

Hotham-Williams River Action Plan

Pumphreys Bridge Detailed site plan



Prepared for
Peel-Harvey Catchment Council
By Urbaqua
June 2022

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Acknowledgements

Urbaqua would like to acknowledge the following organisations for their significant contribution to this project:

1. Peel-Harvey Catchment Council.
2. Newmont Boddington.
3. Shire of Wandering.
4. South32 Worsley Alumina.

Peel-Harvey Catchment Council - Hotham-Williams River Action Plan

Figure 1: Pumphreys Bridge Site Concept - Restoration Plan

Legend

- Revegetation**
- Demonstration planting with signage
 - Comprehensive restoration of 30m riparian buffer zone
 - Spot removal/replacement of weeds and problem exotics
- Access**
- Proposed pedestrian access track
 - Existing vehicle track
 - Investigate and install fencing as required to control stock access to River
 - Proposed bollards or equivalent
- Bank stability**
- Rock revetment/gabions
 - Bank slope modification (incl. woody debris, where required)
 - Woody debris (where required)
 - Sediment fencing and/or groundcover vegetation
- Amenity**
- Directional signage for wayfinding
 - Historic information board
 - General information & Directional signage for wayfinding
 - River restoration information

Notes:

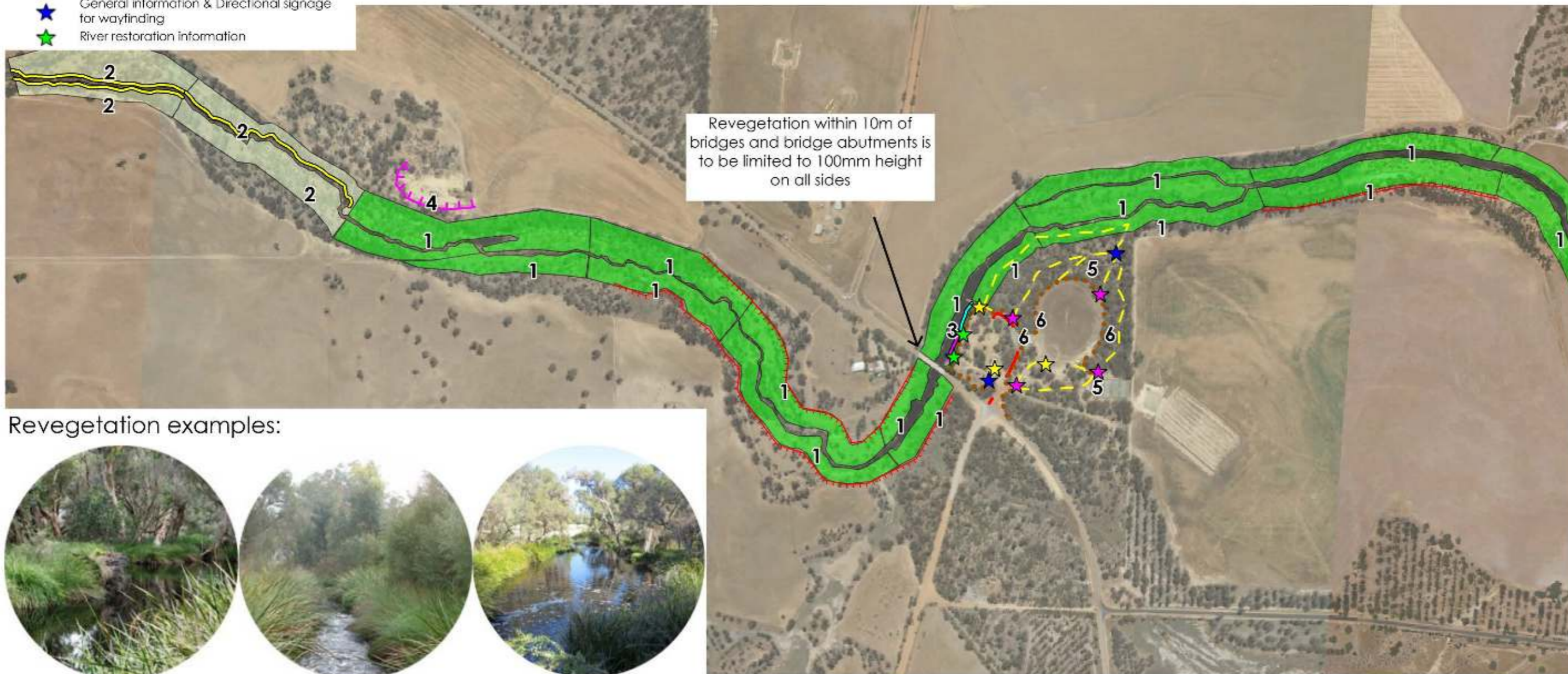
- 1 Revegetation – comprehensive weed removal and revegetation of minimum 10m riparian buffer in these areas (30m preferred where tenure and land-use allow).
- 2 Revegetation – spot removal of weeds and problem exotics, replacement with native species where necessary.
- 3 Revegetation – accessible demonstration area for revegetation with higher value species incorporating explanatory signage and trees to improve riparian shading.
- 4 Install sediment fencing and/or groundcover vegetation between the quarry and the River to improve management of sediment.
- 5 Mix of formal and marked but informal footpaths connecting camping, river reserve and recreation reserve with wayfinding and signage to provide information on local flora & fauna.
- 6 Bollards or equivalent to prevent vehicle access into bush areas.

Fencing should be located outside of the riparian zone above the top-of-bank and at least 15m from the high water mark in accordance with PHCC minimum fencing requirements.

Signage will include information to acknowledge Noongar and European history of the River at Pumphreys Bridge site and communicating its cultural and historical significance, including the way the Noongar people and Europeans have valued this place throughout history.

Project activities outside of the main focal areas on public land will be in close consultation with neighbouring landholders.

Existing conditions:



Revegetation examples:



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1 SITE DESCRIPTION

First and foremost, Pumphreys Bridge is called Koompkinning by the Noongar community and is a culturally significant site, not least because it was historically a permanent camping ground for many Noongar families. The Hotham River at this location is a Registered Aboriginal Site of Mythological significance according to the Aboriginal Heritage Inquiry System on the Department of Lands and Heritage website. It is now a site with an informal campground for the general public, in addition to other community assets including a functioning CWA hall and old sports grounds, parts of which are now used for camping. The River has a meandering form with two wider pools at, and upstream of the bridge, however the channel is degraded with consistent erosion and tree collapse.

Riparian vegetation along this reach is broadly characterised by exotic ground cover and scattered trees providing limited stream cover. Riparian vegetation has been damaged by stock access and direct clearing (for the campgrounds) and verge vegetation is generally limited by the rural land use. Erosion is common along the reach, though generally noted as minor to moderate.

2 CONSULTATION

Consultation with key stakeholders commenced in February 2021 and has included the following:

- Meeting with Noongar Elder Jock Abraham, who provided a letter of support.
- Attendance at 'Back to Pumphreys Bridge' event arranged by Jock Abraham for Noongar families connected to Pumphreys Bridge.
- Meeting with Anna Haebich from Curtin University about current research project 'Healing Land Healing People', which is directly relevant to Pumphreys Bridge in the context of Noongar history.
- Site visits with and formal presentation to the Shire of Wandering, with direct feedback.
- Meeting with landholders adjacent to the project site.
- Information session for the local community, with direct feedback.

Key comments from the consultation include:

- The need to work closely with Noongar families connected to Pumphreys Bridge.
- Incorporate specific Noongar heritage places at the site and advocate the need for their formal registration as significant sites.
- Include signage and acknowledgement of Pumphreys Bridge as a place of Noongar heritage.
- The area was previously a swimming hole, and suitably deep with good water quality for that purpose.
- An aspiration of Noongar families for their historic campsites is the need for restoration in the form of revegetation and 'cleaning up' of the River.
- Acknowledgment that some private land is incorporated within the River reserve according to the current location of the boundary fences.
- Incorporate controlled grazing of the River reserve.
- Concern for fire, weeds and feral animals associated with the River reserve.
- The need to work in partnership with Peel-Harvey Catchment Council and the Shire to deliver the plan in a staged manner over a number of years. Other partnerships such as with the Department of Fire and Emergency Services should also be explored.
- Incorporate heritage into the walk trial, with signs showing links to the town of Wandering and to other nearby trails e.g. Dryandra, Boddington.
- Preserve parts of the Old Bridge, possibly including a viewing platform. A structural assessment of the Old Bridge is required prior to undergoing any works.
- Provide controlled access for paddling.

- Incorporate Noongar history such as that reflected in *Koompkinning – The Pumphreys Bridge Storybook* developed by Wheatbelt NRM.
- Improvements to the camp site including better definition of sites and access is supported. Include barriers to ensure camping does not occur too close to the River, in specific areas of Noongar heritage, or in the area of remnant vegetation e.g. pine bollards around perimeter of oval, and large rocks between camp ground and vegetation.
- Local brigade is concerned about campfires. Provide a wood pile and designated campfire areas.
- Revegetation should be locally appropriate.
- Consider options to better manage sediment sources into the river.

3 CONCEPT DESCRIPTION

The main focus of the restoration concept overall (Figure 1, Figure 2 and Figure 3) is improvement of river health. The low level of biodiversity is noted, and this is proposed to be addressed through significant weeding and revegetation of a large area of foreshore. Bank stabilisation works are also required in some areas, together with better control of stock access to the river. These works have been informed by the original field assessments, further desktop assessment, site visits and stakeholder consultation.

In addition, the proposed works in Figure 2 aim to better manage the area between the oval and the river which is currently used for camping. The intent is for low-key improvements in amenity with better definition of the areas for access and use by vehicles and people. This includes better definition of camping sites and control of vehicle and pedestrian access (including for paddling) to the river. It is also recommended that the area between the bank and the proposed bollards is revegetated with high value species to minimise the impact of future flooding. Installed signage could provide an educational opportunity for the community.

The amenity of the area will be improved by planting trees and providing firepits and picnic facilities to address fire risk, as well as including signage which contains general and historic information, and directional signage for wayfinding. An opportunity also exists to restore the remaining parts of the Old Bridge. This could incorporate a viewing platform with historic information.

4 PROPOSED WORKS

The proposed works are detailed in Figures 1, 2 and 3 as follows.

4.1.1 River restoration

- Comprehensive weed removal in degraded areas with spot weed removal and control of exotics in other areas (see Figure 1).
- Bank stabilisation works (See Figure 3 for examples). Where banks are modified but unable to achieve a 1:3 grade, some form of matting or other stabilisation is likely to be required. This may also be required where the sediment is sandy or otherwise unstable. In general:
 - Banks steeper than 1:3 should be gently regraded where possible without damage to existing vegetation.
 - Banks up to approx. 1m high and steeper than 1:3 that cannot be regraded should be covered with pinned geofabric prior to revegetation with native riparian species.
 - Banks greater than 1m high and steeper than 1:3 that cannot be regraded should be stabilised at the toe with rock revetment or secured woody debris, covered with pinned geofabric above and vegetated with native riparian species.

- Revegetation of approximately 10m along the bank between Pumphreys Road and the Old Bridge with higher value species incorporating explanatory signage and trees to improve riparian shading.
- Revegetation of minimum 10m riparian corridor extending to 30m from each bank, where possible.
- Revegetation should seek to increase the level of biodiversity as well as canopy, particularly over the river channel.

Estimated quantities for river restoration works:

Item	Unit	Amount
Temporary fencing	Length (m)	7,080
Rocks (d50 = 300mm)	Volume (cum)	50
Geofabric	Area (sqm)	670
Revegetation	Area (sqm)	257,430

Notes:

1. Temporary fencing will be installed to protect sections of comprehensive and demonstration revegetation.
2. Rock pitching will be installed to base and sides of steps (as per Figure 2 and Figure 3).
3. Geofabrics will be installed to banks identified for bank stability measures (as per Figure 1).

4.1.2 Public amenity, access, and use

The majority of public access and use works are detailed on Figure 2. This includes:

- Incorporation of wayfinding principles into directional signage with a mix of formal (marked) and informal paths connecting the camping area to the river and recreation reserve.
- Formalisation of parking area and access with bollards or equivalent to prevent entry to specific sites of Noongar heritage and into sensitive bush areas. This includes on the outside of the existing track to the Old Bridge to control access to the oval and support rehabilitation efforts.
- Planting of trees for increased canopy and amenity, with strategic placement to help define camp sites and areas for different uses.
- Installation of safe and controlled firepits or barbecues in existing cleared area with adjacent picnic benches or shelters.
- Construction of shelters or picnic facilities on the foreshore (behind the revegetated riverbank), noting areas at risk of flooding in high rainfall events. Access to the riverbank should also be controlled with bollards or similar.
- Modification of riverbank at indicated location to provide a safe beach entry point for paddling with wide timber edged steps from the upper bank level.
- Information will be displayed to acknowledge Noongar and European history of the River at Pumphreys Bridge site and communicating its cultural and historical significance, including the way the Noongar people and Europeans have valued this place throughout history.
- Signage will also be included to provide information on river restoration (at least 2), local history, general information and wayfinding including directional signage.
- Existing remnant bridge deck made safe and repurposed as viewing platform with historic information board.

Signage examples

Wayfinding



River restoration information



Natural and cultural stories



Historic information



Access treatment examples

Bollards or large boulders for vehicle access control



Boardwalk



Pedestrian access and wayfinding



4.1.3 Adjacent landowner management

PHCC works with landholders in offering advice about managing natural areas, and opportunities for access to funding when it is available.

This communication process can occur with owners of properties located next to the Pumphreys Bridge site, with the aim of future on-ground projects such as revegetation, weed control, and protection of existing vegetation, particularly in relation to the River ecosystem.

Fencing is required to control stock access to the northern bank of the River. Where possible, this should be located outside of the riparian zone above the top-of-bank and at least 15m from the high water mark in accordance with PHCC minimum fencing requirements. Access points for controlled stock access can be included where bank grades and vegetation permit. This may be in the context of water access and crash grazing if and when required, both of which need to be at appropriate locations and durations.

Sediment fencing is also recommended to be installed along the southern border of the quarry site to reduce the amount of sediment transported to the river.

Consideration may be given to incorporating a cut or diversion in the channel where indicated; to control stock access for watering needs.

5 NEXT STEPS

Delivery of the plan will be guided by available funding. At this stage, weeding and revegetation can be undertaken without any further investigation, however further detailed design cannot be undertaken without detailed site survey and is required for:

- Improvements to pedestrian path network.
- Bank and bed stabilisation techniques.
- Restoration of remnant bridge structure.

Other considerations for the implementation of the works include:

- Prioritisation of environmental restoration aspects of the plan, with secured funding.
- Further funding for restoration activities to be investigated and applied for with project partners.
- Consultation with Pumphreys Country Women's Association regarding parking arrangements.
- Aboriginal Heritage Approvals process through Department of Planning, Lands and Heritage.
- Approvals for modification of bed and banks through Department of Water and Environmental Regulation.
- Implementation of low impact activities such as revegetation, weed control and feral animal control.
- Formal partnership with representatives of the Noongar families connected to Pumphreys Bridge.
- Formal partnership with Local Governments to seek funding for the parts of the plans involving public amenity.

The works can be undertaken collectively or individually, and during further detailed design, consideration should be given to the following:

- Materials, quantities and installation of bank stabilisation structures and formal/informal access points for recreation.
- Historical connection to the site as a swimming hole.
- The need for stock crossings/access points where the River runs through private land.
- The location of the formal and informal path network, which should be sited in cleared areas. And provide direct access to the carpark and camp sites, with wayfinding links to other tracks. Other facilities such a picnic tables or firepits should also be located in cleared areas.
- The need for a structural assessment of the Old Bridge prior to any works.
- The removal of couch grass may need to be undertaken in stages to minimise the risk of sediment loss and transport.
- Where banks are modified but unable to achieve a 1:3 grade, some form of matting is likely to be required. This may also be required where the sediment is sandy or otherwise unstable.

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Figure 2: Pumphreys Bridge Site Concept - Detailed Restoration Plan

Legend

- Cadastre
- Cross section locations (refer to cross section plan)
- Existing vehicle track
- Proposed vehicle access to parking and limited camp sites
- Proposed parking bays
- Proposed pedestrian access
- Proposed firepit or barbeque facilities
- Proposed shelter/picnic facilities
- Proposed campgrounds
- Proposed deck and viewing platform (part of the Old Bridge)
- Proposed bollards or equivalent
- Proposed river access for paddling**
 - Beach zone
 - Steps
- Bank stability**
 - Rock revetment / gabions
 - Bank slope modification (including woody debris, where required)
- Amenity**
 - General information & Directional signage for wayfinding
 - Historic information & Directional signage for wayfinding
 - Directional signage for wayfinding
 - River restoration information
- Revegetation**
 - Demonstration planting with signage
 - Comprehensive restoration of 30m riparian buffer zone
 - Proposed trees
 - Current trees
 - Water level
 - Top bank level
 - Flooding areas (2021-7-21 42 mm at Caernarvon Park BoM Station)



Existing remnant bridge deck made safe and repurposed as viewing platform with historic information board.



Riverside picnic benches or shelters for day use, located behind revegetated riverbank.



Existing riverbank headcut widened and stabilised to provide safe entry point for kayaks.

Overnight camping areas with informally marked bays using existing and newly planted trees to create alcoves.



Existing cleared area near camping with few trees to be repurposed as firepit or barbeque area with adjacent picnic benches or shelters.



Revegetation within 10m of bridges and bridge abutments is to be limited to 100mm height on all sides

Marked area for day-parking with bollards or equivalent to prevent entry to bush areas.

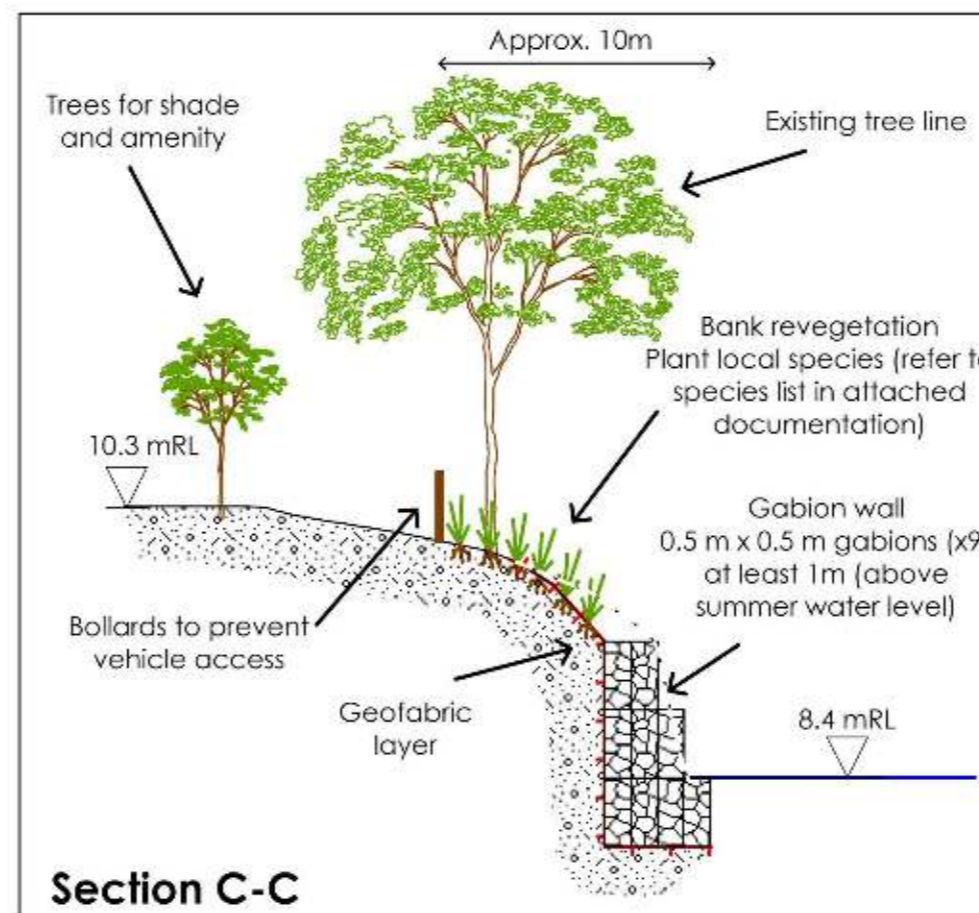
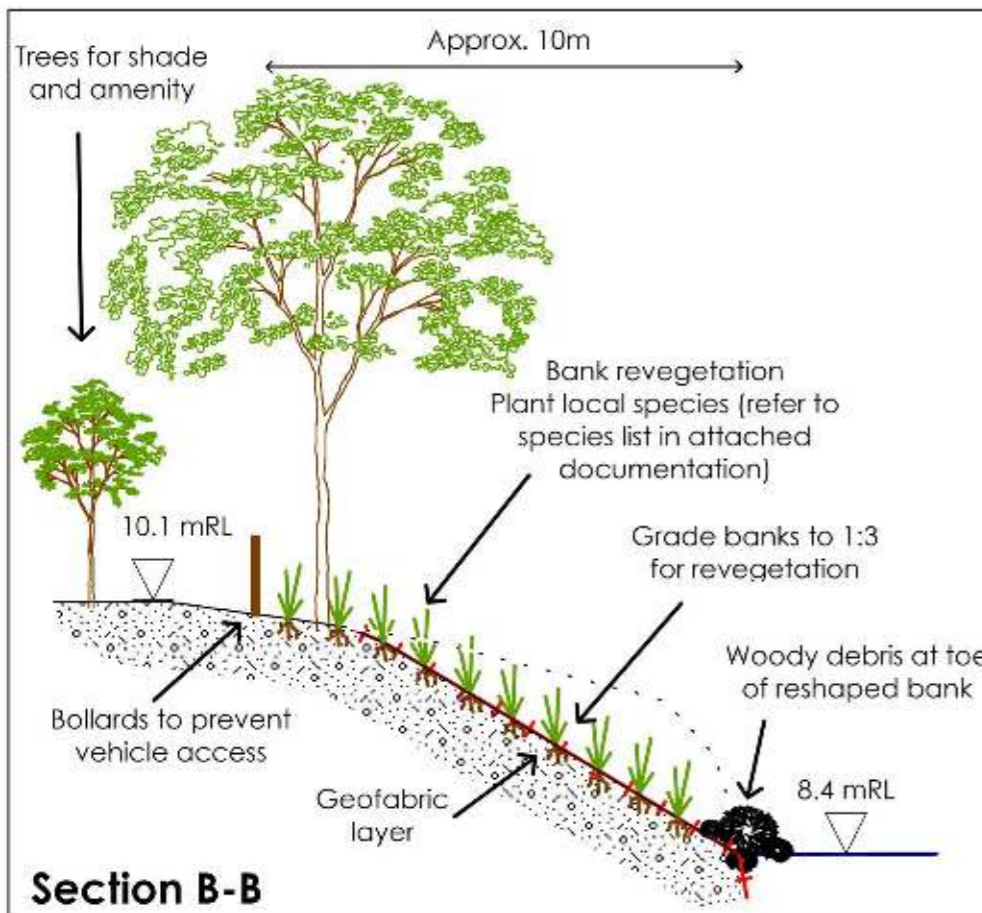
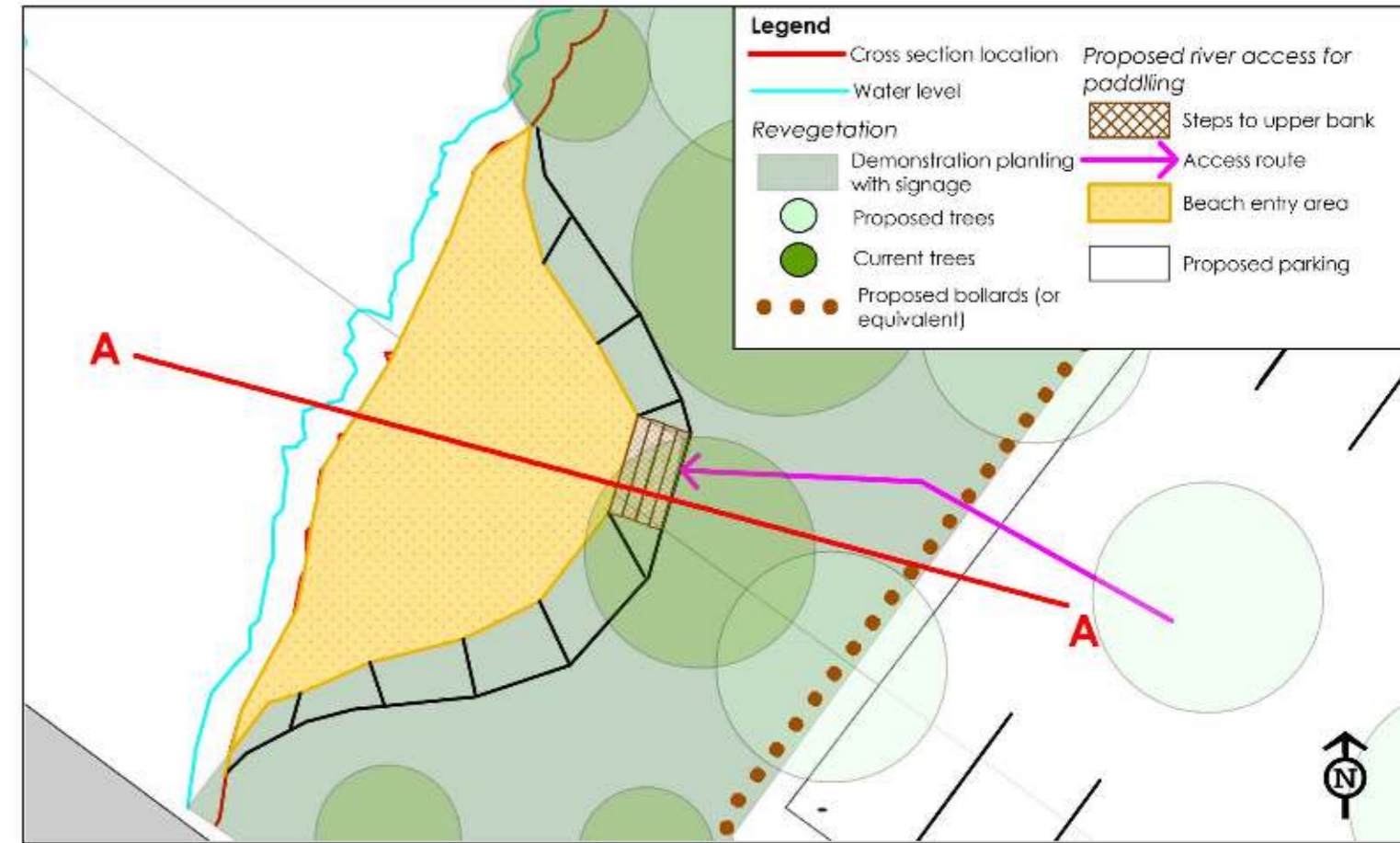
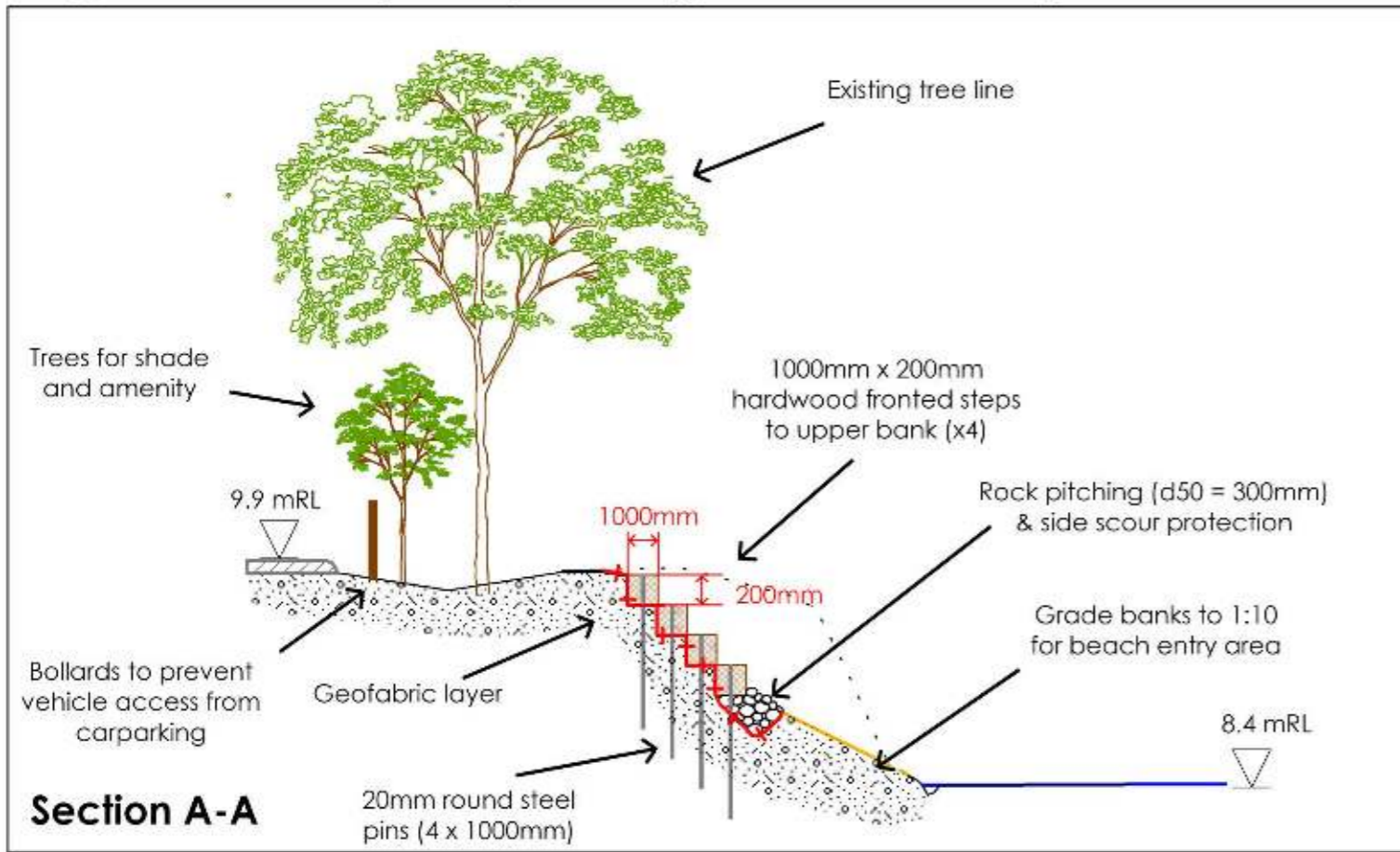
Notes:

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Figure 3: Pumphreys Bridge Site Concept - Cross Section Plan



Notes:

- Minor modification of bank shape may be required for vehicle/equipment access and/or local stabilization.
- Geo-fabric (slopes steeper than 1:3):
 - o Install below summer water levels (under rock pitching).
 - o Install Around existing vegetation where required.
 - o Laid in direction of flow at base of slopes (to 1m above summer w.l.).
 - o Roll geofabric downslope over remainder of bank.
 - o Bury at top of bank.
 - o Pin as per manufacturer requirements.
 - o Overlap geo-fabric maps by 100mm.
 - o Include slits for planting.
- Rock pitching (slopes steeper than 1:3 and higher than 1m):
 - o d50 size of 300mm.
 - o Hard, durable rocks that are not susceptible to weathering.
 - o Larger rocks to be installed at the base of the slopes.
 - o Smaller rocks to be used to fill gaps and form tightly packed layer.
 - o Two layers of rocks.
 - o Rock pitching grade >1:2.
 - o Rock pitching to be installed to at least 1m above summer w.l.
 - o Toe trench, up to 400mm (back filled with rocks).
- Woody debris (tree trunks, collapsed trees) may be installed instead of rock pitching depending on local conditions, access or availability of material:
 - o Pinned/anchored to (or buried into) the bank.
 - o Aligned in a downstream direction.
 - o Use only native species.

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Not to scale
Levels shown are relative based on limited survey to local datum





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Report	Version	Prepared by	Reviewed by	Submitted to Client	
				Copies	Date
Draft	V1	SSh	HBr	electronic	4 October 2021
Revised draft	V2	SSh/HBr	HBr	electronic	17 January 2022
Final report	V3	SSh/HBr	HBr	electronic	15 February 2022
Revised final report	V4	SSh/HBr	HBr	electronic	8 April 2022
Revised final report	V5	SSh/HBr	HBr	electronic	27 April 2022
Revised final report	V6	SSh/HBr	HBr	electronic	28 June 2022

Urbaqua

land & water solutions

Suite 4/226 Carr Place

p: 08 9328 4663 | f: 08 6316 1431

e: info@urbaqua.org.au

www.urbaqua.org.au