



# Toowong to West End Green Bridge

Preliminary  
Business Case  
Key Findings

November 2021



*Dedicated to a better Brisbane*



## A message from the Lord Mayor



We're building a lifestyle travel network across Brisbane, making it even easier to avoid traffic and get home quicker.

Our plan for new green bridges will improve access across the Brisbane River, connecting our economic, education, lifestyle and leisure precincts.

As part of this plan, we can now reveal designs and key findings of the preliminary business case for the Toowong to West End Green Bridge.

This bridge will connect more residents to parks, cafes, businesses and public transport, and make it even easier to walk and ride around our city. It will also create new public spaces at either end of the bridge, including a new riverside park and plaza in Toowong.

The bridge concept designs have been developed following consultation, with more than 4,000 responses to alignment proposals earlier this year, and technical assessments.

Following the announcement of the Brisbane 2032 Olympic and Paralympic Games, city-shaping projects like our green bridges will leave a lasting legacy for generations to come.

Together, they will create a vital green transport network between the vibrant communities of West End, Toowong and St Lucia as well as The University of Queensland.

The preliminary business case for the Toowong to West End Green Bridge confirms it will reduce traffic congestion and improve connections between work, education and recreation precincts.

With new green bridges adding to our world-class public and active transport network, we're building an even more liveable Brisbane for the future.

A handwritten signature in black ink, appearing to read 'Adrian Schrinner'.

**Adrian Schrinner**  
Lord Mayor



# Table of contents

Part of the plan	4
About the Toowong to West End Green Bridge	6
The need for the Toowong to West End Green Bridge	8
Options development	10
About the concept design	12
Delivering city-wide benefits	16
Project timings	20
Next steps	21



*Artist impression of the viewing and rest area near the bridge*



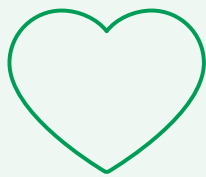


The **Toowong to West End Green Bridge** supports a clean, green and sustainable city and healthy lifestyle by boosting inner-city movement and cross-river access, and enhancing inner-city amenity and recreation opportunities.

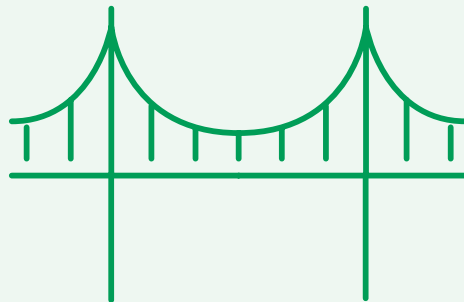
**Supports** growing  
**e-mobility**  
ridership



More **lifestyle** and  
**leisure** opportunities  
for local residents

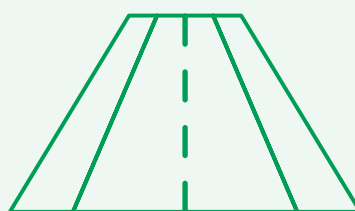
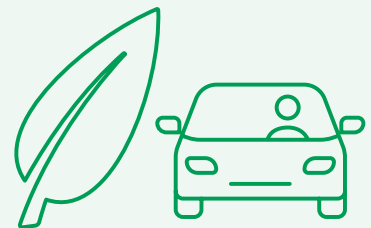


Supports a **clean, green**  
and **sustainable** city and  
healthy lifestyle



**Boosts** inner  
city **movement**  
and **cross-river**  
**access**

**Reduces** reliance  
on private vehicle  
trips and decreases  
vehicle emissions



**Reduces** congestion  
on the road and public  
transport network



Artist impression of the Toowong to West End and St Lucia to West End Green Bridges

## A message from the Civic Cabinet Chair for Transport



The Schrinner Council is getting on with the job of delivering new green bridges across Brisbane, making it easier to leave the car at home and walk or ride around our city.

Building and investing in Brisbane's green transport infrastructure – bridges, footpaths, bike paths and e-mobility – is creating a world-class transport network that will take traffic off our roads and give people more choice when it comes to travel.

The Toowong to West End Green Bridge will make it easier to walk or ride between the growing West End community and the Toowong Centre, rail and ferry services, as well as connecting to riverside parks.

The Schrinner Council recognises the strong level of interest in the new green bridges and is committed to working with all levels of government, as well as residents, to deliver this project.

Previous consultation revealed residents want to see the Toowong to West End Green Bridge built as a priority. In response to this feedback, we will deliver the Toowong to West End Green Bridge first.

Works could commence on the Toowong to West End Green Bridge as soon as 2024, subject to funding and approvals, with each bridge expected to take around two years to complete.

I'm proud to be part of the team that is working to deliver these landmark projects for Brisbane.

I encourage you to have your say to help shape these exciting projects and I look forward to keeping you updated as planning progresses to get these green bridges moving.

Cr Ryan Murphy  
Civic Cabinet Chair for Transport



**Faster and more convenient connections between work, study and lifestyle precincts**



**Upgraded riverside parks**



**River loop walking and riding experiences**



**Access to high-frequency bus and rail services**



# Part of the plan

Brisbane City Council is delivering more transport options and responding to our growing population, making it easier for residents and visitors to travel around our city now and into the future.

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Building and investing in Brisbane's bridges, footpaths, bike paths and e-mobility network is creating world-class green transport infrastructure that will help residents navigate the city easily, and will leave a lasting legacy as we set our sights on the Brisbane 2032 Olympic and Paralympic Games.

Our new green bridges are a vital part of this plan, making it even easier for our residents and visitors to get around our city on foot, by bike or scooter, or by connecting with public transport.

Four new green bridges will link Kangaroo Point to the Brisbane CBD, Toowong to West End, St Lucia to West End, as well as a new crossing at Breakfast Creek. Council is also investigating locations for a fifth green bridge and will make more information available as planning progresses.

We have committed the city's largest ever investment in green transport with a \$294 million commitment over the next four years to progress the 10-year Green Bridges Program, including the delivery of the Kangaroo Point and Breakfast Creek Green Bridges by late 2023.

In total, \$550 million will be invested to build new green bridges. Additional funding will be sought from the Queensland and Australian governments.

The creation of new green bridges is a key initiative of Council's *Transport Plan for Brisbane – Implementation Plan 2018*. Key Initiative 2 of the plan includes the following:

- ▶ investigate the feasibility and preferred alignment for new cross-river pedestrian, cycling and public transport bridges
- ▶ incorporate new bridge crossings in the active and public transport networks
- ▶ work with the Australian and Queensland governments to develop the business case for investments in an expanded green bridge network.



Building green bridges also supports the implementation of *Brisbane's e-mobility strategy 2021*, which focuses on opportunities to encourage greater use of e-bikes, e-scooters and other emerging, sustainable e-mobility travel options.





# About the Toowong to West End Green Bridge

The Toowong to West End Green Bridge will make it easier to walk and ride between the growing West End community and the Toowong Centre, rail and ferry services.

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The new green bridge will:

- ▶ offer Toowong residents direct access to markets, restaurants, art and music venues and green space in West End
- ▶ link West End residents to shopping, business and health facilities in Toowong
- ▶ enable commuters to interchange at Toowong railway station and Regatta ferry terminal, and access high-frequency bus services in West End and South Brisbane
- ▶ provide residents in the southern end of the West End peninsula with improved access to the rail network.

Together with the proposed St Lucia to West End Green Bridge, it will:

- ▶ connect to the city's existing green transport networks, enhancing the river loop walking and riding experiences
- ▶ create a more direct route between the Bicentennial Bikeway and the University of Queensland (UQ).



*Artist impression of the Toowong to West End Green Bridge*



## Project background

Toowong and West End are two growing inner-city residential, commercial and lifestyle centres situated on opposite sides of the Brisbane River within a short distance of the Brisbane City Centre.

Despite the close geographic proximity to each other, sustainable transport options between Toowong and West End are generally limited and inconvenient.

The need to provide a high-quality walking and riding connection between Toowong and West End was first identified by Council in the *River's Edge Strategy (2013)* and has since been outlined in a number of other Council and Queensland Government plans and studies.

Following the announcement of the Green Bridges Program in March 2019, initial consultation and pre-feasibility investigations for the Toowong to West End Green Bridge were undertaken by Council in late 2019 as part of the Program's early planning phase.

Throughout 2020, Council completed further technical investigations and studies on potential alignments and landing locations for the Toowong to West End Green Bridge. This included traffic and transport modelling, environmental studies, site investigations and initial cost estimates.

Based on these studies, Council selected a shortlist of alignment options for the community to provide feedback on in late 2020 and early 2021. This helped to inform the selection of a preferred alignment, and the development of a concept design and preliminary business case.



# The need for the Toowong to West End Green Bridge

A green bridge linking Brisbane's Toowong and West End suburbs will provide a cross-river link to enhance connectivity via walking and riding, and improve accessibility to jobs, services and lifestyle opportunities located within two key inner-city centres.

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## A growing city

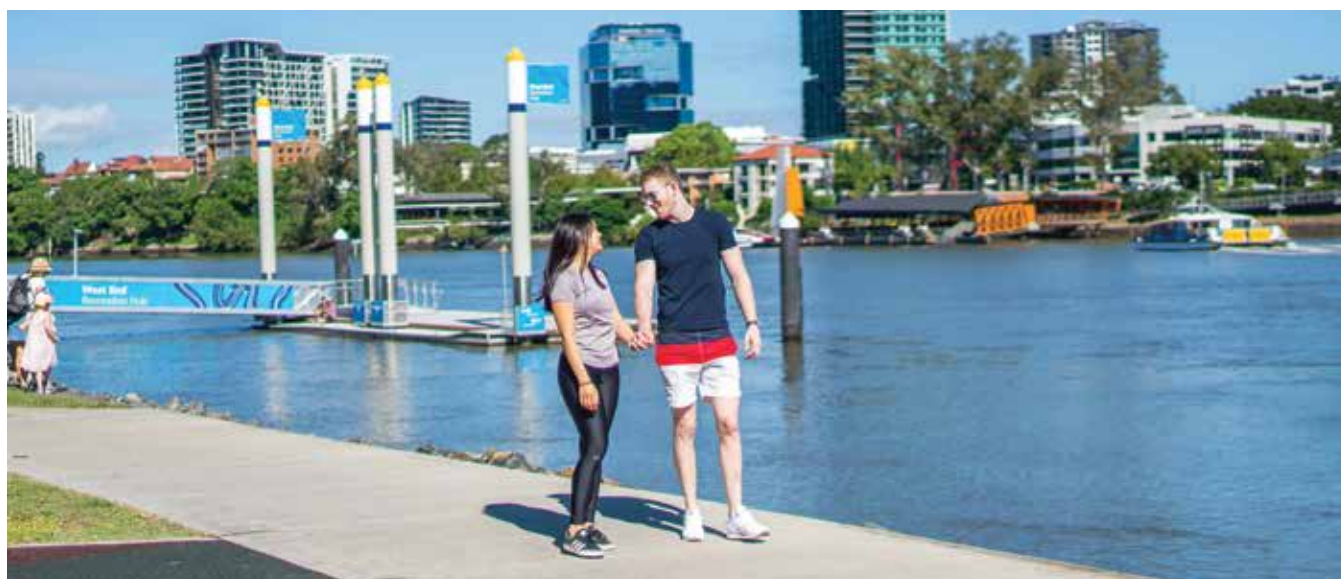
Brisbane currently has relatively low rates of active transport, driven by a range of issues including low densities and long distances, insufficient infrastructure and safety concerns.

Continued growth in private vehicle use will increase congestion, impact freight and commercial movements, increase the cost of conducting business and ultimately restrict economic activity.

Ongoing reliance on private vehicles as the main form of transport will also negatively impact the health and wellbeing of Brisbane residents, along with the environment.

As Brisbane continues to grow, green transport will play a significant role in allowing the population to commute effectively along congested transport routes, lessening the impact on roads and improving sustainable use of transport network infrastructure and associated services.

Limited scope exists to further develop and increase capacity of the road network into Brisbane's inner city. Without investment in alternate transport modes, there will be insufficient capacity to cater for increased demand resulting from population and employment growth, and the significant influx of tourists, athletes and officials expected as part of the Brisbane 2032 Olympic and Paralympic Games.







## Improving cross-river connectivity

Despite their close proximity, sustainable transport options between Toowong and West End are currently limited and inconvenient due to:

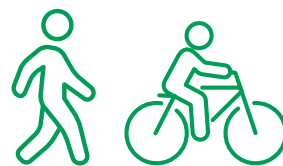
- ▶ the traditional radial nature of Brisbane's transport network focused towards the CBD, and the lack of connectivity between West End and suburbs to the west of the Brisbane River
- ▶ the barrier effect of the Brisbane River, which limits sustainable active and public transport options between West End and Toowong
- ▶ missing links in green transport infrastructure, which lead to increased usage of private vehicles, causing increased local and inner-city congestion on both sides of the river and unreliable travel times.

Providing green transport links into Brisbane's inner city from commuter catchments will be critical for driving population and economic growth in Brisbane, and to ensure the growing population has access to employment and essential services within 30 minutes of home.

Without action, the transport network and travel patterns will remain poorly integrated and sustainability improvements will be limited. The introduction of new green transport links will promote safe, affordable and efficient travel options for residents and visitors.



Provide access to employment and services **within 30 minutes** of home



**Improve sustainable travel options between Toowong and West End**



**Fix missing links in green transport infrastructure**

# Options development

The preliminary business case for the Toowong to West End Green Bridge has been prepared in line with the infrastructure assessment frameworks outlined by Infrastructure Australia and the Queensland Government.

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Council assessed alternative options for addressing the need for more sustainable cross-river travel options between Toowong and West End, including better use of, or upgrades to, existing infrastructure, policy reform initiatives and new infrastructure such as green bridges.

Options analysed included alternate forms of river crossings such as a general-purpose bridge, additional bus services, additional ferry services and an active/public transport bridge.

This analysis found:

- ▶ a general-purpose bridge would lead to increased private vehicle volumes and congestion in West End streets, which conflicts with the objective of prioritising active transport around activity centres and would reduce the liveability of neighbourhoods
- ▶ an upgrade of the bus network in itself would not address the issues as buses would be required to use existing congested river crossings
- ▶ establishment of an additional ferry terminal at West End would support only 500 cross-river trips per day, a volume significantly less than the forecast usage of a bridge, based on initial transport modelling.

In addition, the options analysis found that while a combined active/public transport bridge would attract significantly greater patronage, the operation of bus services through narrow streets would be difficult and further land resumptions would need to be made to accommodate bus services. This, and the cost of a larger bridge, would outweigh any further benefit.

Based on these outcomes, the preferred option was identified as a new cross-river green bridge for walkers and riders between Toowong and West End.

## Alignment options

During 2020, Council undertook a range of technical investigations and studies on potential alignments and landing locations for a green bridge.

This included traffic and transport modelling, environmental studies, site investigations and initial cost estimates. The findings of these investigations were outlined in the draft *West End Green Bridges alignment study (2020)*.

Based on these studies, Council released a shortlist of alignment options for the community to provide feedback on from November 2020 to March 2021. The shortlisted alignments were:

- ▶ **Option A** – 600 Coronation Drive, Toowong to Orleigh Park (near Forbes Street), West End
- ▶ **Option B** – Archer Street (mid-block), Toowong to Orleigh Park (near Drury Street), West End
- ▶ **Option C** – Archer Street (near Glen Road), Toowong to Orleigh Park (near Drury Street), West End.

Council reviewed and analysed all feedback received on the alignment options and prepared a consultation summary document and detailed consultation report, released on Council's website in May 2021.

Following initial technical investigations and feasibility assessments, and community consultation, **Option A connecting 600 Coronation Drive to Orleigh Park (near Forbes Street)** was identified as the preferred alignment for the Toowong to West End Green Bridge.



## Toowong to West End Green Bridge alignment options



### LEGEND

- |  |                         |                                 |
|--|-------------------------|---------------------------------|
| ➡️➡️➡️ Toowong to West End bridge alignment option | ➡️➡️➡️ Major cycle path | ➡️➡️➡️ High-frequency bus route |
| ➡️➡️➡️ Future pedestrian and cycle connection      | ➡️➡️➡️ Bus stop         | ➡️➡️➡️ Ferry route              |
| ➡️➡️➡️ Indicative landing zone                     | ➡️➡️➡️ Train line       |                                 |
| ➡️➡️➡️ Pedestrian overpass and arcade              |                         |                                 |

### Key benefits of the preferred alignment

- ✓ Provides good connectivity to the Toowong Centre, rail services and the Regatta ferry terminal
- ✓ Provides off-road access to riverside riding and walking paths in West End and Toowong
- ✓ Provides a new landscaped riverside park and landing plaza at Toowong
- ✓ Attracts strong patronage based on initial transport modelling
- ✓ Provides a comfortable and accessible bridge grade
- ✓ Has strong support from the community and key stakeholders.

### Bridge form options

To prepare a concept design and initial cost estimate for the project, a detailed multi-criteria analysis was undertaken to determine the preferred bridge form for the Toowong to West End Green Bridge. Based on this analysis, a single mast cable stay bridge with a curved deck was selected as the preferred bridge form as it:

- ▶ allows for a single pier in the river on the Toowong side, reducing impacts on existing river users including rowing and sailing clubs
- ▶ allows for a gentle and accessible bridge grade with no requirements for ramping at either landing
- ▶ minimises impacts on key view corridors, including views of Middenbury House in Toowong.

The preferred bridge form is not final and will be further investigated through future stages of the design and procurement process for the project.

# About the concept design

Council has prepared a concept design for the Toowong to West End Green Bridge based on the preferred alignment from the south east corner of 600 Coronation Drive, Toowong to Orleigh Park (near Forbes Street), West End.

The concept design aims to provide a modern bridge structure that touches lightly on the river's edge and provides new ways to enjoy the river and local parks.

Key features of the design include:

- ▶ a curved single mast cable stay bridge form with a length of about 280m and mast height of 75m above water level
- ▶ a single water-based pier on the Toowong side of the Brisbane River to minimise impacts on river users
- ▶ dedicated pathways for walkers and riders, with a minimum width of 6m and accessible grades
- ▶ a navigable bridge clearance height of 11.4m, with provision for a 70m wide navigation channel
- ▶ a rest point and widened pathway (up to 9m) adjacent to the bridge mast with seating and viewing opportunities
- ▶ shade along the length of the walking path provided by a series of lightweight structures

- ▶ a new riverside green space at the Toowong landing
- ▶ a landing at Orleigh Park that minimises impacts on open space and provides a direct connection to the walking and riding network.

The concept design has been prepared for the purposes of preparing an initial cost estimate and preliminary business case. The design is not final and will be subject to community feedback, and further development during future stages of project planning.



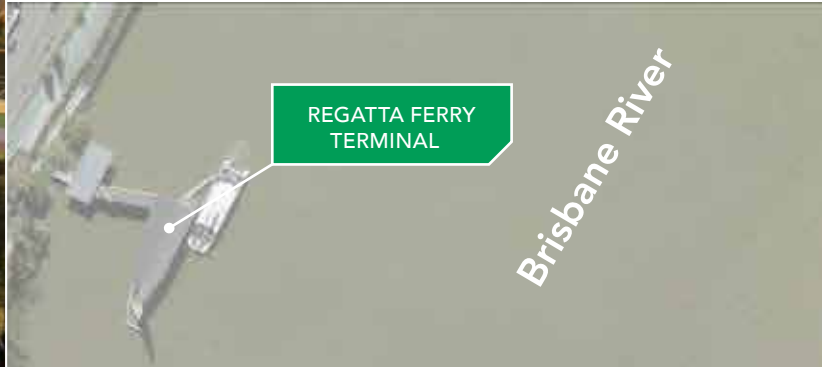
Toowong bridge landing







Riverside park at Toowong landing



REGATTA FERRY  
TERMINAL

Brisbane River



West End bridge landing



FUTURE DEVELOPMENT AT  
600 CORONATION DRIVE

NEW GREEN  
BRIDGE

ACCESS TO  
OVERPASS

BRISBANE AND  
GPS ROWING  
CLUB

West End

ORLEIGH  
PARK

CRANBROOK  
PLACE

SOUTH BRISBANE  
SAILING CLUB



Viewing area and seating near the bridge mast

## Toowong landing

The Toowong landing is located on the south east corner of 600 Coronation Drive, adjacent to Archer Street and south of Middenbury House.

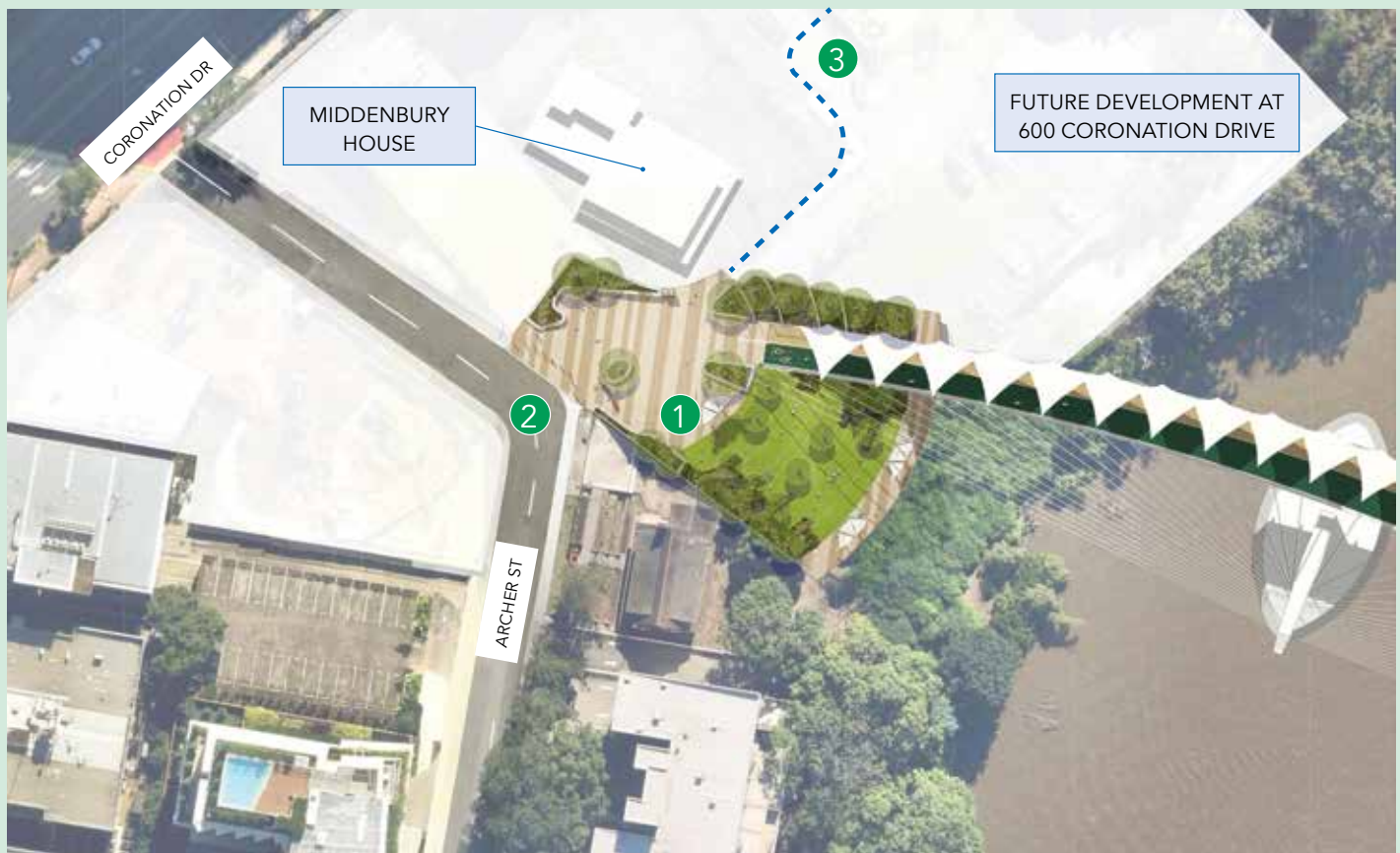
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The landing will provide:

- 1 a new riverside park and plaza with seating and landscaping
- 2 connection to existing walking and riding routes, via Archer Street
- 3 opportunity for a future riding connection through 600 Coronation Drive to the Bicentennial Bikeway.

Based on the concept design, the Toowong landing would require Council to acquire a section of the site at 600 Coronation Drive. The final design of the landing and new riverfront park space will be subject to a range of considerations. This includes:

- ▶ minimising heritage and visual impacts, including to Middenbury House
- ▶ meeting accessibility requirements
- ▶ opportunities for shade and landscaping
- ▶ connectivity to the broader walking and riding network.





## West End landing

The West End landing is located in Orleigh Park adjacent to Forbes Street, immediately north of the Brisbane and GPS Rowing Club, and the Cranbrook Place memorial site.

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This landing will provide:

- ➊ a direct connection to existing walking and riding paths on Riverside Drive
- ➋ new subtropical planting and park upgrades
- ➌ ongoing connections to UQ St Lucia campus via Hill End Terrace and the the proposed St Lucia to West End Green Bridge.

The West End landing will aim to:

- ▶ be sensitive to existing park and heritage features, including Cranbrook Place
- ▶ support the continued operations of the nearby rowing and sailing clubs
- ▶ minimise impacts on mature trees and incorporate new planting
- ▶ maintain privacy for nearby residential properties
- ▶ provide safe and comfortable access for all bridge and path users.



# Delivering city-wide benefits

The Toowong to West End Green Bridge will enable faster and more direct walking and riding connections between growing high-density residential, work, study and lifestyle precincts, reducing reliance on private vehicle trips.

.....

## Faster and more convenient travel

Based on assessments undertaken for the preliminary business case, the Toowong to West End Green Bridge is expected to carry **3900 trips per day by 2031 and 5300 trips per day by 2041**, which includes walking, riding and walk to public transport trips. The bridge will lead to more than 87,000 fewer car trips using river crossings per year.

## Creating a cleaner and greener city

The Toowong to West End Green Bridge supports a clean, green and sustainable city and healthy lifestyle by boosting inner-city movement and cross-river access and enhancing inner-city amenity and recreation opportunities. It will improve access to existing riverside parks and green spaces for residents in the inner south and inner west, as well as deliver a new riverside park and plaza space at Toowong.

## Supporting a growing city

Providing additional green transport infrastructure will enhance connections between key areas of employment and population growth. It will also help support increased visitor numbers, jobs and employment growth expected as part of the Brisbane 2032 Olympic and Paralympic Games, leaving a lasting legacy for generations to come.

The Toowong to West End Green Bridge will provide greater access to support an expected 120% growth in population in South Brisbane and West End in the next 20 years, and more than expected 70% growth in employment in South Brisbane in the same period.

The bridge is anticipated to generate shifts in settlement patterns and employment hubs, bringing people closer to where they work, study or relax.

Further, by improving connections to public transport, the bridge helps facilitate a mode shift from private vehicle to public transport as inner-city roads become congested over time, with the volumes of bridge patrons walking to connect to public transport increasing by 160% between 2021 and 2041.

The bridge itself will result in a reduction of more than 5100 vehicle kilometres on a typical weekday in 2031.

## Connecting key inner-city precincts

The new green bridge will mean Toowong residents will have more direct access to markets, restaurants, art and music venues and riverside recreational opportunities. Residents in West End will be linked to shopping, business and health facilities in Toowong, including major new developments such as 600 Coronation Drive and the Toowong Town Centre.

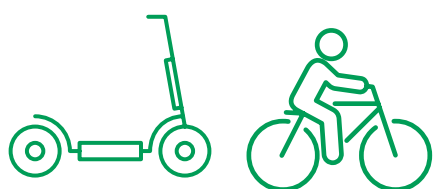
Currently it takes 20 to 30 minutes to drive between Toowong and the West End peninsula. The Toowong to West End Green Bridge will provide the same travel time by walking. For people using bicycles and e-mobility devices, the journey time would be one third of the travel time by car.

As well as connecting existing green transport corridors, including the Bicentennial Bikeway to the CBD and the Centenary Bikeway to the western suburbs via Toowong, the new green bridge will help establish a new east-west strategic riding corridor from Toowong through to Woolloongabba, via West End.

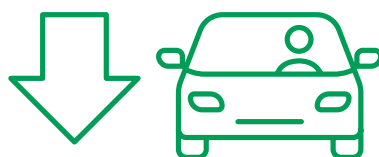




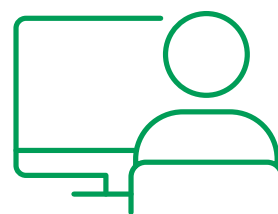
Artist impression of the Toowong landing plaza



Making journey times for people using bicycles and e-mobility devices **one third** of the travel time by car

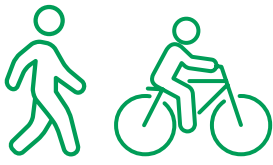


87,000 **fewer car trips** using river crossings per year

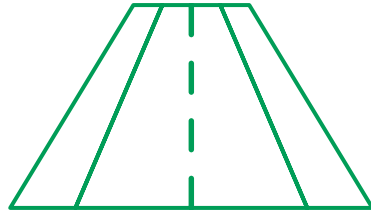


**Improved accessibility** to jobs in South Brisbane and Toowong





Expected to carry **3900** trips per day by 2031 and **5300** trips per day by 2041



A **reduction** of over 5100 vehicle kilometres on a typical weekday in 2031

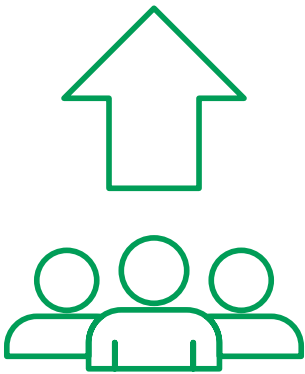


Estimated capital cost ranging between **\$175-200 million**



*Artist impression of proposed new riverside park space at the Toowong landing*





Supporting an expected  
**120% growth** in  
population in South  
Brisbane and West End  
in the next 20 years



Local **employment**  
**and supplier**  
opportunities during  
construction

## A value-for-money investment

The preliminary business case for the Toowong to West End Green Bridge has been informed by a range of initial economic, transport and technical investigations that have assessed the costs, benefits and feasibility of the project.

It confirms the project is a feasible, value-for-money investment in our transport network that will provide lasting expected benefits for Brisbane, including:

- ▶ travel time savings
- ▶ road decongestion
- ▶ lower road and vehicle operating costs
- ▶ reduced vehicle emissions
- ▶ user health benefits.

The economic appraisal of the project has been undertaken in alignment with nationally accepted approaches for transport project cost-benefit analysis, as provided in the *Australian Transport Assessment and Planning guidelines*.



Artist impression of the West End landing

The project has an estimated capital cost ranging between \$175-200 million based on a single mast cable stay bridge design with a curved deck, which was determined through initial technical investigations for the purpose of preparing a business case and providing an indicative cost for the project. The proposed bridge design and subsequent cost estimate for the project may change following further design investigations and community consultation.

The project has a benefit cost ratio of up to 1.2, when benefits from expected shifts in population and jobs generated by the bridge in both Toowong, West End and South Brisbane are taken into account.

It is important to note this analysis only considers the costs and benefits that can be monetised. Some of the key wider economic benefits delivered by the Toowong to West End Green Bridge have not been monetised and incorporated in the cost benefit analyses, including:

- ▶ improved accessibility to jobs in South Brisbane and Toowong
- ▶ positive impacts to lifestyle, amenity and tourism, including access to green space, entertainment and dining precincts
- ▶ local employment and supplier opportunities during construction.

Despite these key benefits not being included when calculating the benefit cost ratio, Council is confident these outcomes serve to improve the benefits of the project.

# Project timing

Previous consultation undertaken on these new green bridges clearly indicated many residents see the Toowong to West End Green Bridge as a greater priority for Brisbane.

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In response to community feedback, Council would deliver the Toowong to West End and St Lucia to West End Green Bridges in stages, with the Toowong to West End Green Bridge delivered first.

Strong feedback from the local community and stakeholders has also indicated they want to see new riverside green space delivered at 600 Coronation Drive, Toowong, which will form a key part of the Toowong to West End Green Bridge project.

Providing a key link between two of Brisbane's major growth areas, initial assessments indicate the Toowong to West End Green Bridge will have a greater forecasted patronage than the St Lucia to West End Green Bridge.

It will provide access to a greater number of destinations via high frequency bus services and the Toowong railway station, making it easier for residents and visitors to access growing employment and lifestyle precincts in Toowong, West End, South Brisbane and the CBD.

Subject to community feedback, funding and government approvals, works could commence on the Toowong to West End Green Bridge as soon as 2024, with each bridge expected to take around two years to complete.



\*Subject to funding and approvals



Artist impression of the viewing and rest area near the bridge mast



# Next steps



Initial assessments of the costs, benefits and impacts of the Toowong to West End Green Bridge have identified a range of opportunities for Council to work with stakeholders and the community to deliver the project.

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The next phase will focus on completing the detailed business cases for the Toowong to West End and St Lucia to West End Green Bridges in the first half of 2022 for further discussions with the Queensland and Australian governments. This will help to determine the next steps for each project, including potential funding and delivery timeframes.

Initial environmental and social assessments undertaken for the preliminary business case have identified a range of matters that will require further investigation and management by Council through future phases of project planning. This includes potential flooding impacts, protection of heritage places, land matters, potential noise and vibration during construction, and potential for reduced local amenity.

Council is committed to working closely with the Queensland and Australian governments, and other important stakeholders, to fully realise the benefits of the Toowong to West End and St Lucia to West End Green Bridges.

## Involving the community

Feedback will continue to play a critical role in the development of the new green bridges, including final design treatments, ongoing connections to the city-wide walking and riding network, and management of impacts during construction.

Council will continue to keep the community informed about the new green bridges and provide further opportunities for residents to have their say during future stages of project planning.





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