

Causeway Pedestrian and Cycle Bridge

Development Application Submission

Causeway Link Alliance
September 2022 | 21-403



element.
the art and science of place

Acknowledgement of Country

The Causeway Link Alliance recognises the Whadjuk people of the Noongar nation as Traditional Owners of the land on which the project will take place. We acknowledge and respect their enduring culture, their contribution to the life of this city, and Elders, past and present.

WARNING

Aboriginal and Torres Strait Islander readers are advised that this document may contain the names and images of people that have passed away. In some Aboriginal communities this may cause sadness, distress or offence.

Document ID: /Volumes/Graphics/2021/21-403 Causeway Pedestrian Bridge/00 Report/00 Draft - Planning/00 InDesign/21-403 Causeway DA 220825 Folder/21-403 Causeway DA F 220930.indd

Issue	Date	Status	Prepared by	Approved by	Graphics	File
1	26.08.22	Draft	George Ashton	Murray Casselton	MS	D1
2	16.09.22	Draft	George Ashton	Murray Casselton	MS	D2
3	30.09.22	Final	George Ashton	Murray Casselton	MS	F

This report has been prepared for the exclusive use of the Client, in accordance with the agreement between the Client and Element Advisory Pty Ltd (element) ('Agreement').

element accepts no liability or responsibility whatsoever in respect of any use of or reliance upon this report by any person who is not a party to the Agreement or an intended recipient.

In particular, it should be noted that this report is a qualitative assessment only, based on the scope and timing of services defined by the Client and is based on information supplied by the Client and its agents.

element cannot be held accountable for information supplied by others and relied upon by element.

Copyright and any other Intellectual Property arising from the report and the provision of the services in accordance with the Agreement belongs exclusively to element unless otherwise agreed and may not be reproduced or disclosed to any person other than the Client without the express written authority of element.

Contents

Abbreviations	v	Appendix A	33
		Consultation Outcomes Report	33
1. Introduction	1	Appendix B	35
1.1 Project Team	1	Certificates of Title	35
1.2 Development Approval Pathway	1	Appendix C	37
		Urban Landscape Design Framework	37
2. Project Background	3	Appendix D	39
2.1 Site History	3	Section 18 Approval	39
2.2 Project Background	3	Appendix E	41
2.3 Preliminary Consultation Summary	5	Heritage Impact Statement and Archaeological Management Plan	41
3. Site Description and Context	7	Appendix F	43
3.1 Site Description	7	Environmental Impact Assessment and Clearing Permit	43
3.2 Site Context	9	Appendix G	45
3.3 Heritage Considerations	10	Acid Sulphate Soils Management Plan	45
3.4 Environmental Considerations	11	Appendix H	47
3.5 Metropolitan Region Scheme Reservations	12	Development Plans	47
4. Proposed Design Response	15	Appendix I	49
4.1 Bridge Design	15	Landscape Plans	49
4.2 Urban and Landscape Design	16	Appendix J	51
4.3 Heritage Interpretation	18	Lighting Strategy	51
4.4 Project Timing	18	Appendix K	53
4.5 State Design Review Panel Engagement	19	Heritage Interpretation Plan	53
5. Planning Assessment	21	Appendix L	55
5.1 Perth and Peel @ 3.5 Million	21	Environmental Wind Assessment	55
5.2 Metropolitan Region Scheme	22	Appendix M	57
5.3 WAPC Policies	22	Construction Management Plan	57
5.4 City of Perth Planning Framework	24		
5.5 Town of Victoria Park Planning Framework	25		
5.6 DBCA Policies and Strategies	25		
6. Accompanying Technical Reports	27		
6.1 Heritage Impact Assessment	27		
6.2 Environmental Wind Assessment	28		
6.3 Construction Management Plan	29		
7. Conclusion	31		



Abbreviations

Abbreviations used in this document are summarised in Table 1 below.

Table 1 – Abbreviations used in this Document

Abbreviation	Description
CBD	Central Business District
CEMP	Construction Environmental Management Plan
City	City of Perth
CLA	Causeway Link Alliance
CMP	Construction Management Plan
CPCB	Causeway Pedestrian and Cyclist Bridge
CPS2	City of Perth City Planning Scheme No. 2
DAP	Development Assessment Panel
DAWE	Department of Agriculture, Water and the Environment
DBCA	Department of Biodiversity, Conservation and Attractions
DCA	Development Control Area
DCP5.3	Development Control Policy 5.3: Use of Land Reserved for Parks and Recreation and Regional Open Space
DoT	Department of Transport
DPLH	Department of Planning, Lands and Heritage
Draft SPP2.9	Draft State Planning Policy 2.9: Planning for Water
EIA	Environmental Impact Assessment
EPA	Environmental Protection Authority
EWA	Environmental Wind Assessment
HCWA	Heritage Council of Western Australia
HIP	Heritage Interpretation Plan
HIS	Heritage Impact Statement
LDAP	Local Development Assessment Panel
LPS1	Town of Victoria Park Local Planning Scheme No. 1
MRS	Metropolitan Region Scheme
MRWA	Main Roads Western Australia
OGA	Office of the Government Architect
SDRP	State Design Review Panel
SPP2.10	State Planning Policy 2.10: Swan-Canning River System
SPP7.0	State Planning Policy 7.0: Design of the Built Environment
SRT	Swan River Trust
TMP	Traffic Management Plan
Town	Town of Victoria Park
ULDF	Urban Landscape Design Framework
VMP	Vessel Management Plan
WAPC	Western Australian Planning Commission



1. Introduction

This report has been prepared by **element**, on behalf of the Causeway Link Alliance (CLA), in support of a development application for the proposed new Causeway Pedestrian and Cyclist Bridge (CPCB).

The CPCB project is an opportunity to deliver a landmark pedestrian and cyclist connection across the Derbal Yerrigan (Swan River) that responds to the unique cultural and historic significance of the area, integrates with the existing landscape and urban design of the local area, and provides an attractive link for both tourists and the wider community.

The project will introduce two interconnected landmark bridge structures across the Swan River approximately 80-90 metres downstream of the existing Causeway Bridge, with dedicated pedestrian and cyclist lanes providing safer access for the more than 1,400 cyclists and 1,900 pedestrians who use the path on the existing Causeway Bridge daily. The new bridge structures span from the eastern banks of Point Fraser within the City of Perth (the City), touching down on Heirisson Island, and through to McCallum Park in the Town of Victoria Park (the Town).

Located on Whadjuk Noongar boodja and in a rich historic and cultural context, the new bridge and associated landscape is intended to serve as a canvas to bring together a number of important cultural heritage messages to exhibit and act as a forward-looking piece of civic infrastructure.

The project forms part of the Perth City Deal and is jointly funded by the State and Federal Governments, and the City. It is being delivered by the CLA on behalf of Main Roads Western Australia (MRWA), with a target completion date in 2024.

This report has been prepared to provide an overview of the site and the project, as well as an assessment against the relevant planning requirements and an examination of the planning merits of the proposal. The application is also accompanied by a range of detailed plans and technical documents, as discussed throughout this report.

1.1 Project Team

The new CPCB is being delivered by the CLA: a partnership between MRWA, Seymour Whyte, Civmec and WSP.

The CLA design team is comprised of Dissing + Weitling (Bridge Architects), Hassell (Urban and Landscape Designers) and WSP (Bridge Engineers), with **element** engaged to provide supporting planning, heritage and public art services for the project, including the preparation and lodgement of this development application.

1.2 Development Approval Pathway

The CLA is undertaking the proposed works on behalf of MRWA, which is classified as a 'public authority' for the purposes of Section 6 of the *Planning and Development Act 2005*.

The proposed works also fall within the definition of 'public works' under the *Public Works Act 1902*, as works related to the construction of a bridge.

In accordance with the above, the proposed works constitute public works undertaken on behalf of a public authority and are therefore exempt from requiring development approval under any applicable local planning scheme.

However, aspects of the proposed works do require approval from the Western Australian Planning Commission (WAPC) under the provisions of Clause 30A(2) of the Metropolitan Region Scheme (MRS), with the proposed works located partially within the Swan and Canning River Development Control Area (DCA).

Given that the proposed development has an estimated cost of \$100 million, it also falls within the mandatory Development Assessment Panel (DAP) threshold and therefore requires approval from a DAP based on a report and recommendation prepared by the WAPC.

As the majority of the proposed works are located within the City of Perth Local DAP (LDAP) boundary, the decision will be made by the City of Perth LDAP in accordance with Regulation 8(2) of the *Planning and Development (Development Assessment Panels) Regulations 2011*.



2. Project Background

2.1 Site History

The proposed new pedestrian and cyclist bridge spans the Derbal Yerrigan (Swan River) from the eastern banks of Point Fraser in East Perth, touching down on Heirisson Island before continuing to McCallum Park in Victoria Park. The site is on Whadjuk Noongar boodja with the area in the vicinity of the existing Causeway Bridge having a high level of integrity as a continual and significant river crossing point throughout the history of Boorloo (Perth) since well before the arrival of colonists in 1829.

The shallow riverine flats in the vicinity of what is now known as Heirisson Island provided a natural junction to traverse between the northern and southern banks of the river. While the landforms have been altered over time, the place maintains its significance to the Whadjuk Noongar Traditional Owners.

The first Causeway bridge was opened in 1843, followed by successive programs of bridge upgrades and replacement in 1865, and finally completion of the current construction in 1952. The existing Causeway Bridge therefore represents the third bridge structure built across this location, with remnants of the second bridge still extant and visible within the surrounding waters. The site of the current Causeway Bridge is included on the State Register of Heritage Places (Place No. 3632 – *Causeway Bridges*), as discussed in detail in Section 3.3 of this report.

Heirisson Island itself is also a registered Aboriginal Heritage Site (Site No. 3589) that is recognised for its ongoing significance as a mythological, camping, hunting and meeting place, and as a significant plant resource site, as is the surrounding Swan River environment (Site No. 3536). Heirisson Island originally consisted of six land masses that were amalgamated or removed during programs of alteration and reclamation works which took place on the river between the 1900s and 1940s. Other than the existing Causeway Bridge and minor infrastructure facilities, the island largely comprises natural reserve.

2.2 Project Background

The narrow shared path located on the downstream side of the existing Causeway Bridge is currently the only pedestrian and cyclist connection linking East Perth to Victoria Park. In addition to providing an important connection between the Perth Central Business District (CBD) and Victoria Park, this route forms a key component of the Perth Water loop, linking the two recreational shared paths located on the Swan River's southern and northern foreshores.

The need to improve this connection has long been recognised, to safely cater for the more than 1,400 cyclists and 1,900 pedestrians who use the path on the existing Causeway Bridge daily. This includes recognition in key strategic planning documents at both a State and local level, including:

- The City of Perth Transport Strategy (2016);
- The Town of Victoria Park/City of South Perth Joint Bicycle Plan (2018); and
- The Perth and Peel @ 3.5 Million Framework (2018).

Over the past decade, various government agencies including MRWA, the City and the Department of Transport (DoT) have explored options for improving this connection's level of service, comfort and safety.

The current project commenced in early 2019, with a DoT led study to explore innovative and cost-effective solutions for improving pedestrian and cyclist connectivity across Heirisson Island. With a directive to develop an iconic design that responds appropriately to the area's natural and cultural heritage values, the study investigated a range of potential options in collaboration with key stakeholders from the State Government, City, Town, Burswood Park Board and WA Recreational Water Sports Association.

Recognising the importance of Heirisson Island to Perth's first nations people, a Whadjuk Noongar Reference Group was also formed to help identify the most appropriate alignments, bridge types and architectural design responses to ensure a well-considered interface between history, place and design.

Throughout the project, numerous bridge types were considered including arch, box girder and cable stay bridges as shown in Figure 1 below. In addition, the design team also investigated the possibility of widening the Causeway's existing shared path from 2.0m to 6.0m through the provision of a cantilevered structure.

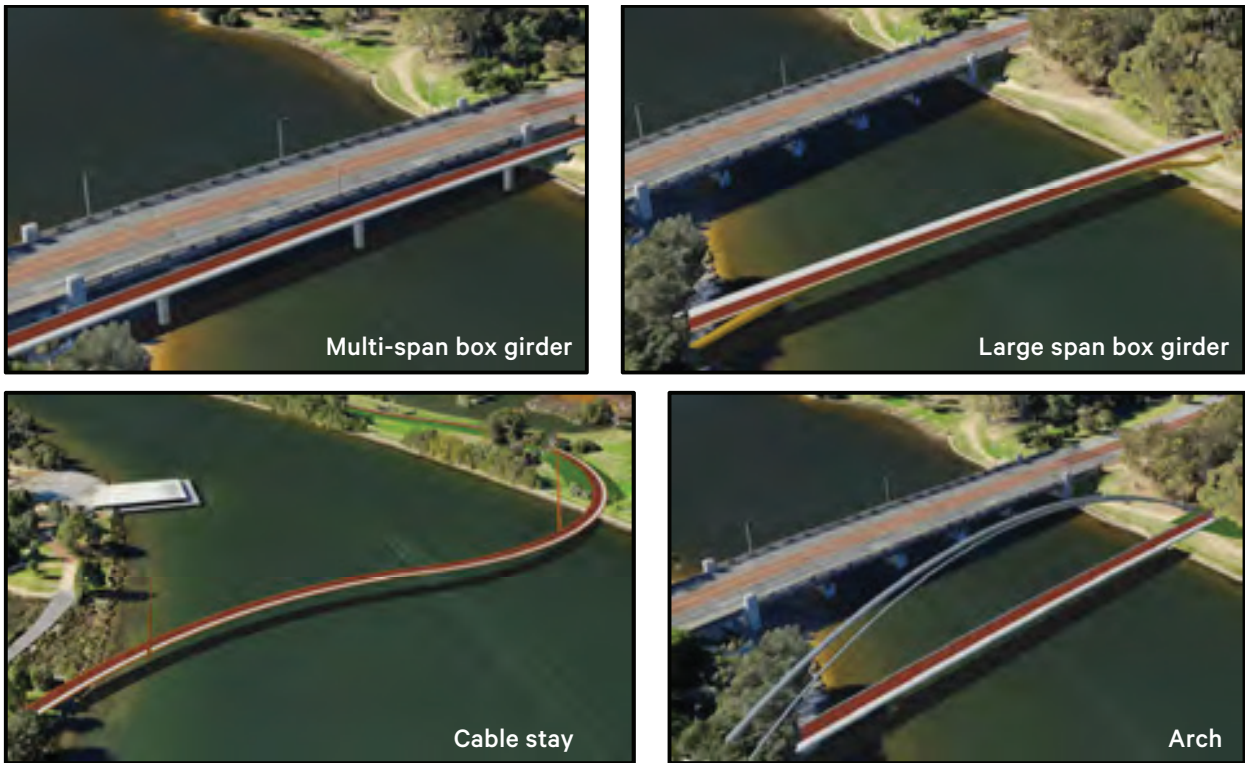


Figure 1. Preliminary Design Options

Key objectives considered during the option development process included the need to respect the area's environmental and cultural heritage, achieving a minimalistic yet iconic design, as well as ensuring the proposed bridge remained future proof in terms of both vertical clearance and anticipated walking/cycling demand.

Following an extensive engagement process, five high-level concepts were shortlisted for further development, underpinned by three preferred alignments as shown in Figure 2 below.



Figure 2. Preliminary Alignment Options

Following additional workshops with the stakeholder and Noongar reference groups, the project team identified the current option to proceed to the next phase of design, as reflected in this application for development approval. This solution locates a new pedestrian bridge approximately 90 metres downstream of the existing Causeway Bridge and was selected for its ability to:

- Improve pedestrian/cyclist amenity;
- Maintain directness; and
- Minimise impacts on flora and fauna, as well as the Swan River itself.

Consisting of two cable stay bridge structures, the proposed option limits the number of in river piers to just three, acknowledging the spiritual and cultural importance of the Swan River (Derbal Yerrigan) to Perth's first nations peoples.

The proposed design of each bridge structure also acknowledges the Aboriginal history and culture in the local area. Based on discussions with the Whadjuk-Noongar reference group, the final concept has sought to acknowledge two Whadjuk people closely associated with the area, being:

- Yagan, a warrior-leader of the Whadjuk people at the time of European settlement (represented by a single boomerang-inspired pier on the western bridge); and
- Fanny Balbuk, a Noongar Woman who resisted the over-development of the Swan Coastal Plain in the early years of the colony (represented by two digging stick-inspired piers on the eastern bridge).

By employing these two similar, yet subtly contrasting designs for the two cable stay bridge structures, the proposed design seeks to create an iconic landmark for the Perth CBD's eastern gateway, while complementing the post-war architecture of the heritage-listed Causeway Bridge.

Importantly, the two bridge structures have also been designed with navigational envelopes that are significantly wider and taller than the current Causeway Bridge. This futureproofing of overhead clearances in the proposed design will enable larger watercraft (including ferries) to navigate the upper reaches of the Swan River should the existing traffic bridges ever be raised or replaced.

2.3 Preliminary Consultation Summary

A Community and Stakeholder Engagement Strategy was developed at the inception of the CPCB project in August 2020, to ensure that affected stakeholders were consulted at key stages so that their feedback could be considered as part of the design where possible. This has informed the consultation activities undertaken on the project, as summarised in the accompanying Consultation Outcomes Report at Appendix A.

Throughout different phases of the project, extensive consultation has been undertaken with key stakeholders from local and State government, and representatives of the Whadjuk Noongar community.

These consultation activities have included:

- Preliminary one-on-one meetings with key stakeholders including:
 - The DoT Marine Safety Unit;
 - The Department of Biodiversity, Conservation and Attractions (DBCA), including the Swan River Trust (SRT);
 - The Town;
 - The City;
 - The neighbouring City of South Perth;
 - The South West Aboriginal Land and Sea Council;
 - The State Heritage Office at the Department of Planning, Lands and Heritage (DPLH);
 - The Burswood Park Board;
 - The Office of the Government Architect (OGA); and
 - The Water Corporation.
- Preliminary stakeholder workshops involving:
 - MRWA;
 - The DoT Marine Safety Unit;
 - The DBCA;
 - The Town;
 - The City;

- The City of South Perth;
 - The State Heritage Office;
 - The Burswood Park Board;
 - The OGA; and
 - Westcycle.
- Preliminary Noongar workshops, including the establishment of a Noongar Reference Group.

Further targeted workshops with key stakeholders were then held during the tender phase from July to October 2021 in relation to various matters including:

- Bridge design;
- Landscaping and public realm arrangements;
- Traditional Owner and stakeholder engagement; and
- Proposed construction methodologies.

This consultation has continued following the appointment of the CLA, with a series of meetings with the key project stakeholders identified above, the Matagarup Elders Group and local businesses operating on Point Fraser. This consultation has reinforced that CLA's early design reflects the feedback stakeholders provided through earlier stages of the project, with general consensus on and support for the alignment proposed by the CLA.

The CLA also intends to continue to build on this thorough engagement process throughout the detailed design and construction phases of the project, through the establishment of an Alliance Stakeholder Reference Group. This will include ongoing consultation activities at key stages of the detailed design process in relation to:

- Bridge design;
- Revegetation and landscaping works;
- Urban design;
- Public art; and
- Shared paths and footpaths.

Whilst no direct consultation with the broader public has been undertaken to date, numerous communications with the Perth and broader community have been shared by MRWA as planning for the project has progressed.

For further details, please refer to the accompanying Consultation Outcomes Report at Appendix A.

3. Site Description and Context

3.1 Site Description

As noted in the previous section of this report, the proposed CPCB is located approximately 90 metres south of the existing Causeway Bridge. The new bridge structures extend from McCallum Park in Victoria Park, across Heirisson Island to Point Fraser in East Perth, as shown in Figure 3.

Refer to Figure 3 – Location Plan

The affected land parcels are summarised in Table 2 below, inclusive of both permanent and temporary construction works. Copies of the relevant Certificates of Title are enclosed at Appendix B.

Table 2 – Lot Summary

Lot	Survey	Volume	Folio	Registered Street Address (Location)
501	P412328	2975	780	3 Canning Highway, Victoria Park (McCallum Park)
502	P412328	2975	781	1 Canning Highway, Victoria Park (McCallum Park)
5268	P213977	LR3153	637	N/A (Heirisson Island)
13697	P213977	LR3117	994	N/A (Heirisson Island / Causeway Bridge)
305	P47251	LR3140	965	21 Riverside Drive, East Perth (Point Fraser)
301	P47451	LR3151	548	171 Riverside Drive, Perth (Swan River)
Causeway and Riverside Drive Regional Road Reserves (North Embankment). Land ID Nos. 3033060, 3033064, 3133960, 3133963, 3133971 and 3285192.				
Causeway, Shepperton Road, Canning Highway and Great Eastern Highway Regional Road Reserves (South Embankment). Land ID Nos. 3033062, 3171329, 3641183 and 3641184.				
Garland Street Local Road Reserve (South Embankment). Land ID Nos. 3641182, 3165563 and 4433398.				

All the affected lots are State-owned land, except for Lot 502 (No. 1) Canning Highway and Lot 501 (No. 3) Canning Highway, which are owned in freehold by the Town.

The State-owned land is all vested in public authorities, as summarised below:

- Lot 5268 is vested in the City in accordance with Crown Reserve 23063, for the purpose of a public park.
- Lot 305 is vested in the City in accordance with Crown Reserve 13375, for the purpose of public recreation and vehicle parking.
- Lot 301 is vested in the Swan River Trust in accordance with Crown Reserve 48325, for the purpose of protecting and enhancing the environment and community amenity value of the Swan and Canning Rivers.
- The Garland Street local road reserve is automatically vested in the Town as a local road.
- The affected regional road reserves and Lot 13697 are automatically vested in MRWA by virtue of the applicable 'Primary Regional Roads' reservation under the MRS.



 Subject Site



source: metromap

Figure 3. Location Plan

3.2 Site Context

As noted previously in this report, the existing Causeway Bridge and the proposed new CPCB cross the Swan River on the site of an ancient crossing point used by the Whadjuk Noongar people called Matagarup. A very important place in Noongar culture, it connects through songlines and stories to places east of Perth, to the wheatbelt and interior, and across the whole continent.

The proposed new bridge structures will connect the higher intensity CBD to the northwest to the lower scale suburban context of Victoria Park to the southeast, with the culturally significant Heirisson Island at its mid-point.

Originally part of several small islands surrounded by mudflats, the landscape of Heirisson Island is the result of previous dredging and land reclamation. The island is a natural place with trees and meandering informal paths, and is of great importance to local Whadjuk Noongar people. The existing Causeway Bridge segregates the island into two parts. The northern area can be accessed via the existing Causeway Bridge and features a car park, toilets and BBQs, whilst the southern area has been fenced off to allow kangaroos to roam. Heirisson island features a large number of predominantly non-native Eucalypt trees that were planted as part of previous landscaping works in the 1970s, with limited groundcover planting.

To the southeast, 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, with connections through to Shepperton Road, Canning Highway and Great Eastern Highway.

To the northwest, the 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, with the bridge landing area being heavily vegetated with native trees and understorey.

The extensive path network within the Point Fraser reserve provides access to the broader CBD environment, via connections to Riverside Drive to the west and Adelaide Terrace to the north.

A more comprehensive context analysis is provided in the enclosed Urban Landscape Design Framework (ULDF) at Appendix C.

Refer to Figure 4 - Site Context Plan

Refer to Figure 5 - Existing Pedestrian Connections

Refer to Appendix C - Urban Landscape Design Framework



Figure 4. Site Context Plan

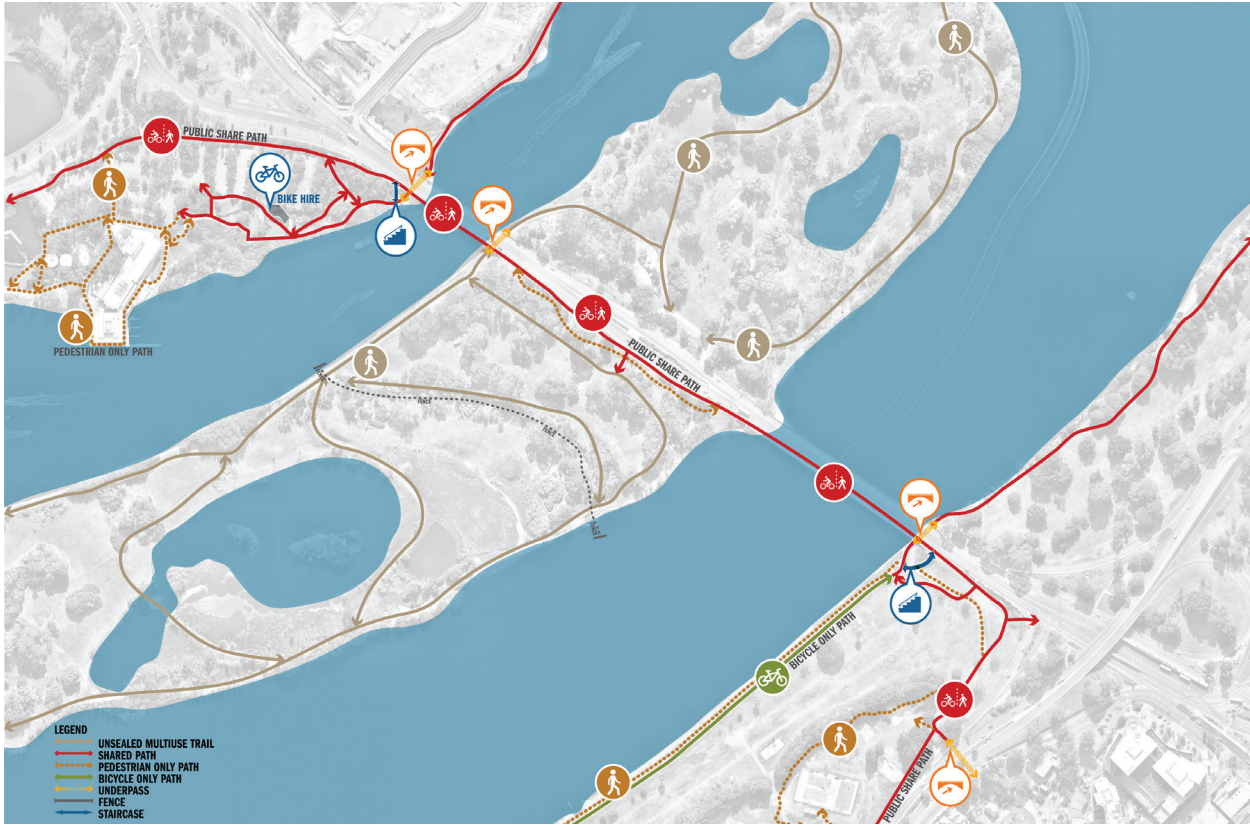


Figure 5. Existing Pedestrian Connections

3.3 Heritage Considerations

As noted previously in this report, the proposed works intersect two registered Aboriginal Heritage Sites, being:

- Site 3589: Heirisson Island, which is recognised for its ongoing significance as a mythological, camping, hunting and meeting place, and as a significant plant resource site; and
- Site 3536: Swan River, which is recognised for its ongoing significance as a mythological site.

Accordingly, the CLA has obtained a separate approval for the project under Section 18 of the *Aboriginal Heritage Act 1972*.

Refer to Appendix D - Section 18 Approval

The proposed works are also located in close proximity to the State heritage listed *Causeway Bridges* site (Place No. 3631). The Heritage Council of WA (HCWA) has published the following Statement of Significance for the *Causeway Bridges* site.

Causeway Bridges consisting of 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 the western shore and connecting roadway, has cultural significance for the following reasons:

the place consists of the first bridges in Western Australia constructed of steel and reinforced concrete materials using advanced principles of structural analysis to produce efficient structures of lasting durability; the place is representative of the bridge building technology of the period during which they were constructed, with its structural, balustrading and bridge pier treatment design. The 1952 bridges were also innovative in lighting design;

the place represents almost 120 years of continuous bridge building endeavour up to the completion of construction in 1952;

the place is important as the river flats presented a navigation barrier to early explorers and settlers, and from the establishment of the settlement of Perth, work was carried out at the site to improve river navigation and provide a river crossing;

the place has associations with E W C Godfrey, who designed and supervised its construction, and with the Department of Public Works and the Main Roads Department. The place also has historical associations

with Surveyor General J S Roe, Superintendent of Works Henry Trigg and Major F C Irwin, who designed and modified the first Causeway opened in 1843, and with Richard Roach Jewell, who designed the second Causeway that was built by convicts and opened in 1865:

the place represents a continuous point of crossing between the eastern and western shores of the Swan River, traditionally for Aboriginal people and then for European settlers; and,

the place is part of an important road link in the history of Western Australia connecting Perth with the southern suburbs and providing access to inland areas. The place is highly valued by the community in providing a link over the river for pedestrians, cyclists and vehicle transport and access to the adjacent landscaped recreational areas.

Given the proximity of the proposed works to the Causeway Bridges site, this application is accompanied by a detailed Heritage Impact Statement (HIS) and Archaeological Management Plan (AMP) at Appendix E. The findings of the HIS are also discussed in Section 6.1 of this report.

Refer to Appendix E - Heritage Impact Assessment and Archaeological Management Plan

3.4 Environmental Considerations

The proposed CPCB project works intersect land that is identified as containing:

- Threatened ecological communities;
- Conservation category wetlands; and
- Areas of high to moderate acid sulphate soils risk.

Given the above, and the nature of the proposed works impacting the Swan River, an Environmental Impact Assessment (EIA) has been completed for the CPCB project, a copy of which is enclosed at Appendix F.

The EIA identifies a number of environmental issues that will require ongoing management throughout the construction phases of the project, including:

- Aboriginal heritage values, which have been addressed as part of the Section 18 approval issued for the CPCB project;
- Acid sulphate soils risk, which has been addressed in the accompanying Acid Sulphate Soils Management Plan;
- Native vegetation clearing and black cockatoo habitat impacts; and
- Noise and vibration impacts during construction.

Importantly, the EIA concludes that the identified environmental impacts can be appropriately managed and are not so significant as to warrant referral to the State Environmental Protection Authority (EPA) under the *Environmental Protection Act 1986* nor to the Commonwealth Department of Agriculture, Water and the Environment (DAWE) under the *Environment Protection and Biodiversity Conservation Act 1999*.

A range of environmental management measures will however be implemented throughout the construction phases of the project, with the CLA to work closely with the DBCA to develop a Construction Environmental Management Plan (CEMP) for the project prior to works commencing. This will build on the extensive work undertaken to date with the DBCA in implementing an in-river environmental survey program that commenced in August 2021. This process is being used to establish baseline water quality data in order to monitor impacts on water quality during construction, and to conduct analysis on existing benthic habitat and in-river fauna.

Removal of native vegetation has been minimised as far as is practicable, with 0.4ha of native vegetation currently proposed to be removed, and up to 0.62ha of native vegetation clearing having been authorised in accordance with the project Clearing Permit issued under the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* and included at Appendix F. The remaining vegetation impacted is previously planted vegetation, and all endeavours will be undertaken to minimise the loss of vegetation (planted or native) as far as practicable, especially the previously planted mature trees on Heirisson Island. A more detailed assessment of the current vegetation clearing proposal against the project Clearing Permit is provided in Table 3 in the following page.

Table 3 – Native Vegetation Clearing

	Clearing Permit Allowance - DWER Approval CPS 818/15 dated 18/03/202	Current Clearing Proposal
1	0.62 hectares of native vegetation clearing, in line with the preliminary Environmental Impact Area (EIA). Out of the 0.62 hectares, the Clearing Permit allows 0.41 hectares of mixed planted native vegetation clearing at Point Fraser.	Current proposal remains within the requirements of the Clearing Permit. Current proposal is for 0.4 hectares of native vegetation clearing (to be finalised as part of the detailed design development but no more than 0.62 hectares). The 0.4 hectares of native vegetation clearing includes 0.33 hectares of mixed planted native vegetation clearing at Point Fraser, and potentially 0.07 hectares of riparian vegetation clearing consisting of isolated individuals of <i>Melaleuca curicularis</i> and <i>Casuarina obesa</i> on the southern shoreline of Heirisson Island
2	0.22 hectares of planted riparian vegetation clearing comprising of: <ul style="list-style-type: none"> • 0.1 hectares of Conservation Category Wetland associated with the Swan River Estuary at the southern foreshore of Heirisson Island. • 0.12 hectares at the Point Fraser foreshore. 	Current proposal remains within the requirements of the Clearing Permit. Current proposal is for 0.17 hectares of planted riparian vegetation clearing including: <ul style="list-style-type: none"> • Potentially 0.07 hectares of Conservation Category Wetland associated with the Swan River Estuary at the southern foreshore of Heirisson Island. • 0.1 hectares at the Point Fraser foreshore. This will be finalised as part of the detailed design development but no more than 0.22 hectares of planted riparian vegetation will be removed.

For further details please refer to the accompanying EIA and Acid Sulphate Soils Management Plan at Appendix F and Appendix G respectively.

Refer to Appendix F - Environmental Impact Assessment and Clearing Permit

Refer to Appendix G - Acid Sulphate Soils Management Plan

3.5 Metropolitan Region Scheme Reservations

The proposed works occur entirely within land that is reserved for public purposes under the MRS. This includes land that is reserved for:

- 'Primary Regional Roads';
- 'Parks and Recreation'; and
- 'Waterways'.

Refer to Figure 6 - Extract of Metropolitan Region Scheme



Figure 6. Extract of Metropolitan Region Scheme



4. Proposed Design Response

As noted previously, the proposal is for a landmark piece of pedestrian and cycling infrastructure linking East Perth to Victoria Park, and replacing the existing narrow and substandard walking and cycling connection on the Causeway Bridge.

Fundamentally, the design seeks to improve community connectivity and safety via the creation of a culturally responsive, beautiful and harmonious bridge environment that is a Perth landmark and integrates sympathetically with the Swan River landscape environment.

The ULDF prepared for the CPCB project 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 and between the City of Perth and Town of Victoria Park.

Upon completion, the new river crossing will provide a safer connection from the Perth CBD to Victoria Park and beyond, for people walking and cycling.

4.1 Bridge Design

Like the existing Causeway Bridge, the proposal is for two separate bridge structures, which ‘touch down’ on Heirisson Island and extend from Point Fraser through to McCallum Park. These will be delivered as suspension bridge structures using cables and pylons, with a six metre wide deck that enables the provision of separated pedestrian paths (2.5 metres wide) and cyclist paths (3.5 metres wide).

The alignment of the proposed bridge structures approximately 90 metres downstream of the existing Causeway Bridge was determined in consultation with the Matagarup Elders Group following an extensive options analysis, with the primary aims of:

- Minimising the number of in river piers impacting the riverbed (three in total);
- Minimising the extent of vegetation clearing through the curved geometry of the footprint on Heirisson Island;
- Minimising impacts on the more culturally sensitive upstream side of Heirisson island, and the more environmentally sensitive wetland areas of Heirisson Island; and
- Delivering an iconic design that responds appropriately to the area’s natural and cultural heritage values.

The design of the two connected bridge structures is also inspired by two prominent Whadjuk Noongar people, being:

- Yagan, a warrior leader of the Noongar people at the time of European settlement, who is represented by a single boomerang inspired pier on the Point Fraser bridge; and
- Fanny Balbuk, a Noongar woman who resisted the over-development of the Swan Coastal Plain in the early years of the Swan River colony, and is represented by two digging stick inspired piers on the McCallum Park bridge.

The McCallum Bridge structure spans approximately 250 metres and connects through to the 140 metre span Point Fraser Bridge via a 270 metre long path through Heirisson Island.

The two bridge structures have been designed with navigational envelopes that are significantly wider and taller than the current Causeway Bridge, to enable larger watercraft (including ferries) to navigate the upper reaches of the Swan River should the existing traffic bridges ever be raised or replaced to accommodate future increased water traffic. This results in the bridge structures being raised a minimum of 6.2 metres above river level within the defined navigational envelopes, whilst still maintaining a 3% grade to ensure universal accessibility in accordance with the requirements of the *Disability Discrimination Act 1992*. The Whadjuk Noongar inspired piers then rise a further 40-45 metres above the bridge deck, as shown in the accompanying development plans at Appendix H.

Refer to Appendix H - Development Plans

The materials and colours for the bridge have been set by the Minister for Transport, and exhibit a red tone colour language that references Western Australian red earth as a grounding element of the bridge design.

4.2 Urban and Landscape Design

Through the adoption of a robust ULDF, the project seeks to embed the new bridge structure in its setting through a high quality urban and landscape design approach that seeks to:

- Acknowledge the spiritual and cultural importance of the Swan River to Perth's first nations peoples and ensure a culturally sensitive design response;
- Improve connections to and across the Swan River, including to and around the site and the bridge structures;
- Enhance the environment by maximising the retention of vegetation and re-planting of native species;
- Augment existing amenities through increased levels of shade for users of the bridge structure and the adjacent foreshore parks, locally relevant and culturally engaging art work, and foreshore park amenities; and
- Embed safety outcomes for pedestrians and cyclists as a priority in all design decisions.

The design seeks to recognise the distinct character of Point Fraser, Heirisson Island and McCallum Park to provide a variety of connected place experiences based on the key themes identified in Figure 7.

Refer to Figure 7 - Adopted Landscape Themes

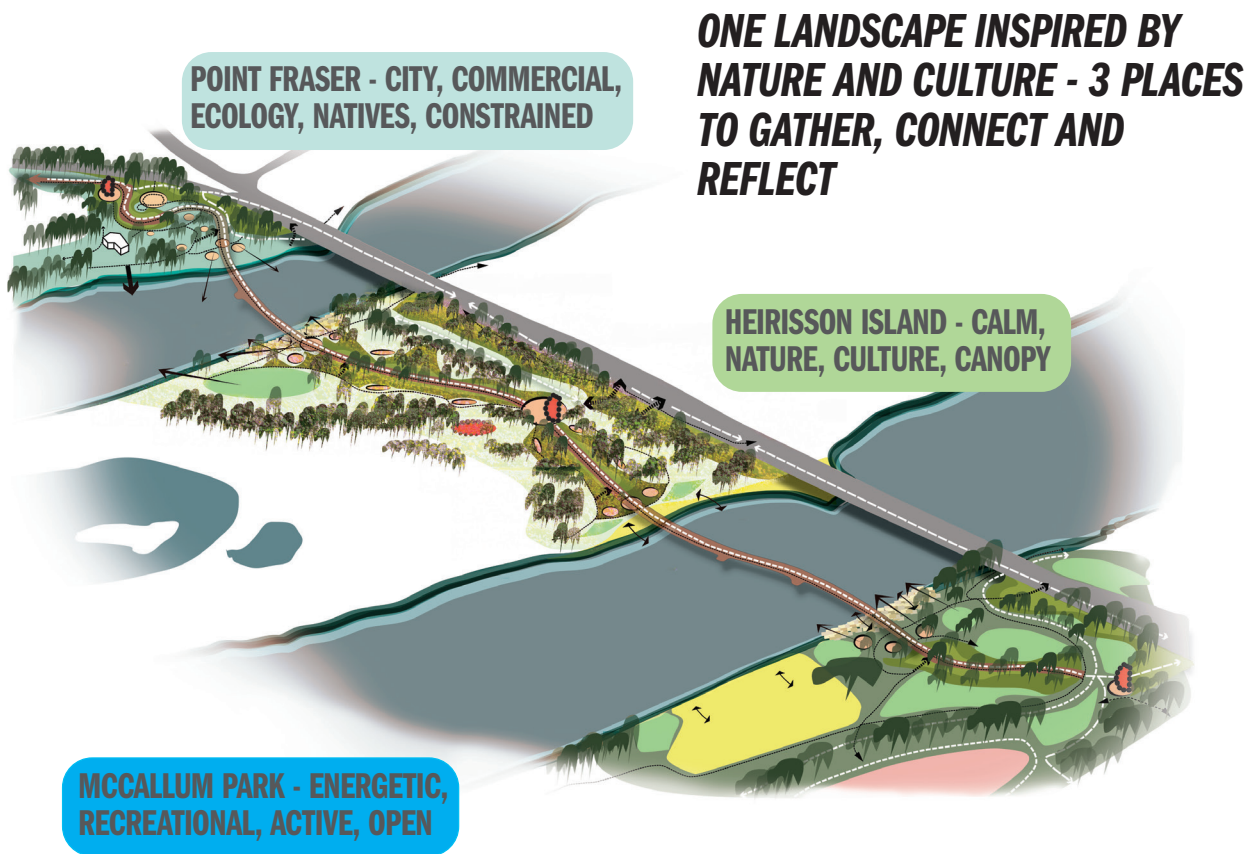


Figure 7. Adopted Landscape Themes

Throughout the project area hard landscape materials have been chosen to be robust, long-lasting and to 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. Planting selections have also been chosen from the Swan complex to ensure they are appropriate to the location, with the exact species selections to be refined in consultation with key stakeholders as part of the detailed design process.

Across the project area, approximately 164 trees are proposed to be removed to facilitate the CPCB works, including 0.4ha of native vegetation. However, the proposed vegetation removal will be appropriately offset by the planting of over 300 new trees throughout the project area, supplemented by more than 1ha of additional planting and more than 1,500m² of 140mm plant stock. This is shown in the accompanying landscape plans at Appendix I.

Refer to Appendix I - Landscape Plans

The landscaping response is also supported by a detailed lighting strategy that seeks to reinforce the landmark bridge architecture, highlight public art features, and establish safe and atmospheric spaces on and around the bridge, along pathways and within landscaped spaces.

Refer to Appendix J - Lighting Strategy

4.2.1 Point Fraser

The Point Fraser landscape response sees the raised bridge deck floating above the existing landscaping, before connecting into the existing path network along Riverside Drive.

The extensive planting proposed throughout the Point Fraser landscape is complemented by various stone seating areas, interpretive elements and a landmark Whadjuk Noongar themed entry marker for the Point Fraser bridge. In doing so, the design seeks to provide a range of social gathering spaces that encourage visitors to dwell and enjoy the natural environment of Point Fraser.

4.2.2 Heirisson Island

Within Heirisson Island, the urban landscape response seeks to harmonise the new bridge infrastructure within a culturally significant landscape and minimise disruption of the existing environment.

As the bridge connects from both sides, landform, new tracks and planting combine with the abutments to soften the lineal nature of the pathway. This includes extensive native vegetation planting within the project footprint to contribute positively to the landscape environment of Point Fraser.

At the river's edge, new gathering spaces are introduced, providing a range of seating spaces for groups and individuals. These will combine with planting, interpretation and art work to tell stories of the place that are to be identified through the supporting Heritage Interpretation Plan (HIP).

4.2.3 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.

Considerable enhancement of existing pedestrian and cyclist networks is proposed, connecting to Canning Highway and Albany Highway, complemented by extensive native plantings, new drainage swales and community gathering spaces that prioritise the river edge experience.

A landmark entry marker, developed by Whadjuk Noongar artists, is also proposed to be positioned at the entry to the McCallum Park bridge.

A more detailed overview of the proposed design response can be found in the supporting ULDF at Appendix C, including a response to the ten principles of good design under State Planning Policy 7.0 – Design of the Built Environment (SPP7.0), which is summarised in Table 3 below.

Table 3 – Ten Principles of Good Design Response

Ten Principles of Good Design	
<p>Context and Character</p> <p>The CLA 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.</p>	<p>Landscape Quality</p> <p>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.</p>
<p>Built Form and Scale</p> <p>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.</p>	<p>Functionality & Build Quality</p> <p>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 an enduring landscape is established to support the bridge experience.</p>

Ten Principles of Good Design	
<p>Sustainability</p> <p>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.</p>	<p>Amenity</p> <p>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.</p>
<p>Legibility</p> <p>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.</p>	<p>Safety</p> <p>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.</p>
<p>Community</p> <p>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.</p>	<p>Aesthetics</p> <p>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.</p>

4.3 Heritage Interpretation

The interpretive opportunities that are embedded throughout the urban landscape design will be delivered in accordance with the framework set out by the HIP, which is provided in draft format as part of this development application and will be subject to further refinement in consultation with key stakeholders during further detailed design, including the Matagarup Elders Group.

The objectives that will be realised through the framework of the HIP are to:

- Reveal the history of this site to maximise opportunities for future place making;
- Integrate the interpretation of key stories into the visitor experience in the new landscape; and
- Provide a clear and implementable series of strategies to guide development of interpretive initiatives.

These objectives are supported by a draft heritage interpretation vision, which is that:

The bridge and landscape design connects communities by celebrating and sharing Whadjuk Noongar cultural history and stories.

The next phases in developing the draft HIP will focus on identifying the key themes, stories and messages to be expressed in the design of the project, and to identify the appropriate strategies and locations to facilitate that messaging within its cultural catchment area.

These interpretive themes will be embedded throughout the design of the project through the provision of public art and signage, lighting, bespoke furniture installations, place naming and opportunities for ephemeral events, with a focus on the consistent key themes of country, community and connections.

Early concept ideas also recognise the opportunity to establish distinct thematic zones for Aboriginal interpretation across the site, with Point Fraser to focus on male stories, McCallum Park on female stories, and Heirisson Island as the family heart at the centre of the project area. This in turn is reflected in the design of the two bridge structures, through the boomerang and digging stick inspired piers, as identified previously within this report.

For further details, including potential zones for implementing the interpretation strategies, please refer to the accompanying HIP at Appendix K.

Refer to Appendix K - Heritage Interpretation Plan

4.4 Project Timing

The project is scheduled to commence construction in late 2022 with a scheduled completion date in late 2024.

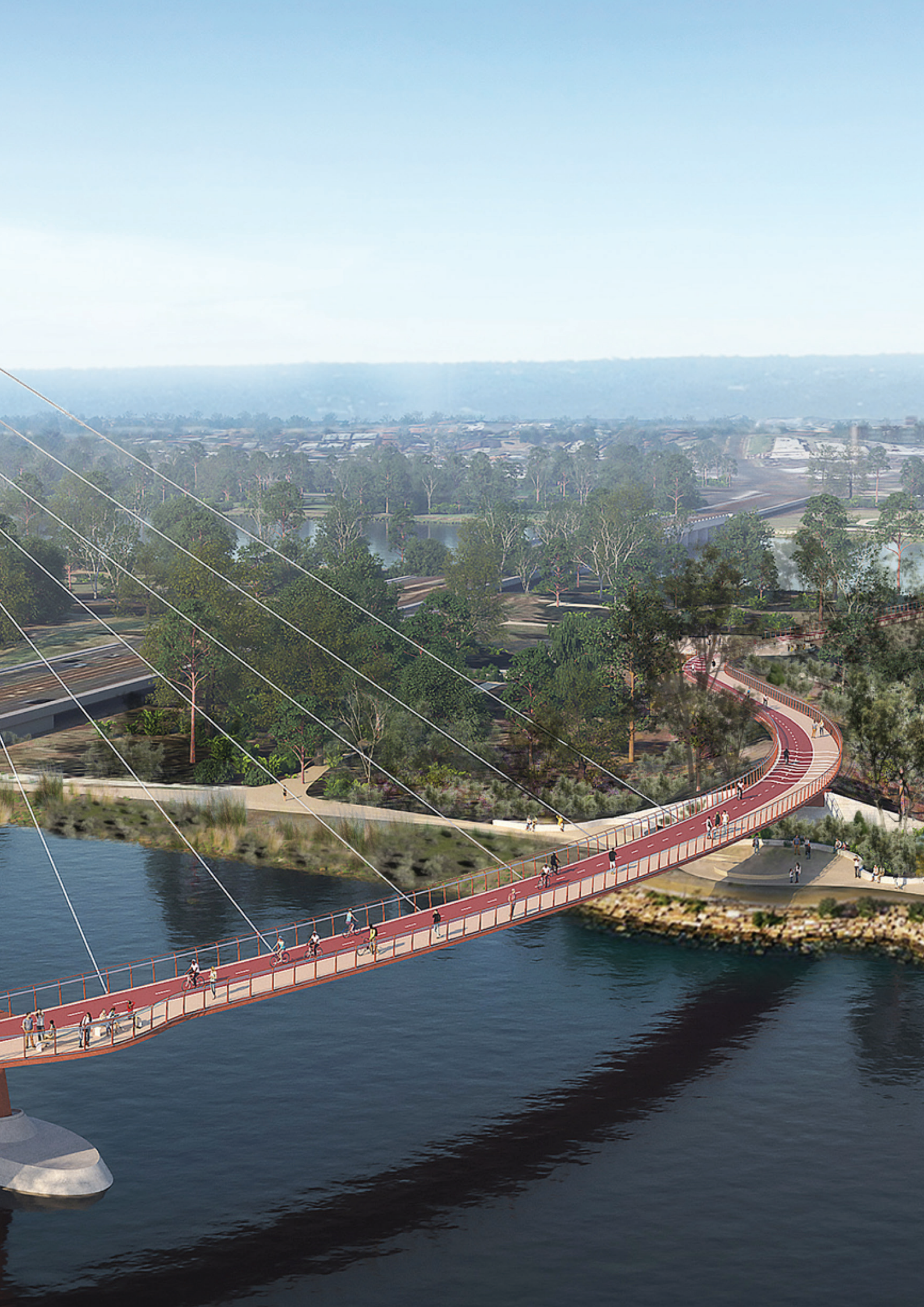
4.5 State Design Review Panel Engagement

Prior to lodging this application for development approval, the project team has undertaken engagement with the OGA and the State Design Review Panel (SDRP) to assist in refining the design of the proposed development. This has resulted in further development of various aspects of the project design in response to the most recent consideration of the proposal by the SDRP on 26 July 2022. This includes:

- Further development of a holistic landscape response that seeks to integrate the new bridge infrastructure with the existing Swan River foreshore environment, and minimise the visual impact of bridge abutments.
- Provision of detailed metrics on proposed tree retention, removal and replacement across each of the distinct landscape zones within the project area.
- Development of a lighting strategy for the project, addressing architectural feature lighting, and public and marine safety lighting.
- Progressing detailed wind studies, as discussed in Section 6.2 of this report.
- Modifying bridge access points at Point Fraser to encourage activation of the surrounding area, by guiding pedestrians through key nodes in order to access the new bridge.

The project team is also continuing to develop the cultural narrative to be reflected in the heritage interpretation aspects of the project through ongoing engagement with the Matagarup Elders Group, as recommended by the SDRP. This will include interpretation elements that assist in conveying and reinforcing the design intent of the two bridge structures.

It is anticipated that further engagement with the SDRP will be undertaken as part of the progression of this development application.



5. Planning Assessment

The proposed works require approval under the MRS as public works undertaken on reserved land. The proposed works are also located partially within the Swan and Canning Rivers DCA and are therefore subject to determination in accordance with Clause 30A(2) of the MRS, based on advice from the SRT.

Public works proposals are also required to have regard to the purpose and intent of any applicable local planning schemes in the area, being the City of Perth City Planning Scheme No. 2 (CPS2) and the Town of Victoria Park Local Planning Scheme No. 1 (LPS1).

The relevant provisions of the applicable State and local planning frameworks are therefore addressed below.

5.1 Perth and Peel @ 3.5 Million

The Perth and Peel @ 3.5 Million framework is the primary strategic plan for the Perth and Peel Metropolitan Regions, and builds on the vision established under Directions 2031.

The framework seeks to achieve a more consolidated urban form and to strengthen key activity centres and employment nodes as the Perth and Peel population grows to 3.5 million people by 2050. This includes a focus on promoting urban growth within activity centres and along key transit corridors, in accordance with the principles of transit oriented development.

The CPCB project area sits within the context of a number of these identified activity centres and transport corridors within the Central sub-region, including:

- The Perth CBD Capital City Activity Centre to the northwest;
- The Victoria Park Secondary Activity Centre to the southeast; and
- The Albany Highway and Canning Highway transit corridors.

These areas are intended to support increased housing and economic development as the Perth and Peel population grows, in accordance with the established dwelling targets for the City and Town, which are as follows:

- 15,910 additional dwellings in the City by 2050; and
- 19,320 additional dwellings in the Town by 2050.

To support this anticipated growth, the Central Sub-Regional Planning Framework identifies a need for new active transport connections over the Swan River, based on the findings of the supporting Perth and Peel@ 3.5 Million Cycling Network Plan, which specifically identifies the need for a new pedestrian bridge across the Swan River at Heirisson Island.

This integration of urban growth centres and high-quality transport networks is identified as a fundamental component of achieving the desired urban form under the framework, and a key contributor to regional liveability.

The project will therefore assist in implementing the recommendations of the Perth and Peel @ 3.5 Million framework, supporting ongoing economic and population growth in this portion of the Central Sub-Region, and encouraging the use of lower-impact modes of transport through enhanced pedestrian and cyclist connections and improved connectivity generally.

5.2 Metropolitan Region Scheme

The MRS provides the basis for land use and development control throughout the Perth Metropolitan Region.

As noted previously within this report, the land within the CPCB project area is all reserved for public purposes under the MRS, including land reserved for:

- 'Primary Regional Roads';
- 'Parks and Recreation'; and
- 'Waterways'.

The CPCB project area is also partially within the Swan and Canning Rivers DCA and therefore this development application is required to be processed in accordance with Clause 30A(2)(a) of the MRS, with input from the SRT.

In considering an application for development approval under the provisions of the MRS, the WAPC is to have regard to

- The purpose for which the land is zoned or reserved under the MRS;
- The orderly and proper planning of the locality; and
- The preservation of the amenities of the locality.

In response to these considerations, it is noted that:

- The CPCB project comprises integrated public works that will deliver new pedestrian and cyclist connections over the Swan River and an enhanced public realm across land reserved for a range of suitable public purposes, including primary regional roads, waterways, and parks and recreation;
- The proposed works will deliver improved pedestrian and cyclist connections that are identified in the Perth and Peel @ 3.5 Million framework, in a manner that is consistent with identified State strategic planning priorities, and the principles of orderly and proper planning; and
- As well as the enhancement of existing connections across the Swan River, the proposed works will enhance the amenity of the locality through the high-quality public realm treatments within the project area, including extensive heritage interpretation works to reinforce the cultural heritage significance of this ancient crossing point.

As such, the proposed works are observed to warrant approval under the provisions of the MRS.

5.3 WAPC Policies

5.3.1 State Planning Policy 2.10: Swan-Canning River System

State Planning Policy 2.10: Swan-Canning River System (SPP2.10) sets out the approach of the WAPC and the SRT to the management of land use and development in and around the Swan and Canning Rivers, in recognition of the importance of the Swan-Canning river system to the environmental, landscape and cultural character of Perth, and to the recreational needs of Perth's residents.

SPP2.10 seeks to ensure that new development affecting the Swan-Canning river system respects its environmental values, social benefits and cultural significance, as a sustaining resource to Aboriginal society over millennia and as the foundation of European settlement in Western Australia.

With respect to the key guiding principles established under SPP2.10, it is noted that the CPCB project will:

- Enhance community amenity through the provision of improved pedestrian and cyclist connectivity across the Swan River, offering enhanced active recreation opportunities;
- Enhance public accessibility and enjoyment of the river foreshore through improved walking paths, cycleways and landscaping at each of the bridge landing zones, including Heirisson Island;
- Provide a future proofed design that protects future river navigation possibilities through overhead clearances that would enable larger watercraft (including ferries) to navigate the upper reaches of the Swan River should the existing Causeway traffic bridges ever be raised or replaced;
- Minimise the extent of native vegetation clearing required to accommodate the new bridge structures, with only 0.4 hectares of native vegetation currently proposed to be cleared as part of the project; and
- Deliver a design outcome that:
 - Minimises riverbed impacts;
 - Includes extensive heritage interpretation works that will enable the community to better appreciate the history and heritage of the area, creating a new opportunity to connect people to Country and cultural stories associated with this ancient crossing point;

- Utilises external materials and finishes that complement the Swan River environment, with a colour palette that references local Western Australian red earth and a planting palette that priorities endemic Western Australian species selections; and
- Enhances the river setting within the CPCB project area through high quality landscaping and urban design.

This CPCB project therefore represents a positive outcome for the riverine environment that is consistent with the objectives, intentions and provisions of SPP2.10, including the specific matters for consideration within the 'Perth Water' precinct under SPP2.10.

In addition, it is noted that the WAPC is in the process of reviewing the State's water planning policy framework. As part of this review, the WAPC has produced a draft State Planning Policy 2.9: Planning for Water (draft SPP2.9) and associated draft Planning for Water Guidelines, which will ultimately consolidate the following operational policies and strategies.

- State Planning Policy 2.1: Peel-Harvey Coastal Plain Catchment;
- State Planning Policy 2.2: Gngangara Groundwater Protection;
- State Planning Policy 2.3: Jandakot Groundwater Protection;
- State Planning Policy 2.7: Public Drinking Water Source Policy;
- State Planning Policy 2.9: Water Resources;
- State Planning Policy 2.10: Swan Canning River System;
- The policy measures that address flooding within State Planning Policy 3.4: Natural Hazards and Disasters;
- The Better Urban Water Management framework; and
- The Government Sewerage Policy.

Draft SPP2.9 seeks to ensure that planning and development appropriately considers water resource management through an integrated policy framework that is supported by the draft Planning for Water Guidelines. Consistent with the existing SPP2.10, and the justification provided above, one of the primary aims of SPP2.9 is to protect and enhance the environmental, social, cultural and economic values of the State's water resources, including the Swan-Canning river system.

Notably, draft SPP2.9 also considers the impacts of riverine flooding and climate change, and the inundation risk this poses to development in and around riverine environments. In response to this consideration, detailed flood modelling will be undertaken using the Swan River TUFLOW model previously developed as part of the '*Swan and Helena Rivers Flood Study and Floodplain Management Plan Hydraulic Modelling Final Report*' (BMT, 2017). The post-development scenario TUFLOW model will incorporate the digital elevation model (DEM) of the proposed road alignment, and the proposed bridge will be represented in the flood model using layered flow constriction shape files (to account for the effect of hydraulic losses due to the proposed bridge piers and pile caps). The afflux (increase in peak flood level) will be calculated against the 1% Annual Exceedance Probability (AEP) defined flood event (DFE) that has a peak flood level of 2.3m AHD for the pre-development scenario at the proposed bridge site. It is noted that this DFE was defined and adopted by the BMT 2017 study as the joint probability of the 2% AEP design peak flow coupled with 2% AEP storm tide and a sea level rise (SLR) of 0.9m. The hydraulic criterion is to limit the afflux to within 50mm for the 15% design package, but final the afflux is anticipated to be less than 20mm. A sensitivity scenario will be undertaken using the 1% AEP design peak flow without a SLR that will have a higher velocity than the DFE, and it is anticipated that the afflux will remain within 20mm.

5.3.2 Development Control Policy 5.3: Use of Land Reserved for Parks, Recreation and Regional Open Space

Development Control Policy 5.3: Use of Land Reserved for Parks, Recreation and Regional Open Space (DCP5.3) outlines the key matters taken into consideration by the WAPC in relation to the use and development of land reserved for parks and recreation under the MRS. A key objective of the policy is to ensure that the intent of parks and recreation reserves is not prejudiced by inappropriate development, and that any uses carried out are ancillary to and/or enhance the use and enjoyment of parks and recreation reserves for recreational purposes.

Consistent with the above, the use and development of land reserved for parks and recreation under the MRS is generally restricted to that which is consistent with furthering the enhancement of the reserve and facilitating its use for recreational or conservation purposes. In this regard, the CPCB project will enhance the existing active recreation values of the foreshore environment through the provision of enhanced pedestrian and cyclist connections, complemented by high quality landscaping.

As noted previously, the incorporation of extensive heritage interpretation works will also create new opportunities for connection to and interaction with Country and cultural stories associated with this ancient crossing point over the Swan River, which represents an important enhancement of the public recreation areas within the precinct.

Considering the above, those components of the works that encroach on existing parks and recreation reserves under the MRS are observed to be consistent with the purpose of this reservation and should be supported accordingly.

5.4 City of Perth Planning Framework

5.4.1 City of Perth City Planning Scheme No. 2

As noted previously in this report, the CLA is delivering the project on behalf of MRWA, with the proposed works qualifying as public works being undertaken for and on behalf of a public authority. The proposed works are therefore exempt from the requirement to obtain approval under any applicable local planning scheme, including the City's CPS2.

However, notwithstanding the applicable exemptions, public authorities are still required to comply with the following requirements of Section 6 of the *Planning and Development Act 2005* when formulating a proposal for a public work:

- a. To have regard to the purpose and intent of the applicable local planning scheme;
- b. To have regard to the principles of orderly and proper planning, and the amenity of the area; and
- c. To consult with the local government when formulating a proposal for any public work.

In this regard, the proposed works are observed to respond appropriately to the purpose and intent of CPS2, on the basis that:

- The works are located across land reserved for various public purposes under the MRS, which are reflected in CPS2, and represents an appropriate land use classification for the upgrading of pedestrian and cyclist infrastructure and public open space areas, as proposed via the CPCB project as set out in this development application; and
- The project aligns with the objectives and intentions of CPS2, in that it will:
 - Assist in catering for the recreation, transport and access needs of the diverse range of residents, workers and visitors of the City;
 - Deliver safer pedestrian and cyclist connections that promote active modes of transport that are sustainable and contribute to the health of the community;
 - Contribute to the development of a unique sense of place for the Perth community through an iconic design and extensive heritage interpretation works that will connect people to Country and facilitate opportunities for a deeper connection to the history and heritage of the project area;
 - Deliver a high standard of design in an iconic structure that is appropriate to the Capital City environment; and
 - Improve accessibility between major activity centres, providing improved access to existing services and facilities in the area.

The principles of orderly and proper planning, and the amenity of the area, have also been addressed throughout this report, and consultation with the City has occurred over an extended period prior to lodging this application for development approval.

For these reasons, the project satisfies the requirements under Section 6 of the *Planning and Development Act 2005* and is consistent with the intent of the City's CPS2.

5.4.2 City of Perth Transport Strategy

The provision of a new pedestrian and cyclist bridge at Heirisson Island is recognised in the City's Transport Strategy, which notes that:

"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."

This Strategy builds on the City of Perth's Cycle Plan 2029, which establishes a long-term strategy to support and encourage the uses of bicycles as a sustainable and active form of transport within the City.

Similarly, the new pedestrian and cyclist bridge is recognised in the City's draft Local Planning Strategy as an infrastructure project that will *"improve access from the south east and at the same time enable more people to enjoy the river foreshore"*.

The benefits of the new CPCB are therefore well recognised within the City's established strategic planning for future active transport connections around the Perth CBD.

5.5 Town of Victoria Park Planning Framework

5.5.1 Town of Victoria Park Local Planning Scheme No. 1

As with the City's CPS2, the proposed works have had regard for the purpose and intent of the Town's LPS1, and consultation with the Town has occurred over an extended period prior to lodging this application for development approval, as part of satisfying the requirements under Section 6 of the *Planning and Development Act 2005*.

In particular, the project aligns with the key objectives and intentions under Clause 6 of LPS1, which are closely correlated with those under the City's CPS2 in relation to:

- Catering for the diverse leisure, transport and access needs of the Town's residents and workers;
- Enhancing the safety and health of the Town's inhabitants through the social, physical and cultural environment;
- Promoting sustainability in design, including active transport; and
- Promoting a sense of community and enhancing cultural heritage features within the Town.

As detailed previously, the CPCB project will contribute positively to these objectives and intentions by:

- Providing safe and attractive connections across the Swan River that support the use of active and sustainable modes of transport;
- Enhancing the public realm in and around McCallum Park; and
- Embedding cultural heritage interpretation throughout the public realm.

5.5.2 City of South Perth and Town of Victoria Park Joint Bike Plan

The Joint Bike Plan prepared for the Town and the City of South Perth sets out the long-term vision for the strategic cycling network across both local governments, in line with State Government's Perth and Peel Transport Plan for 3.5 Million People and Beyond.

The Joint Bike Plan recognises the importance of the Causeway Bridge as a critical connection between Victoria Park and the Perth CBD, and the significant conflicts experienced between pedestrians and cyclists on the current Causeway Bridge. The Joint Plan therefore recommends that the implementation of the shared pedestrian and cyclist bridge over Heirisson Island that is identified in the Perth and Peel Transport Plan is pursued as a matter of priority, as proposed via the CPCB project and this development application.

The proposed development is therefore consistent with the Town's vision for improved pedestrian and cyclist connections across the Swan River to the Perth CBD.

5.6 DBCA Policies and Strategies

5.6.1 Perth Water Buneenboro Action Plan and Locality Plan (2020)

The Perth Water Buneenboro Action Plan and associated Locality Plan provide a framework for the management of the Perth Water area of the Swan and Canning Rivers DCA.

One of the key pillars of these plans is improving circulation and movement around the Swan River, which was identified as an important consideration through the extensive consultation undertaken with the local community. This includes a specific focus on promoting safe and accessible active transport networks, including the need for a new pedestrian and cyclist connection across Heirisson Island to relieve pressure on the current Causeway Bridge path, as proposed via this development application.

The Locality Plan also acknowledges the need to recognise the Aboriginal cultural heritage values of the area, and Heirisson Island in particular. This is reflected in the design of the proposed development, with Aboriginal interpretation to be embedded throughout the bridge design and public realm, to celebrate and communicate the cultural heritage significance of the project area.

5.6.2 Swan River Trust Corporate Policy Statement No. 42

Swan River Trust Corporate Policy Statement No. 42: Planning for Land Use, Development and Permitting Affecting the Swan Canning Development Control Area (the Policy Statement) seeks to ensure land use, development and other permitted works, acts and activities in or affecting the Swan River Trust DCA:

- *maintain and enhance the ecological health, community benefits and amenity of the Swan Canning river system;*
- *make suitable provisions for foreshore areas that can be reserved and protected under planning schemes and acquired as public land; and*

- do not create obstructions to the flow of flood waters of the river system and that appropriate provisions are made to minimise property damage by major flood flows.

The Policy Statement also provides direction on the DBCA's assessment and provision of advice in relation to applications for development approval under the provisions of the MRS.

A response to the key matters raised in the Policy Statement is provided in Table 4 below.

Table 4 – DBCA Corporate Policy Statement No. 42 Response

Policy Statement Consideration	Applicant Response
Ecological health	<p>As noted previously in this report, this application is supported by an accompanying EIA which concludes that environmental impacts associated with the project can be appropriately managed and are not so significant as to warrant referral to the EPA under the <i>Environmental Protection Act 1986</i> nor to the DAWE under the <i>Environment Protection and Biodiversity Conservation Act 1999</i>.</p> <p>A range of environmental management measures will however be implemented throughout the construction phases of the project, with the CLA to work closely with the DBCA to develop a CEMP for the project prior to works commencing.</p> <p>Whilst some areas of vegetation are required to be removed to facilitate the proposed works, this is primarily non-native vegetation of limited environmental value and will be appropriately replaced as part of the extensive landscaping components of the CPCB project works. This will result in an overall enhancement of the existing public realm in the area, with the bridge alignment having been specifically formulated to minimise the clearing of mature trees and native vegetation as far as is practicable.</p>
Landscape protection	<p>The proposed works will not adversely impact key views and vistas in and around the river foreshore, and will contribute an iconic new bridge design that will enhance the visual amenity of the Swan River environment.</p> <p>The design utilises landscaping to soften the visual impact of the abutment walls for the new bridges and seeks to integrate the abutment walls within the overall landscape response. The abutment walls also represent a key heritage interpretation opportunity that will be delivered in accordance with the framework established under the draft HIP.</p> <p>As noted above, vegetation removal has been minimised as far as is practicable and will be appropriately offset by the landscaping works proposed as part of the CPCB project scope.</p>
Recreation opportunities and public areas	<p>The proposed works will enhance public access and enjoyment of the Swan River environment, through the provision of greatly improved pedestrian and cyclist connections between McCallum Park, Heirisson Island and Point Fraser.</p> <p>The incorporation of extensive heritage interpretation throughout the design will also enhance the understanding of the places of natural and cultural interest within the project area.</p>
River foreshores	<p>The proposed works are compatible with the parks and recreation functions of the respective landing points for the new bridge structures, providing enhanced recreation opportunities and improved landscape amenity.</p>
Flood prone land	<p>The proposed works have been designed to minimise effects on the normal flow of the Swan River, by minimising the number of in-river piers for the new bridge structures.</p>
Heritage	<p>As noted previously in this report, the CLA has obtained separate consent for the proposed works under Section 18 of the <i>Aboriginal Heritage Act 1972</i>, and has undertaken extensive engagement with the local Aboriginal people in formulating the proposed design response.</p> <p>A Heritage Impact Statement (HIS) has also been prepared to support the project, which concludes that the impacts to the State heritage listed Causeway Bridges site are minor and are appropriately offset by the extensive heritage interpretation offerings that are to be embedded within the project.</p> <p>The findings of the HIS are discussed in more detail in Section 6.1 of this report, and a full copy of the HIS is provided at Appendix E.</p> <p><i>Refer to Appendix E - Heritage Impact Statement</i></p>

In accordance with the above, the proposed works present an appropriate response to the riverine environment of the Swan River, in a manner that is consistent with Corporate Policy Statement No. 42.

6. Accompanying Technical Reports

As noted previously, this application is accompanied by a range of supporting technical reports. These include:

- An Environmental Impact Assessment (EIA). Refer to Appendix F.
- A Heritage Impact Statement (HIS) and Archaeological Management Plan (AMP). Refer to Appendix E.
- An Environmental Wind Assessment (EWA). Refer to Appendix L.
- A Construction Management Plan (CMP) that includes a preliminary Traffic Management Plan (TMP) and Vessel Management Plan (VMP). Refer to Appendix M.
- Detailed Engineering Design Reports that have been provided separately.

Key matters arising from the HIS, EWA and CMP are also discussed below.

6.1 Heritage Impact Assessment

The accompanying HIS addresses the potential heritage impact of the project on the cultural heritage significance of the State Heritage Registered *Causeway Bridges* site (Place No. 03631).

The HIS has been prepared in accordance with the guiding document prepared by the DPLH entitled Heritage Impact Statement – A Guide (HCWA, 2012) to address the following questions:

- How will the proposed works affect the heritage significance of the place?
- What measures (if any) are proposed to ameliorate any adverse impacts?
- Will the proposal result in any heritage conservation benefits that may offset any adverse impacts?

The HIS has been informed by a number of site visits undertaken by **element**, and the following key documents:

- Causeway Bridges (P03631), Assessment dDocumentation for the State Register, Heritage Council of Western Australia, 1998;
- Causeway Pedestrian and Cyclist Bridge Project: Section 16 project plan for proposed archaeological investigations within Heirisson Island (DPLH ID:3589) and Swan River (DPLH ID: 3536), on Whadjuk Nyungar Country by Aboriginal Land Services, August 2022;
- The AMP and Heritage Impact Assessment for Causeway Pedestrian Bridge Project, prepared for Main Roads WA by Archae-Aus Pty Ltd, 2021;
- Causeway Bridge Conservation Plan for Main Roads prepared by G.B. Hill Consulting Engineers, 1997; and
- Causeway Pedestrian and Cycling Link Pre-Feasibility Study on Innovative and Cost-Effective Designs, prepared by WSP For Main Roads WA, 2021.

In particular, the AMP provides an important analysis of the archaeology associated with the *Causeway Bridges* site, with field work conducted to date having identified areas of potential archaeological significance within the defined project area for the CPCB project. In particular, the AMP notes that:

The Archaeological field work to date has confirmed a mixture of older hand-made and machine-made bricks, along with other debris, were found to be eroding out of the banks behind Causeway Bridge II on Heirisson Island. As this section of the Island was partially reclaimed, they may be related to the filling episodes of the Island. Further investigation would be required to fully understand the nature of this deposit.

The only archaeological features visible from the surface are the jetty piles and support beams or possible footings that are remnants of the Causeway Bridge II (Figure 1). These features are likely the remnants of the footbridge, pipe trestles and the main traffic bridge, which were all demolished by 1953.

Accordingly, the HIS notes that whilst the proposed works do not directly impact the registered curtilage of the *Causeway Bridges* site, there remains potential for heritage impact based on the proximity of associated archaeological material and remnant structural elements of previously demolished bridges. The assessment of these impacts undertaken as part of the HIS concludes that the proposal will have minor impacts on the heritage values of the Causeway Bridges site, relating to the archaeology of the previous bridges and the scale of the new CPCB. However, these minor impacts will be ameliorated through implementation of the AMP and HIP for the project, with archaeological test pitting works underway to provide a greater understanding of the archaeological potential of the project area.

The project will also deliver heritage benefits for the area, arising largely from the integration of interpretive opportunities into the design process. These will enable the community to better appreciate the history and heritage of this important river crossing point and the *Causeway Bridges* site, creating a new opportunity to connect people to Country and cultural stories associated with this ancient crossing point.

The HIS also notes that the successful mitigation of heritage impact is greatly assisted by the quality and sensitivity of the design response to its context. It shows respect for the cultural context of the site and the strength, scale and character of the existing bridge. While taller, its separation and refined design does not overpower the existing Causeway Bridge.

For these reasons, the project represents a positive cultural heritage outcome that is supported by the findings of the HIS.

For further details, please refer to the HIS and accompanying AMP at Appendix E.

Refer to Appendix E - Heritage Impact Statement and Archaeological Management Plan

6.2 Environmental Wind Assessment

Given the nature of the proposed works, a climate and desktop EWA has been undertaken by RWDI to quantify the wind impacts on the new bridge structures.

Through this EWA, the aerodynamic stability of the McCallum Park and Point Fraser bridges has been examined based on RWDI's extensive project experience, and available analytical and empirical formulae. The assessment includes consideration of the following types of wind induced instabilities:

- Flutter: a self-excited aerodynamic instability that can grow to destructive amplitudes in torsion or coupled torsion-vertical motions that is to be avoided at all costs.
- Galloping: an instability involving across-wind vibrations. Similar to flutter, galloping induced vibrations can theoretically grow to large amplitudes with increasing wind speed and therefore are also to be avoided at all costs.
- Vortex-shedding Induced Oscillations (VIO): a phenomenon that involves limited amplitude motions caused by alternate and regular vortices shed from either side of a bluff body, such as a bridge deck or pylon. The phenomenon occurs only over limited wind speed and amplitude ranges and can be tolerated if the frequency of occurrence, amplitudes, and accelerations are not excessive.

Utilising these criteria, the key findings of the EWA are as follows:

- Flutter of the new bridge decks is considered unlikely below the 10,000 year stability speed for each bridge;
- Galloping at a wind speed below the 10,000 year stability speed for each bridge may occur, but can be appropriately mitigated through aerodynamic design of the bridge structures without anticipated modification of the bridge cross section;
- There is a potential risk of vertical VIO of the deck of the bridge structures that will be further investigated by wind tunnel testing to identify appropriate mitigations measures. However, potential mitigation measures are not anticipated to impact the current architectural design of the bridge structures;
- There is a risk of torsional VIO of the deck of the McCallum Park bridge that will be further investigated by wind tunnel testing to identify appropriate mitigations measures. However, potential mitigation measures are not anticipated to impact the current architectural design of the bridge structures; and
- The risk of VIO of the pylons is low for both bridge structures on completion works.

Through the next phases of detailed design, a sectional model wind tunnel test of the new bridge structures is planned and will investigate further the aerodynamic stability behaviour of the deck for each wind direction, and identify appropriate mitigation measures where required. As identified in the accompanying EWA these mitigation measures would likely involve minor modifications to the bridge deck to maximise stability and aerodynamic performance.

Refer to Appendix L – Environmental Wind Assessment

6.3 Construction Management Plan

The accompany CMP provides a detailed overview of the proposed construction methodology that will be implemented for the project.

The bridge fabrication works are expected to be carried out at Civmec's fabrication workshop facilities in Henderson, with the CLA concurrently managing bridge fabrication and onsite works, which will include:

- Preliminary ground improvement works and clearing of vegetation;
- Piling works conducted via land-based cranes and in-river barges; and
- Bridge installation following delivery of pre-fabricated components to site.

The main project site area will be established at McCallum Park, with access from Taylor Street. The McCallum Park site area will provide a laydown area, site office, crib room, stores and ablutions for the construction team, with secondary laydown areas established on Heirisson Island and Point Fraser.

Temporary fencing will be installed to isolate work zones from the public, with signage being erected to advise of planned changes to footpaths and cycle paths during the work period. Temporary access routes will also be constructed by the CLA and will be maintained in a dust-free condition throughout the duration of project.

Standard work hours for the project will be between 0700-1900 Monday to Saturday. The exceptions to this will be to implement the Riverside Drive temporary bypass link road, and for the delivery of large bridge and pylon sections. These works will be carried out at night to minimise the impact to surrounding traffic, with any out of hours work to be approved directly by MRWA.

Traffic and vessel movements within the project area will be maintained and managed during construction in accordance with the preliminary TMP and VMP that form part of the submitted CMP at Appendix N.

The CMP and accompanying TMP and VMP are live documents that will continue to be reviewed and updated throughout the life of the CPCB project, with a Construction Environmental Management Plan (CEMP) also under development by the CLA.

Refer to Appendix N – Construction Management Plan



7. Conclusion

The CPCB project is required to enhance connectivity, relieve congestion, and improve safety for the more than 1,400 cyclists and 1,900 pedestrians who currently use the existing Causeway pedestrian and cyclist crossing on a daily basis. This has been recognised by both the State and Commonwealth governments who will be jointly funding the CPCB project as part of the Perth City Deal.

The quality and sensitivity of the design response to its context has evolved through consultation with key stakeholders and will deliver a range of benefits for the Perth community, including:

- Improvements to the established pedestrian and cyclist network in the locality, with a focus on user amenity and safety;
- Enhancements to existing public realm and landscaping within the project area;
- Extensive heritage interpretation works that reflect the cultural heritage significance of the area to the local Whadjuk Noongar; and
- A unique and iconic design that is inspired by the historic and cultural context of the area.

The project is also supported by a robust framework for managing environmental and amenity considerations during construction and on an ongoing basis, as detailed throughout this report, in recognition of the cultural and environmental importance of the Swan River environment.

For these reasons, and the demonstrated consistency with the applicable State and local planning frameworks, the CPCB project is consistent with the principles of orderly and proper planning and warrants approval accordingly. We therefore respectfully request the support of the City, the Town and the WAPC, and look forward to the favourable consideration of this application by the City of Perth LDAP.

To assist the implementation of this important government infrastructure project, we respectfully request the assistance of all key stakeholders to process this application for approval as expediently as possible.



Appendix A

Consultation Outcomes Report



Appendix B

Certificates of Title

Appendix C

Urban Landscape Design Framework

Appendix D

Section 18 Approval

Appendix E

Heritage Impact Statement and Archaeological Management Plan

Appendix F

Environmental Impact Assessment and Clearing Permit

Appendix G

Acid Sulphate Soils Management Plan

Appendix H

Development Plans

Appendix I

Landscape Plans

Appendix J

Lighting Strategy

Appendix K

Heritage Interpretation Plan

Appendix L

Environmental Wind Assessment

Appendix M

Construction Management Plan



element.

element.

the art and science of place

Level 18, 191 St Georges Tce, Perth WA 6000

T. (08) 9289 8300 – E. hello@elementwa.com.au

elementwa.com.au