

# 6. Pedestrian and Cycling



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# 6. Pedestrian and Cycling

## 6.1 Description of Existing Environment

**TOR Requirements:**
Describe the existing and planned infrastructure for pedestrian and cycle movements and facilities within the environs of the Project.

The decision to include pedestrian and bicycle facilities within the physical works of the GUP, in particular the duplicated Gateway Bridge, has not been made at this stage of the EIS. The GUP Business Case currently being developed allows for the potential inclusion of pedestrian and bicycle facilities on the Gateway Bridge. However, the final decision regarding the inclusion of any facilities within the GUP will be made as a part of the approval process of the GUP Business Case.

Existing bicycle facilities in the vicinity of the Gateway Motorway corridor are shown in Figure 6.1a to 6.1d. The facilities shown on these figures are either:

- On road bicycle facilities; or
- Off road facilities, being either:
  - Shared pedestrian and bicycle facilities; or
  - Bicycle only facilities, as defined by the Australian Road Rules.

Pedestrian paths, either formed or unformed, generally exist within all road corridors surrounding the Gateway Motorway. No pedestrian or bicycle facilities exist within the corridor of the Gateway Motorway, including the existing Gateway Bridge.

Pedestrians and cyclists are currently prohibited from entering the Gateway Motorway reserve.

### *6.1.1 Existing Corridors Crossing the Gateway Motorway*

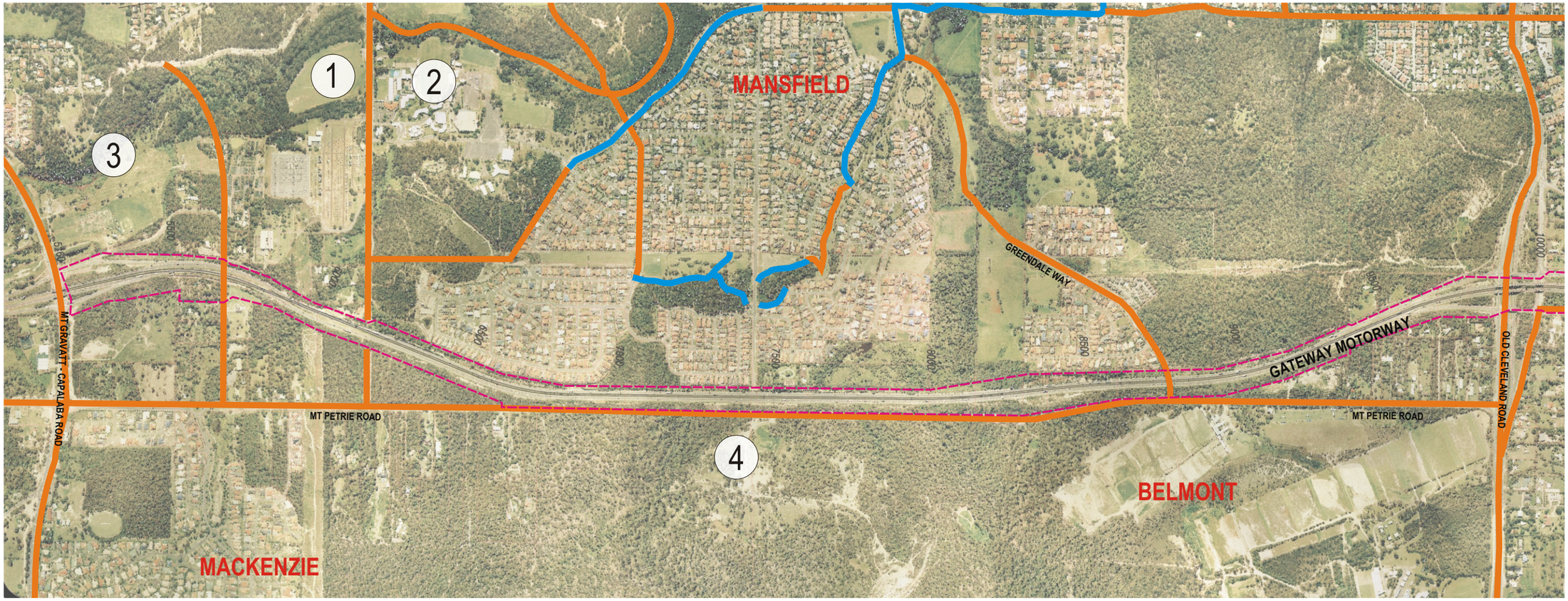
Pedestrian corridors that cross the proposed corridor of the GUP include:

- Mt Gravatt – Capalaba Road CH5160;
- Greendale Way CH8775;
- Old Cleveland Road – Service Roads CH9900 and CH10000;
- Meadowlands Road CH11100;
- Ambara Street underpass CH11500;
- Wynnum Road CH13450;
- Ingham Court CH14900;
- Lytton Road CH15760;
- Southern bank of Brisbane River CH16850;
- Curtin Avenue CH18000;
- Lavarack Avenue CH18600;
- Kingsford Smith Drive CH18900; and
- Kedron Brook bikeway CH23260.

Designated bicycle corridors that cross the proposed GUP corridor include:

- Ambara Street underpass CH11500 – shared off road pathway;
- Wynnum Road CH13450 – on road bicycle lanes in both directions;
- Southern bank of Brisbane River CH16850 – shared off road pathway terminating just to the west of the existing bridge; and
- Kedron Brook bikeway CH23260 – shared off road pathway.

# Gateway Upgrade Project




KEY

- Existing Bikeway Network
- Planned BCC Bikeway Network

1. Yandina Picnic Ground
2. Christian Outreach College
3. Bulimba Creek
4. Mt Petrie Road

Source: BCC 2004

Queensland Government Department of Main Roads

Australian Government Department of Transport and Regional Services

Connell Wagner

0 250 500m

SCALE

**FIGURE 6.1a**
**Bikeway Network**
Mt Gravatt-Capalaba Road to Old Cleveland Road

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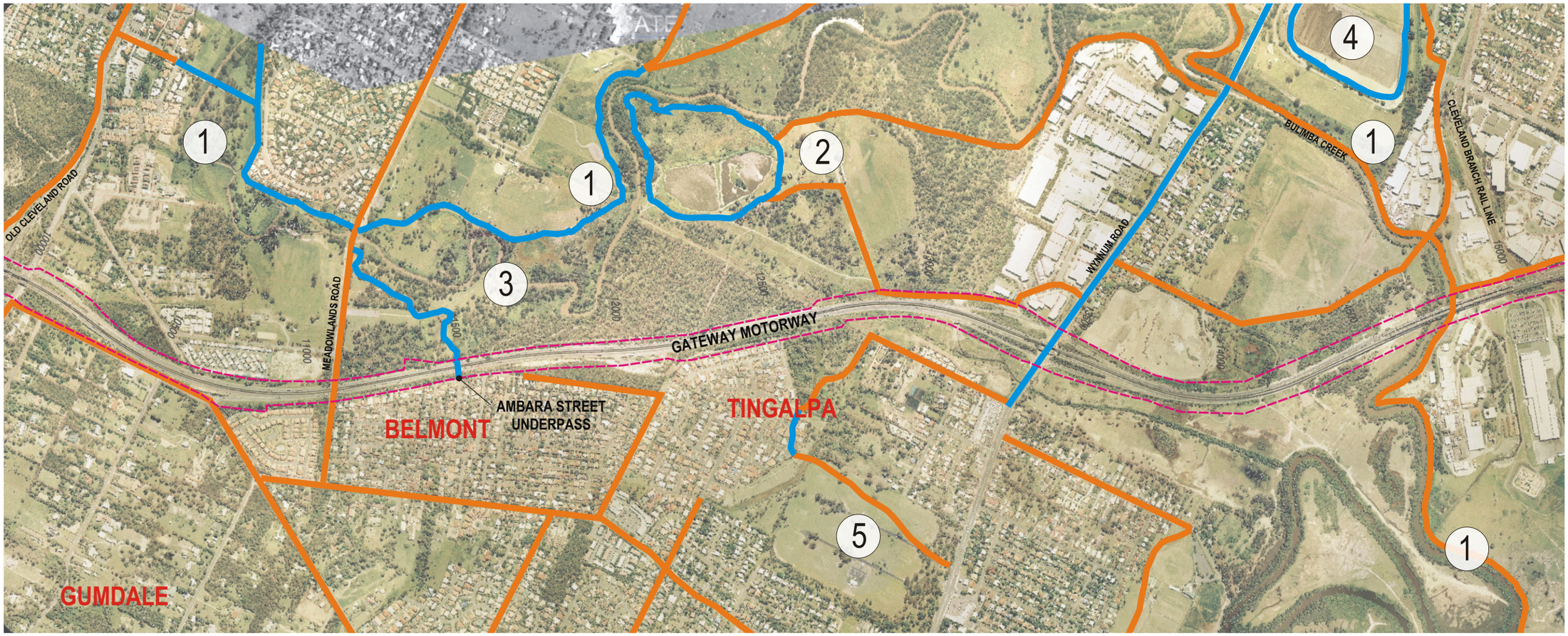
# Gateway Upgrade Project




KEY

- Existing Bikeway Network
- Planned BCC Bikeway Network

1. Bulimba Creek
2. Minnippi Parklands
3. Meadowlands Picnic Ground
4. Murarrie Recreational Ground
5. Kianawah Park

Source: BCC 2004

0 250 500m

SCALE

Queensland Government Department of Main Roads

Australian Government Department of Transport and Regional Services

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**FIGURE 6.1b**
**Bikeway Network**
Old Cleveland Road to Cleveland Branch Rail Line

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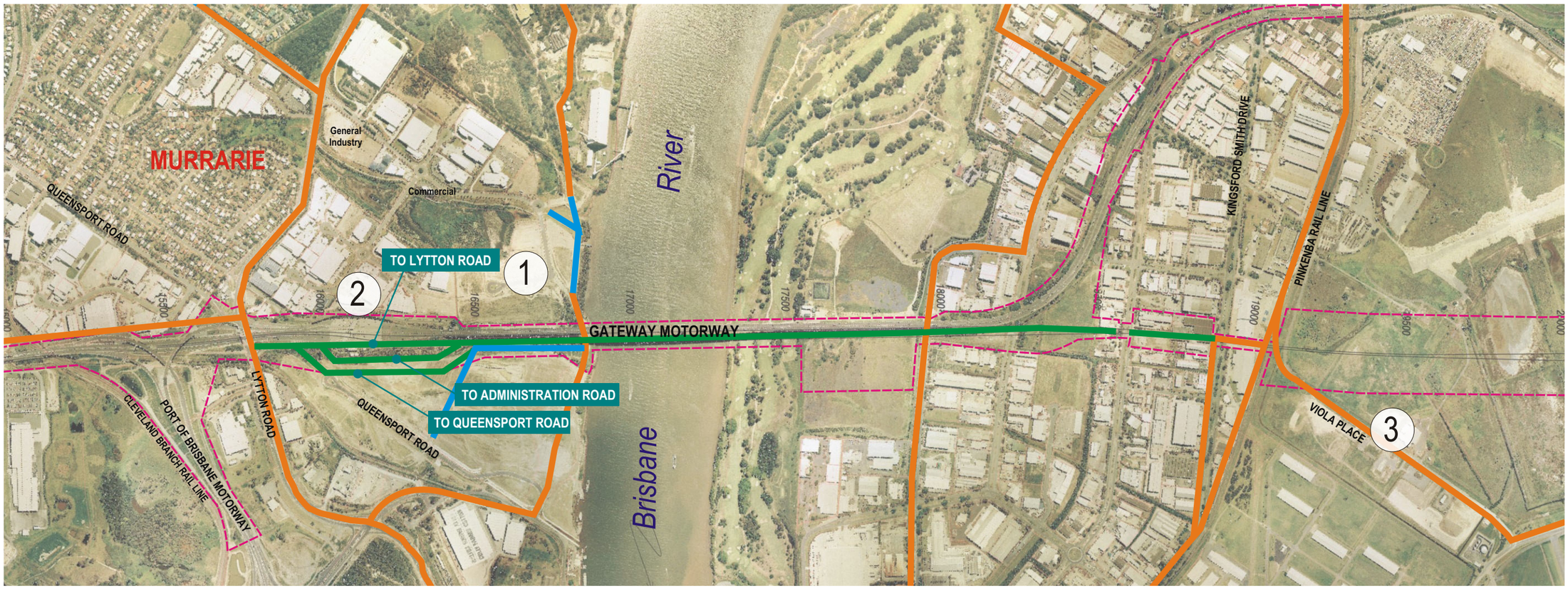
# Gateway Upgrade Project




KEY

- Existing Bikeway Network
- Planned BCC Bikeway Network
- Possible GUP Bikeways
- (1) Metroplex Development
- (2) Administration Road
- (3) Viola Place

Source: BCC 2004

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Queensland Government Department of Main Roads

Australian Government Department of Transport and Regional Services

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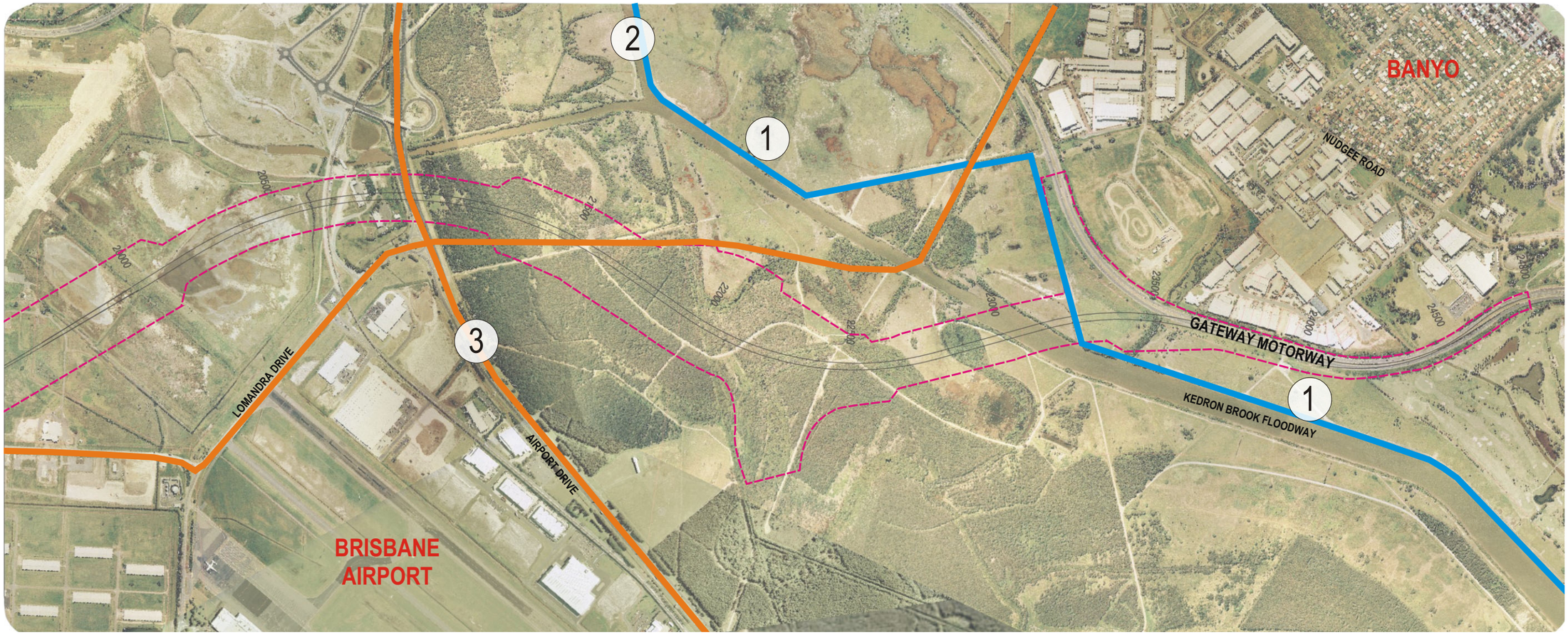
0 250 500m

SCALE

**FIGURE 6.1c**
**Bikeway Network**
Cleveland Branch Rail Line to Pinkenba Rail Line

# Gateway Upgrade Project




KEY

- Existing Bikeway Network
- Planned BCC Bikeway Network

1. Kedron Brook Bikeway
2. Shultz Canal
3. Airport Drive

Source: BCC 2004

Queensland Government Department of Main Roads

Australian Government Department of Transport and Regional Services

Connell Wagner

0 250 500m

SCALE

**FIGURE 6.1d**
**Bikeway Network**
Airport Drive to Nudgee Road

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### *6.1.2 Existing Corridors Adjacent to the Gateway Motorway*

**Pedestrian Corridors**

Pedestrian paths, either formed or unformed, generally exist within all road corridors adjacent to the Motorway. The following formed pedestrian facilities have been identified during site visits:

- A sealed footpath on the northern side of Mt Gravatt-Capalaba Road under the Motorway, including signalised crossings across the northbound on ramp and the southbound off ramp;
- A sealed footpath on both sides of Greendale Way passing under the Motorway;
- A concrete footpath in Meadowland Road between Write Street and Belmont Road;
- A shared pedestrian and bicycle underpass providing access from Ambara Street to the existing bicycle facilities in the Bulimba Creek area;
- A concrete footpath on the northern side of Wynnum Road passing under the Motorway including signalised crossings across the northbound on ramp and the southbound off ramp;
- Concrete footpaths on the southern and northern side of Lytton Road where it passes above the Motorway. Formal pedestrian crossing locations across Lytton Road only exist at the signalised intersection of Lytton Road and Queensport Road. Pedestrian crossing facilities are not located at the existing signalised intersection of Lytton Road and the southbound off-ramp from the Motorway;
- Sealed footpaths partially along Lavarack Avenue and Kingsford Smith Drive; and
- A shared pedestrian pathway along the northern edge of Kedron Brook Floodway connecting Toombul and Nudgee Beach.

**Bicycle Corridors**

The following roadways and open space areas adjacent to the Motorway include formal bicycle facilities of varying form (Figures 6.1a to 6.1d):

***Gateway South Area***

- A network of off road pathways and on road bicycle routes (without formal markings) along the corridor of Bulimba Creek to the west of the Motorway, between Mt Gravatt-Capalaba Road and Minnippi Parklands;
- Bicycle facilities in Minnippi Parklands;
- Bicycle facilities in Murarrie Recreation Ground;
- Along Wynnum Road between Junction Road and Belmont Road;
- Along Lytton Road between Creek Road and Queensport Road;
- Along Creek Road between Stanley Road and Wynnum Road, and between Condamine Street and Miller Street;
- An off road pathway linking Metroplex Avenue to the southern bank of the Brisbane River, terminating just to the west of the existing bridge; and
- An off road pathway to the east of the existing Gateway Bridge linking to Queensport Road, north of Lytton Road. This pathway terminates before the southern bank of the Brisbane River.

**Gateway North Area**

- An off road shared pathway along Schulz Canal and Kedron Brook Floodway between Toombul and Nudgee Beach;
- On road bicycle lanes along Sandgate Road; and
- An off road shared pathway along Nudgee Road between Approach Road and O'Quinn Street.

## 6.2 Potential Impacts and Mitigation Measures

**TOR Requirements:**
This section should discuss the potential impacts of the Project on existing and planned infrastructure for pedestrian and cycle movements and facilities affected by the proposal. Options for pedestrian and cycle use of the river crossing, along and across the corridor should be investigated and reported.

### *6.2.1 Strategic Planning*

Overall strategic planning for cycling provisions within the Greater Brisbane Area is established within the following strategies/plans:

- Queensland Transport's *Cycle South East*;
  (Refer: http://www.transport.qld.gov.au/qt/cystheas.nsf/index/cycle); and
- BCC's *Transport Plan* and the supporting *Brisbane Bicycle Plan* (Refer:
  http://www.brisbane.qld.gov.au/BCC:STANDARD:797933670:pp=PC_66,pc=PC_73)

A major action from *Cycle South East* is the development of an Integrated Regional Cycle Network Plan for South East Queensland (IRCNP). The IRCNP has identified the Gateway Bridge and a corridor to the north as key elements of the regional network that should be investigated, with Queensland Transport (QT) and MR being the lead government agencies for implementation.

The *Brisbane Bicycle Plan* identifies the Gateway Bridge as a strategic connection in the development of the *Moreton Bay Cycleway.* When complete the Moreton Bay Cycleway has the potential to be a continuous 150km bikeway stretching from Bribie Island to Redland Bay. It would be the longest cycle route on the East Coast of Australia.

This strategic recreational and tourism route seeks to provide cycle and pedestrian access from Bribie Island to Redland Bay, using the existing Kedron Brook link, a crossing of the Brisbane River in the vicinity of the Gateway Bridge and existing bikeways in Brisbane's south east. The duplicate Gateway Bridge and connecting elements to the overall planned bicycle network represent major elements of the proposed route. The Moreton Bay Cycleway is being jointly developed by BCC, Redcliffe City Council, Caboolture Shire Council and Redland Shire Council as network opportunity arises.

### *6.2.2 Planned Networks*

Planned bicycle and pedestrian networks within the immediate environs of the Gateway Motorway are shown in Figure 6.1a to 6.1d. The facilities shown on these figures are either:

- On road bicycle facilities;
- Off road facilities, either:
  - Shared pedestrian and bicycle facilities; or
  - Bicycle only facilities, as defined by the Australian Road Rules.

Routes for the planned network were sourced from BCC as part of the Brisbane Bicycle Plan and have been developed within the overall context of the Integrated Regional Cycle Network Plan (IRCNP) and the Moreton Bay Cycleway.

Proposed major routes that are potentially influenced by the GUP works include:

- Completion of the network along Bulimba Creek between Mt Gravatt-Capalaba Road and the Murarrie rail station;
- North-south facilities along Mt Petrie Road between Mt Gravatt-Capalaba Road and Old Cleveland Road;
- North-south facilities along Belmont Road between Old Cleveland Road and Wynnum Road;
- Connection of the Ambara Street underpass to corridor along Bulimba Creek;
- Completion of an east-west pathway along Bulimba Creek passing under the Motorway at CH14750;
- Connection of Lytton Road to the southern bank of the Brisbane River;
- A crossing of the Brisbane River in the vicinity of the Gateway Bridge;
- East-west facilities along Curtin Avenue;
- East-west facilities along Kingsford Smith Drive and the Pinkenba Rail Line;
- A north-south connection from the Pinkenba Rail Line, through the old Airport site to Airport Drive;
- An east-west connection along Airport Drive; and
- A north-south connection from Airport Drive across Kedron Brook Floodway to link with the existing Kedron Brook bikeway.

Other local minor network enhancements are proposed crossing the Motorway corridor (at existing crossing locations) or to improve local network connectivity. These routes are also shown in Figures 6.1a to 6.1d.

### *6.2.3 Impacts on Existing Networks*

The GUP works have minimal impact on existing networks mainly due to the lack of existing facilities within the existing corridor. Existing network components potentially affected by the GUP are limited to:

- The underpass at Ambara Street, Belmont CH11500;
- The on road bicycle lanes and adjacent pedestrian footpath at Wynnum Road CH13450;
- An off road pathway linking Metroplex Avenue to the southern bank of the Brisbane River, terminating just to the west of the existing Gateway Bridge;
- The off road pathway to the east of the existing Gateway Bridge, starting to the south of the southern river bank linking to Queensport Road, north of Lytton Road; and
- The off road shared pathway along Schulz Canal and Kedron Brook Floodway between Toombul and Nudgee Beach.

At all of the above locations, the GUP passes over the existing facilities. Some impact on the network may occur during construction of the GUP works. Temporary closures or deviations may be required during some construction activities.

**Proposed Mitigation Strategies**

All existing bicycle and pedestrian networks would be maintained as part of the GUP works. It may be necessary to extend the existing Ambara Street underpass to allow for the Motorway widening. This will be determined during further design stages.

Network connectivity will be maintained during construction works. Best practice traffic management techniques will be used during construction to maintain connectivity and to ensure safety for all users.

### *6.2.4 Impacts on Planned Networks*

Impacts of the GUP on planned networks are limited to:

- The proposed BCC route between Kingsford Smith Drive and the Pinkenba Rail Line (refer to Figure 6.1c); and
- The proposed BCC route along the GUP northern deviation between Airport Drive and the existing Kedron Brook bikeway (refer to Figure 6.1d).

**Proposed Mitigation Strategies**

The GUP northern deviation between Kingsford Smith Drive and the Pinkenba Rail Line passes over the existing G James Glass and Aluminium property on an elevated bridge structure, between the two existing buildings. It is not possible to fit the additional width of a pedestrian and bicycle pathway between the existing buildings. The network route for this link will be required to be developed along the line of Kingsford Smith Drive and the Pinkenba Rail Line as currently proposed by BCC (refer to Figure 6.1c).

The route nominated between Airport Drive and Kedron Brook bikeway does not appear to afford the best network solution within this area when considered in detail. A crossing of Airport Drive at the end of Lomandra Drive, refer to Figure 6.1d, appears problematic from a walking and cycling perspective.

Further, an additional crossing of Kedron Brook Floodway in the vicinity of Cannery Creek is considered costly and has potential hydraulic impacts on Kedron Brook Floodway.

An alternative future network link is proposed using the following route:

- Use Lomandra Drive as proposed by BCC;
- At the Brisbane Airport rail line crossing of Lomandra Drive, follow the route of the supporting piers of the elevated rail line to the recently completed overbridge across Airport Drive;
- Use the newly constructed pathway on the eastern side of the overbridge to cross Airport Drive;
- Follow the alignment of the eastbound off ramp from Airport Drive to this bridge with a pathway located to the north of the ramp to the point where the Brisbane Airport Rail Line crosses Airport Drive;
- At the Brisbane Airport Rail Line, follow the route of the supporting piers to where it intersects the existing Gateway Motorway corridor where the installation of a pedestrian and bicycle bridge mirroring the spans of the existing Gateway Motorway bridges will minimise hydraulic impacts on Schultz Canal/Kedron Brook Floodway; and
- Provide direct connectivity to the existing pathway to Toombul to the west and Nudgee Beach to the east.

Whilst it is believed that this route would be more affordable and has significantly less impacts than the current proposed route, it would need the support of landholders and other key agencies.

### *6.2.5 Network Opportunities - Gateway Bridge Crossing*

The GUP presents a significant opportunity to provide the cross river pedestrian and bicycle connection identified in the IRCNP and the Moreton Bay Cycleway.

As a part of the EIS, a Pedestrian and Cycle Working Group (PCWG) involving QT, BCC, Bicycle Queensland, sporting cyclists, disability/accessibility groups and pedestrian organisations was convened by GUP. The PCWG's investigations included the need and practicality of providing a potential solution for any pedestrian and bicycle facilities on the duplicated Gateway Bridge.

**User Needs**

The PCWG identified 16 different potential user groups for cyclists and pedestrians who could use a facility on the duplicated Gateway Bridge. The user groups identified included recreational, sporting and disability groups for both pedestrian and bicycle users.

The PCWG concluded that whilst the actual number of persons who would use such a facility may be high on special occasions (eg fun runs) the number of persons using the bridge on a daily basis for walking and cycling has the potential to grow as the tourist potential of the facility is realised and as the ATC precinct develops.

**Practicality**

The grade and length of the Gateway Bridge represent challenges to both potential pedestrians and cyclists. The proposed bridge has grades of 5.3%, for >500m on south side and >930m on north side. Fatigue of pedestrians and cyclists ascending the grades, and potential speeds of cycles/wheelchairs descending the northern approach and the southern approach are key issues that need to be managed.

Whilst the preferred option, discussed below, complies with *Austroads Part 14 – Bicycles*, for width requirements for a shared pathway with frequent and concurrent high speed commuting (30+ kph), it does not comply with the suggested maximum length of uphill grade (ie >100m). Austroads Part 14 does not give guidance on the maximum length of downhill grades >5%, but allows their use if unavoidable.

Given the complexity of construction and length of grade of the duplicated bridge, it is not possible to comply with the landing requirements of *Australian Standard AS1428* (Mobility and Access Standard) for ramps, assuming that the bridge is classified as a ramp under the Standard. AS1428 does not provide guidance on the overall length of grade of a ramp. This Standard is primarily applied for access to and from buildings. However, under the *Disability Discrimination Act (DDA),* AS1428 could be regarded as applicable to infrastructure where pedestrians can access and travel upon.

As a result of the length and grading issues of the duplicated bridge, consultation during the EIS also included discussions with the Human Rights and Equal Opportunity Commission (HREOC) and the Anti-Discrimination Council, Queensland (ADCQ) regarding DDA compliance. These discussions concluded that whilst it is not possible to eliminate any potential claims of discrimination from a member of the community, the maritime and aviation constraints imposed on the duplicated bridge and the complexity of construction, the proposed solution would be

considered as not actively discriminating against any members of the community. This conclusion was on the basis of the level of stakeholder involvement in the development of the preferred solution and the proviso that all possible means of improving accessibility, including appropriate signage to users, are investigated during further project stages.

During the EIS, a field trial was undertaken early on the morning of 1 August 2004 to further assess the practicality of pedestrians and cyclists using such a facility. The existing Gateway Bridge was used as the benchmark as it represented an exact replica of the length and grade of any potential pedestrian and cyclist facility. The trial was undertaken by a mixed sample of able-bodied pedestrians and cyclists including men, women and children. The existing Gateway Bridge was closed during the trial and participants were escorted by motorcycle police.

The trial used the northern approach to the existing bridge with access from the Cullen Avenue on ramp. The northern approach of the bridge presents the maximum length of grade to the bridge crest due to the surrounding terrain on the northern bank of the Brisbane River being lower than the southern bank.

All cyclists and pedestrians were able to comfortably reach the crest of the bridge within the time allocated for the trial. All cyclists noted that uphill cycling was made easier as a result of the constant grade and the straightness of the climb.

Downhill speeds obtained by the cyclists were not considered excessive and were able to be controlled by the application of mild braking.

**Preferred Solution**

Five workshops were held with the PCWG between February and July 2004. Following consideration of user needs, practicality and affordability of various alternative solutions, a shared off road pathway, with a clear width of 4.25m between handrails, was agreed to be the most cost efficient means to provide cycle and pedestrian facilities on the bridge. Refer to the concept design drawings in Volume 3.

The PCWG agreed that the pathway should be located on the eastern side of the new bridge at deck level. The PCWG requested rest spots with seats, drinking fountains and other along-trip facilities be provided. Further consultation and design will be required to determine the exact position of these facilities if the proposed pathway is included in the GUP.

**Network Connectivity**

Connectivity to a pathway on the new Gateway Bridge could be provided at both the north and south end of the bridge to the proposed BCC network. The EIS preferred treatment presents potential network connections. Further consultation would be required with BCC during future project stages to confirm actual network connections if a pathway is included on the duplicated bridge.

At the southern end, the pathway could be extended from the bridge to an at-grade intersection with Lytton Road, immediately to the east of the southbound off ramp. A pathway connection, from the north-south pathway at the southern end of the bridge, to Administration Road could be provided to connect to a possible carparking facility under the southern abutment of the bridges. This connection would allow for pedestrian and cycle users of the bridge to access the river crossing either by bicycle, via Administration Road, by bus (refer below) or by private vehicle.

An alternative to the currently planned link between Creek Road and the bridge is suggested for the connection from Creek Road to Queensport Road. It is suggested to use the existing pathway located to the east of the existing Gateway Bridge to connect to Queensport Road in lieu of the route shown in the BCC plan. A connection to the existing pathway from the new bridge could then provide network connectivity to the bridge from Creek Road via Metroplex Avenue.

At the northern end of the bridge, the pathway could be extended to connect with Lavarack Avenue and extend to Kingsford Smith Drive. An at-grade intersection and crossing of Lavarack Avenue and an at-grade intersection with Kingsford Smith Drive could be provided.

Numerous options exist for connections to the north from Kingsford Smith Drive. Network development north of Kingsford Smith Drive could be undertaken following resolution of the development layout of the old airport site by BCC.

Pathway "runouts" at each end of the bridge can be designed to slow bicycles prior to any intersections with roadways. Design of the end treatments and intersections would be to current standards with no special treatments required.

Existing kerbside and median carparking facilities currently exist in Lavarack Avenue and Kingsford Smith Drive that users of any pathway could use to park if they access the bridge by private vehicle.

**Integration with Public Transport**

Integration with the proposed Gateway Bridge pathway and other forms of public transport could be provided by:

- Re-routing the existing Great Circle 598/599 bus route along Administration Road to a proposed bus stop under the southern abutment. The 598/599 route already carries bike racks on each bus under the current BCC "Bikes on Buses" policy. This route currently connects to the Murarrie rail station; and

- Existing Brisbane Transport bus routes 302 and 303 travel along Kingsford Smith Drive with bus stops located near the connection of the proposed pathway to Kingsford Smith Drive.

## 6.3 Conclusion

The decision to include pedestrian and bicycle facilities within the physical works of the GUP, in particular the duplicated Gateway Bridge, has not been made at this stage of the EIS. The GUP Business Case currently being developed allows for the potential inclusion of pedestrian and bicycle facilities within GUP. However, the final decision regarding the inclusion of any facilities within the GUP will be made as a part of the approval process of the GUP Business Case.

The GUP presents a significant opportunity to deliver a major component of planned pedestrian and bicycle networks in the form of a river crossing in the area of the Gateway Bridge. A pedestrian and bicycle crossing on the new Gateway Bridge complies with the objectives of Cycle South East, the IRCNP and the Moreton Bay Cycleway. The proposed solution of an off road shared pathway has been developed following extensive consultation with government agencies, pedestrian, bicycle and disability groups. The facilities proposed in the GUP are able to meet the stated needs and objectives of the stakeholders and government agencies.

Network connectivity with the future BCC bicycle network needs to be further planned. Nevertheless the proposed facilities are able to be integrated with the existing bicycle network and existing public transport operations on the south and north side of the Brisbane River, thereby meeting the overall objectives of the Integrated Regional Transport Plan (IRTP) for integrated transport solutions.

Negative impacts by GUP on existing pedestrian and bicycle networks are minimal and limited to impacts during construction which can be mitigated by the use of sound traffic management principles.

If the pedestrian and bicycle facilities are approved during the approval process of the Business Case the benefits to the community are as follows:

- Provision of a critical network link in the IRCNP and *Moreton Bay Cycleway*;
- Potentially encourage more walking and cycling trips rather than private vehicle trips in accordance with the objectives of the IRTP for SEQ;
- Represent a major deliverable for the *Cycle South East* strategy;
- Allow direct pedestrian and bicycle access to both sides of the river in the area of the Gateway Bridge; and
- Has the potential to become a tourism icon for walking and cycling.