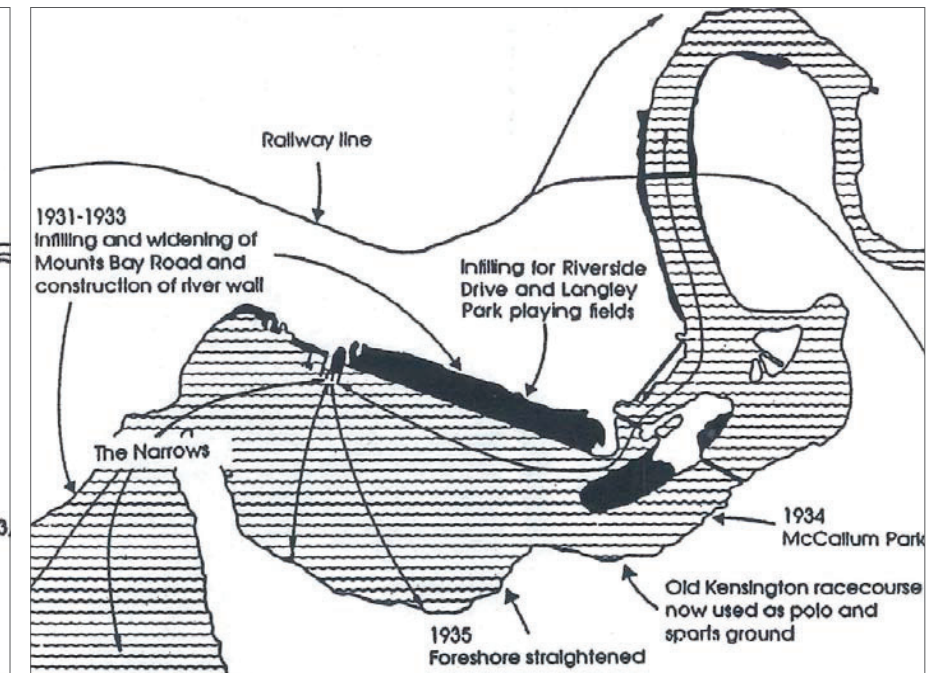
HISTORICAL LAND USE

Heirisson Island and The Causeway have changed significantly over time.

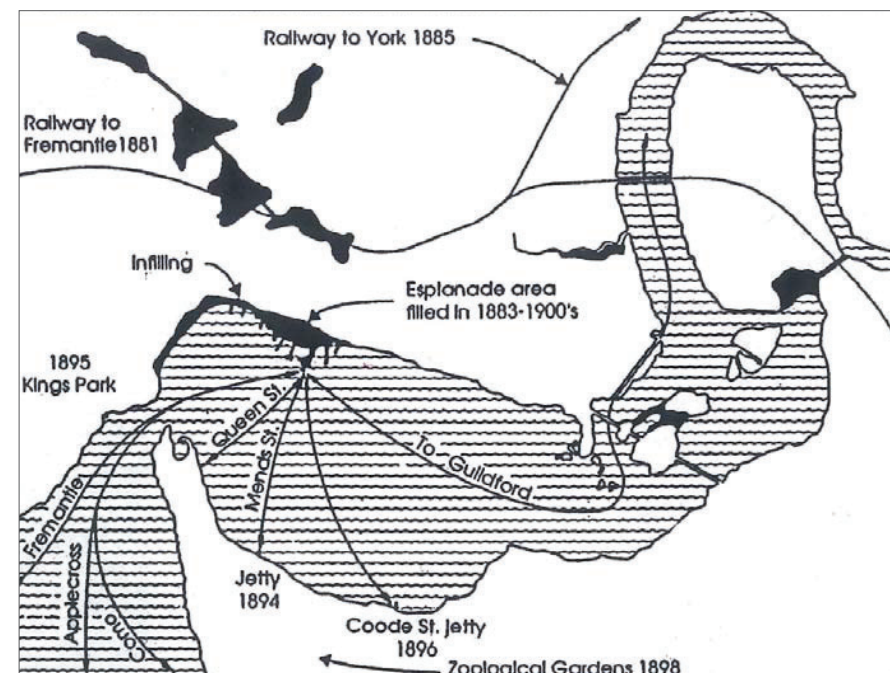
- A small chain of islands and surrounding mud flats, the area is known as Matagarup, the place where the river is 'only leg deep'. Originally Heirisson Island was a much smaller island known as Kakaroomup.
- In 1801, Heirisson Island was named after French mid-shipman François-Antoine Boniface Heirisson, who was on the French ship *Le Naturaliste*.
- English settlement in 1829.
- 1842 a toll bridge was constructed. Second Causeway Bridge constructed after flooding.
- Reclamation works were carried out to the Heirisson Islands in 1903. At this time, the two islands were consolidated into one. Two channels were created on either side of the island; the north one being navigable.
- In the 1920s and 1930s, further works were undertaken to re-shape and raise the island.
- Existing Causeway constructed in 1955.
- Major landscaping works occurred on Heirisson Island in the 1970s creating a parkland.
- Vested in the City of Perth in 1975, Heirisson Island became an A Class Reserve.
- In 1984, a statue of Noongar Whadjuk warrior Yagan was erected on the island.



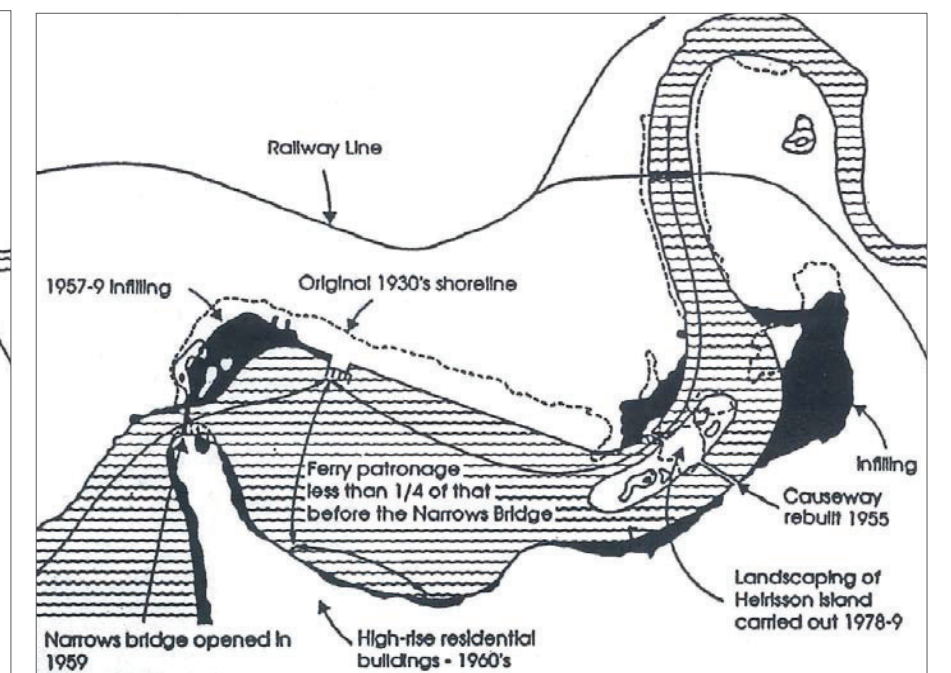
1870



1930



1900



1970

Image source: City of Perth Heirisson Island Sculpture Park Master Plan (2008)

2. CONTEXT ANALYSIS

HISTORICAL LAND USE

Reclamation works have been a constant feature of the Causeway crossing from as early as 1920s and 1930s.

Works to the west have facilitated the expansion of the Causeway interchange, creating an entrance gateway to the Perth CBD.

Over time the island landform has been moulded into one cohesive island with water bodies and complemented by river edge vegetation communities, extensive tree canopy and footpaths.

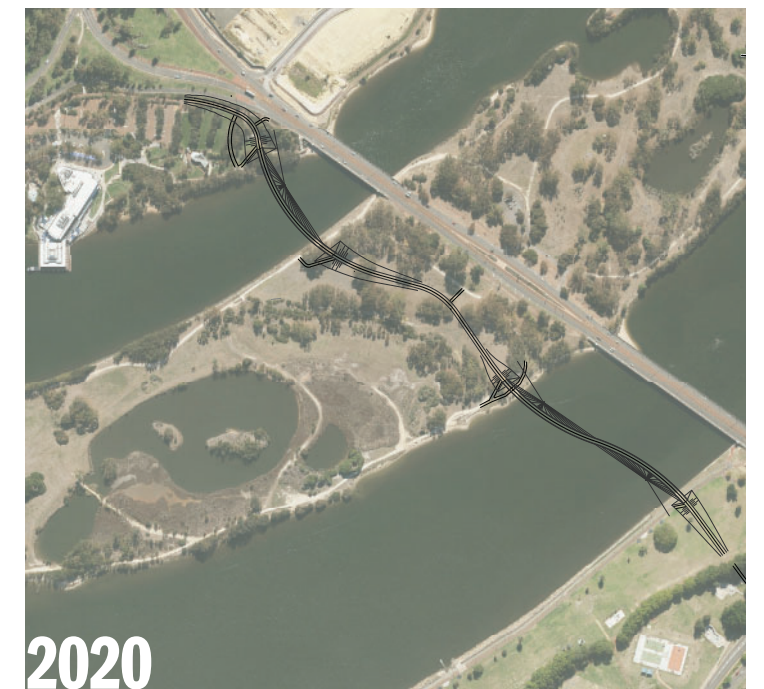
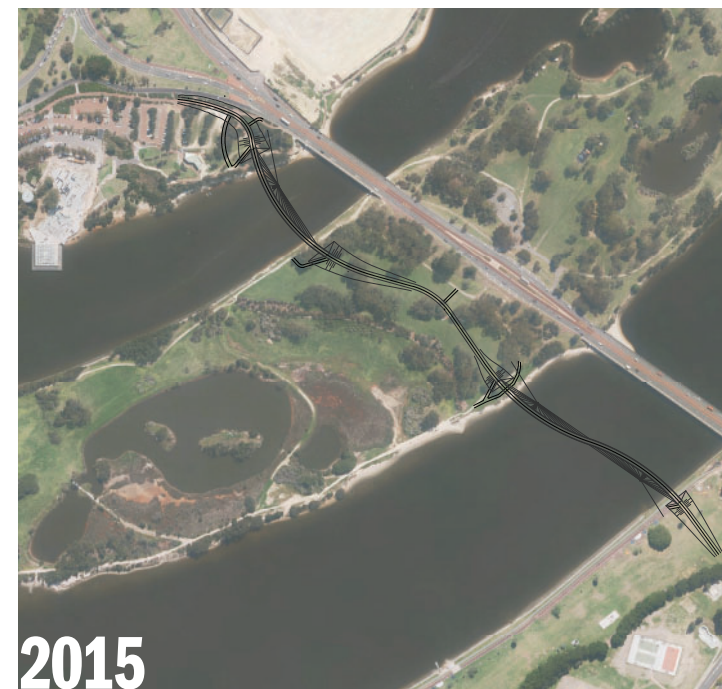


2. CONTEXT ANALYSIS

HISTORICAL LAND USE

Modest redevelopment of facilities in McCallum Park to the east of the Causeway is contrasted with the larger scale development of Fraser Point and anticipated Waterbank to the west.

Vegetation on Heirisson Island has matured over time with little change to landform since the late 1970s.



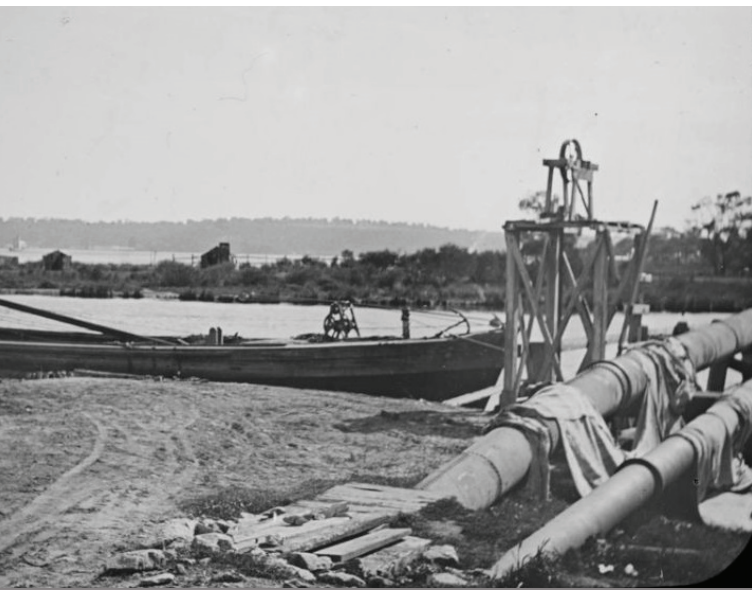
2. CONTEXT ANALYSIS

HISTORICAL LAND USE

Over time The Causeway Bridge has evolved to address the transport needs of the community, embracing new construction techniques.

1860

The Causeway Bridge I prior to its partial destruction during the floods of 1862



1906 - 1907 Pipes over The Causeway, with buildings present on

c.1865

North side of Causeway Bridge II



1950s
Causeway Bridge II still in use while Causeway Bridge III is under construction, showing broken railing

Images source: Heritage Impact Assessment and Archaeological Management Plan for the installation of a pedestrian / cyclist bridge near the Causeway Bridges, East Perth WA

2. CONTEXT ANALYSIS

PLANNING CONTEXT

Western Australian Planning Commission

Perth and Peel @ 3.5 Million (2018)

The Perth and Peel@3.5million frameworks aim to accommodate 3.5 million people by 2050 by creating vibrant communities within a compact and connected city; making best use of existing and proposed infrastructure; and protecting important environmental assets.

The Central Sub-regional Planning Framework identifies the population is projected to grow by more than 468,000 people between 2011 and 2050 – from around 783,000 to nearly 1.2 million people.

An urban consolidation approach increases or sustains the density of housing in established residential areas through infill development. It results in higher-density employment and residential development and urban renewal initially along public transport corridors. Perth and Peel @ 3.5 Million acknowledges the importance of public and active transport options in a city of 3.5 million people.

DoT / Main Roads WA / PTA / WAPC

Perth and Peel @ 3.5 Million The Transport Network (2018)

As the city grows, there will be more emphasis on providing high-quality, safe and comfortable pedestrian and cycling infrastructure.

The cycling network for a city of 3.5 million, will include:

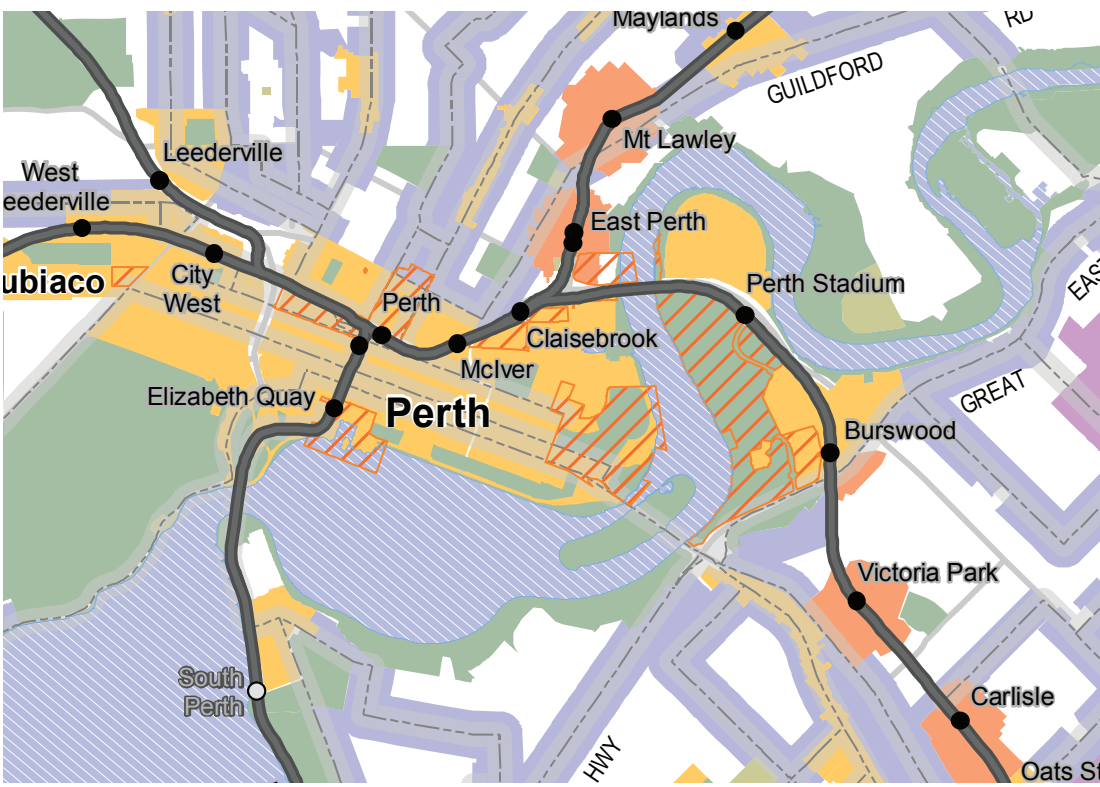
_ extension to the current 172 km of metropolitan off-road commuter cycle paths to over 850 km, to cater for approximately half a million bicycle trips each day.

_ new active transport (cycling and pedestrian) and green (active and public transport) bridges to improve connectivity across rivers and lakes, reducing walking and cycling times.

The active transport will include three bridges crossing the Swan River between Heirisson Island and Maylands.

Framework land uses

- Green network (MRS only)
- Activity centre
- Urban corridor
- Station precinct
- Industrial centre
- Public purposes
- Waterway
- Redevelopment area



Central sub-regional planning framework (2018)



Perth and Peel 2050 Cycling and Walking Network (2018)

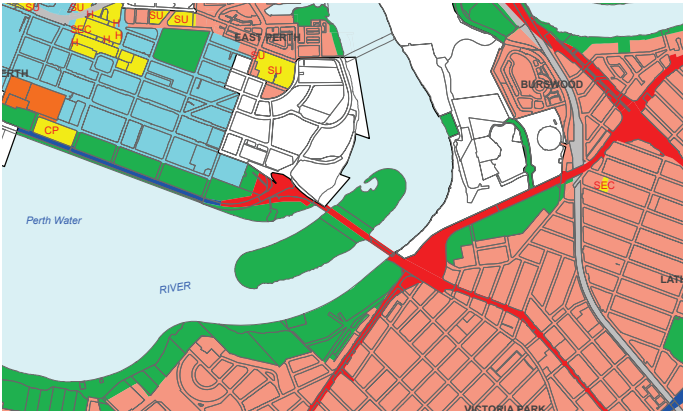
2. CONTEXT ANALYSIS

PLANNING CONTEXT

The proposed Causeway Pedestrian and Cyclist Bridge is located within the Metropolitan Region Scheme’s Parks and Recreation, Primary Regional Roads and spans across the Waterways reserves.

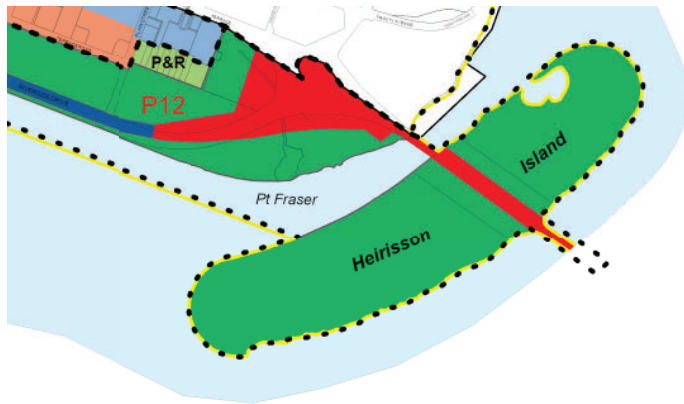
The proposed bridge is considered to have the potential to contribute to the active transport and recreational needs of the community.

Western Australian Planning Commission
Metropolitan Region Scheme
Site reserved:
Parks and Recreation
Primary Regional Roads and
Waterways
Proposed development is considered appropriate within the reserves.



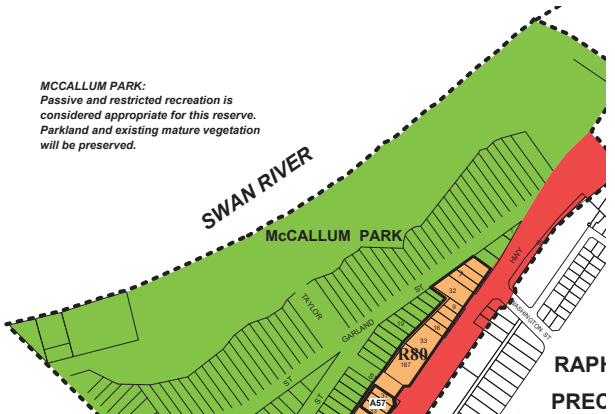
Metropolitan Region Scheme

City of Perth
City Planning Scheme No. 2
Site partially located within the Langley Precinct
The Langley Precinct will be predominantly maintained as an area of expansive public open space providing a dramatic setting for the city. Langley Precinct plan identifies Heirisson Island as a place for passive recreation and refuge for wildlife. The island is managed by the City of Perth.



City of Perth City Planning Scheme No. 2

Town of Victoria Park
Town Planning Scheme No. 1
Site partially located within the McCallum Park Precinct
Passive and restricted recreation is considered appropriate for this reserve. Parkland and existing mature vegetation will be preserved.



Town of Victoria Park Town Planning Scheme No. 1

2. CONTEXT ANALYSIS

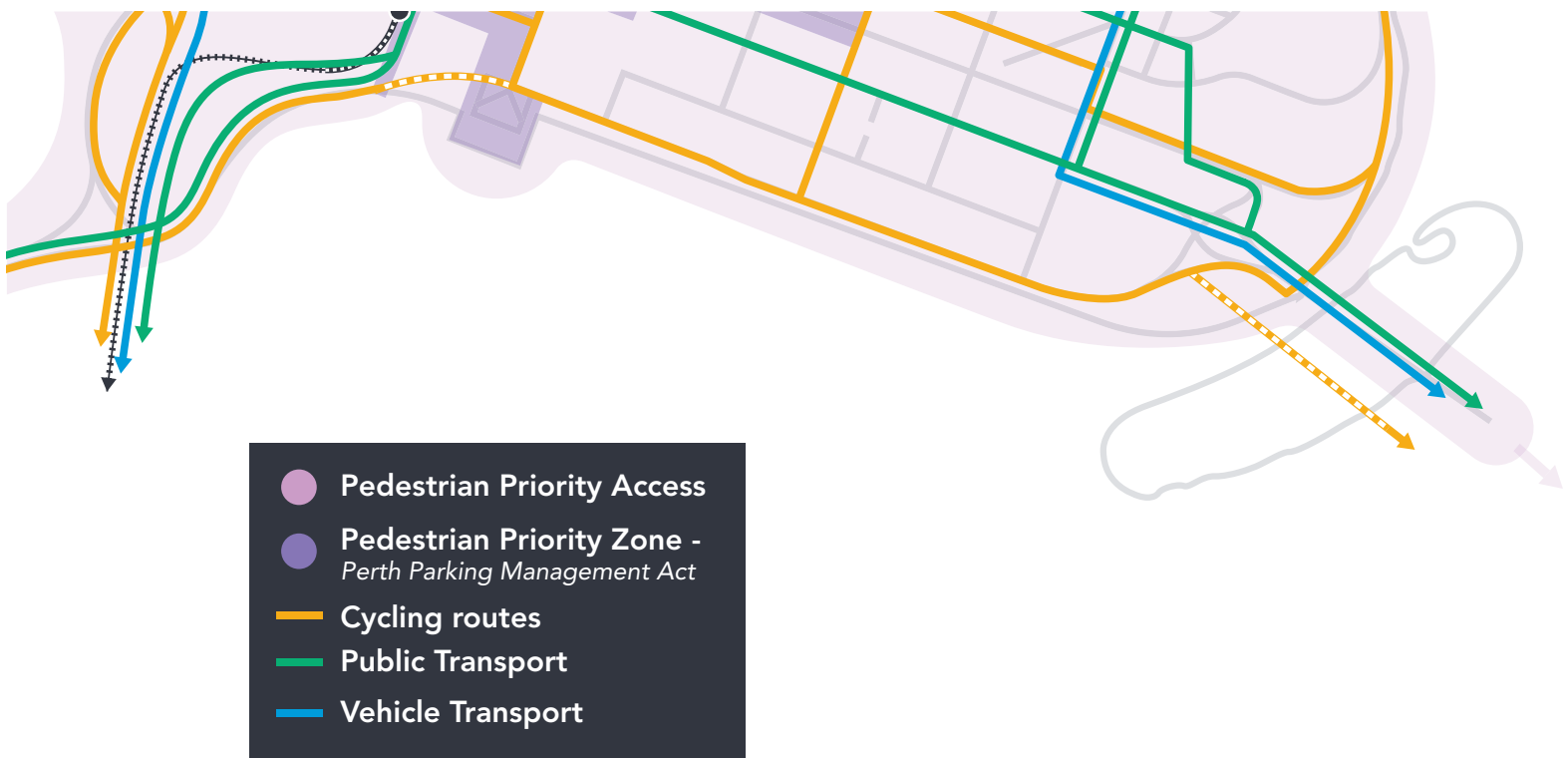
PLANNING CONTEXT

City of Perth

Transport Strategy

Identifies Heirisson Island and The Causeway as an important pedestrian and movement link. “A new walking and cycling bridge at The Causeway will provide a safe and attractive link for the significant number of people cycling in to the city from the south-east.”

The City of Perth’s Cycle Plan 2029 is a long term strategic plan, which has been developed to support the thousands of people choosing to cycle at present, as well as encourage others to use a bicycle as part of their trips within the city.



City of Perth Transport Strategy (2017)

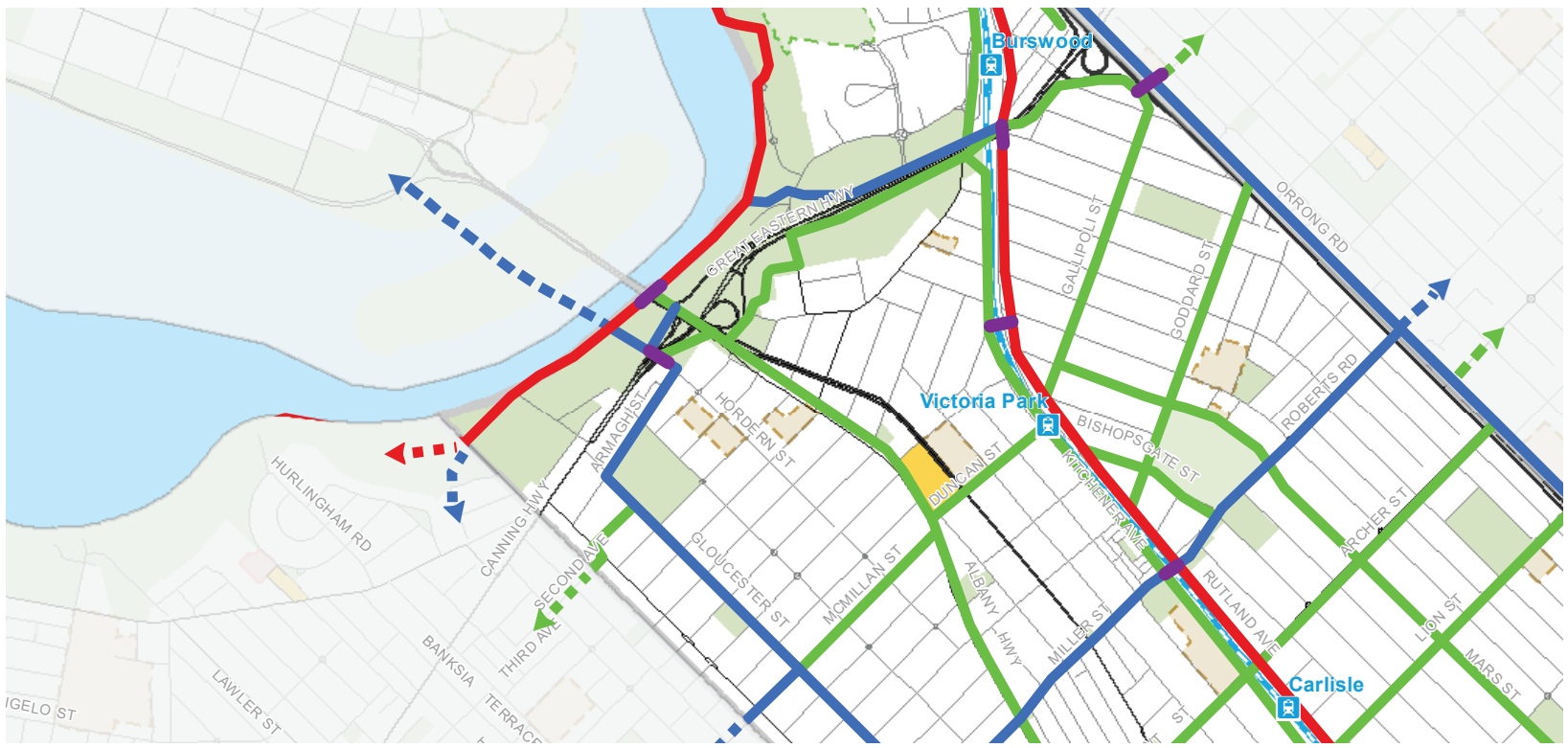
City of South Perth and Town of Victoria Park

Joint Bike Plan (2018)

The Joint Bike Plan sets out the long term vision for the strategic cycling network over the CoSP and ToVP area, in line with State Government’s Perth and Peel Transport Plan for 3.5 million People and Beyond. A pedestrian/cycle bridge across Heirisson Island is highlighted in the Perth Transport Plan at 3.5 million, and the acceleration of the implementation of this project is recommended.

Legend

- | | | |
|-----------|------------------------------|--------------------------------------|
| Rail Stop | Aspirational Network | Overpass/Underpass |
| Railway | Principal Route | Existing Overpass/Underpass |
| Freeway | Principal Route - by others | Proposed Overpass/Underpass |
| Highway | Strategic Routes | LGA Boundary (Town of Victoria Park) |
| Main | Strategic Routes - by others | |
| Minor | Local Routes | |
| | Local Routes - by others | |
| | Within Curtin University | |



City of South Perth and Town of Victoria Park Joint Bike Plan (2018)

2. CONTEXT ANALYSIS

PLANNING CONTEXT

Department of Biodiversity, Conservation and Attractions

Perth Water Buneenboro Action Plan (2020)

Perth Water Buneenboro Action Plan aligns with the aspirations of the Vision and Transition Strategy for a Water Sensitive Greater Perth (2018):

Theme 1: Fostering stewardship of the system

Theme 2: Protecting and enhancing the well-being of people and the environment

Theme 3: Integrating and engaging with the built and natural landscape

Theme 4: Sustaining the long-term use of Perth's resources

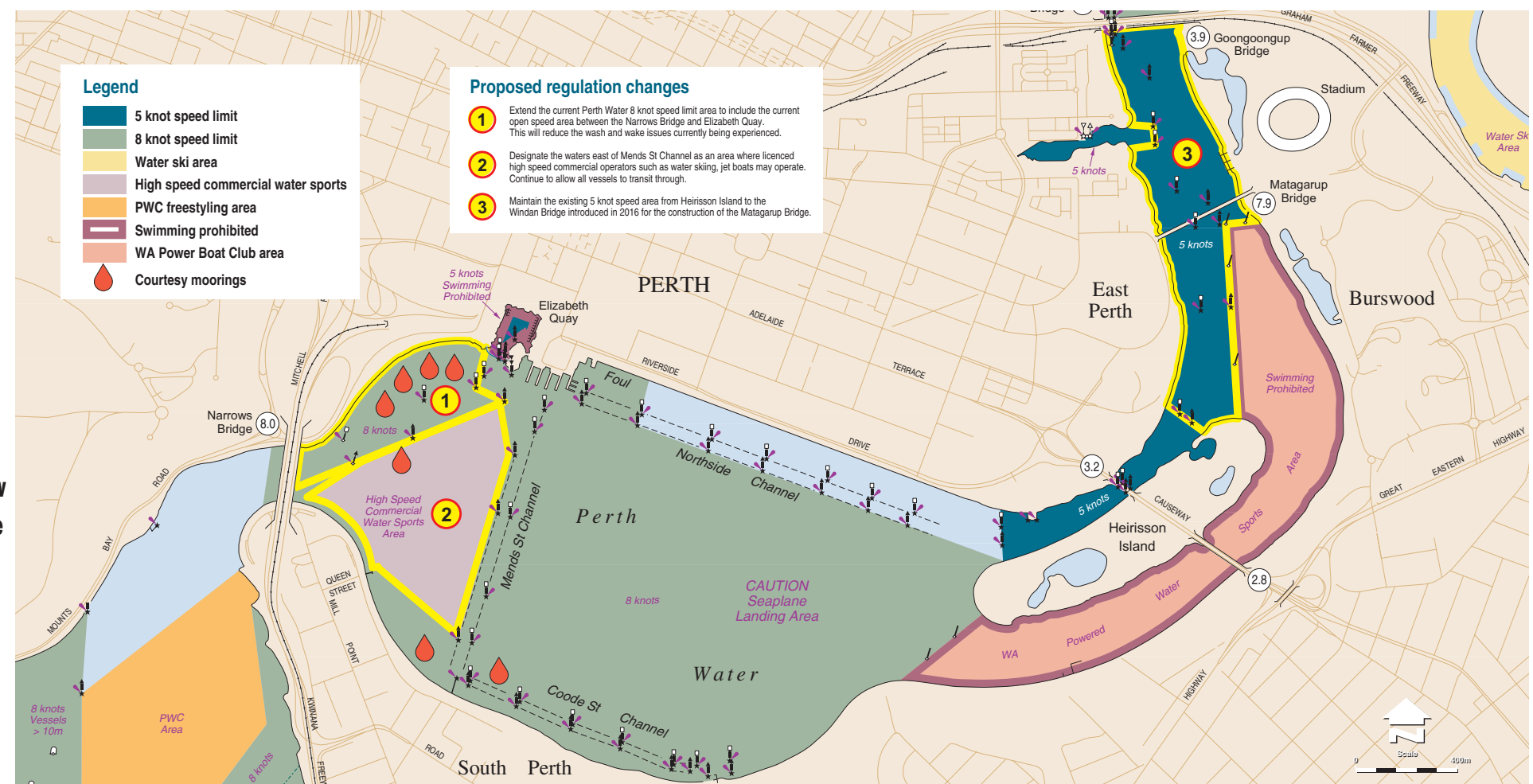
Specifically, Heirisson Island is identified as an important active transport link. The report outlines the need to investigate the feasibility of the Heirisson Island pedestrian and cycle only bridge.

It also mentions future planning for Matagarup (Heirisson Island). In collaboration with the Whadjuk Noongar community and Perth Water Vision Group establish a vision and plan for the future of Matagarup (Heirisson Island) with a focus on recognising Aboriginal cultural value and enhancing the natural qualities (including biodiversity values) and features of the Island.

The Department of Transport conducts regular aquatic reviews to ensure the safe, equitable and sustainable use of our important waterways. It's Perth Aquatic Use Review is appended to the Perth Water report and identifies proposed regulation changes in the area.

“The river has long been a hub for our people. It is our church, our university, our shopping centre and our playground.”

Dr Richard Walley, Noongar elder



2. CONTEXT ANALYSIS

PLANNING CONTEXT

Main Roads WA

Wildflower Capital Initiative (2018)

The Wildflower Capital Initiative is part of a state-wide initiative, to enhance the community and tourist experience of WA using a ‘Wildflower theme’ in the design and character of public spaces, built form and major infrastructure. This includes wildflower plantings, decorative landscaping, feature lighting, urban design treatments, public art and signage, events and festivals and media and promotion materials.

The connection across Heirisson Island provides opportunity to improve the arrival sequence into the capital with feature planting to the east of The Causeway and a landscape feature area to the west at the roundabout.

The intent is for the planting to be predominantly robust perennial CAPITAL species with some annual/herbaceous perennials introduced at key locations.

Capital Species

WA - CAPITAL

- CAPITAL
 - All of Western Australia's flora
 - Diversity of earth / foliage and flower colours
 - Imaginative artistic urban design treatments
 - Celebration of land and landscape
 - Six seasons iconic species
 - Key gateway moments

The capital zone is a celebration of iconic species brought from all corners of the state. It reflects the wide variety of forms, colours, textures and seasonality embedded in Western Australian native plants.

FEATURE ICONIC WILDFLOWER, COLOUR PALETTE AND MATERIALS



e.g. Anigozanthos spp.



Summer Stone



Pea Gravel - Cracked



Blue Metal



Moss Rock

EASTERN CITY

THE EASTERN CITY PROVIDES OPPORTUNITY TO IMPROVE THE ARRIVAL SEQUENCE INTO THE CAPITAL



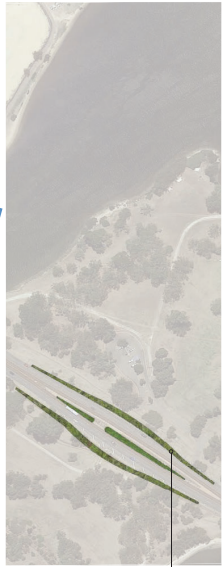
EASTERN CITY - SITE 5 THE CAUSEWAY

THE CAUSEWAY IS A GATEWAY ARRIVAL MOMENT INTO THE CITY CENTRE. ADDITIONAL INTEGRATION OF NATIVE PLANTING WILL FURTHER STRENGTHEN THE JOURNEY EXPERIENCE.

Causeway West - Feature Landscape Area

- Use CAPITAL planting and material palettes to develop a feature landscape. Potential as a Six Seasons interpretative site
- Retain existing palms and trees and build on native planting with CAPITAL planting palette
- Lawn - integrate lawn with planting and gravels area

- Irrigated Turf
- Irrigated Feature Planting
- Feature Gravels
- New Trees



- Feature Planting
 - Complement the COP median wildflower planting with verge planting

- Feature Planting
 - Build on the Stage 1 Causeway works and expand feature wildflower planting in this area

2. CONTEXT ANALYSIS

PLANNING CONTEXT

Embracing the beauty of the Swan River - Surrounding the site a number of landowners have taken advantage of the waterfront views. These city shaping projects are complemented by master planning of the foreshore and adjoining park lands creating outstanding opportunities for community recreation.

Heirisson Island Sculpture Park Masterplan 2013

A masterplan has been prepared by the City of Perth focussing on establishing a sculpture park on the island leveraging off the landing of the new bridge on the island. The project is dependent on the building of the bridge to bring people to the island. The proposal envisions a meeting place which looks towards Point Fraser comprising of an amphitheatre, kiosk and a modest series of pathways, planting and locations for public art.

Recommendations are made for improving the water's edge condition as well as species proposed for ground-cover river's edge and tree planting.




Waterbank

Optus Stadium



Heirisson Island Masterplan 2013 - City of Perth



Proposed Tree Planting

PLANTING

The design works with the existing vegetation as far as possible. Where existing arrangements of trees suggest seating and viewing areas, or loosely define open spaces, these spaces are further delineated or "strengthened" with new planting.

New trees are planted along pathways for shade and protection. The planting of reeds and sedges will help to control erosion of the lake and river banks.

All new planting will be of species indigenous to the area and suited to the riverine environment. Using local species has the benefit of attracting local fauna and providing habitat, and helps to develop a more robust island ecology.

TREES	GROUND COVERS / SEDGES
1. Melaleuca lateralis (Robin redbreast bush)	1. Helioscira halimifoliosa (samphire)
2. Melaleuca viridula (Morian)	2. Helioscira indica (samphire)
3. Melaleuca eucalyptoides (Sahel paperbark)	3. Juncus kraussii (Sea rush)
4. Melaleuca thapsiophylla (Swamp paperbark)	4. Sarcocolla blackiana (samphire)
5. Melaleuca preissiana (Mundong)	5. Sarcocolla quinquiflora (samphire)
6. Cladonia doria (Swamp sheoak)	6. Eucalyptus rudis (Flooded gum)
7. Eucalyptus rudis (Flooded gum)	7. Eucalyptus calophylla (Merr)
8. Eucalyptus calophylla (Merr)	8. Eucalyptus gomphocephala (Tuart)
9. Eucalyptus gomphocephala (Tuart)	

PLANTING / 15



2. CONTEXT ANALYSIS

ABORIGINAL HERITAGE PLACES

Registered Aboriginal Site 3589 Matagarup Heirisson Island
ID: 3589
Status: Registered Site
Type: Mythological, Camp, Hunting Place, Meeting Place, Plant Resource

Registered Aboriginal Site 3536 Swan River
ID: 3536
Status: Registered Site
Type: Mythological



* Approx location of Yagan's Statue is identified as Place No. 11472 within the State Heritage Register

Department of Planning, Lands and Heritage's Aboriginal Heritage Inquiry System (2021)

2. CONTEXT ANALYSIS

HERITAGE LISTINGS

Yagan’s Statue is on the City of Perth heritag list, identified as Place No. 11472.

Location: Heirisson Island, Adelaide Tce East Perth

Located on the southern portion of the island. The Yagan statue looks out across the Swan River and his land.

Created in 1984

Statement of Significance

_ The place has aesthetic and historic significance as a powerful statue representing the history of the original inhabitants of the Swan River area. _ The place has associations with Yagan, a tribal leader who defended his lands against the Europeans and was later captured and killed.

_ The place has associations with the campaign led by local Swan River Aboriginal groups for the return of Yagan’s head from England.

_ The place has rarity value as a site recognising the life and battles of Yagan as well as the history of armed conflict between Aboriginal people and Europeans as a result of the displacement of Aboriginal people from their traditional lands.



Image source: Lost Perth

2. CONTEXT ANALYSIS

STATE HERITAGE REGISTER

Yagan’s Statue is identified as Place No. 11472.

Location: Heirisson Island, Adelaide Tce East Perth

History (extract)

Yagan was the son of Midgegooroo, leader of the tribal group who occupied the land known as ‘Beelier’, which was to the south of the Swan and Canning Rivers. Yagan and a group of followers defended their tribal area from the Europeans up to 1932 at which time they were captured and imprisoned on Carnac Island.

Yagan and another warrior later escaped from the Island. Yagan was shot in the back while sharing a meal with the Keats brothers, who were actually bounty hunters who lured the pair with offers of friendship.

Yagan’s head was removed and put through a preservation process, eventually ending up in England where it was displayed for some time before going to the Liverpool Museum.

In 1984, a bronze statue to commemorate the life of Yagan was unveiled on Heirisson Island. Since this time, the statue has been vandalised on at least two occasions by the removal or destruction of the head of the statue. At both times this was repaired. One of these times occurred at a time when an Aboriginal delegation was in England petitioning the Homes Office for the return of Yagan’s head. This eventually occurred in 1997/1998 after a lengthy and emotional campaign.

August 1997 - Court decision to allow the return to Western Australia of the Aboriginal Warrior Yagan’s Kaat (head).

2010 - A unique place has been created to commemorate the life, death and spirit of the great Noongar leader and warrior, Yagan (c. 1795 - 11 July 1833) and as a Burial site for Yagan’s repatriated Kaat in the Swan Valley.



Images: Kaartdijin Noongar - Noongar Knowledge South West Aboriginal Land & Sea Council
Yagan reburial. Courtesy Trevor Walley (2010)

2. CONTEXT ANALYSIS

STATE HERITAGE REGISTER

The Causeway Bridges are identified as Place No. 3631.

There are two bridges, one over the eastern channel of the Swan River between the eastern shore and Heirisson Island and the other over the western channel between the island and western shore.



Department of Planning, Lands and Heritage's State Heritage Register (2021)

2. CONTEXT ANALYSIS

ENVIRONMENT - ZONE 1 - WEST / POINT FRASER

The Point Fraser landing area is heavily vegetated with natives trees and understorey planted as part of the eco-development of a couple of decades ago. The established trees, overflow car park and path network will be disrupted. The topography is fairly level, sloping gradually towards the river. There is an embankment edging The Causeway and Ruverside Drive slip road.

The existing shared path which runs along the Causeway and slip road will need to be connected into, as will the foreshore pathway system with its underpass connection and flight of steps.

There are small groupings of street furniture (bike racks, drinking fountains) which will need re-positioning.

Diagram illustrates how the approximate proposed bridge alignment and footprint impacts the existing environment.

Trees, under-storey planting and other landscape features such as footpaths and street furniture located within the footprint of the bridge embankment will need to be retained, re-positioned and removed.



2. CONTEXT ANALYSIS

ENVIRONMENT - ZONE 2 - HEIRISSON ISLAND

Heirisson island has a large number of predominantly non-native Eucalypt trees which were planted as part of landscaping works in the 1970s.

The topography is fairly level with a mound in the south-east portion rising +3.40.

Along The Causeway there is a shared path and a pedestrian only path. Pathways within the site are unsealed limestone tracks for use by pedestrians and service vehicles. There are currently two service vehicle entry points. Only the northern river's edge as a connection through The Causeway underpass.

The parkland has little groundcover planting.

Diagram illustrates how the approximate proposed bridge alignment and footprint impacts the existing environment.

Trees located within the footprint of the bridge embankment will need to be removed.



2. CONTEXT ANALYSIS

ENVIRONMENT - ZONE 3 - MCCALLUM PARK

The McCallum Park landing area is a wide, open area of irrigated lawn. It has split pedestrian/cyclist paths by the river's edge. The junction of paths and connection through The Causeway underpass feels somewhat unsafe for users. The topography is fairly level, rising towards The Causeway.

There are a number of trees in the lawn which can be retained. The mature fig trees which bound the activity centre will not be impacted by the bridge. Recent wildflower planting by Main Roads (along The Causeway edge) could be expanded to improve the character of the landscape.

Diagram illustrates how the approximate proposed bridge alignment and footprint impacts the existing environment.



2. CONTEXT ANALYSIS

LANDSCAPE CHARACTER AND VISUAL ANALYSIS - ZONE 1 - WEST / POINT FRASER

1_VIEW - FORESHORE SHARED PATH

The existing shared path provides a pleasant and shaded route along the foreshore. Lawn between groups of trees create pleasant vistas through the landscape.

2_VIEW - CAUSEWAY SHARED PATH

Views to Heirisson Island and towards the established relatively dense tree canopy. Poor pathway experience.

3_VIEW - CAUSEWAY EXISTING UNDERPASS

The meeting point of shared paths, stairs and underpass adjacent to The Causeway. Shaded, enclosed area adjacent to the river. Poor visual quality. Opportunity to improve legibility, safety and aesthetics of the space.

4_VIEW - BIOENGINEERED FORESHORE

A pleasant vista eastwards along the naturalised foreshore. Views to Heirisson Island are calm and green but compromised by noisy Causeway traffic.

5_VIEW - OVERFLOW PARKING ZONE

A pleasant landscape of lawns and groups of trees. The bike hire quietly activates the area. The overflow parking and lawns are under-utilised. The vegetation creates CPTED issues.

6_VIEW - NORTH EAST TO THE CAUSEWAY

View towards The Causeway is screened by established tree planting (Casuarinas/Eucalypts) and river's edge understorey and lawns enabling the landscape to appear quite natural although very close to significant infrastructure.

The Point Fraser landscape benefits from native planting, feels shaded, cool and somewhat secluded, even though very close to the shared path and traffic of The Causeway. Walking along the foreshore has a calming feel providing pleasant landscape views across the river to Heirisson Island.



1_VIEW - FORESHORE SHARED PATH



2_VIEW - CAUSEWAY SHARED PATH



3_VIEW - CAUSEWAY EXISTING UNDERPASS



4_VIEW - BIOENGINEERED FORESHORE



5_VIEW - OVERFLOW PARKING ZONE



6_VIEW - NORTH EAST TO THE CAUSEWAY



2. CONTEXT ANALYSIS

LANDSCAPE CHARACTER AND VISUAL ANALYSIS - ZONE 2A - HEIRISSON ISLAND

1_VIEW - KANGAROO FENCE NORTH EAST

View along unsealed foreshore pathway looking towards The Causeway. River's edge wall is old and damaged.

2_VIEW - NORTH EAST TO BRIDGE LOCATION

The island's established tree canopy creates a pleasant landscape character. The mown lawns and lack of native groundcovers create a somewhat over-managed 'golf course' feel. The trees successfully buffer the visual and noise impact of The Causeway.

3_VIEW - NORTH WEST TO POINT FRASER

The view over the river from Heirisson Island towards Point Fraser looks towards a foreshore with dense existing tree canopies creating a natural foreground to the view of the city beyond.

4_VIEW - NORTH WEST TO POINT FRASER

This view from The Causeway level over the river shows the established planted bank of Point Fraser. The damaged island river wall requires attention and could be bioengineered.

5_VIEW - SOUTH WEST TO THE CAUSEWAY

The unsealed pathway north of The Causeway links the car park to the river's edge and the new bridge location. There is an opportunity to seal the path creating an accessible route from the car park to the new bridge.

6_VIEW - NORTH TO BRIDGE LOCATION

Existing established tree canopy has visual appeal and provides valuable habitat for birds drawn to Heirisson Island, offering a protected nesting environment.

The north side of Heirisson Island has an open character with views across the river, the city and Point Fraser. The existing trees create a pleasant landscape character. There is a dominance of lawn with unsealed pathways connecting through the parkland, which does not provide any seating or other amenities.



1_VIEW - KANGAROO FENCE NORTH EAST



2_VIEW - NORTH EAST TO BRIDGE LOCATION



3_VIEW - NORTH WEST TO POINT FRASER



4_VIEW - NORTH WEST TO POINT FRASER



5_VIEW - SOUTH WEST TO THE CAUSEWAY



6_VIEW - NORTH TO BRIDGE LOCATION



2. CONTEXT ANALYSIS

LANDSCAPE CHARACTER AND VISUAL ANALYSIS - ZONE 2B - HEIRISSON ISLAND

1_VIEW - NORTH ON HEIRISSON ISLAND

Established tree canopy and open grass areas looking north on Heirisson Island. Pleasant landscape character.

2_VIEW - EAST TOWARDS THE CAUSEWAY

Larger established trees in open grassland screen The Causeway. Two service vehicle access gates come off the road. A shared path and a pedestrian path run alongside the road. There is no formal pedestrian crossing to the north side of the island.

3_VIEW - SOUTH EAST TOWARDS THE CAUSEWAY

There are groups of established trees on the island creating pleasant shaded landscape character. They provide habitat and soften views to The Causeway. A grassed mound elevates the park through its central/southern portion.

4_VIEW - SOUTH WEST ACROSS THE RIVER

View along informal/unsealed pathway with quiet landscape character.

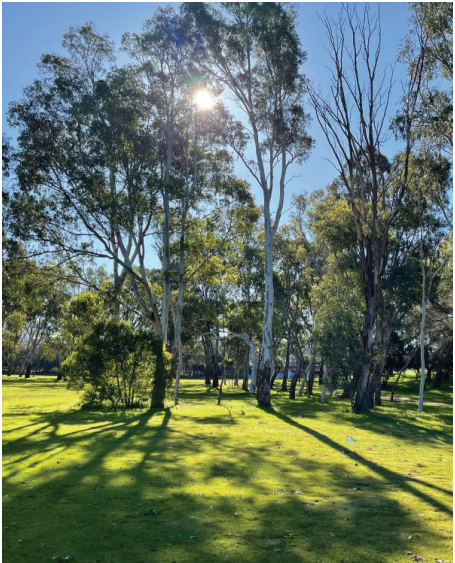
5_VIEW - SOUTH WEST FROM THE CAUSEWAY

The existing landscape on Heirisson Island and it's existing dense tree canopy.

6_VIEW - SOUTH TO McCALLUM PARK

The open grassed foreshore of McCallum Park with its backdrop of established Fig trees. The active foreshore edge of the park has separated pedestrian and cyclist paths.

In the southern landing area of Heirisson Island the parkland character continues with the lawn elevating towards a mound which overlooks the river south to McCallum Park. The unsealed riverside walks are pleasant but do not connect under the bridge to the northern part of the island. The buffer planting to the fenced off kangaroo area is effective providing some much needed medium planting structure.



1_VIEW - NORTH ON HEIRISSON ISLAND



2_VIEW - EAST TOWARDS THE CAUSEWAY



3_VIEW - SOUTH EAST TOWARDS THE CAUSEWAY



4_VIEW - SOUTH WEST ACROSS THE RIVER



5_VIEW - SOUTH WEST FROM THE CAUSEWAY



6_VIEW - SOUTH TO McCALLUM PARK



2. CONTEXT ANALYSIS

LANDSCAPE CHARACTER AND VISUAL ANALYSIS - ZONE 3 - MCCALLUM PARK

1_VIEW - SOUTH ACROSS MCCALLUM PARK

McCallum Park has la arge open lawn with a number of isolated or small groupings of trees. The Fig trees create a screen to the activity area.

2_VIEW - SOUTH WEST FROM THE CAUSEWAY

Steps connection from The Causeway. Open and exposed landscape edge to The Causeway with expansive elevated views.

3_VIEW - NORTH WEST FROM SHEPPERTON ROAD

Open lawn landscape and tree planting with views directly to the river, Heirisson Island and to the city.

4_VIEW - WEST ACROSS THE PATH JUNCTIONS

Complex intersection of shared, pedestrian and cyclist only pathways close to the underpass. An uncomfortable experience for users.

5_VIEW - McCALLUM PARK FORESHORE PATHS

A clear view north along the path to The Causeway and beyond.

6_VIEW - SOUTH ACROSS MCCALLUM PARK

Wide and expansive views from The Causeway to McCallum Park.

McCallum Park has an open and expansive landscape character with only a select number of trees. The landscape is flexible yet offers little in the way of amenity. The pathways facilitate fast paced people movement through the park and river's edge connecting to The Causeway underpass, Canning Highway underpass and Shepperton Road.



1_VIEW - SOUTH ACROSS MCCALLUM PARK



2_VIEW - SOUTH WEST FROM THE CAUSEWAY



3_VIEW - NORTH WEST FROM SHEPPERTON ROAD



4_VIEW - WEST ACROSS THE PATH JUNCTIONS



5_VIEW - McCALLUM PARK FORESHORE PATHS



6_VIEW - SOUTH ACROSS MCCALLUM PARK



2. CONTEXT ANALYSIS

CONNECTIVITY - VEHICLE CIRCULATION AND ACCESS

This diagram illustrates the adjacent existing road network along with the service vehicle entry points and used pathways within the landscape areas.

The new pedestrian and cyclist bridge will not significantly impact the service vehicle routes with head clearance and set-backs allowing vehicle transit.

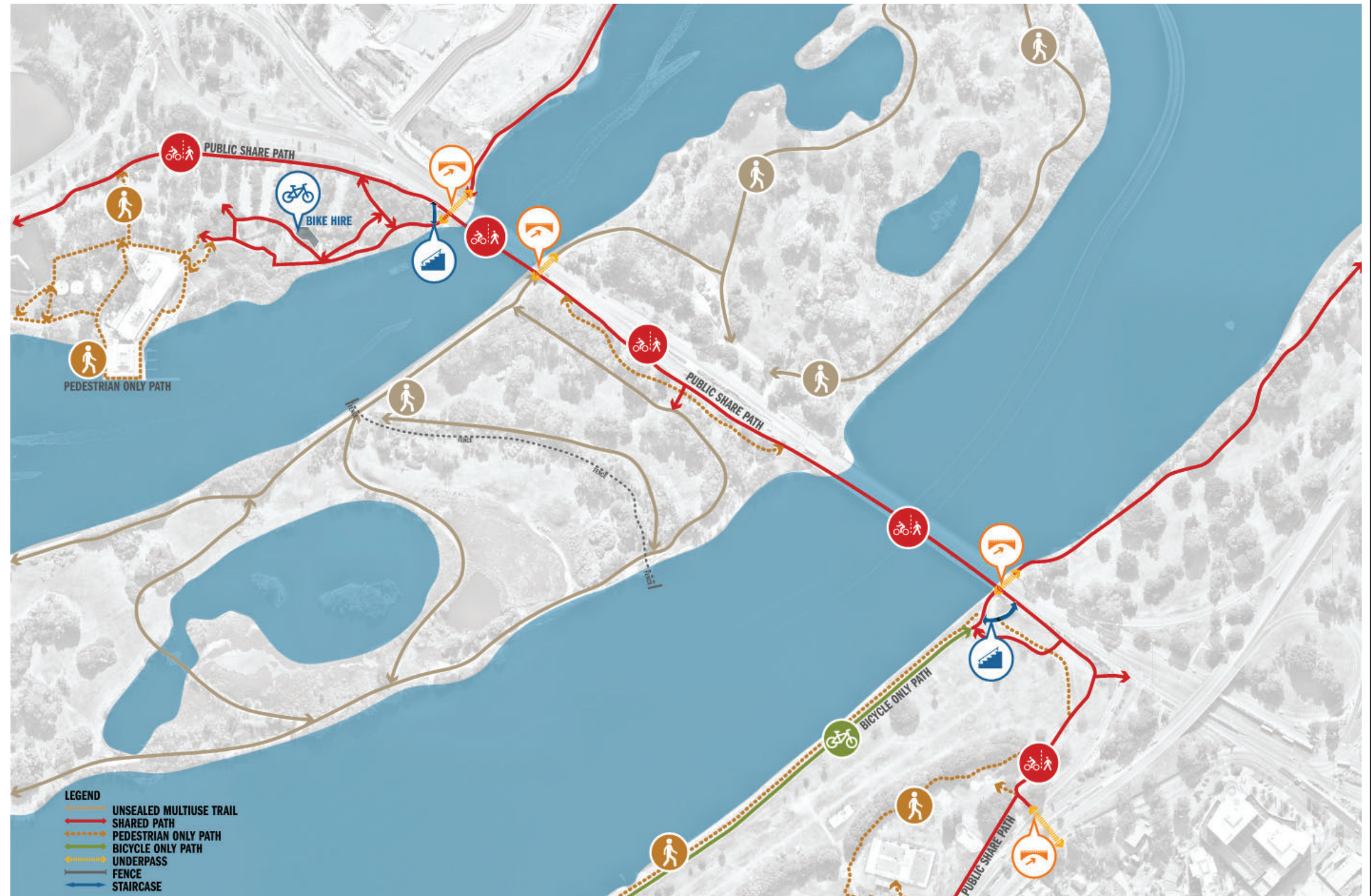


2. CONTEXT ANALYSIS

CONNECTIVITY - PEDESTRIANS AND CYCLISTS

The project site is connected via a series of pathways, some of which are shared for cyclists and pedestrians, some are defined for sole use by cyclists or pedestrians. Within the island there are informal unsealed tracks.

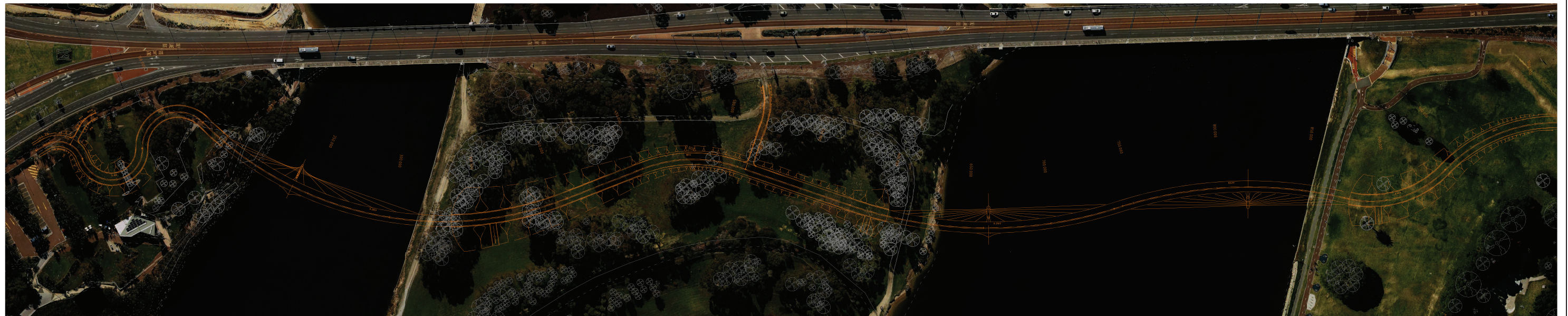
It is imperative that the new bridge connects well to the existing network and looks for improvements.



2. CONTEXT ANALYSIS

THE BRIDGE DESIGN - PLAN

The urban and landscape design responds to the site and the bridge design itself. This plan image and the studies on the following page illustrate the bridge layout and the key design moves.



2. CONTEXT ANALYSIS

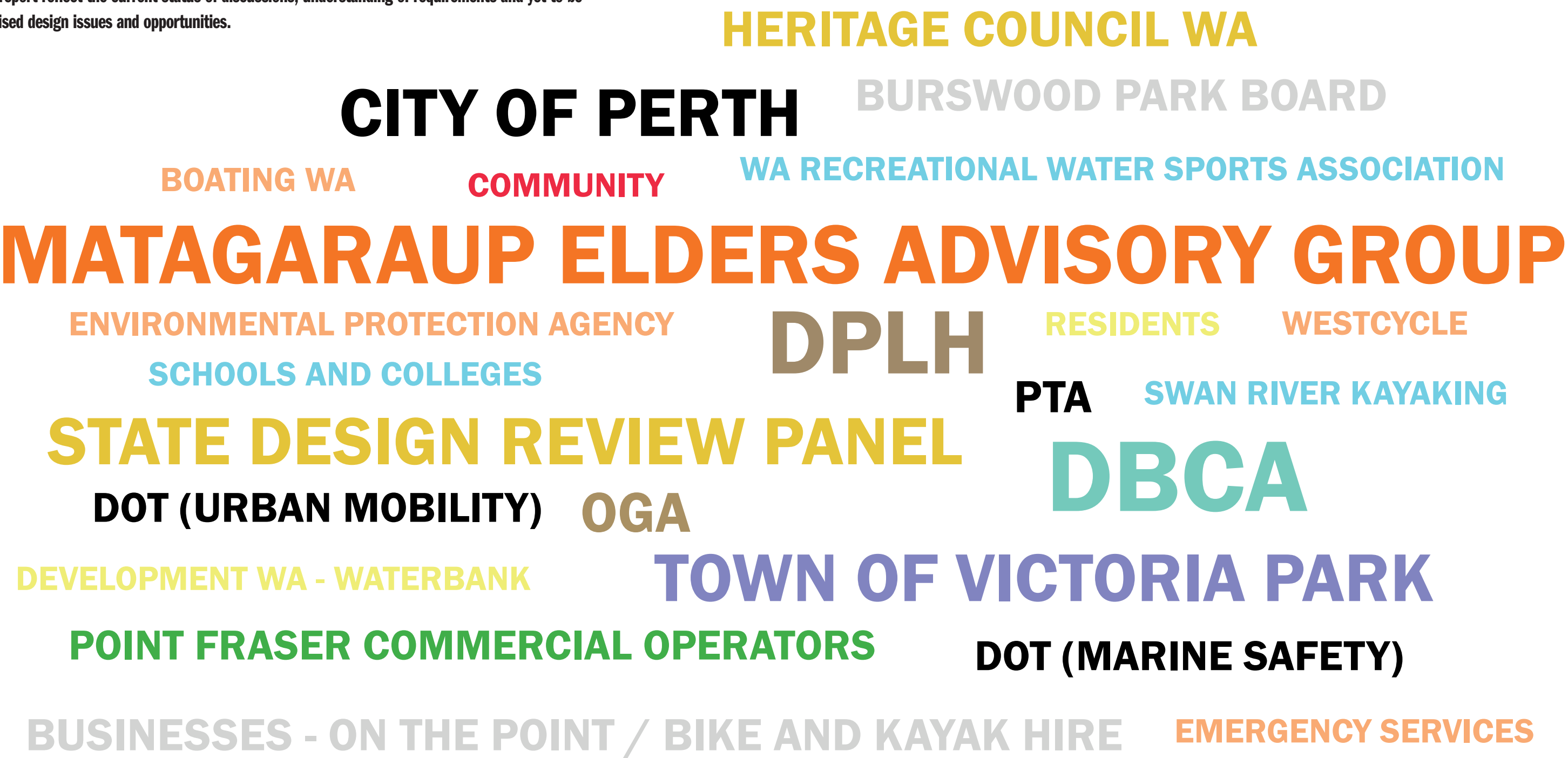
THE BRIDGE DESIGN - STUDIES



2. CONTEXT ANALYSIS

STAKEHOLDERS AND APPROVAL AUTHORITIES

Following the bid phase extensive engagement has commenced with stakeholders. These have included regular meetings with the City of Perth, Town of Victoria Park, DBCA, Department of Transport, State Design Review Panel and Matagarup Elders Group. The landscape plans shown in this report reflect the current status of discussions, understanding of requirements and yet to be finalised design issues and opportunities.



3. DESIGN VISION & OBJECTIVES & PRINCIPLES

DESIGN VISION

Fundamentally the vision for the design is to improve community connectivity and safety via the creation of culturally responsive, beautiful and harmonious bridge. It will be a Perth landmark and gateway to the city and it must sympathetically integrate with the Swan River landscape environment.

DESIGN OBJECTIVES

Design Objectives

Aesthetics

Contribute to the physical and visual amenity of the built and natural environment, for the benefit of the community, including road and river users, cyclists and pedestrians.

Nature

Provide an attractive, well-vegetated landscape by retaining vegetation where practical and reinforcing the local vegetation patterns and structure.

Local History

Create an identifiable character for the project that acknowledges the area's history and cultural heritage and that will enhance the local sense of place.

Local Character

Complement and be in scale with the existing visual character of the surrounding natural and built environments.

Connectivity

Integrate new pedestrian and cyclist facilities to improve the accessibility, safety, connectivity and general permeability of movement through the site.

View Corridors

Manage visual amenity both into and out of the road reserve by enhancing positive views and mitigating visually intrusive elements and poor-quality views.

3. DESIGN VISION & OBJECTIVES & PRINCIPLES

DESIGN PRINCIPLES

The urban and landscape design principles incorporate the following intent:

- _ ‘State Planning Policy No. 7: Design of the Built Environment (SPP 7)’ Western Australian Planning Commission (2016);
- _ ‘Beyond the Pavement Urban Design approach and procedures for transport infrastructure’ document, RMS Centre for Urban Design (2019); and
- _ Site specific response detailed within this Urban and Landscape Design Framework.

As part of the collaborative approach the Office of the Government Architect and the State Design Review Panel will be consulted to ensure the highest quality outcomes.

10 Design Principles are outlined in SPP 7.0 to guide projects.

These principles will be tested through the design development to ensure highest quality design is achieved. At this stage of the process we have addressed the principles as they relate to urban design and landscape architecture.

Context and Character

We have analysed the historic and current landscape and cultural characteristic of the landscape areas from a holistic perspective, as well as looking at their individual qualities. The design concept responds to this unique sense of place.

Landscape Quality

The concept builds upon the qualities of the site promoting use of native planting, locally sourced materials, ensuring designs are refined and add to a sense of delight. The design seeks to embed the bridge within the landscape ensuring the bridge truly feels part of the site.

Built Form and Scale

The landscape and key urban design moves respond to the scale and form of the bridge forming a cohesive design response. Spaces created on the riverfront and within the parklands seek to harmonise the impact of the infrastructure.

Functionality & Build Quality

Hard and soft landscaping, as well as key infrastructure elements, are high performing for their locality. They will embed high quality detailing and refinement in build quality, ensuring a an enduring landscape is established to support the bridge experience.

Sustainability

The principle of designing a landscape which is in tune with its locality, emphasising the use of native, water-wise plants, WSUD, tree planting, low maintenance and recycling of site won materials. Additional re-wilding and solar power source elements are included.

Amenity

The landscape design integrates opportunity for social interactions as well as planned events and gatherings. The spaces created will be comfortable, pleasant to experience and informative. A range of facilities are included encouraging bike use and recreation.

Legibility

Clear sightlines, clear pathways, riverside staircases and passive view lines create an experience which is intuitive and easily understood. Wayfinding will support legibility through signage as well as landscape design techniques and landmark art work.

Safety

Pathways are designed in a safe manner with pedestrians and cyclists separated where possible. Appropriate lighting is included and CPTED principles adopted to ensure clear sightlines and avoidance of hidden spaces. Planting will be extensive but kept low throughout.

Community

A key focus of the design is to facilitate a safe and pleasant movement network for the community. The design also seeks to enrich the experience through creating places to pause and view the landscape, as well as learn about the rich cultural significance of Whadjuk Country.

Aesthetics

The design complements the beauty of the bridge structure with the intrinsic qualities of the Swan River landscape. Refined landscape design, with appropriately formed furniture and art elements, will combine to create a landscape with high aesthetic value.

4. VISION

EXPERIENCES

As the new bridge and associated revitalised landscape work together they create new experiences for people who are moving up and down the foreshores and across the river.

The project reinforces the sense of place and people's appreciation of Whadjuk culture and the beautiful natural environment.

WHADJUK
 WESTERN AUSTRALIAN
 NATURE
 VIEWS
 WATER
 DANCE AND CEREMONY
 HEALTHY
 LOOKOUTS
 SHORELINE
 INVITING
 HABITAT
 LEARNING
 BBQ
 INTERPRETATION
 VEGETATION
 TREES
 FAMILY
 SAFE
 UNIQUE
 CYCLING
 TOUCH THE WATER
 EXPLORATIVE
 PLAY
 SHADY
 CULTURAL
 JOGGING
 WILDLIFE
 ICONIC
 MAINTAINABLE
 LOCAL
 VISIBLE
 COMMUTING
 NATUREPLAY
 ART
 RELAXED
 SEASONAL
 LUNCH
 CONNECTED
 WILDFLOWERS
 ACCESSIBLE
 WALKING
 BEAUTIFUL
 VIEWS
 SUSTAINABLE
 WATER-SENSITIVE
 STORY TELLING
 HEALTHY

4. VISION

INSPIRATION

The Swan River offers the opportunity to create a range of edge conditions and experiences.



Natural condition retained



Sawn cut boulders



Board-walks



Story telling



Steps and terracing



Bio-engineering



Beaches



Riverside lounge decks



Access for boats



Reeds

4. VISION

INSPIRATION

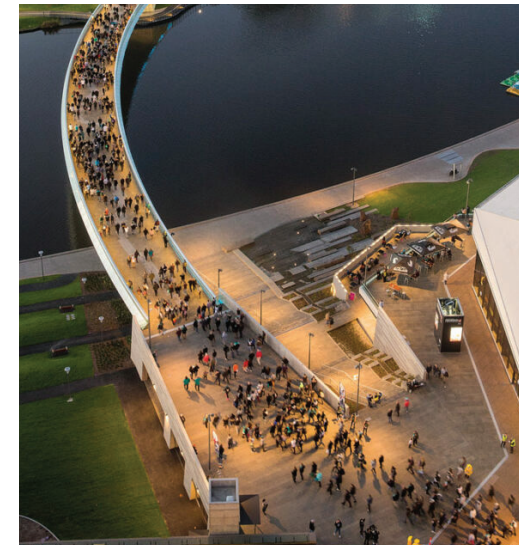
The design of the bridge and landscaping can combine to create enjoyable movement, resting and social experiences.



Attention to detail to the bridge soffit improves the underpass experience for people



Legible circulation encouraging activation



Ampitheatre terracing positively utilises the level change



Landscape and infrastructure - Wow!



The angled walls open up views, bring in light and create a less oppressive feel



Generous paths with strongly defined edges for shared use



Vantage point overhanging natural river's edge

4. VISION

INSPIRATION

The textures and spaces created by the landscape design can enrich the experience for people.



River's edge seating space



Interpretive artwork



Dance circle



Robust stone bench



Meeting space



Interesting use of organic forms



Innovative use of stone



Use of height and vantage points

4. VISION

INSPIRATION

Use of planting and river's edge detailing can help to integrate the bridge within a WA landscape.



Bridge 'hidden' by the trees



Well defined pathways by the river's edge



Floating over flowers



Relaxed timber recliners



Bush tucker



Refined deck form elevates the river's edge experience



WA Wildflowers



Interesting use of bold colour and form

4. VISION

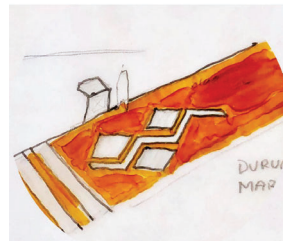
INSPIRATION

The WSP document - *WHADJUK NOONGAR COUNTRY CAUSEWAY BRIDGE (HEIRISSON ISLAND - ABORIGINAL DESIGN PRINCIPLES)* has been reviewed to inform the urban and landscape design proposal. It includes the findings of an engagement process undertaken with Whadjuk Traditional Owners in early 2020. The report identifies a number of ways that Whadjuk Noongar culture and stories can be referenced and celebrated within design and public art.

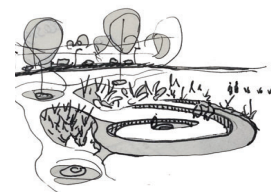
Potential use of Whadjuk Noongar design



Entry statement, significant site marker sculpture referencing Whadjuk Noongar Design.



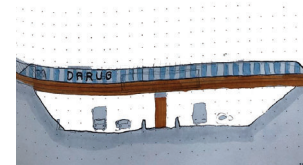
Shared pathway with Whadjuk Noongar patterns in coloured asphalt.



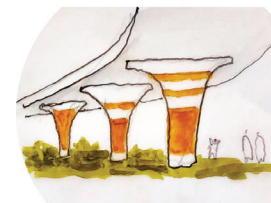
Resting place Whadjuk Noongar design treatment in pavement, seating, landscape art.



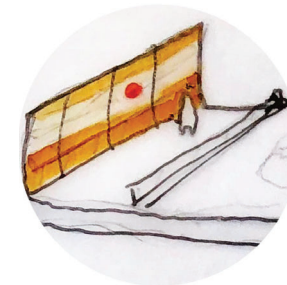
Waugal iconic sculpture to mark important gateway or zone.



Bridge identity, piers and safety screens are canvases for Whadjuk Noongar art



Bridge piers painted up in colours and patterns of Whadjuk Noongar Country.



Wall treatment, anti throw screens, abutments, noise walls etc



Sculptural or murals, message sticks, landscape communicating stories and design.

4. VISION

KEY LANDSCAPE MOVES

TREES

- RETAIN AS MANY TREES AS POSSIBLE
- PLANT AS MANY TREES AS POSSIBLE
- INCREASE CANOPY COVER
- NATIVE TREES
- CONSULT WITH STAKEHOLDERS AND TRADITIONAL OWNERS
- POSITION TO SOFTEN BRIDGE AND CREATE SHADE
- MAINTAIN SAFETY OFFSETS
- SUSTAINABLE WATER-USE

CULTURE

- ELDERS ADVISORY GROUP DESIGN LEADERSHIP
- DEVELOP A CULTURAL NARRATIVE FOR THE PROJECT
- TELL WHADJUK NOONGAR STORIES
- INTERPRETATION PLAN STRATEGIES INTEGRATE WITH THE BRIDGE & LANDSCAPE DESIGN AND ARTWORK
- LANDMARK ENTRY WELCOME MARKERS
- PLANTING DESIGN SUPPORTS CULTURAL LANDSCAPE
- RESPECT THE RIVER - WAGYL
- PUBLIC ART STRATEGY

CONNECTIONS

- CONNECT TO EXISTING TRACKS AND PATHS
- LEGIBLE AND UNIVERSALLY ACCESSIBLE
- CLEAR WAYFINDING
- ANTICIPATE LGA STAKEHOLDER FUTURE PROJECTS
- ROUTE CYCLIST AND PEDESTRIANS SAFELY
- ENSURE PATHS ARE ADEQUATELY LIT
- RESPECT THE LANDSCAPE CHARACTER
- CONNECT WITH THE RIVER
- CONNECT WITH THE PAST AND FUTURE

GRADES

- MINIMISE THE SCALE AND BULK OF EMBANKMENTS
- GRADE THE ADJACENT LANDSCAPE TO SEAMLESSLY EMBED THE BRIDGE WITH THE LAND
- MAXIMUM 1:3 GRADES - MIX UP THE GRADES
- UTILISE PLANTING AND LAWN TO BLUR THE EDGES OF LEVEL AND SLOPING GROUND
- PLANT TREES ON THE SLOPES TO SOFTEN THE IMPACT OF THE BRIDGE
- RIVER EDGE REHABILITATION

SOCIAL SPACES

- CREATE A SERIES OF SOCIAL SPACES TO GATHER, SHARE STORIES, PERFORM AND HOLD EVENTS
- LOCATE SOME UNDER THE SKY/STARS, TREES AND SOME UNDER THE BRIDGE
- VARIETY OF SCALES AND CHARACTER STYLES
- PROMOTE EASE OF INTERACTION FOR SMALL AND LARGER GROUPS
- COMPLEMENT WITH INTERPRETATION TELLING CULTURAL STORIES
- ENSURE WELL VIEWED AND LIT

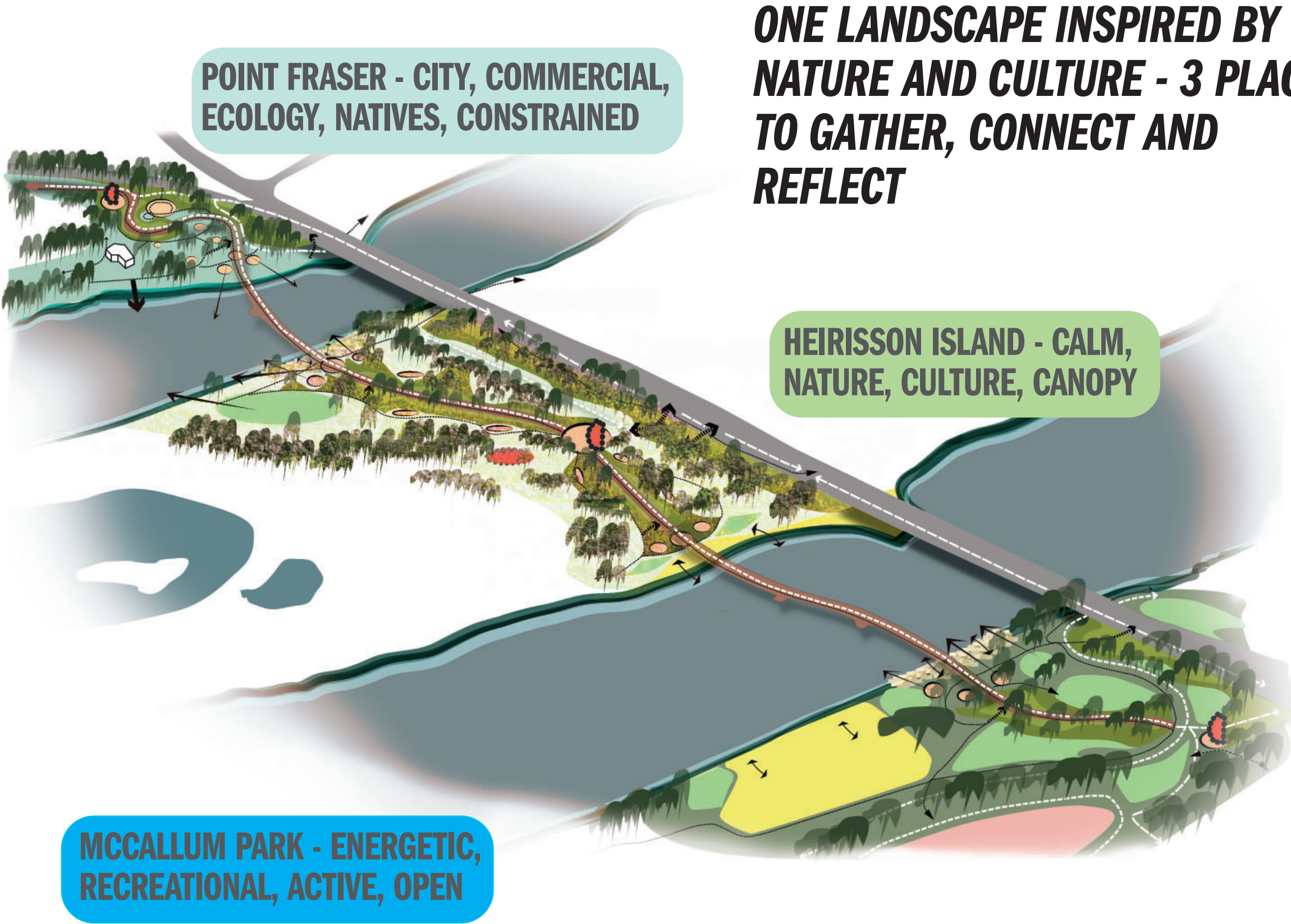
NATIVES

- INTRODUCE WIDER SPREAD OF GROUNDCOVER PLANTING TO REDUCE THE EXTENT OF LAWN
- INTRODUCE WA WILDFLOWERS SPECIES TO SHOWCASE NATIVE FLORA
- SUPPORT RE-WILDING AND HABITAT CREATION
- COMPLEMENT THE MAIN ROADS WA WILDFLOWER CAPITAL INITIATIVE WORK
- REPLACE LOST TREES AND PLANTING DUE TO SITE CLEARANCE AT RATES PRESCRIBED BY AUTHORITIES
- INTEGRATE WATER SENSITIVE URBAN DESIGN

5. URBAN AND LANDSCAPE CONCEPT

This conceptual diagram communicates our intent to create a cohesive landscape experience, which responds to culture and landscape character, creating a variety of connected place experiences.

The sketch plans on the following pages were presented to the Elders Advisory Group and key stakeholders (ToVP, CoP, DBCA) at a workshop on 1st September, 2021. Following the session comments were taken on board leading to the production of the landscape general arrangement plans (see pages 49-52).



ONE LANDSCAPE INSPIRED BY NATURE AND CULTURE - 3 PLACES TO GATHER, CONNECT AND REFLECT

5. URBAN AND LANDSCAPE CONCEPT

POINT FRASER

Two initial sketch options were developed for the Point Fraser area.

Option A constrains the bridge footprint to within the existing overflow car park to retain the workability of the asphalt car park. The 'S' bend of the bridge floats across the landscape before meeting a planted embankment. The 'floating' of the bridge allows landscape and pathways to wind under and around the structure creating seating spaces and opportunities for displays of native planting. Planting will be kept low to maintain sight-lines.

Important existing pedestrian connections are maintained by the river's edge and up the slope to the existing Causeway shared path. A flight of steps connects river path users to the bridge and promotes connections to the Point Fraser commercial area.

Where possible many of the native *Casuarina* and *Eucalyptus rudis* trees are maintained. Replacement trees will be planted to soften the infrastructure, blurring the bridge into the landscape.

Cultural interpretation and art work enriches the landscape experience and welcome the users via a landmark entry marker.



5. URBAN AND LANDSCAPE CONCEPT

POINT FRASER

This option for Point Fraser retains the existing overflow car park. The main downside to this version is the difficulty of connecting pedestrians from the river walk to the start of the bridge.

Our proposal believes the better community and urban design outcome is achieved by adopting the Option A version.



5. URBAN AND LANDSCAPE CONCEPT

HEIRISSON ISLAND

The aim of the landscape design response on Heirission Island (Matagarup) is to harmonise the infrastructure within a culturally significant landscape. As the bridge connects from both sides landform, new tracks and planting combines with the abutments to soften the lineal nature of the pathway.

The embankment grades are loosened to utilise varying grades (non steeper than 1 in 3) forming an organically shaped landscape. Native groundcover bush planting and many native trees are planted on the banks and areas of former turf to change the character of the landscape from what currently feels like a manicured ‘golf course’.

At the river’s edge gathering spaces are included providing a range of seating spaces for groups and individuals. These can be used formally and informally. They combine with planting, interpretation and art work to tell stories of place. Some of the seating spaces make use of the shade provided by the bridge.

The river edges are rehabilitated in the zones impacted by construction activity. The northern edge will have a ‘harder’ treatment due to the erosive nature of the river. The detail will be worked through with the City of Perth and DBCA but will look to combine terracing and native planting.



5. URBAN AND LANDSCAPE CONCEPT

MCCALLUM PARK

The design of the landscape at McCallum Park envisages a different character and style of use when compared to Point Fraser and Heirisson island. In line with the Town of Victoria Park's strategic goals for this area a dynamic, recreational experience is envisaged which leverages the existing play space and promotes greater interaction with the river. A new beach is planned and a major transformation of the play zone.

Building those features, as well as the bridge, means the pedestrian and cyclist pathways will need to be re-aligned. In tune with the ToVP policy of splitting pedestrians and bike riders our plan shows separate paths which connect to the new bridge, Canning Highway underpass, Causeway underpass, Albany Highway crossing and to the south west of the park. The area under the bridge should be kept free of fast moving cyclists. A new river activation node can be established by the river with water's edge terracing, seating spaces, shelters, artwork and interpretation.

The bridge pathway is softened with planting and organically shaped embankment grades. A significant quantity of native trees are planted. A landmark entry marker, developed by Whadjuk Noongar artists is positioned at the entry to the bridge.



5. URBAN AND LANDSCAPE CONCEPT

This conceptual view illustrates how the rehabilitated landscape of Heirisson Island can provide riverside gathering spaces associated with the bridge.



5. URBAN AND LANDSCAPE CONCEPT

Trees, wildflowers, reed planting and embankment planting combine with pathways and group spaces to create a characterful landscape experience.



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REV	DESCRIPTION
A1	ISSUED FOR 15% EXTERNAL DESIGN REVIEW ISSUED FOR DA APPLICATION
AMENDMENTS	

DATE
07/09/2022
13/09/2022

CONSULTANT



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NOTES

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CHECKED	JT
APPROVED	AB

VERIFIER

VERIFIED

DATE



CAUSEWAY LINK ALLIANCE

CONTRACT MANAGER

PROJECT DIRECTOR



INFRASTRUCTURE DELIVERY DIRECTORATE

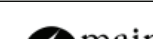
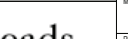
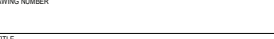
CONTRACT MANAGER

PROJECT DIRECTOR

LOCAL AUTHORITY		MAIN ROADS RESPONSIBILITY AREA	
MRWA DRAWING NUMBER			
PROJECT TITLE			
CAUSEWAY PEDESTRIAN & CYCLIST BRIDGE			
DRAWING TITLE			
OVERVIEW/PRECINCT			
DRAWING STATUS		DRAWING No.	
DRG		C301-CLA-0000-LA-DRG-0100	
SHEET		REV	
A1		A1	

EXISTING TREE SCHEDULE _HEIRISSON ISLAND	
Type	NUMBERS
Existing Tree	182

FOR CONTINUATION - REFER DRAWING L_0200

REV A A1	DESCRIPTION ISSUED FOR 15% EXTERNAL DESIGN REVIEW ISSUED FOR DA APPLICATION	DATE 07/09/2022 13/09/2022	CONSULTANT Hassell LTD ABN 24 007 711 435 Level 1 Commonwealth Bank Building 242 Murray Street Perth WA 6000 Australia T +61 8 6477 6000 perth@hassellstudio.com Hassell	NOTES 1. Do not scale drawing. Written dimensions govern 2. All dimensions are in millimeters unless noted otherwise 3. All dimensions shall be verified on site before proceeding with the work. Hassell shall be notified in writing of any discrepancies 4. This drawing must be read in conjunction with all relevant contracts, specifications and drawings This drawing is an uncontrolled copy. Unless noted otherwise © Copyright of this drawing is vested in Hassell Ltd.	CHECKED JT	APPROVED AB	VERIFIER	   FOR CONTINUATION, REFER DRAWING L 0202 INFRASTRUCTURE DELIVERY DIRECTORATE	MWRA DRAWING NUMBER PROJECT TITLE CAUSEWAY PEDESTRIAN & CYCLIST BRIDGE DRAWING TITLE EXISTING CONDITIONS - SHEET 2			SHEET A1	
					VERIFIED	CONTRACT MANAGER	DATE		CONTRACT MANAGER	DATE	DRAWING STATUS	DRAWING No.	REV
					DATE	PROJECT DIRECTOR	DATE		PROJECT DIRECTOR	DATE	DRG	C301-CLA-0000-LA-DRG-0201	A1
	AMENDMENTS												


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FOR CONTINUATION - REFER DRAWING L_0201

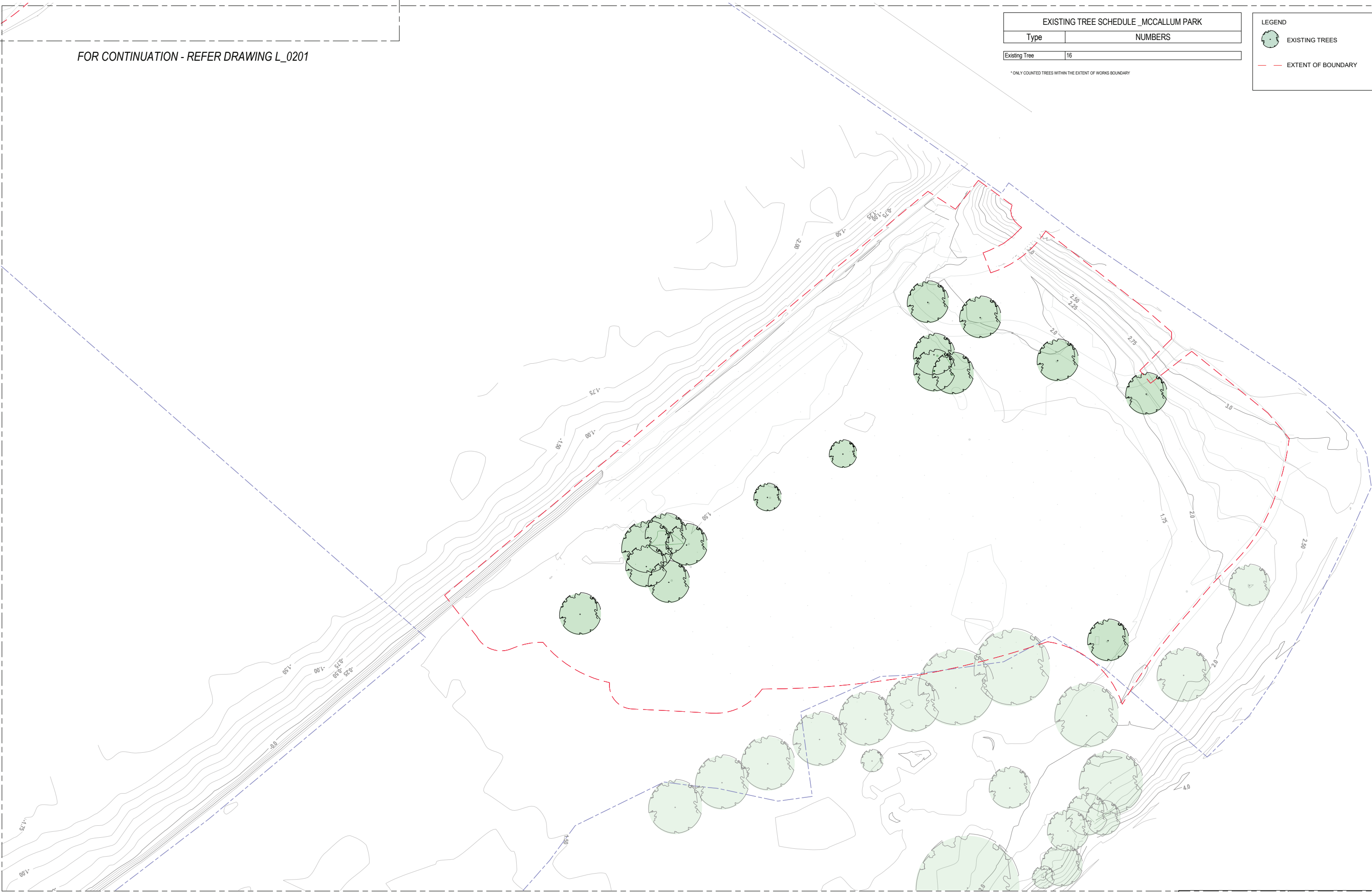
EXISTING TREE SCHEDULE _MCCALLUM PARK	
Type	NUMBERS
Existing Tree	16

* ONLY COUNTED TREES WITHIN THE EXTENT OF WORKS BOUNDARY

LEGEND

 EXISTING TREES

 EXTENT OF BOUNDARY



REV	DESCRIPTION
A	ISSUED FOR 15% EXTERNAL DESIGN REVIEW
A1	ISSUED FOR DA APPLICATION

DATE
07/09/2022
13/09/2022

CONSULTANT



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APPROVED	AB

VERIFIER



INFRASTRUCTURE DELIVERY DIRECTORATE

CONTRACT MANAGER

DATE

CONTRACT MANAGER

DATE

PROJECT DIRECTOR

DATE

PROJECT DIRECTOR

DATE

LOCAL AUTHORITY

MAIN ROADS RESPONSIBILITY AREA

MRWA DRAWING NUMBER

PROJECT TITLE
CAUSEWAY PEDESTRIAN & CYCLIST BRIDGE

DRAWING TITLE
EXISTING CONDITIONS - SHEET 3

DWG

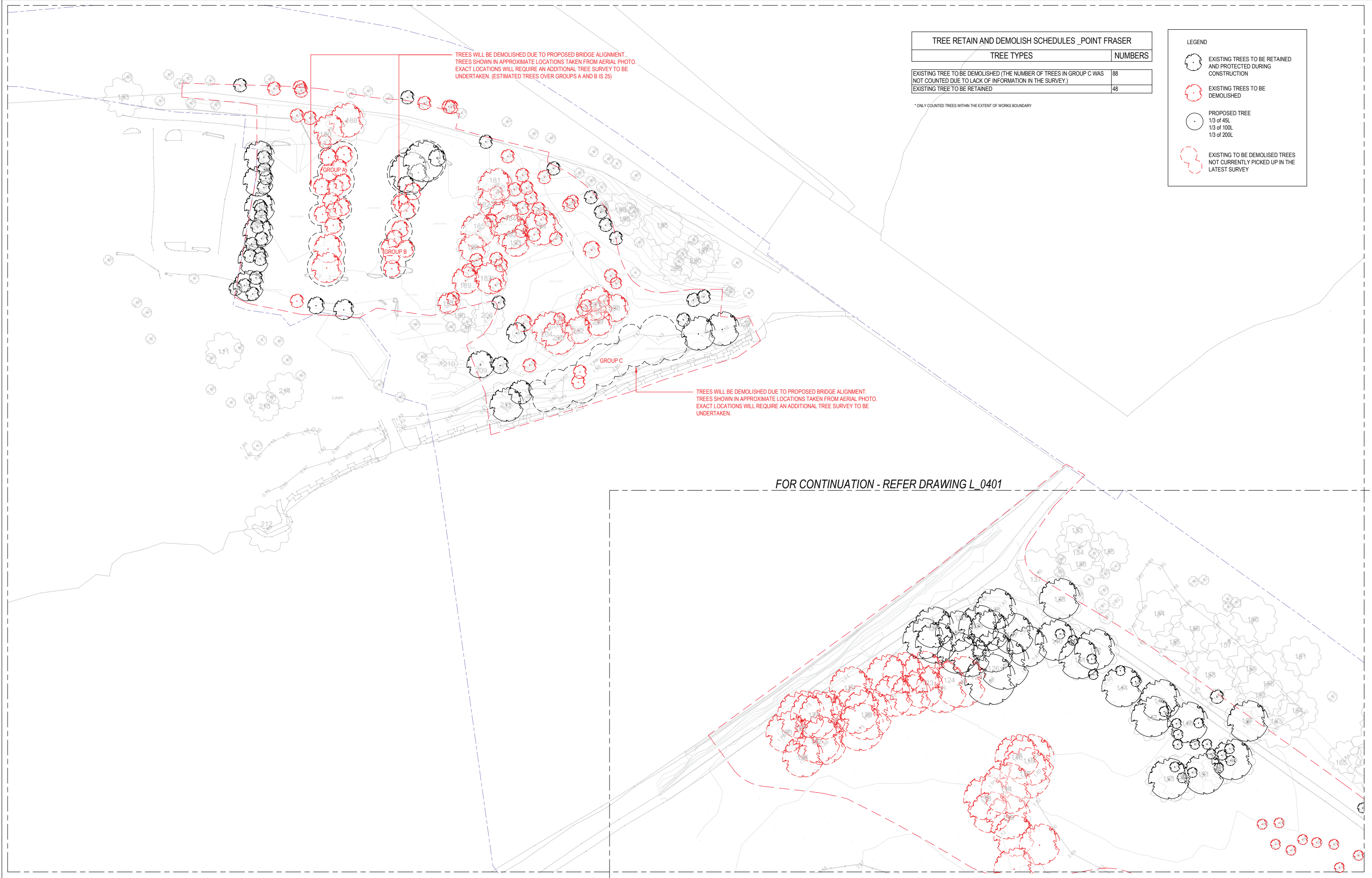
C301-CLA-0000-LA-DRG-0202

SHEET

REV

AMENDMENTS

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REV	DESCRIPTION	DATE
A	ISSUED FOR 15% EXTERNAL DESIGN REVIEW	07/09/2022
A1	ISSUED FOR DA APPLICATION	13/09/2022
AMENDMENTS		

CONSULTANT	NOTES
Hassell Hassell LTD ABN 24 007 711 435 Level 1 Commonwealth Bank Building 242 Murray Street Perth WA 6000 Australia T +61 8 6477 6000 perth@hassellstudio.com	1. Do not scale drawing. Written dimensions govern 2. All dimensions are in millimeters unless noted otherwise 3. All dimensions shall be verified on site before proceeding with the work. Hassell shall be notified in writing of any discrepancies. 4. This drawing must be read in conjunction with all relevant contracts, specifications and drawings This drawing is an uncontrolled copy. Unless noted otherwise © Copyright of this drawing is vested in Hassell Ltd.

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APPROVED	AB
VERIFIED	
DATE	

VERIFIER	
CONTRACT MANAGER	
PROJECT DIRECTOR	



INFRASTRUCTURE DELIVERY DIRECTORATE

CONTRACT MANAGER	DATE
PROJECT DIRECTOR	DATE

LOCAL AUTHORITY	
MRWA DRAWING NUMBER	
PROJECT TITLE	CAUSEWAY PEDESTRIAN & CYCLIST BRIDGE
DRAWING TITLE	TREE PRESERVATION AND DEMOLITION - SHEET 1
DRAWING STATUS	DRG
DRAWING No.	C301-CLA-0000-LA-DRG-0400

LOCAL AUTHORITY	
MAIN ROADS RESPONSIBILITY AREA	
PROJECT TITLE	CAUSEWAY PEDESTRIAN & CYCLIST BRIDGE
DRAWING TITLE	TREE PRESERVATION AND DEMOLITION - SHEET 1
DRAWING STATUS	DRG
DRAWING No.	C301-CLA-0000-LA-DRG-0400
REV	A1


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TREE RETAIN AND DEMOLISH SCHEDULES...	
TREE TYPES	NUMBERS
EXISTING TREE TO BE DEMOLISHED	74
EXISTING TREE TO BE RETAINED	108

* ONLY COUNTED TREES WITHIN THE EXTENT OF WORKS BOUNDARY


LEGEND

 EXISTING TREES TO BE RETAINED AND PROTECTED DURING CONSTRUCTION

 EXISTING TREES TO BE DEMOLISHED

 PROPOSED TREE

1/3 of 45L
1/3 of 100L
1/3 of 200L

 EXISTING TREES NOT CURRENTLY PICKED UP IN THE LATEST SURVEY

FOR CONTINUATION - REFER DRAWING L_0400

FOR CONTINUATION - REFER DRAWING L_0402

REV	DESCRIPTION
A	ISSUED FOR 15% EXTERNAL DESIGN REVIEW
A1	ISSUED FOR DA APPLICATION

DATE
07/09/2022
13/09/2022

CONSULTANT



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INFRASTRUCTURE DELIVERY DIRECTORATE

VERIFIED
DATE





CONTRACT MANAGER
PROJECT DIRECTOR




CONTRACT MANAGER
PROJECT DIRECTOR

LOCAL AUTHORITY	MAIN ROADS RESPONSIBILITY AREA
MRWA DRAWING NUMBER	
PROJECT TITLE	CAUSEWAY PEDESTRIAN & CYCLIST BRIDGE
DRAWING TITLE	TREE PRESERVATION AND DEMOLITION - SHEET 2
DRAWING STATUS	DRG
DRAWING No.	C301-CLA-0000-LA-DRG-0401
REV	A1

AMENDMENTS

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LEGEND	
	EXISTING TREES TO BE RETAINED AND PROTECTED DURING CONSTRUCTION
	EXISTING TREES TO BE DEMOLISHED
	PROPOSED TREE 1/3 of 45L 1/3 of 100L 1/3 of 200L
	EXISTING TREES NOT CURRENTLY PICKED UP IN THE LATEST SURVEY

REV A A1	DESCRIPTION ISSUED FOR 15% EXTERNAL DESIGN REVIEW ISSUED FOR DA APPLICATION	DATE 07/09/2022 13/09/2022	CONSULTANT <div><div>Hassell</div><div>Hassell LTD ABN 24 007 711 435 Level 1 Commonwealth Bank Building 242 Murray Street Perth WA 6000 Australia T +61 8 6477 6000 perth@hassellstudio.com</div></div>	NOTES 1. Do not scale drawing. Written dimensions govern 2. All dimensions are in millimeters unless noted otherwise 3. All dimensions shall be verified on site before proceeding with the work. Hassell shall be notified in writing of any discrepancies. 4. This drawing must be read in conjunction with all relevant contracts, specifications and drawings This drawing is an uncontrolled copy. Unless noted otherwise © Copyright of this drawing is vested in Hassell Ltd.	CHECKED JT	APPROVED AB	VERIFIER <div><div></div><div>INFRASTRUCTURE DELIVERY DIRECTORATE</div></div>	<div><div></div><div></div></div>	MRIA DRAWING NUMBER	
	PROJECT TITLE CAUSEWAY PEDESTRIAN & CYCLIST BRIDGE									
	DRAWING TITLE TREE PRESERVATION AND DEMOLITION - SHEET 3									
	SHEET A1									
AMENDMENTS										
					VERIFIED	CONTRACT MANAGER	DATE	DRAWING STATUS DRG	DRAWING No. C301-CLA-0000-LA-DRG-0402	REV A1
					DATE	PROJECT DIRECTOR	DATE			

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TREE SCHEDULES _POINT FRASER	
TREE TYPES	NUMBERS
EXISTING TREE TO BE DEMOLISHED (THE NUMBER OF TREES IN GROUP C WAS NOT COUNTED DUE TO LACK OF INFORMATION IN THE SURVEY)	88
EXISTING TREE TO BE RETAINED	48
PROPOSED TREES	70


* ONLY COUNTED TREES WITHIN THE EXTENT OF SITE BOUNDARY

REV	DESCRIPTION	DATE
A	ISSUED FOR 15% EXTERNAL DESIGN REVIEW	07/09/2022
A1	ISSUED FOR DA APPLICATION	13/09/2022
AMENDMENTS		

CONSULTANT	Hassell LTD ABN 24 007 711 435 Level 1 Commonwealth Bank Building 242 Murray Street Perth WA 6000 Australia T +61 8 6477 6000 perth@hassellstudio.com
	

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VERIFIED		CONTRACT MANAGER	DATE
DATE		PROJECT DIRECTOR	DATE

	
INFRASTRUCTURE DELIVERY DIRECTORATE	
CONTRACT MANAGER	DATE
PROJECT DIRECTOR	DATE

LOCAL AUTHORITY	MAIN ROADS RESPONSIBILITY AREA
MIRWA DRAWING NUMBER	
PROJECT TITLE	CAUSEWAY PEDESTRIAN & CYCLIST BRIDGE
DRAWING TITLE	1 TO 500 GENERAL ARRANGEMENT PLANS - SHEET 1
DRAWING STATUS	DRG
DRAWING No.	C301-CLA-0000-LA-DRG-1100
SHEET	A1
REV	A1

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TREE SCHEDULES _HEIRISSON ISLAND	
TREE TYPES	NUMBERS
EXISTING TREE TO BE DEMOLISHED	74
EXISTING TREE TO BE RETAINED	108
PROPOSED TREES	114

* ONLY COUNTED TREES WITHIN THE EXTENT OF WORKS BOUNDARY

REV	DESCRIPTION	DATE
A	ISSUED FOR 15% EXTERNAL DESIGN REVIEW	07/09/2022
A1	ISSUED FOR DA APPLICATION	13/09/2022
AMENDMENTS		

CONSULTANT	Hassell LTD ABN 24 007 711 435 Level 1 Commonwealth Bank Building 242 Murray Street Perth WA 6000 Australia T +61 8 6477 6000 perth@hassellstudio.com

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VERIFIED
DATE

CONTRACT MANAGER	DATE
PROJECT DIRECTOR	DATE

FOR CONTINUATION - REFER DRAWING L_1102	
INFRASTRUCTURE DELIVERY DIRECTORATE	

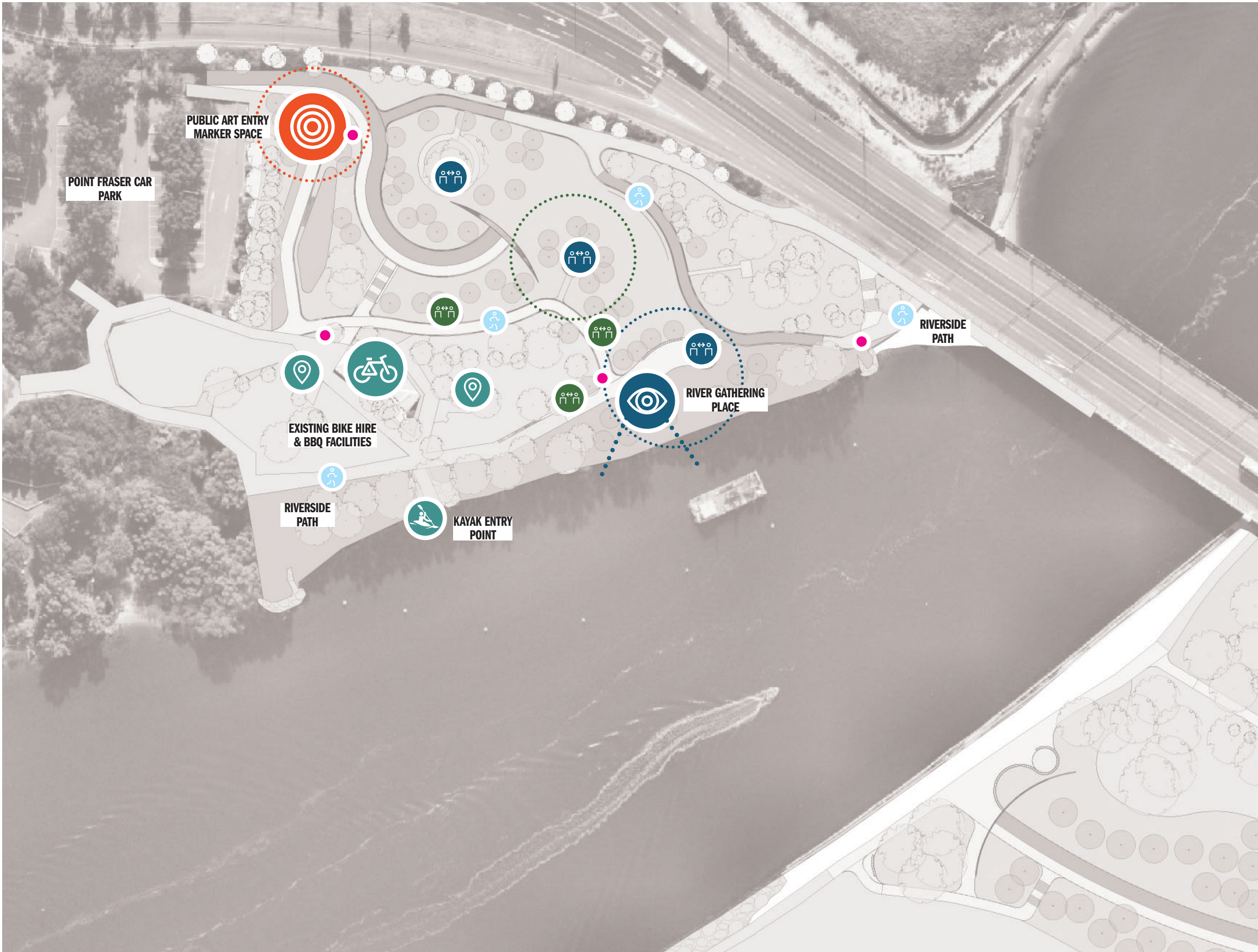
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MRWA DRAWING NUMBER	
PROJECT TITLE	
CAUSEWAY PEDESTRIAN & CYCLIST BRIDGE	
DRAWING TITLE	
1 TO 500 GENERAL ARRANGEMENT PLANS - SHEET 2	
DRAWING STATUS	DRAWING No.
DRG	C301-CLA-0000-LA-DRG-1101
SHEET	REV
A1	A1










TREE SCHEDULES _MCCALLUM PARK	
TREE TYPES	NUMBERS
EXISTING TREE TO BE DEMOLISHED	2
EXISTING TREE TO BE RETAINED	14
PROPOSED TREES	120

* ONLY COUNTED TREES WITHIN THE EXTENT OF WORKS BOUNDARY

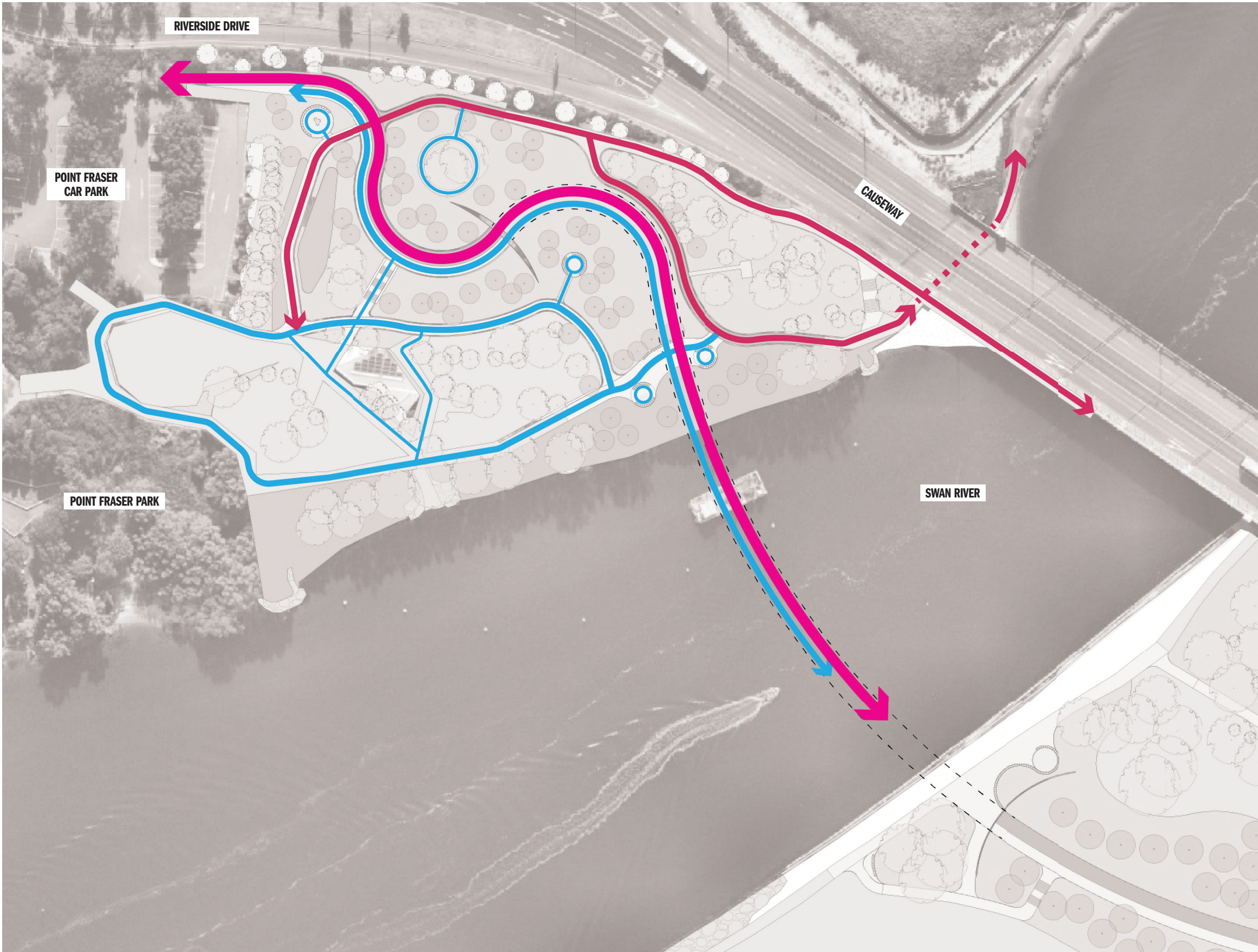
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6. STRATEGIES - POINT FRASER ACTIVATION



-  PUBLIC ART ENTRY MARKER SPACE
-  PICNIC SEATING AREA
-  RIVERSIDE GATHERING PLACE
-  SEATING AREA
-  PATHWAYS
-  EXISTING BIKE HIRE
-  EXISTING BBQ
-  KAYAK ENTRY POINT
-  WAYFINDING SIGNAGE

6. STRATEGIES - POINT FRASER CIRCULATION

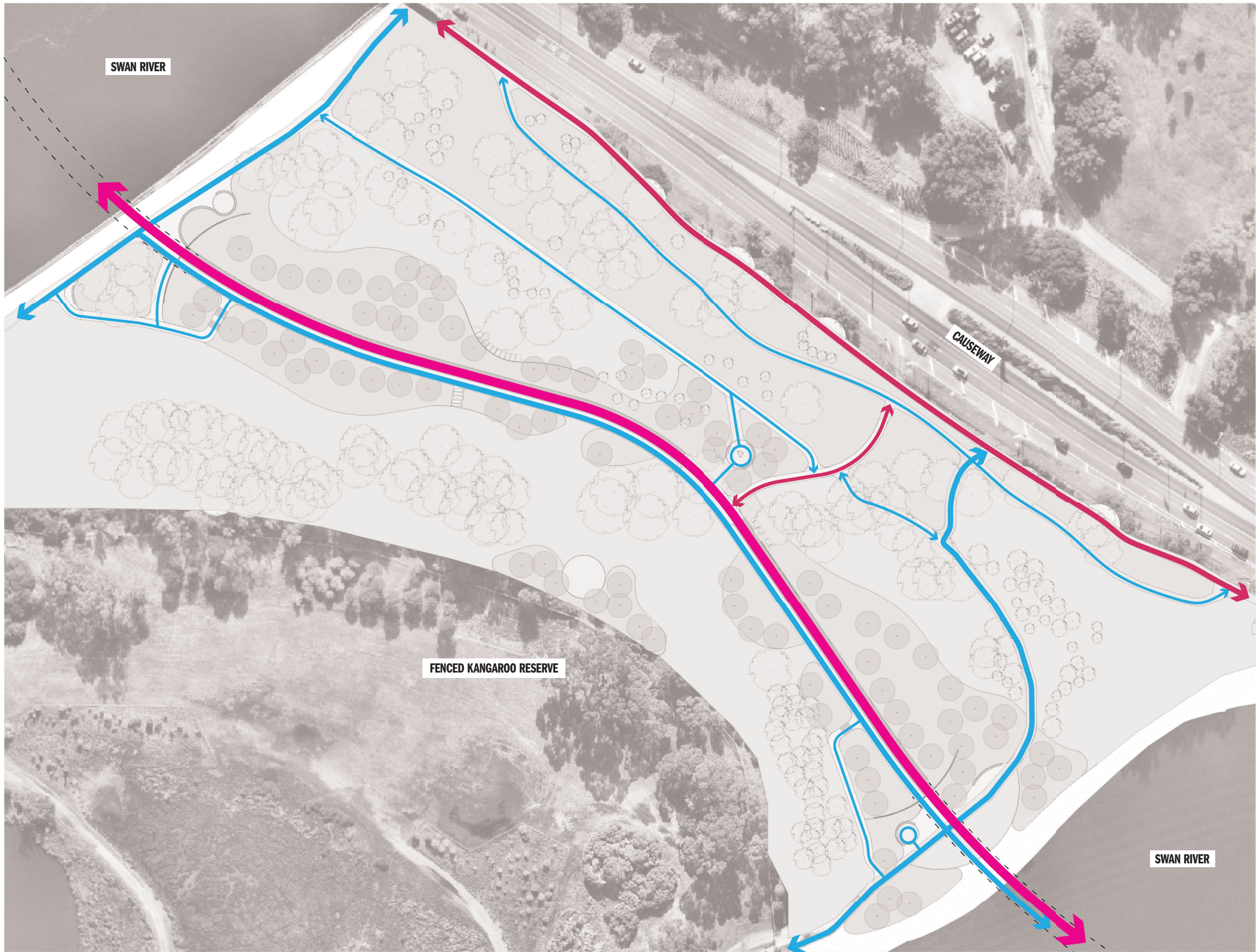


6. STRATEGIES - HEIRISSON ISLAND ACTIVATION



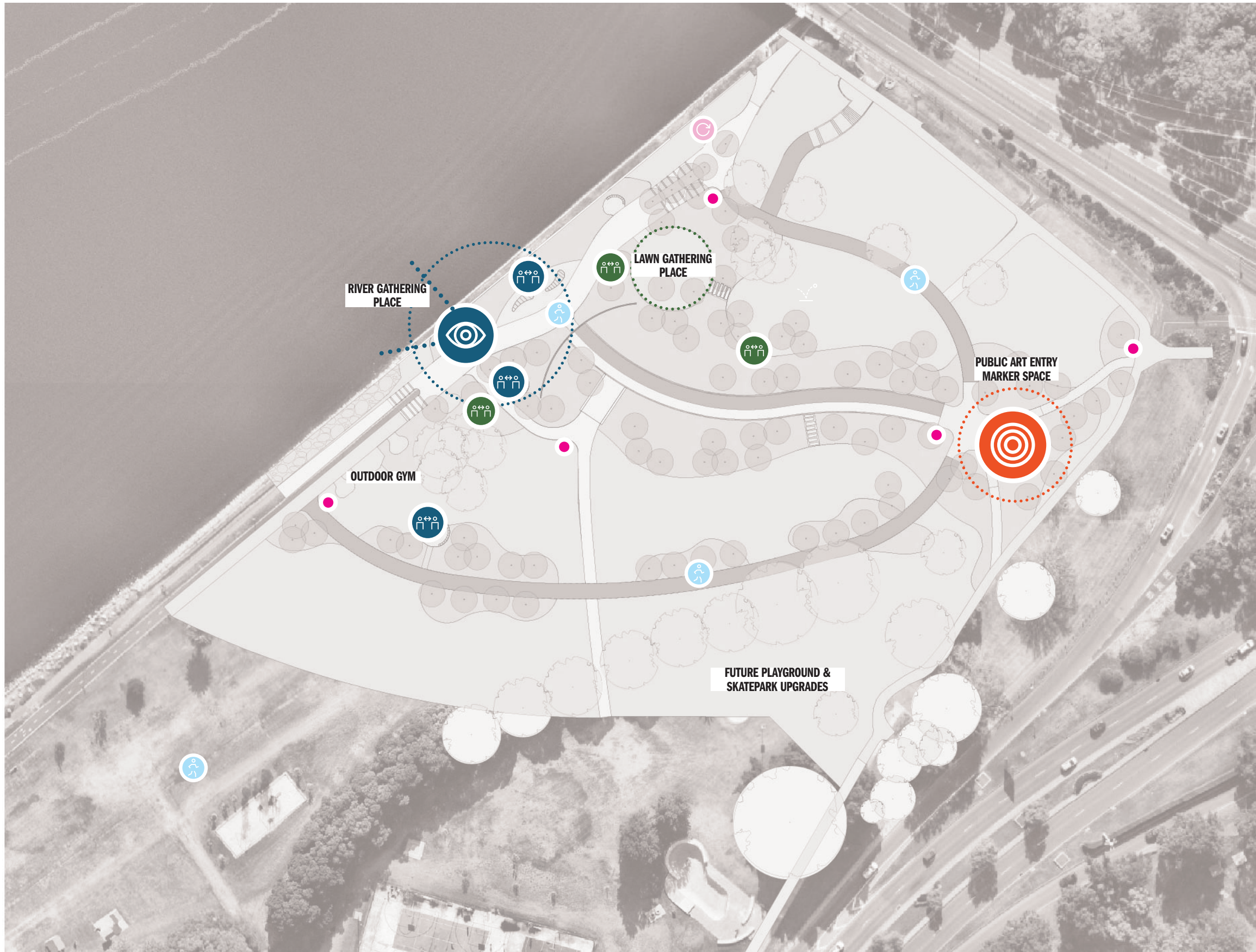
-  PUBLIC ART ENTRY MARKER SPACE
-  PICNIC SEATING AREA
-  RIVERSIDE GATHERING PLACE
-  RIVERSIDE SEATING AREA
-  PATHWAYS
-  CORROBOREE CIRCLE - TBC
-  WAYFINDING SIGNAGE







6. STRATEGIES - HEIRISSON ISLAND CIRCULATION



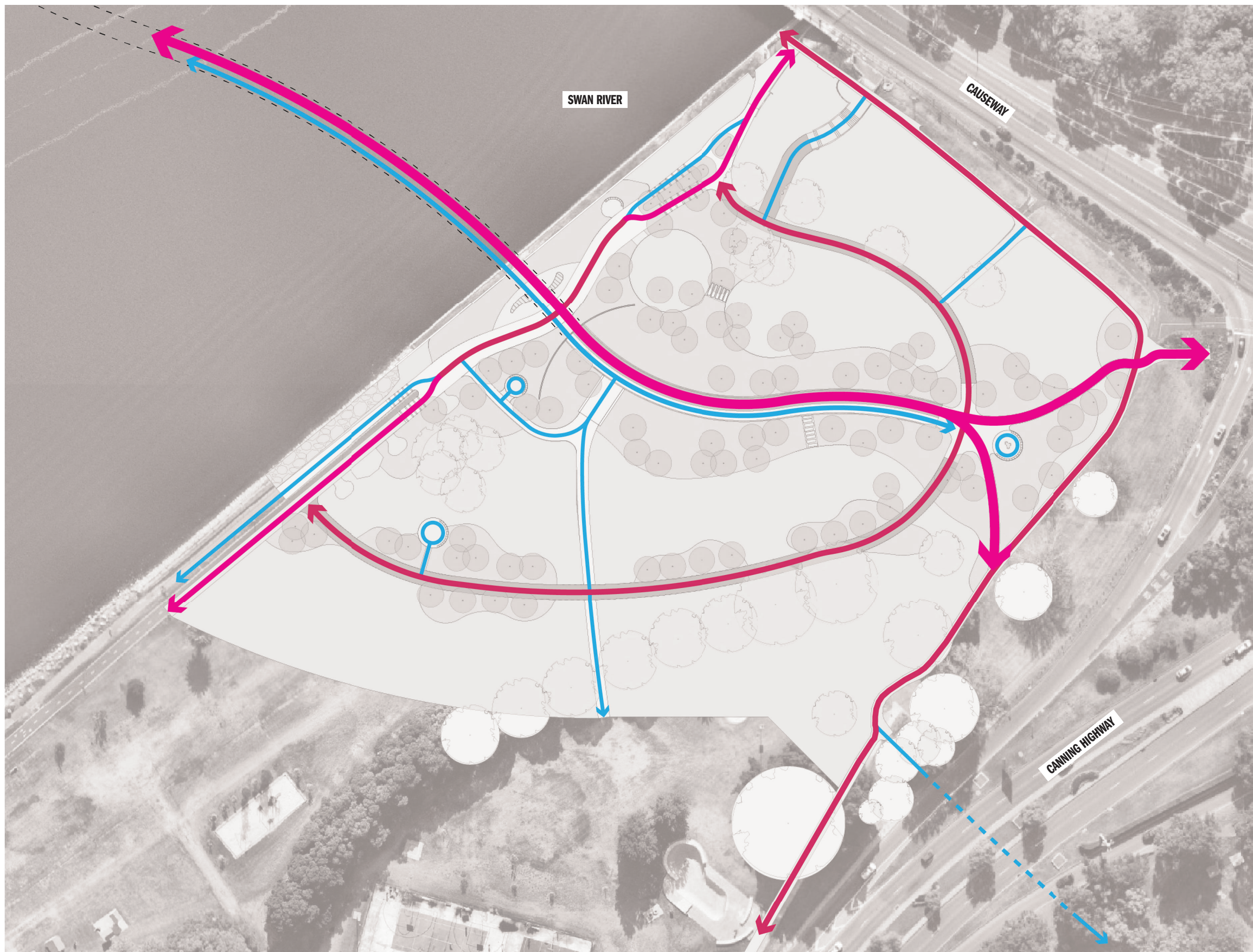
- PRIMARY BICYCLE ROUTE
- TWO WAY SHARED PATH
- PEDESTRIAN ROUTE

6. STRATEGIES - MCCALLUM PARK ACTIVATION



-  PUBLIC ART ENTRY MARKER SPACE
-  PICNIC SEATING AREA
-  RIVERSIDE GATHERING PLACE
-  SEATING AREA
-  PATHWAYS
-  WAYFINDING SIGNAGE

6. STRATEGIES - MCCALLUM PARK CIRCULATION



- PRIMARY BICYCLE ROUTE
- TWO WAY SHARED PATH
- PEDESTRIAN ROUTE

6. STRATEGIES

HARD LANDSCAPE

Materials are chosen to be robust, long-lasting and weather comfortably in exposed conditions. The palette references the colours and textures of the natural environment - sand, rock, earth - through rusted steel, gravel paving and rammed earth with opportunities for interpretive details in high impact places. Detailing will also combine with the architectural styling and material use of the new bridge itself.

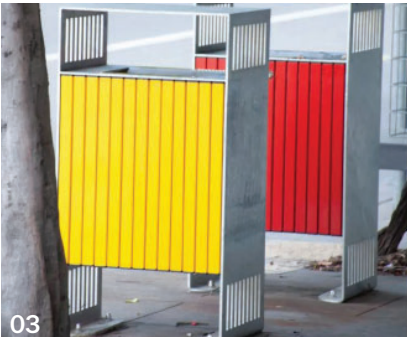


- 01. New asphalt path
- 02. Pavement - stone/ feature
- 03. Exposed aggregate paving
- 04. Paving stencil interp.
- 05. Stabilised gravel paving
- 06. Limestone boulders
- 07. Rammed earth seating

6. STRATEGIES

STREET FURNITURE

A considered palette of street furniture will be developed in consultation with Main Roads WA and in particular the City of Perth and Town of Victoria Park.



01 Table setting
Custom hdg steel frame and dressed
Hardwood table setting - various sizes
02. Galvanised steel bike racks
03. Rubbish & recycle bins

04. Bollards
05. Drinking fountain
06. 'Re-wilding' feature - Bird nesting box
07. Recycled timber log

6. STRATEGIES

CPTED RESPONSE

- The landscape has been designed to best practice CPTED principles.
- The design does not propose any structures which can be hid behind.
- Passive surveillance is a key design principle with clear lines of sight facilitated along pathways and across landscaped areas.
- Most of the groundcover planting will be low level to allow views over. We are proposing some mid-level shrubs on the embankments to soften impact of the bridge infrastructure.
- New tree positioning and canopies are raised to allow views.
- The public spaces will be well lit – refer to the lighting strategy.
- The design proposes a range of gathering points to facilitate activation, encouraging enhanced passive surveillance.
- There are no dead ends of illegible spaces and routes within the design.

UNIVERSAL ACCESS STATEMENT

- At Point Fraser, Heirisson Island and McCallum Park the landscape design connects with the existing site context and new bridge alignment to facilitate universal access.
- Multiple pathways create level access at the key entry points to the bridge in the three site areas.
- Key shared pathways through the three landscapes are sealed and specified to facilitate universal access to Australian Standards.
- There is a discussion still to be resolved around the specification of pathways on Heirisson Island, balancing landscape character and universal access.
- Stepped access from the bridges in the four locations creates strong connections to the river edges.
- A wayfinding strategy is in development to further facilitate strong site legibility.
- The landscape pathways are simple and easy to understand promoting strong site legibility.
- Wayfinding and interpretation signage will be specified to best practice guidelines for the visually impaired.
- Seating spaces will provide a range of experiences, with some areas facilitating universal access seating.
- Picnic table spaces will provide spaces for prams and wheelchairs.
- Legible connections are made to surrounding public transport connections e.g. bus stops close to Point Fraser and McCallum Park.
- A new 4 metre wide shared path at McCallum Park encourages dual use by pedestrians and cyclists.
- Resting points are provided at regular intervals within the landscape.
- Trees are planted close to pathways and seating spaces to create cooler, shaded experiences.
- Gathering spaces take advantage of the cover of the bridge close to the river and abutments.

6. STRATEGIES

PLANTING STRATEGY

Plant species selection will be drawn from local Swan Coastal Plain vegetation complexes. For river edge and infiltration basin planting, species will be exclusively from the Swan/Vasse/Serpentine vegetation complexes. On embankments and other elevated locations the planting will include appropriate species from the Karrakatta and Bassendean vegetation complexes that interface with the river in central Perth. Using species from across these complexes will provide a diverse selection of planting appropriate to the variety of locations and micro-climates across the site.

The planting structure will include tree canopy, mid-storey and understorey species to encourage diversity of flora and fauna. However CPTED requirements will limit the inclusion of medium and large shrubs in some locations. Because of the limited number of low growing species within local complexes there may be a need to include low growing selected forms of local species to ensure a diverse and robust mix of low growing plants.

The softscape approach will respond to the character and function of the three sites within the project.

- At Point Fraser the final softscape will be a heavily planted landscape with minimal lawn areas. The focus of here will be on reinforcing the WSUD principles, encouraging the infiltration of surface water before it enters the river system. The path and seating areas will provide pause points in proximity to the vegetated rivers edge. The dense tree and understorey planting and path network within the relatively small Point Fraser site will need to ensure clear sight lines are maintained to facilitate both wayfinding and safety.

- Heirisson Island is currently dominated by turf grass

and primarily introduced tree species planted in the 1970's. While the intention is to maintain as many as possible of the existing mature trees; new tree and understorey planting will be local native species. The more expansive spaces at Herirsson provide opportunities to introduce greater diversity of plant form/habit. Areas of larger shrub planting located away from movement paths will ensure safety while allowing diversity that will encourage birdlife and other fauna. Areas of turf will be retained to encourage recreational use of the parkland.

- The McCallum Park section of the site is currently predominantly irrigated turf with limited tree planting. The location is the confluence of several cyclist and pedestrian paths, creating potential movement conflicts. Again the planting selection will need to consider the provision of clear sightlines and safety concerns, potentially limiting the use of larger shrub species in this location. Unlike Point Fraser, a significant area of lawn will be established at McCallum park to support active recreation use of the parkland.

A consistent palette of Swan Vegetation Complex trees will be use across the site including;

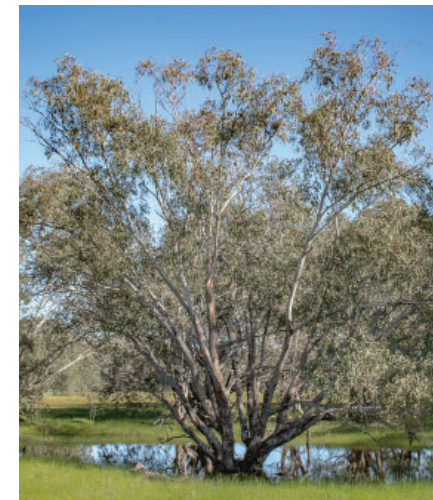
- *Casuarina obesa*
- *Corymbia calophylla*
- *Eucalyptus gomphocephala*
- *Eucalyptus rudis*
- *Casuarina obesa*
- *Melaleuca preissiana*
- *Melaleuca raphiophylla*



Casuarina obesa



Melaleuca preissiana



Eucalyptus rudis



Eucalyptus gomphocephala



Corymbia calophylla



Melaleuca raphiophylla

6. STRATEGIES

PLANTING STRATEGY

Understorey planting selections will be appropriate to location and will use local species from the Swan River, Bassendean and Karrakata vegetation complexes. Through further engagement and detailed design investigation the planting palette will be refined.



Banksia littoralis



Xanthorea preisii



Juncus kraussii



Verticordia acerosa



Ficinia nodosa



Conostylis candicans



Schoenoplectus tabernaemontani (ex.validus)



Kennedia prostrata



Kunzea recurva



Hakea varia

6. STRATEGIES

INTERPRETATION

This ULDF document has been prepared in tandem with the Heritage Interpretation Plan. Please refer to the *Causeway Pedestrian and Cyclist Bridge Hertiage Interpretation Plan (September 2022)* for strategies to share the stories of these places through the use of public art, interpretive elements and signage.