



RiverConnect Paths Master Plan

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This report has been prepared by Spiire for RiverConnect



144 Welsford Street **Shepparton** Victoria 3632

Acknowledgements

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Introduction

The regional settlements of Shepparton and Mooroopna are separated by the Goulburn and Broken Rivers and their surrounding floodplains, sandhills, wetlands and swamps. The Rivers sustain this community on multiple levels, yet in many ways the cities of Mooroopna and Shepparton ‘turn away’ from the rivers. Ironically the dense floodplain vegetation which provides such an environmental asset to the cities, also ‘hides’ the Rivers from view. This project provides the opportunity to not only physically connect people with the Rivers, the floodplains and each other, but just as importantly, provide a means for connecting people to an understanding of the culture and knowledge of this landscape through interpretive signage and information.

Through numerous plans and strategies, the Shepparton and Mooroopna communities have identified a desire for increased linkages between the twin cities and to establish a greater connectedness to each other and to the natural environment. Investigating the extension of the existing path network has become a priority for Greater Shepparton City Council under the auspice of the RiverConnect program. This project, the RiverConnect Paths Project Master Plan was conceived as a direct result of this priority.

The overall objective of the project, is to develop a master plan which meets community and local agency needs and expectations regarding connectedness and accessibility to the floodplain environments.

The specific objectives of the brief were:

- > An increase in new and upgrades to existing infrastructure within the Shepparton Regional Park.
- > Provide a document for Council to use as a guide for implementing extensions to the existing path network.
- > An increased opportunity for a greater appreciation and understanding of the natural and cultural environments
- > An increased connectedness of communities within Shepparton and Mooroopna.
- > An increase in tourism opportunities.
- > Improved community wellbeing.



The following 5 preferred path routes were investigated:

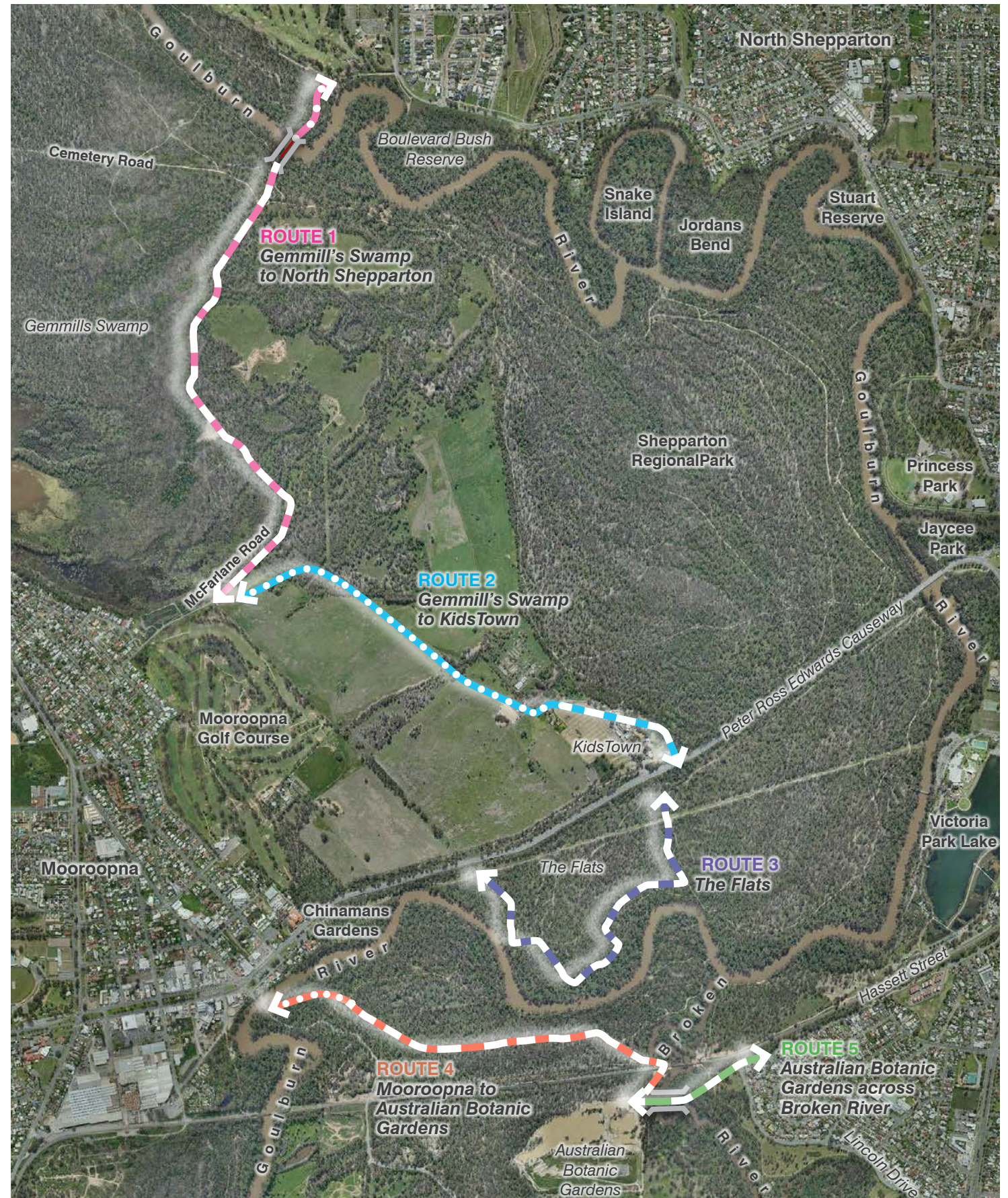
ROUTE 1 Gemmills Swamp to North Shepparton

ROUTE 2 Gemmills Swamp to KidsTown

ROUTE 3 The Flats

ROUTE 4 Mooroopna to the Australian Botanic Gardens

ROUTE 5 Australian Botanic Gardens across the Broken River





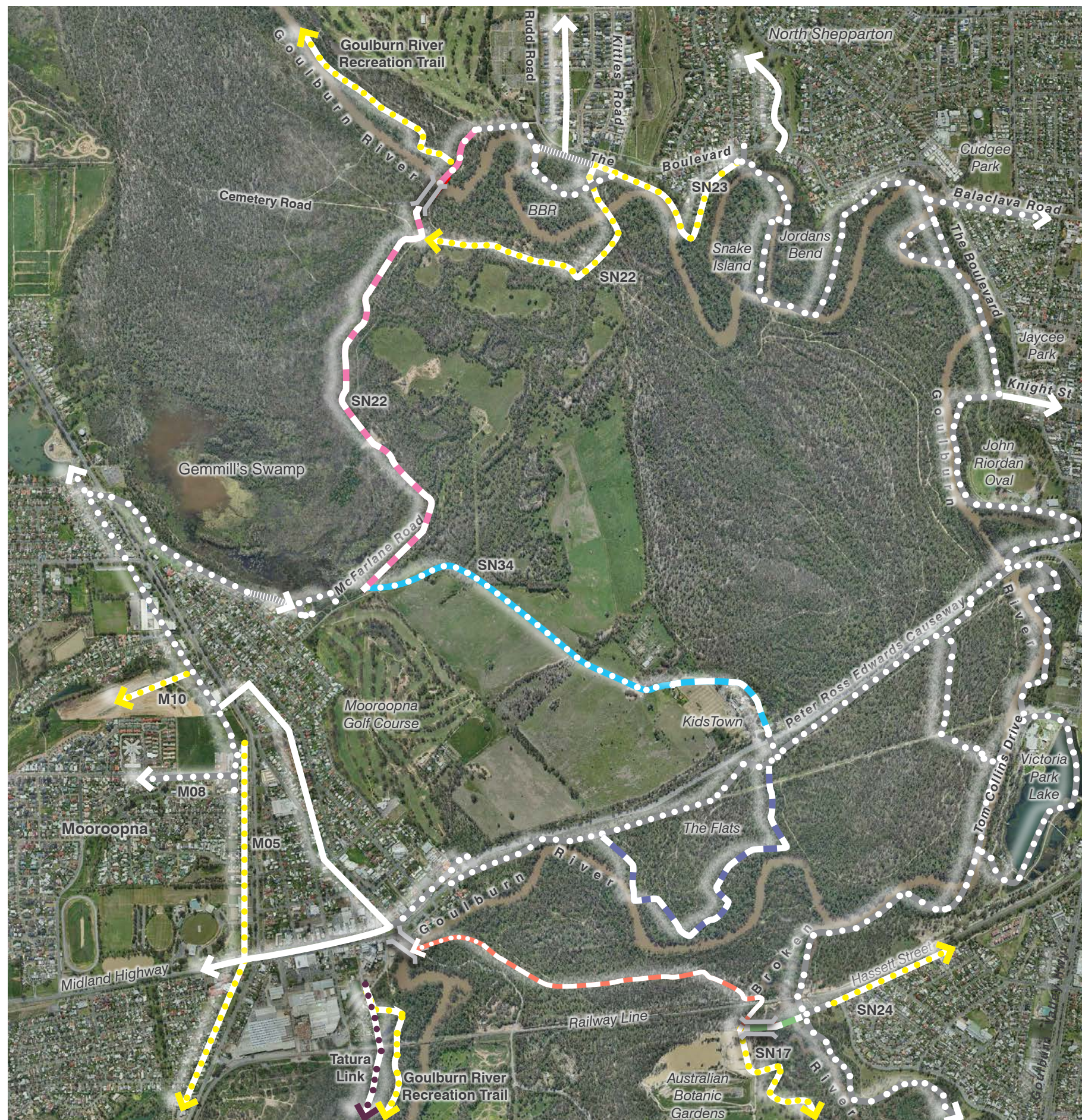
Network Connectivity

Two strategies are relevant to this project with regard to proposed path networks within Shepparton and Mooroopna and the region beyond:

- > Greater Shepparton Cycling Strategy 2013-2017
- > Hume Region Significant Tracks and Trails Strategy 2013-2022

The adjoining plan illustrates how the preferred 5 routes interact with the existing and proposed path networks in Shepparton and Mooroopna. Routes 1, 2 and 5 are identified proposed routes in the Greater Shepparton Cycling Strategy.





Legend

- Route 1 Proposed path along existing track
- Route 1 Proposed path 'off-track'
- Route 2 Proposed path along existing track
- Route 2 Proposed path 'off-track'
- Route 3 Proposed path along existing track
- Route 4 Proposed path along existing track
- Route 4 Proposed path 'off-track'
- Route 5 Proposed path 'off-track'
- Existing On Road Path
- Existing Off Road Path
- SN22 Proposed Greater Shepparton Cycling Strategy Paths with route identification code
- Other Proposed Shared Path
- Missing Links



Issues & Opportunities

The first stage of the project involved research and evaluation in order to identify key issues and opportunities which will, in turn, inform the Draft Master Plan.

Issues and opportunities have been identified through a process of desktop review of existing strategy and policy, technical investigations, site analysis and stakeholder consultation.

The symbols contained on the issues and opportunities plans indicate the following:



Green - support for the project or opportunities.



Amber - issues to note or requiring further investigation.



Red - constraints to the project or issues of concern.

The following issues and opportunities apply to all of the routes under investigation:

Strategy & Policy

A desktop review of the relevant strategies and policies identified the following:

Relevant strategy plans, including the *Greater Shepparton Strategy Plan 2030*, *Council Plan 2013-2017*, *Greater Shepparton Environmental Sustainability Strategy (2013-2030)* and *Action Plan (2014-2017)*, *Mooroopna Community Plan (2010-2020)* and *RiverConnect Strategic Plan* generally support the notion of developing the shared path network between Shepparton and Mooroopna.

The strategies talk of an increased population for the Greater Shepparton area which is more self-sustaining, less reliant on fossil fuel and car use and a more active population which will prioritise walking and cycling networks.

The Goulburn Valley Wayfinding Strategy provides guidance with regard to locational, directional and identification signage across the municipality and beyond. Parks Victoria also has a suite of standard signage, some of which already exists in the Shepparton Regional Park. There is also a wide variety of other existing sign types throughout the area.

Heritage, Ecology, & Planning

Key specialists in ecology, archaeology and statutory planning have undertaken assessments and provided advice regarding any site constraints or issues. These specialist reports are contained in Appendices 1, 2 and 3.

The Cultural Heritage assessment did not identify any significant cultural materials during the survey. Artefact scatters and scar trees do, however, exist in some locations close to the proposed routes. A more detailed Cultural Heritage Management Plan is required for those locations where paths are proposed off existing tracks.

The ecological assessment advised that the proposed works were not likely to have a significant effect on threatened biodiversity. Detailed ecological assessment of the chosen river crossing locations was recommended, as was involvement of suitably qualified personnel when setting out the final alignments on site. Further, any native vegetation removal will require offsetting.

The works are generally exempt from a planning permit if the works are undertaken by Council and do not exceed the value of \$1,000,000 and if they do not involve the removal of native vegetation.

Management

The majority of the preferred routes are proposed within the Parks Victoria managed Shepparton Regional Park, therefore the issue of who will construct and maintain the proposed assets will need to be resolved. The routes also encroach on service corridors, land subject to flooding and the railway corridor and as such, approvals and permits will also be required from the various bodies and authorities in order to proceed with implementation.

Access to build and maintain the majority of these paths is also limited, due to the existence of established trees or the lack of access tracks.

Safety

The proposed works present real and perceived safety threats for people using the paths. Some sections of the routes are quite remote and isolated and people may feel unsafe using them. Flooding, bushfire and limb drop may also threaten public safety.

Strategy + Policy

Greater Shepparton Strategy Plan 2030

- Layout of municipality, including new residential areas and design of built form, will prioritise walking and cycling networks.
- Less fuel use per head of population and a more active community.
- Network of public open space extended into growth corridors and along rivers.

Council Plan 2013-2017

- 'Active and engaged community' – ensure liveability options are always considered in our decision-making activities.
- 'Enhancing the environment' – ensure the environment is a major priority in planning for the future.
- 'Quality infrastructure' - ensure the community has access to high quality facilities, including Australian Botanic Gardens and adoption and implementation of Greater Shepparton Cycling Strategy 2013 -2017.

Greater Shepparton Environmental Sustainability Strategy (2014-2030) and Action Plan (2014-2017)

- A return to a more self-sustaining, resilient local communities, decreasing fossil fuel use and car use by developing infrastructure for walking and cycling.
- Implement 75% of the Cycling Strategy's action within specified timeframes.
- Provide funding for bicycle infrastructure projects above the Victorian rural Council average spend annually.
- Utilising new communication methods eg social media and Quick Reference (QR) technology.

Mooroopna Community Plan 2010-2020

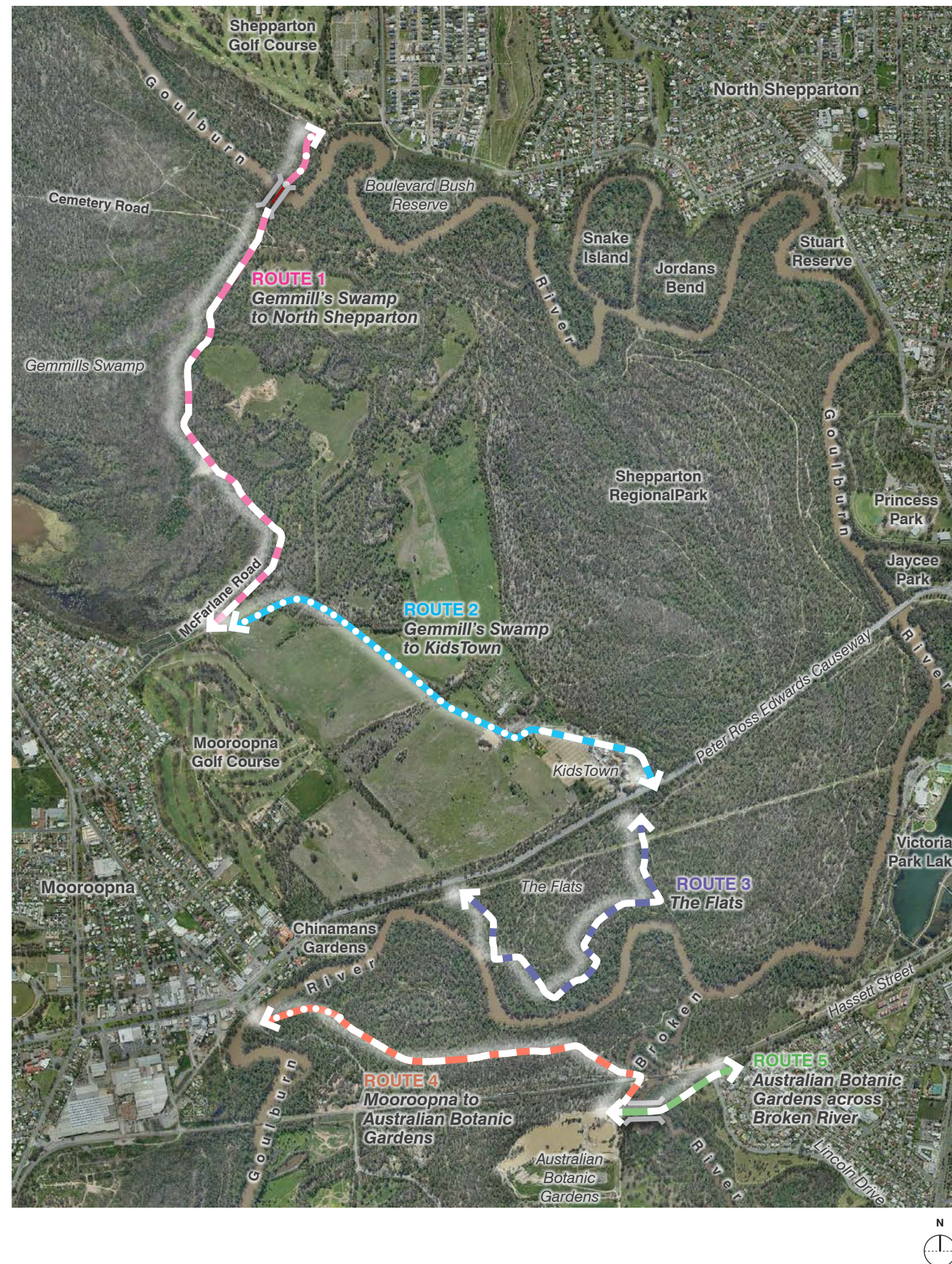
- More walking and bike track links, and seating along the river.
- Riverside development including cultural and recreational tourism.

Goulburn Valley Wayfinding Strategy

- Identifies 4 no. signage types (wayfinding plinth, directional fingerboard, site identification and trail markers) as well as colour and material palettes.
- Recommend minutes instead of distances are used for directional signs where relevant.
- Parks Victoria signage vs Goulburn Valley Wayfinding signage.

RiverConnect Strategic Plan

- Shared path network expanded & improved river access.
- Access to river edge upgraded & improved access for those with a disability.
- Encouraging use via tours.
- Improve disabled access: existing paths and bridges to be made wheelchair friendly.
- Encourage use of facilities via access maps, tours, bike and/or canoe hire business, group activities.



Heritage

- No Aboriginal cultural material located during survey.
- Need complex CHMP where paths are proposed off existing tracks.

Ecology

- 2 fauna species identified (Brown Tree-creeper & Azure Kingfisher) are listed as Near Threatened in the FFG Act.
- No flora or fauna (including Endangered Ecological Communities) listed under the EPBC Act were identified throughout.
- The proposal is not likely to have a significant effect on threatened biodiversity.
- Detailed ecological assessment of the chosen river crossing locations should be undertaken.
- Involvement of suitably qualified personnel is also encouraged during placement of the final alignment through 'off-track' areas.

Safety

- High risk bushfire and area.
- Limb drop area.
- Remote and isolated location.
- Area subject to flooding.

Planning

- All routes are exempt under Clause 62.02-2 of the Greater Shepparton Planning Scheme if the buildings and works are undertaken by or on behalf of the municipality and estimate cost is less \$1,000,000, otherwise a planning permit is required.
- Planning permit is required if the works require native vegetation removal.

Management

- Service authority (GV Water – town water supply and sewer, Powercor – elec, CFA, APA – gas, Telstra/NBN) approvals for locations where the paths or related structures encroach on service corridors.
- CMA approvals for paths or related structures to be located in areas subject to inundation.
- Meet any CMA requirements for bridge structures at river crossings.
- Geotechnical investigations for major structures (river crossings).
- Vic Track approvals for areas where paths or related structures encroach on rail corridor.
- Parks Victoria approvals and agreements required for path implementation and maintenance requirements.

Legend

	Route 1 on track off-track		Route 3 on track
	Route 2 on track off-track		Route 4 on track off-track
	Route 5 off-track		



Route 1: Gemmill's Swamp to North Shepparton

The issues and opportunities of Route 1 are summarised on the adjoining page.

The photos on this page illustrate the existing site conditions along the route.



Strategy + Policy

Greater Shepparton Cycling Strategy

- Route 1 is an identified proposed route in the Greater Shepparton Cycling Strategy.

Gemmill's Swamp Wildlife Reserve Masterplan 2005

- Controlled access is required at the intersection of the shared trail. Shared trail and maintenance access only for habitat values protection.
- Shared trail improvements – granitic gravel path with interpretive signage creating a link around the swamp.

RiverConnect Boulevard Property Masterplan

- Location of City of Greater Shepparton 3.0m sealed shared path shown to east of Boulevard Bushland Reserve adjacent to car park and linking to shared path system.

RiverConnect Strategic Plan

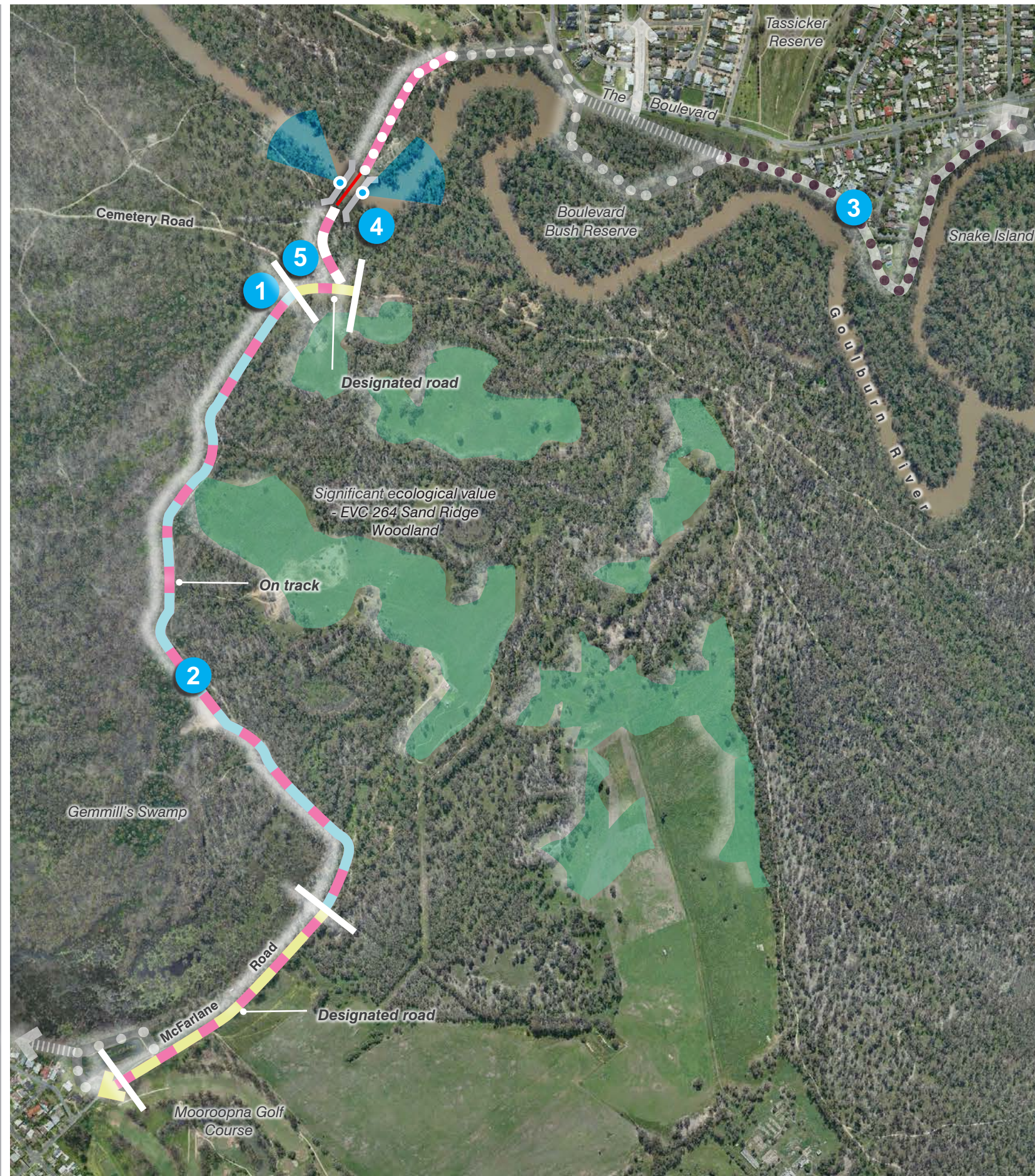
- Northern Shared path network connection from Mooroopna to Shepparton Weir area, including a bridge over the Goulburn River

Engineering

- Cemetery and McFarlane Roads are designated roads - closure or cross sections must incorporate both pedestrians and vehicles.

Management

- Parks Victoria to upgrade Cemetery Road to fire access track.
- Non-designated roads to remain accessible by vehicles.
- Who will construct and maintain path in Parks Victoria managed land?



Ecology

- Soils in the northern section along Cemetery Road are highly erodible and dominated by sandy loam. Consider developing an Erosion & Sediment Control Plan - as the probability of intensified flow resulting in erosion in these environments is very high.

Heritage

- A section is off existing track and a complex assessment is required to identify any sites of potential cultural sensitivity.
- 5 no. Artefact Scatters have been identified within specified distance of the path.
- 1 no. Scarred tree has been identified within specified distance of the path.

Planning

- Zones - Urban Floodway + Farming
- Overlays - Bushfire Management
- Permit required, unless otherwise exempt under clause 62.02-2.

Stakeholder Response

- Create a loop around Gemmill Swamp and links North Shepp to Mooroopna.
- Potential for sharing of cultural stories.
- Potential for shorter section across the Shepparton weir.
- Natural values of BBR and Gemmill Swamp to be protected/enhanced.
- Public safety - snakes
- Uncontrolled vehicle access
- Location & cost of building a crossing?
- Pest animals crossing the river
- Access vs private ownership
- Native vegetation impacts (eg fragmentation)
- Need to go around swamp to Jim Douglass Park to complete the North Mooropna link
- Weeds being spread
- Short term impact of machinery on the environment
- Rubbish
- Vehicle vs pedestrian conflicts
- Parking requirements
- Consider impact on BBR
- Should have a shared path south of golf club boundary



Route 2: Gemmill's Swamp to KidsTown

The issues and opportunities of Route 2 are summarised on the adjoining page.

The photos on this page illustrate the existing site conditions along the route.



Strategy + Policy

Mooroopna Community Plan 2010-2020

- The community of Mooroopna would like to see Gemmill Swamp developed and a boardwalk installed from the Swamp to Kidstown and linking to Shepparton. Gemmill Swamp walkway and signage was identified as a priority/quick win.

RiverConnect Strategic Plan

- Kidstown to Gemmill Swamp shared path network connection identified.

- Extend historic trail to other points of Aboriginal history at Daish's and Sandhills area (McFarlane Rd).

Greater Shepparton Cycling Strategy

- Route 2 is an identified proposed route in the Greater Shepparton Cycling Strategy.

Greater Shepparton Environmental Sustainability Strategy (2014-2030) and Action Plan (2014-2017)

- Utilising new communication methods QR codes at Gemmill Swamp bioremediation wetland to provide 24/7 online resources.

Engineering

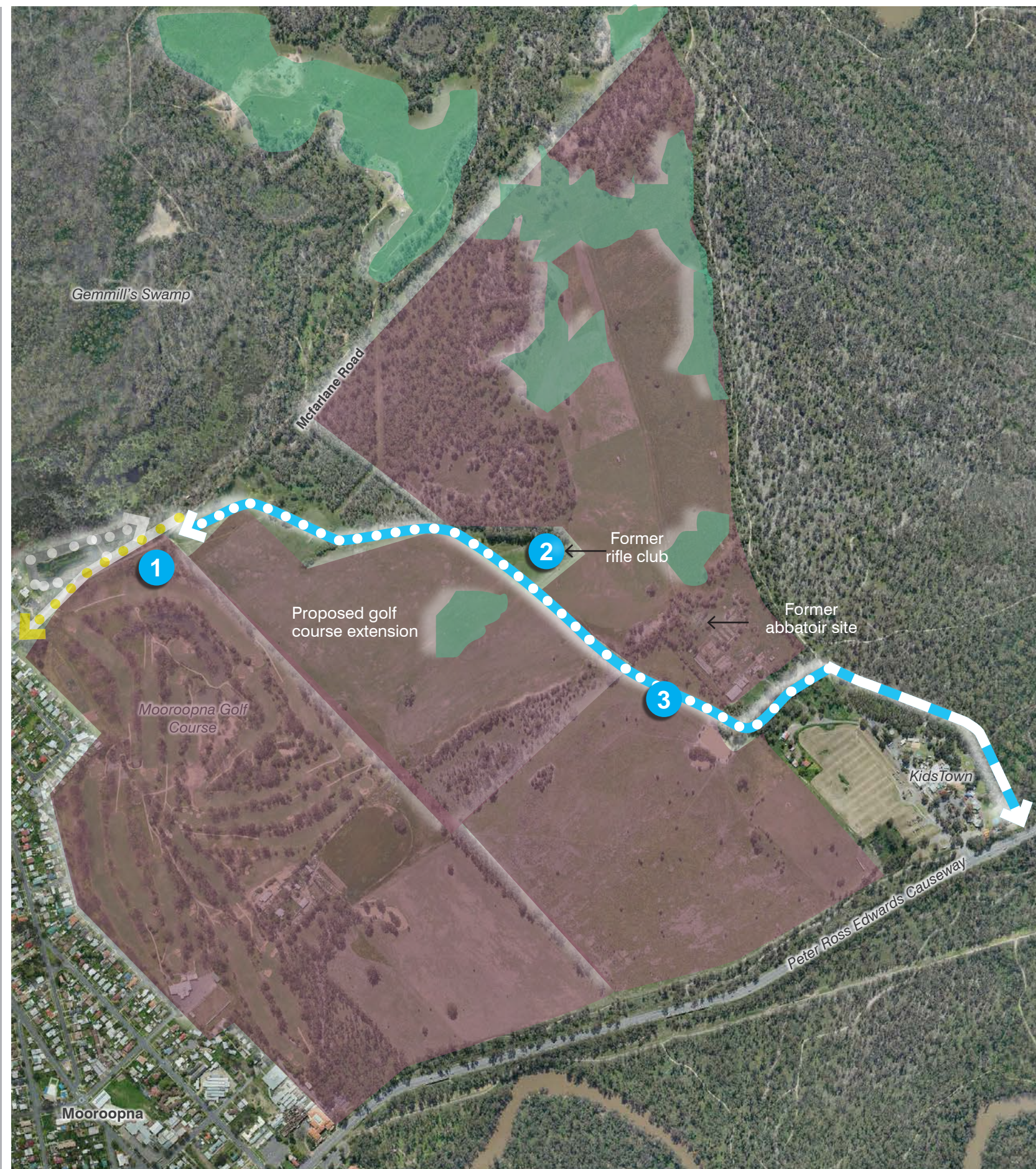
- Cemetery and McFarlane Roads are designated roads - closure or cross sections must incorporate both pedestrians and vehicles.
- There is a high level of lead in the soil which is above acceptable tolerances. This is adjacent to an old rifle range bund. A more detailed investigation is required.

Ecology

- A section is off the existing track, thus an Ecologist or suitably qualified personnel be engaged to flag tape the final alignment.

Heritage

- A section is off the existing track a complex assessment is required.
- 2 no. Artefact Scatters have been identified within specified distance of the path.



Planning

- Zones - Urban Floodway + Farming
 - Overlays - Bushfire Management + Land Subject to Inundation
 - Permit required, unless otherwise exempt under clause 62.02-2.
- Section of proposed route across private land.

Safety

- Proposed route is adjacent to proposed golf course extension.
- Former rifle club contains high levels of lead.

Community Response

- Connection of growth corridor to Kidstown
 - Tourist walks from Kidstown
 - Link to bioremediation wetland at Gemmill Swamp
 - Opportunity for historical information (eg Cobb and Co, indigenous, rifle range, etc)
 - Biodiversity link/corridor with native veg enhancement
 - This route is the easiest stretch – used by bike groups, families
- Maintenance issues
 - Weed infestation
 - Land acquisition/agreement necessary – easement. Private property issues
 - Vehicular vs pedestrian issues





Route 3: The Flats

The issues and opportunities of Route 3 are summarised on the adjoining page.

The photos on this page illustrate the existing site conditions along the route.



Strategy + Policy

Mooroopna Community Plan 2010-2020

- Interest in providing interpretive signage to better inform history and significance of 'The Flats' between Shepparton and Mooroopna.

RiverConnect Strategic Plan

- Development of a trail of Aboriginal history at 'The Flats'.
- Design and construct access path network for 'The Flats' area with appropriate interpretive signage to detail Aboriginal habitation on 'The Flats'.
- Improving river access with tracks, parking and signage at 'The Flats'.

Management

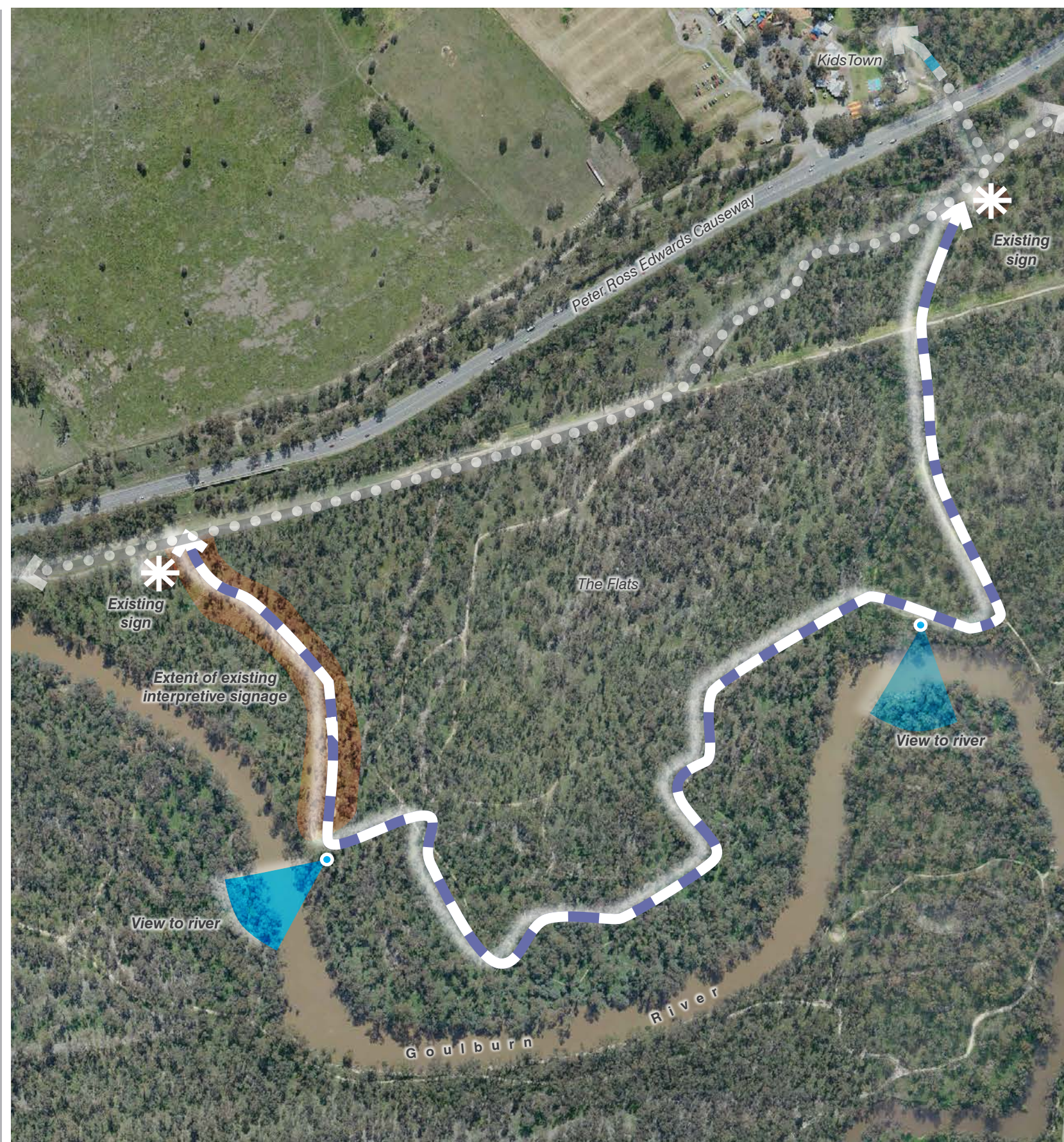
- Surface and cross-section of path?
- Type of path?
- Extent of interpretive signage?
- Clear directional signage required due to numerous tracks.
- Who will construct and maintain path in Parks Victoria managed land?

Heritage

- 1 no. Scarred Tree and 1 no. Artefact Scatter have been identified within specified distance of the path.

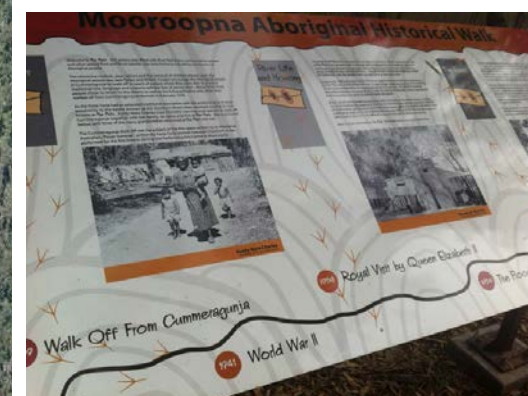
Planning

- Zones - Urban Floodway
- Overlays - Bushfire Management
- Permit required, unless otherwise exempt under clause 62.02-2



Community Response

- Already existing so cheap to upgrade
- Culturally significant / historic
- Education and tourism opportunities (e.g. educational walk)
- Close to Kidstown – achievable walk
- Ecological diversity
- Funding from Rumbalara/YYN – have them fully involved and take ownership
- Permission and possible issues relating to indigenous cultural heritage
- Some families living near Goulburn River adjacent to Tom Collins Drive
- Need to minimize disturbance.





Route 4: Mooroopna to the Australian Botanic Gardens

The issues and opportunities of Route 4 are summarised on the adjoining page.

The photos on this page illustrate the existing site conditions along the route.



Strategy + Policy

RiverConnect Strategic Plan

- Identified southern shared path network connection from Mooroopna to Kialla Landfill (Australian Botanical Gardens) and connecting to Shepparton path network

Ecology

- The terrain east of the Watts road bridge is difficult and includes several secondary 'runners' that drain the floodplain post flood. The shared path is to be therefore located adjacent to the roadside verge of Watts Road.

Engineering

- Track is currently much lower than its surrounds and crosses heavy black to grey cracking clays - will need to be built up such that it is higher than the surrounding floodplain.
- Design of path to consider flood flows and should be designed with a definite 'crown' to facilitate movement of overland flow away from the alignment.
- Proposed upgrade of Watt Road bridge.

Safety

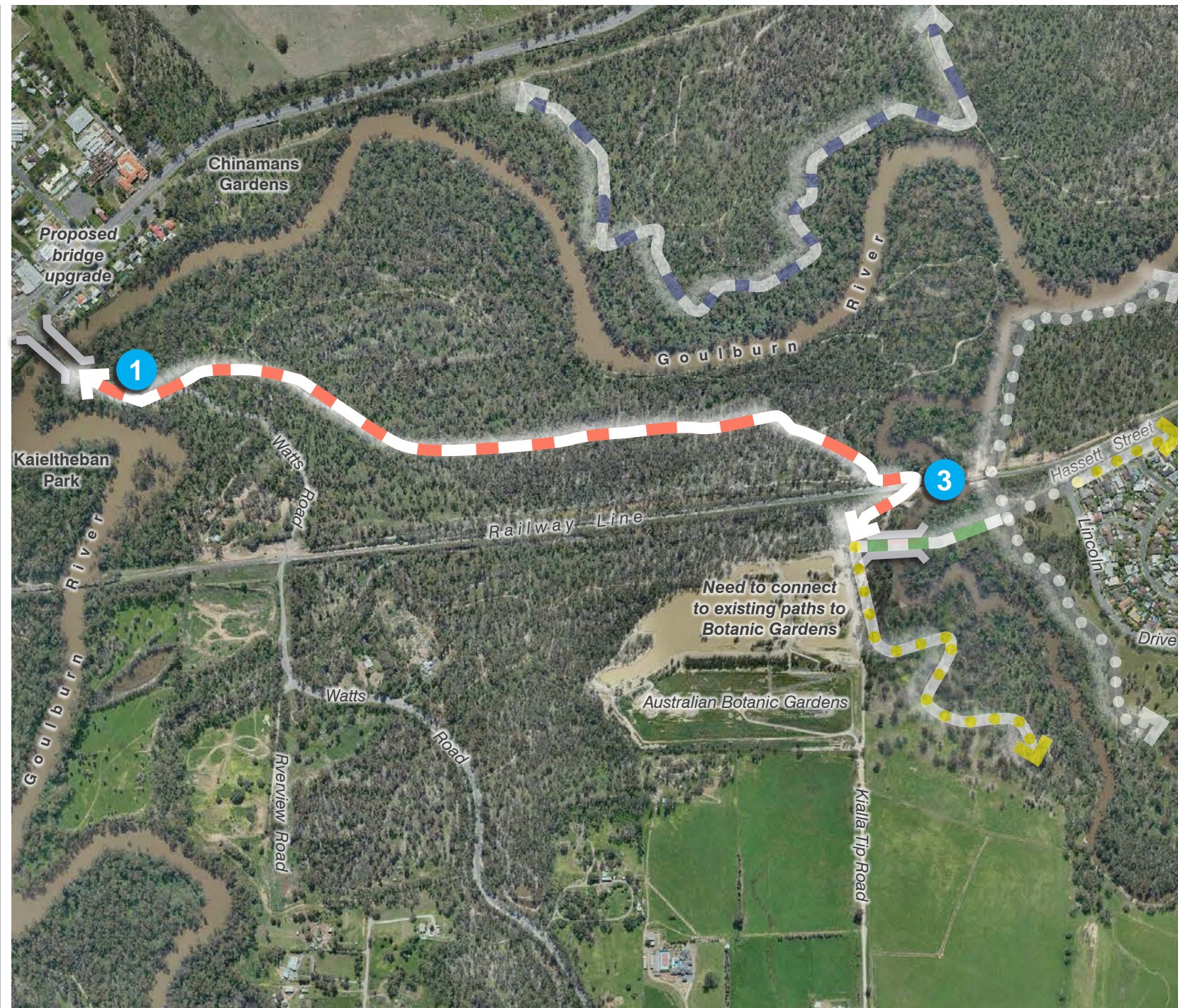
- Passing under the existing Rail Bridge over the Goulburn River is potentially a safety concern that will need to be addressed. The bridge abutments and worked bank below the existing track is scouring, slumping and prone to mass failure if corrective works are not undertaken in the near future.

Planning

- Zones - Urban Floodway + Public Use Zone 4
- Overlays - Bushfire Management
- Permit required for works within Public Use Zone

Management

- Non-designated roads to remain accessible by vehicles.
- Who will construct and maintain path in Parks Victoria managed land?



Heritage

- A section of the proposed route is off the existing track a complex assessment is required

Community Response

- Link Kialla to Mooroopna via Botanic Gardens
- Options for commuting by bike to work
- Enhance aesthetic values of Broken River
- Opportunity for educational materials to direct to Botanic Gardens
- Straight off road as soon as the bridge is crossed
- Can avoid bridge in first stage and go through to Melbourne Road from Botanic Gardens path
- Path goes past Chinese Gardens
- Retain Kialla Landfill to Melbourne Road path
- Prefer for path to be 'shared path' to make bike loop
- Crossing with cars may be issue at Bridge at Watts Road
- Track south of Broken may be unnecessary if already existing on north side of Broken River
- Flooding
- Lack of visual amenity – litter, dumped rubbish - no aesthetic value from Kialla landfill to Melbourne Road
- Big gullies on Kialla / Melbourne Road track near Botanic Gardens
- Vehicles use the tracks create ruts, hazards – might need basic vehicle track separated from shared path
- Potential for damage to environment / good quality vegetation along Broken River
- Hazards along McLennan St in front of hospital – needs to be on other side of road
- Needs to swing directly off road after crossing Mooroopna bridge
- Consider area west of Watt Rd in the future
- Should be a future shared path along Kialla Tip Road to connect to Forest Drive etc.



Route 5: Australian Botanic Gardens across the Broken River

The issues and opportunities of Route 5 are summarised on the adjoining page.

The photos on this page illustrate the existing site conditions along the route.



Strategy + Policy

RiverConnect Strategic Plan

- Improving river access (including wheelchair suitable access) with tracks, parking and signage at Lincoln Drive.

Greater Shepparton Cycling Strategy

- 1 Route 5 is an identified proposed route in the Greater Shepparton Cycling Strategy.

Ecology

- Further investigation required of precise bridge crossing.

Heritage

- A section of the proposed route is off the existing track, a complex assessment is required.

Engineering

- Height of the bridge/construction methods
- CMA approval required.

Management

- Who will construct and maintain path and bridge in Parks Victoria managed land?

Planning

- Zones - Urban Floodway
- Overlays - Bushfire Management
- Permit required, unless otherwise exempt under clause 62.02-2



Community Response

- Link between Shepparton and Mooroopna
- Loop or circuit from Mooroopna
- Australian Botanic Gardens
- Some value in viewing pristine Broken River from both sides

- Environmental issue of tree removal
- Cost of pedestrian bridge
- Doesn't service Shepparton and Mooroopna
- Kialla Tip Road – gate not always open
- Mooroopna Kiwanis wants to be part of the development of the path to Botanic Gardens
- Consider bike hire for people to do the loop
- Parking and signage at Lincoln Drive



Proposed Path Typologies

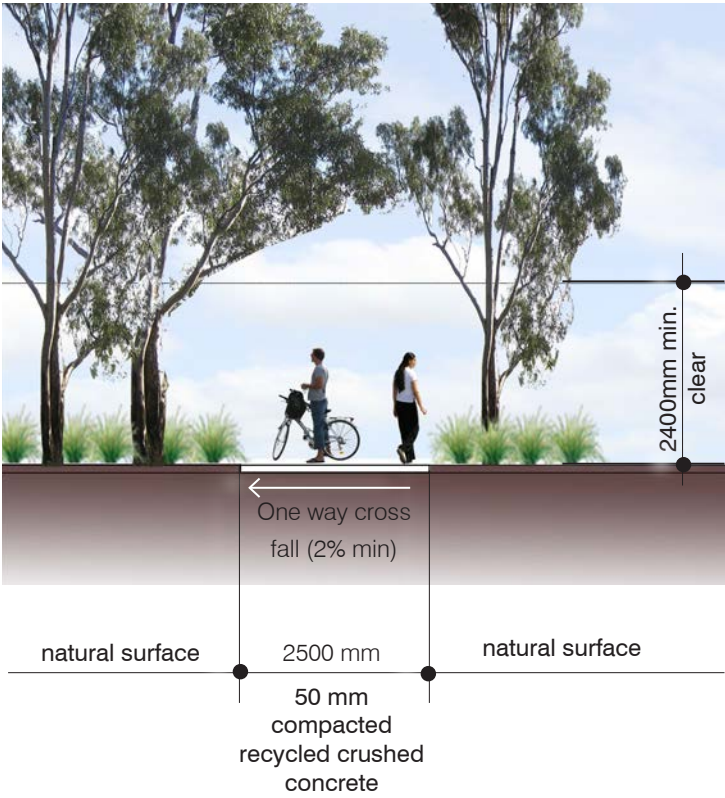
As a result of the RiverConnect Paths Focus Group consultation process, four different path types have been proposed for the shared path extensions. These are illustrated and described in the following illustrative cross sections.

Recreational Path

A 2.5 m wide unsealed path in accordance with the City of Greater Shepparton's 'Typical Recreational Path Cross Section' (refer Appendix 4).



legend symbol on master plans

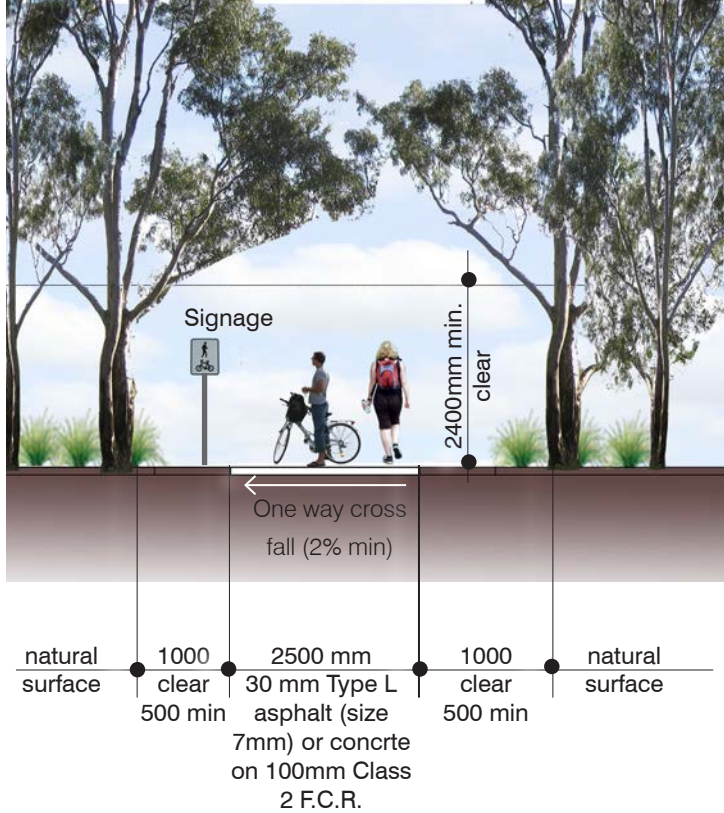


Shared Path

A 2.5 m wide sealed shared path in accordance with the City of Greater Shepparton's 'Typical Shared Path Cross Section' (refer Appendix 4).



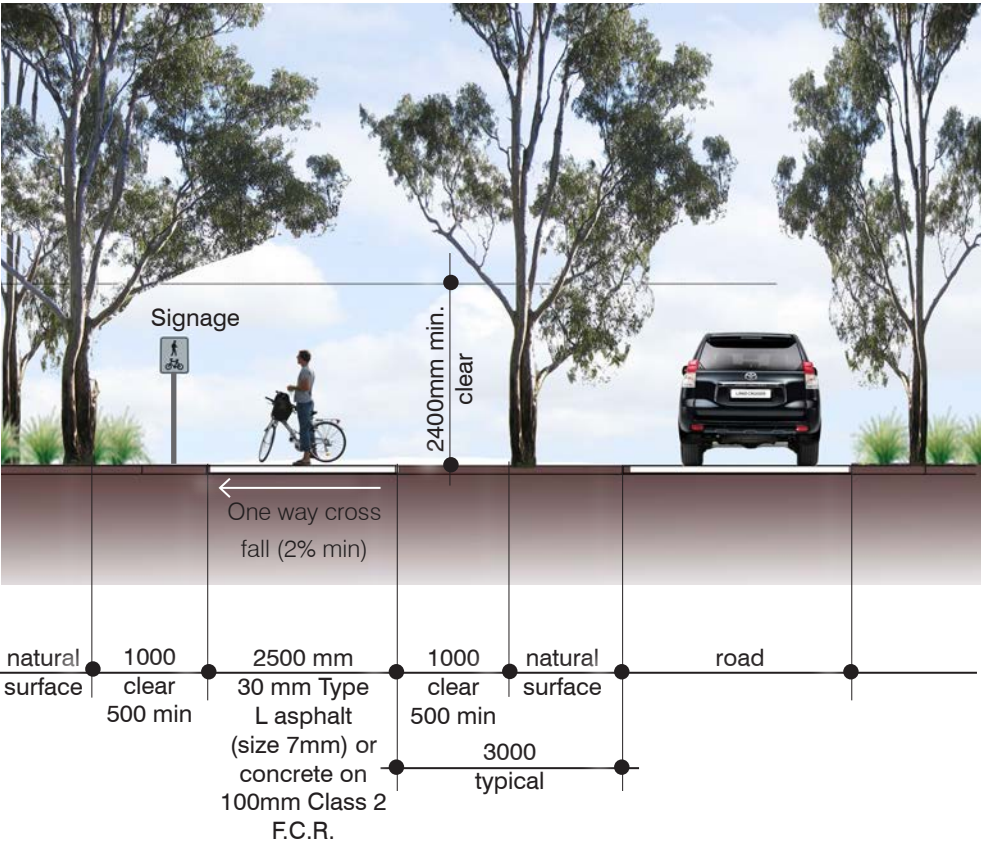
legend symbol on master plans



Shared Path adjacent to existing road


A 2.5 m wide sealed shared path in accordance with the City of Greater Shepparton's 'Typical Shared Path Cross Section' (refer Appendix 4) located adjacent to designated roads.

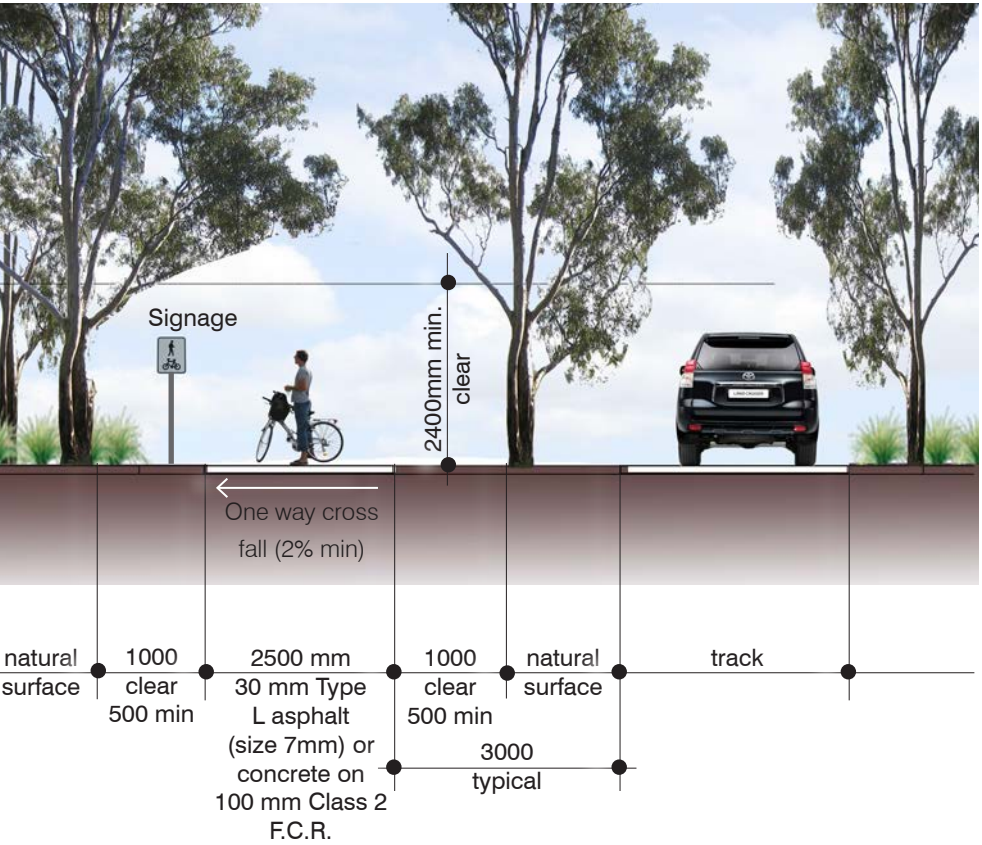
 legend symbol on master plans



Shared Path adjacent to existing 'track'

A 2.5 m wide sealed shared path in accordance with the City of Greater Shepparton's 'Typical Shared Path Cross Section' (refer Appendix 4) located adjacent to access tracks.

 legend symbol on master plans



Proposed Signage Strategy

Signage is an important part of shared path experience, as it will assist users with way-finding and interpretive information.

The 'Goulburn Valley Wayfinding Strategy - Style Guidelines' details a suite of signs to be used across the City of Greater Shepparton. It is recommended that the RiverConnect Paths Project utilise this suite of signage, but incorporating the RiverConnect logo, to provide consistency and to differentiate the Council managed paths and assets as different to the Parks Victoria or Catchment Management Authority signage.

Road safety signage should also be considered during detailed design of any paths, particularly where vehicles, pedestrian and cyclists interface with one another.

Actions for Implementation:

- > Confirm the use of the 'Goulburn Valley Way-Finding Strategy' suite of signs.
- > Rationalise or remove any existing signage which creates visual clutter and does not fit with the adopted signage for RiverConnect.
- > Co-ordinate with Parks Victoria with regard to signage upgrades and locations within Shepparton Regional Park.



Images of existing signage within Shepparton Regional Park and surrounds



Signage Types and Purpose



Wayfinding plinth

- > Located at key entries to and exits from the shared path network.
- > Includes a map of the route and connections, “you are here” reference, walking and/or cycling distances (in minutes) to key destinations and iconography (e.g no bardi grubbing, no dumping of rubbish, carry out rubbish, etc).



Directional signage

- > Located where shared paths and other designated shared and recreational paths intersect.
- > Provides directional information and minutes to destination at key nodal decision points.



Trail Marker

- > Located at key locations for reassurance along the shared path network.
- > Provides walking and/or cycling minutes to destination along route.
- > Must be clear and comprehensible from both approaches.



Interpretive signage

- > Located at key points of interest along the shared path network where appropriate, such as Aboriginal or European heritage and natural heritage or processes.
- > Materials and form could match other wayfinding signage types, where appropriate, to visually unify the RiverConnect stories and also assist with way-finding.



Graphic images taken from the City of Greater Shepparton ‘Goulburn Valley Wayfinding Strategy - Style Guidelines’, 2013

Images of existing interpretive signage at ‘The Flats’ path.



Strategies for Implementation

The following section of this master plan details each route plan and the next steps required to implement each of the preferred routes and the anticipated order of cost associated with this implementation. Where relevant, the possible staging of these paths is also discussed.

Across all routes the following actions should be taken, prior to proceeding with the implementation of any one route.

- > Undertake community consultation to determine community support for the preferred routes and their preferred priorities for implementation.
- > Consult with Parks Victoria to determine how to manage the construction and maintenance of Council assets (paths, signs and seating) within the Shepparton Regional Park.
- > Confirm the use of the 'Goulburn Valley Way-Finding Strategy' suite of signs.

Note that the anticipated order of costs do not include the cost of native vegetation removal offsets or any internal Council costs.

Route 1 Gemmill’s Swamp to North Shepparton

The adjoining plan illustrates the proposed works associated with preferred route 1 and the table below details the actions required to implement these works.

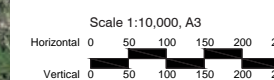
Action	Anticipated order of cost
PRE-CONSTRUCTION ACTIVITIES	
1 Seek permits and approvals from the relevant authorities, such as Parks Victoria and the CMA to undertake the path and Goulburn River pedestrian bridge works.	\$5,000
2 Undertake feature and level survey for route corridor.	\$25,000
3 Complete Complex Cultural Heritage Master Plan for all works proposed through undisturbed areas.	\$20,000
4 Undertake detailed flora and fauna investigation.	\$10,000
5 Undertake geotechnical investigations to enable pavement and structure design.	\$15,000
6 Design and document the works.	\$60,000
7 Obtain planning permit.	\$5,000
CONSTRUCTION ACTIVITIES	
8 Construct path and pedestrian bridge.	\$1,200,000
9 Construct signage and seating.	\$35,000
	\$1,375,000

Route 1 could be constructed in the following stages:

- > Proposed shared path adjacent to The Boulevard.
- > Proposed shared path adjacent to golf course access track extended to location of river crossing.
- > Proposed river crossing.
- > Proposed shared path adjacent to Shepparton Regional Park access track and McFarlane Road extending to intersection with Route 2.



Legend





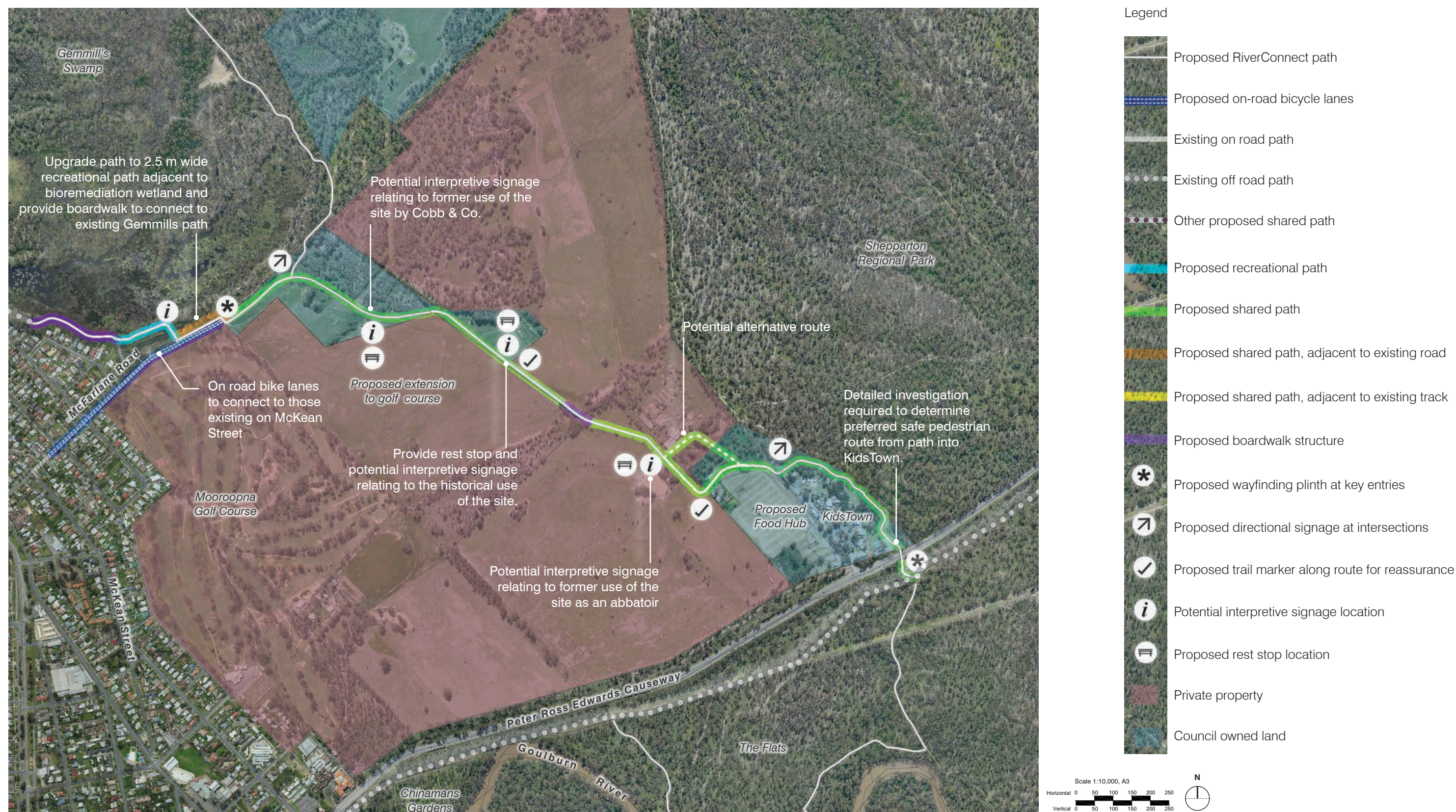
Route 2 Gemmill’s Swamp to KidsTown

The adjoining plan illustrates the proposed works associated with preferred route 2 and the table below details the actions required to implement these works.

Actions		Anticipated order of cost
PRE-CONSTRUCTION ACTIVITIES		
1	Seek permits and approvals from the relevant authorities, such as Parks Victoria to undertake the path works adjacent to Gemmill’s Swamp.	\$5,000
2	Determine extent of private land required for aquisition/transfer to Council.	TBD
3	Undertake further soil testing to determine extent of contaminated land.	\$10,000
4	Undertake feature and level survey for route corridor.	\$20,000
5	Complete Complex Cultural Heritage Master Plan for all works proposed through undisturbed areas.	\$10,000
6	Undertake detailed flora and fauna investigation.	\$5,000
7	Undertake geotechnical investigations to enable pavement and structure design.	\$10,000
8	Design and document the works.	\$25,000
9	Obtain planning permit.	\$5,000
CONSTRUCTION ACTIVITIES		
10	Undertake site remediation works.	TBD
11	Construct path and structures.	\$350,000
12	Construct signage and seating.	\$35,000
		\$475,000

Route 2 could be constructed in the following stages:

- > Proposed shared path adjacent to Kidstown.
- > Proposed boardwalk adjacent to Gemmill’s Swamp.
- > Upgrade of path adjacent to Gemmill’s Swamp bioremediation wetland.
- > Installation of on-road bicycle lanes.
- > Proposed shared path from McFarlane Road to KidsTown.





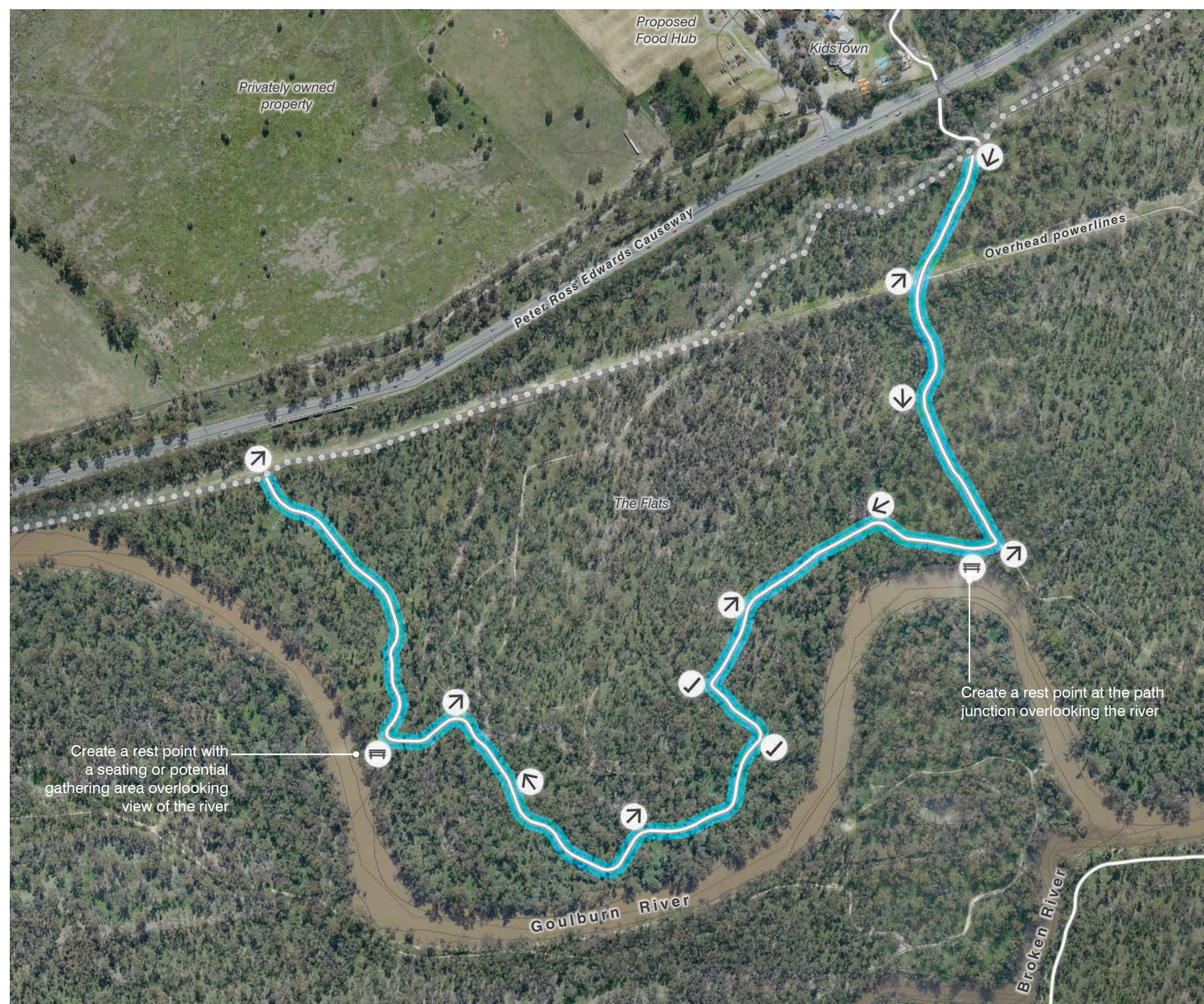
Route 3 The Flats

The adjoining plan illustrates the proposed works associated with preferred route 3 and the table below details the actions required to implement these works.

Actions		Anticipated order of cost
PRE-CONSTRUCTION ACTIVITIES		
1	Seek permits and approvals from the relevant authorities, such as Parks Victoria to undertake the path works.	\$2,500
2	Design and document the works.	\$20,000
CONSTRUCTION ACTIVITIES		
8	Construct path and drainage structures.	\$60,000
9	Construct signage and seating.	\$25,000
		\$107,500

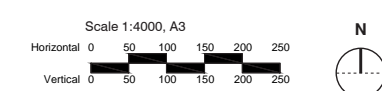
Route 3 could be constructed in the following stages:

- > Proposed path upgrade works.
- > Proposed seating areas.
- > Proposed directional signage



Legend

- Proposed RiverConnect path
- Proposed on-road bicycle lanes
- Existing on road path
- Existing off road path
- Other proposed shared path
- Proposed recreational path
- Proposed shared path
- Proposed shared path, adjacent to existing road
- Proposed shared path, adjacent to existing track
- Proposed boardwalk structure
- Proposed wayfinding plinth at key entries
- Proposed directional signage at intersections
- Proposed trail marker along route for reassurance
- Potential interpretive signage location
- Proposed rest stop location
- Private property
- Council owned land





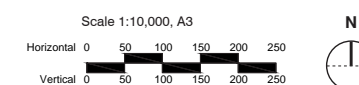
Route 4 Mooroopna to Australian Botanic Gardens

The adjoining plan illustrates the proposed works associated with preferred route 4 and the table below details the actions required to implement these works.

Action		Anticipated order of cost
PRE-CONSTRUCTION ACTIVITIES		
1	Seek permits and approvals from the relevant authorities, such as Parks Victoria, VicTrack and the CMA to undertake the path works.	\$5,000
2	Undertake feature and level survey for route corridor.	\$15,000
3	Complete Complex Cultural Heritage Master Plan for all works proposed through undisturbed areas.	\$10,000
4	Undertake detailed flora and fauna investigation.	\$5,000
5	Undertake geotechnical investigations to enable pavement and structure design.	\$5,000
6	Design and document the works.	\$25,000
7	Obtain planning permit for works across Public Use Zone	\$5,000
CONSTRUCTION ACTIVITIES		
8	Construct path.	\$170,000
9	Construct signage and seating.	\$25,000
		\$265,000

Route 4 could be constructed in the following stages:

- > Proposed shared path adjacent to Watts Road.
- > Proposed shared path from Watts Road to the Australian Botanic Gardens.



Legend





Route 5 Australian Botanic Gardens across the Broken River

The adjoining plan illustrates the proposed works associated with preferred route 5 and the table below details the actions required to implement these works.

Action		Anticipated order of cost
PRE-CONSTRUCTION ACTIVITIES		
1	Seek permits and approvals from the relevant authorities, such as Parks Victoria and the CMA to undertake the path and Broken River pedestrian bridge works.	\$5,000
2	Undertake feature and level survey for route corridor.	\$7,000
4	Undertake detailed flora and fauna investigation.	\$7,500
5	Undertake geotechnical investigations to enable pavement and structure design.	\$10,000
6	Design and document the works.	\$30,000
7	Obtain planning permit.	\$5,000
CONSTRUCTION ACTIVITIES		
8	Construct path and pedestrian bridge.	\$800,000
9	Construct signage and seating.	\$15,000
		\$879,500



Legend



Priorities and Quick Wins

Priorities

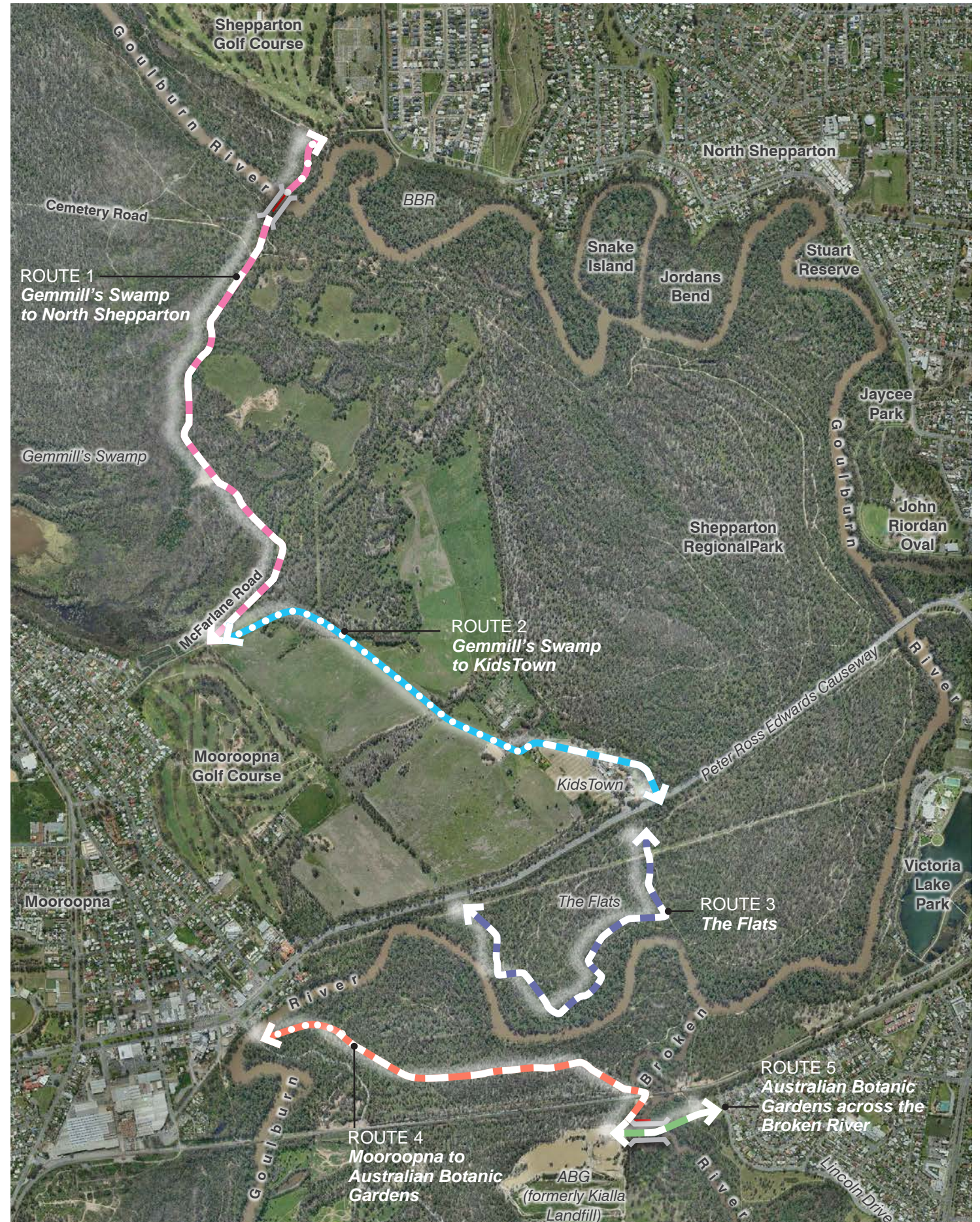
The following order of priority for implementation has been proposed based on the results of the initial stakeholder and Focus Group consultation:

- 1 Route 2 Gemmill's Swamp to Kidstown
- 2 Route 1 Gemmill's Swamp to North Shepparton
- 3 Route 5 Australian Botanic Gardens across the Broken River
- 4 Route 4 Mooroopna to Australian Botanic Gardens
- 5 Route 3 The Flats

Quick Wins

The following potential minor works are relatively cost effective and simple to implement:

- > Route 4 - Ensure an off-road shared use path is incorporated into the design and construction of the Watts Road bridge upgrade.
- > Route 2 - line marking of bicycle lanes along McFarlane Road
- > Route 2 - Upgrade the existing walking track behind the Gemmill's Swamp bioremediation wetland to a 2.5 m wide recreational path
- > Route 3 - install seating areas



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- DG Consulting (Aus) Pty Ltd, 2011, *RiverConnect Strategic Plan*
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