



PENRITH

# CASTLEREAGH CONNECTION

MAXIMISING THE WESTERN PARKLAND CITY

# Executive Summary

**Penrith has a critical role to play in the transformation of the Western Parkland City by providing liveability, productivity and social opportunities for a growing population, as well as infrastructure to enable the region to meet community needs and realise its full potential.**

As a growing city, we are faced with a complex set of challenges that are amplified when faced with extreme weather events. The flood risk to the Hawkesbury-Nepean Valley is serious and ongoing. Infrastructure investment to support improved connections which allow residents to move safely in and out of Penrith has never been more important.

Penrith City Council is advocating for the development of a strategic business case for the Castlereagh Connection. Our initial studies indicate the transport link would provide the following benefits:

## Improving community resilience

In March 2021 our region experienced an extreme flood event which forced thousands of residents in the Hawkesbury-Nepean Valley to evacuate their homes<sup>1</sup>. This event highlighted the urgent need for additional evacuation routes to safeguard communities during extreme weather events. The Castlereagh Connection would address this need by providing an additional east-west evacuation route away from flood prone areas.

## Enabling access to jobs and economic development

Our draft Employment Lands Strategy shows Penrith currently provides around 71, 621 jobs. Our population is projected to grow to around 370,000 over the next twenty years. It is estimated that Penrith will now need more than 100,000 new jobs by 2041 to provide at least one job for every resident worker. It will need to provide even more jobs for Penrith to fully realise its potential as part of a metropolitan cluster and achieve a vision of a thriving, innovative 30-minute city, home to new technologies and opportunities.

The Castlereagh Connection would catalyse this economic transformation by connecting people to jobs, training and services and ensuring the region is a great place to do business. This will also improve outcomes for communities experiencing disadvantage across our region.

## Unlocking regional access for freight and logistics, agribusiness and manufacturing

The Castlereagh Connection has the potential to facilitate regional connectivity and enable swift, direct access to new and existing manufacturing, processing and logistics centres as well as international markets via the Western Sydney International Airport.

This issues paper provides a compelling argument for the allocation of funding and resources to develop a strategic business case for the Castlereagh Connection as the critical next step. A strategic business case would provide detailed analysis around needs, benefits, constraints and staging for this important project for the region.

1. <https://www.abc.net.au/news/2021-03-22/nsw-flooding-forces-evacuations-and-school-closures/13266072> viewed 3 May 2021



## BACKGROUND

A corridor of around 22kms has been preserved for the Castlereagh Connection since 1951 to provide an east-west connection between the Nepean River near Castlereagh and the M7 Motorway in Blacktown. Most of the corridor is located in the Penrith and Blacktown City Council local government areas and almost 90% of the land is in government ownership.

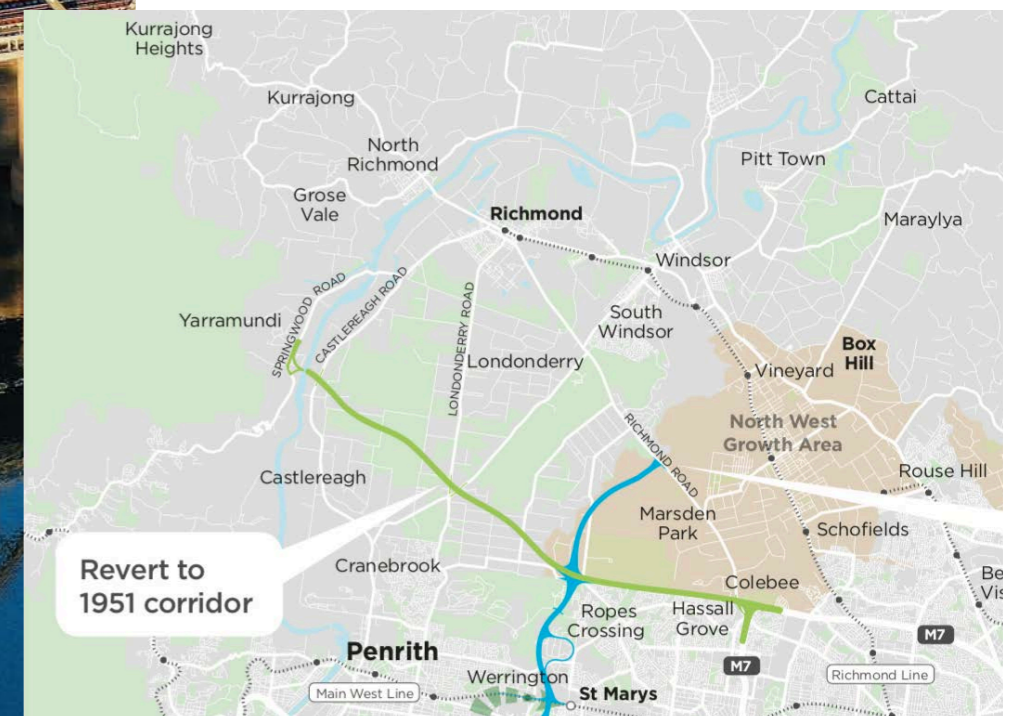
Infrastructure Australia assessed the Castlereagh Connection as a high priority in 2016<sup>2</sup>, and in 2018 the NSW Government re-confirmed the location of the 1951 corridor for a future road connection. However, no further action has been taken.

Penrith City Council has now engaged consultants to undertake

initial studies to provide evidence to support the need to accelerate the development of a strategic business case.

Our advocacy for this project responds directly to the aspirations and needs of our community. These include minimising risks to communities from natural disasters and a changing climate, working close to home and growing the local economy, improving transport connections in the region and infrastructure that matches changing local needs.

Community needs and aspirations are also broadly addressed in several government plans including the NSW Government's Greater Sydney Regional Plan, Western City District Plan, Future Transport Strategy and planning for the Western Sydney City Deal.



**Figure 1:** The 1951 Corridor runs through Blacktown and Penrith Local Government Areas (TfNSW) and extends across the Nepean River into the Blue Mountains LGA. The full corridor is approximately 22km in length.

2. <https://www.infrastructureaustralia.gov.au/map/corridor-preservation-outer-sydney-orbital-road-and-railm9-and-castlereagh-connection> viewed 3 May 2021

## COST BENEFITS AND POTENTIAL STAGING

In 2019 Penrith City Council commissioned high level analysis of the Castlereagh Connection.

The analysis used the M12 Motorway as a comparison and estimated the total cost for the Castlereagh Connection at \$1.8 billion for a four-lane grade separated road (or around \$20 million per lane, per kilometre).

The analysis found the Castlereagh Connection could be built initially as a single lane in each direction, with capacity for widening in the future. Alternatively, a staged approach could be adopted to deliver the following benefits:

» **Stage 1 M7 to The Northern Road approximate total 14kms – (estimated \$1.2bn)**

This section would support flood evacuation for around 13,000 vehicles and support greater east-west movement from the Northern Road/Londonderry Road intersection. This stage would improve regional connectivity and reduce load on the current network by providing an additional east-west connection between the Great Western Highway and Richmond Road.

» **Stage 2 The Northern Road to Castlereagh Road (approximately 7km, estimated at \$600m)**

This section would enable evacuation of up to 24,000 vehicles in a major flood event, enhance regional connectivity and remove traffic from local roads more efficiently.

» **M7 and across Nepean River as per 1951 corridor (approximately 1km)**

This section was not costed in the analysis. It would be subject to future business case investigations for the full-length route from the Blue Mountains which would further facilitate freight movements from the Central West.

| ITEM                               | COST/BENEFIT (\$m) ** 21km | COST/BENEFIT (\$m) *** 14km |
|------------------------------------|----------------------------|-----------------------------|
| Capital Cost                       | -1,839                     | -1,226                      |
| Congestion/VOC                     | 7,7429                     | 6,055                       |
| Flood evacuation                   | 70                         | 57                          |
| Freight Savings (diverted freight) | 54*                        | 54*                         |
| Total NPV                          | 5,660                      | 4,886                       |
| BCR                                | 4.07                       | 4.98                        |

Figure 5: Corview/RPS 2019.

\* Freight Savings not included in the NPV/BCR as these require the entire connection across the Blue Mountains to be built, not only to the Nepean River and M7 as costed here.

\*\* Costs/Disbenefits are shown as negative numbers.

\*\*\* Costs have been prorated based on the distance, benefits have been prorated based on the population shares across the area.

The NPV and BCR for the 21km version of the project are very strong, at \$5,660 and 4.07, respectively. For the 14km version these come in at \$4,880 and 4.98 respectively. This demonstrates that the benefits of the project are significantly higher than its costs.

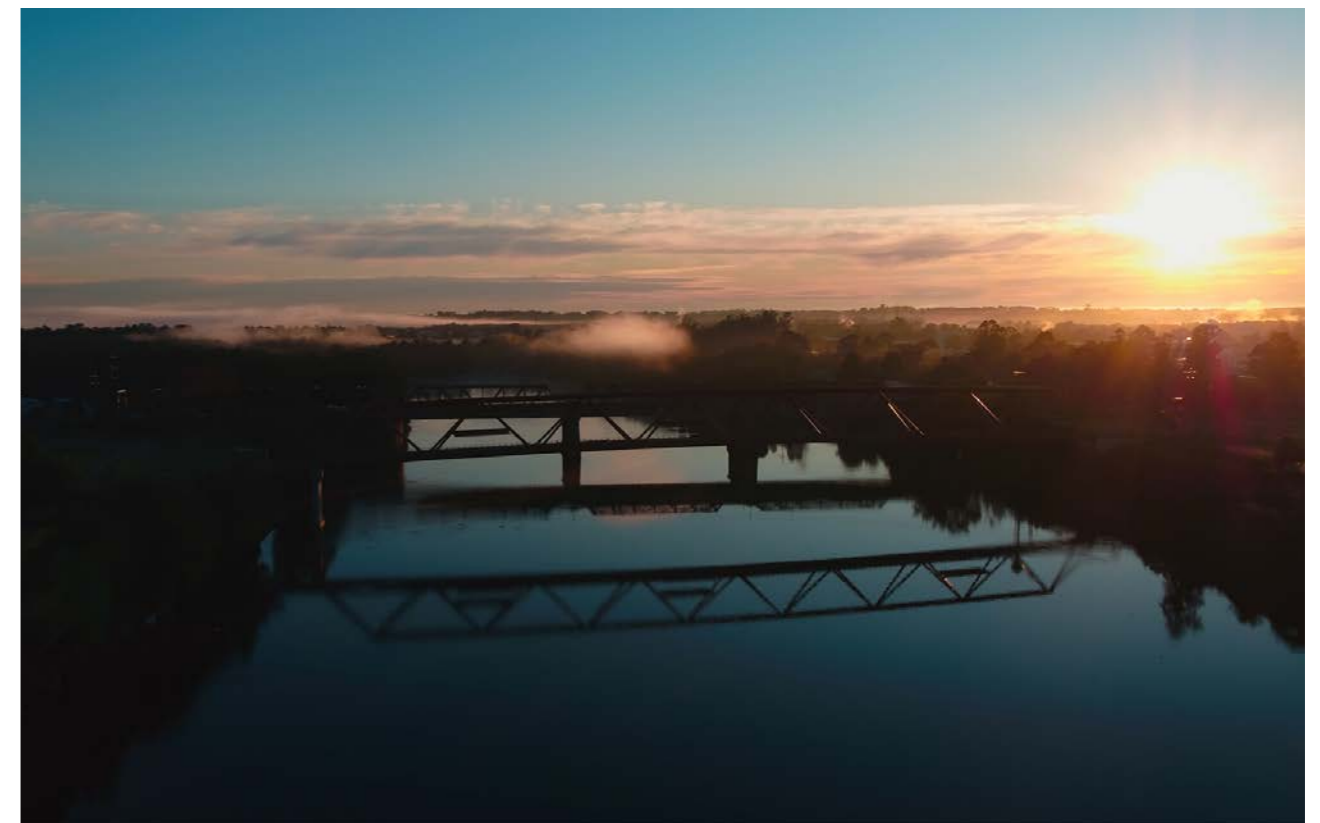
## ISSUE 1

## SWIFTER, SAFER FLOOD EVACUATION FOR THE HAWKESBURY-NEPEAN VALLEY

The NSW Government's Resilient Valley, Resilient Communities – Hawkesbury-Nepean Flood Risk Management Strategy identifies the Hawkesbury-Nepean Valley as one of the highest risk areas for flood in Australia.

Infrastructure NSW (INSW) estimates around 64,000 people would need to evacuate the area in the event of a 1 in 100-year flood. This could rise to around 134,000 people in an extreme flood. Over time this risk is predicted to impact more people. INSW estimates by 2041 as many as 158,000 people may need to evacuate in a 1 in 500-year event<sup>3</sup>. This will increase pressure on the existing road network.

The NSW Government's *Hawkesbury-Nepean Valley Flood Risk Management Strategy: Taskforce options assessment report*<sup>4</sup> states in a flood similar to that of 1867 around 90,000 people would need to evacuate, and the time required for them to do so exceeds the forecast time currently provided by the Bureau of Meteorology. In such cases, emergency services agencies can be forced to call evacuations based on less certain, predicted rainfall forecasts.



3. Infrastructure New South Wales, 2019 *Hawkesbury-Nepean Valley Flood Risk Management Strategy: Taskforce options assessment report*. State of New South Wales, Sydney, pp. 5-6 4. Infrastructure New South Wales, 2019 *Hawkesbury-Nepean Valley Flood Risk Management Strategy: Taskforce options assessment report*. State of New South Wales, Sydney, p. xv

INSW and the Roads and Maritime Services are developing a comprehensive agent based flood evacuation modelling tool. While the full details are yet to be released, the modelling has identified significant constraints to the prevailing evacuation network, which limits the evacuation capacity of the current road network.

Figure 2 shows the flood evacuation routes directing the majority of evacuees to travel south towards Penrith via a number of low order, rural roads

to exit via the Great Western Highway or M4 Motorway. These roads could become heavily congested in an emergency, causing significant delays and posing risks to our communities.

In 2018, vehicle counts and Census data were used to analyse evacuation numbers. It was estimated up to 24,000 vehicles would use one of four routes through the Penrith Local Government Area as per the Hawkesbury-Nepean Flood Emergency Sub Plan (NSW SES 2015). Figure 3 provides this breakdown.

In 2019 the NSW Government implemented an 'Adaptive Management Framework' and accompanying Development Assessment Guideline. The aim of the framework and guideline was to manage flood risk and evacuation constraints in the Penrith City Centre to ensure future development does not impact on the safe evacuation of the community in the event of a flood. The framework reflects the fact that current evacuation routes place pressure on the Penrith City Centre to accommodate large numbers of displaced people during floods.

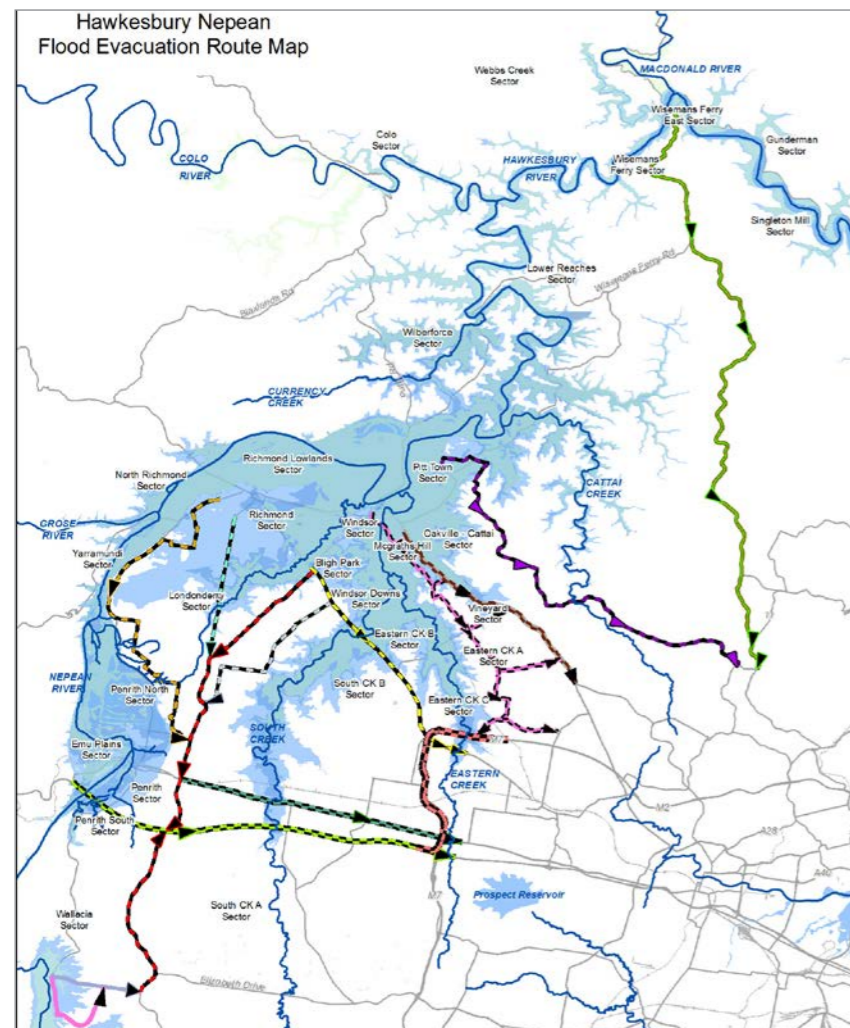


Figure 2: Regional Flood Evacuation Routes within the Hawkesbury Nepean Valley.

| ROUTE   | VEHICLES      |
|---|---------------|
| (number in brackets relates to route identified on map below) |               |
| Castlereagh Road (Regional Evacuation Route) (4)              | 9,038         |
| Londonderry Road (3)  | 2,292         |
| The Northern Road (from Windsor and Bligh Park) (2)           | 6,953         |
| Llandilo Road (1)   | 5,938         |
| <b>TOTAL</b>  | <b>24,221</b> |

Figure 3: Number of vehicles estimated to use one of four routes through Penrith LGA.



Figure 4: How the Castlereagh Connection supports swifter, safer evacuation for the majority of evacuees from North of Penrith and reduces traffic entering the M4 and Great Western Highway.

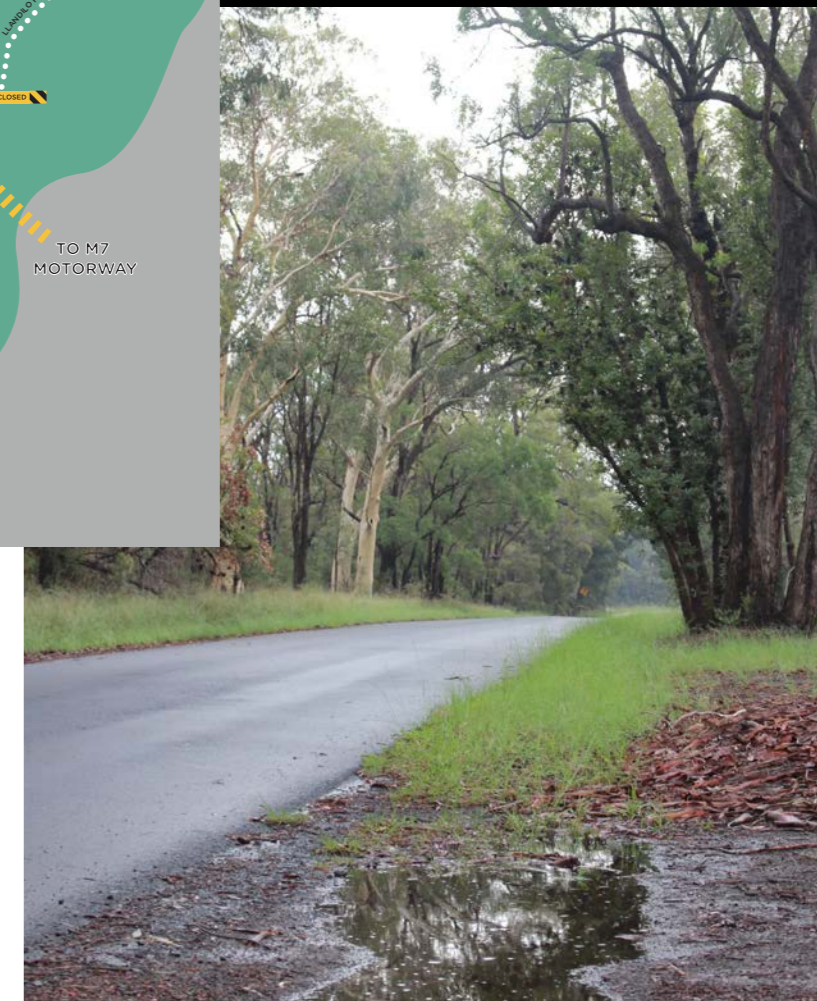
Image right: Jockbet Street is part of the Regional Evacuation Route.

**HOW CASTLEREAGH CONNECTION WILL ADDRESS THIS ISSUE**

The Castlereagh Connection would intersect with four of the current evacuation routes and divert up to 24,000 vehicles onto the M7. This would reduce congestion at several convergence points on The Northern Road.

It would also support safer, swifter evacuation and reduce the need for early evacuation due to capacity constraints. The improved evacuation outcomes are shown in Figure 4.

The Castlereagh Connection would provide an evacuation grade route and allow for SES and other emergency workers to be more effectively deployed during any evacuation.



## CONNECTING WORKERS TO LOCAL JOBS IN OUR KEY STRATEGIC CENTRES

There are limited east-west connections to link workers in parts of Western Sydney to emerging economic hubs and key strategic centres.

Better connectivity is needed for the Western Parkland City to fully realise its potential and achieve a 30 minute city. There is limited east-west connectivity between Greater Penrith, the Hawkesbury and other parts of Western Sydney, to the emerging economic hubs in the Penrith CBD, The Quarter, St Marys as well as the North West Growth Area.

Existing east-west connections such as the Great Western Highway, M4 Motorway and Richmond/Blacktown Road are heavily congested. Increasing congestion and delays on the road network impact quality of life and productivity for our communities who have consistently asked for more local jobs closer to home, improved transport connections in the region and infrastructure that meets their changing needs.

Ensuring workers can easily access local jobs is critical in maintaining appeal for investors and businesses focused on talent acquisition and retention within a competitive market.

### HOW CASTLEREAGH CONNECTION RESPONDS TO THIS ISSUE

The Castlereagh Connection would improve access to the motorway network for residents, particularly those in the north of the Penrith, Hawkesbury and Blacktown LGAs (including the North West Growth Area where some 30, 000 new homes are planned).

The Castlereagh Connection corridor is adjacent to the Marsden Park Strategic Centre where there is a potential for 10, 000 jobs. Future planned and proposed infrastructure also intersects with the corridor including the Outer Sydney Orbital and Sydney Metro Western Sydney Airport. The Castlereagh Connection will enhance the benefits of other infrastructure projects through increased regional connectivity.



## INCREASING ACCESS TO OPPORTUNITIES FOR DISADVANTAGED COMMUNITIES

Limited access to jobs and education can lead to negative social and economic outcomes for many Western Sydney residents.

A high number of residents in our region have limited access to resources and opportunities to participate in and contribute to society.

This includes several suburbs in the Penrith and Blacktown LGAs that have been identified as highly disadvantaged under the Socio Economic Indexes for

Areas (SEIFA) by the ABS (2016). Mt Druitt (2), Blacktown (2) and St Marys (1) are particularly notable, with St Marys in the lowest decile on both measures (SEIFA disadvantage and SEIFA Index of economic resources).

In 2016, North St Marys had a particularly high unemployment rate 12.3% compared to 6% for Greater Sydney, with the figures for youth unemployment also high at 18.6% compared to 13.3% for Greater Sydney.

A contributing factor for unemployment is limited public transport connecting residents to jobs, with most residents forced to use cars to get to work.

### HOW CASTLEREAGH CONNECTION RESPONDS TO THIS ISSUE

Some of Sydney's most disadvantaged residents would benefit from the Castlereagh Connection through improved connectivity to jobs, education and services including residents in St Marys, Mt Druitt and Blacktown, who would have greater access to jobs and opportunities in the North West Growth Area via the Castlereagh Connection.



## SWIFT REGIONAL ACCESS TO DIVERSE INDUSTRIES

Supporting existing industries and new sectors across the region.

The region will be part of a nationally significant economic corridor with diverse industries and a range of job opportunities. These include growth and expansion of new and emerging industries related to the Aerotropolis.

Existing and emerging precincts, including those in St Marys and Erskine Park specialising in industry, manufacturing and logistics are set to grow. Swift access to these precincts will become pressing. Manufacturing, processing and packaging facilities will be necessary in order to export goods to international

markets via the Western Sydney International Airport.

Freight access to the region will become a critical issue for businesses in the Central West, a region which is home to a quarter of the state's agriculture. It is forecast by Infrastructure Australia to be among the seven most important regions in the country in terms of Gross Regional Product by 2031.

Freight and other heavy vehicles face the same challenges as passenger vehicles. The main freight routes are the M4 and M7, with Richmond Road, the Great Western Highway and the Northern Road also in use. Trucks are currently forced to travel along congested corridors with general traffic.

### HOW CASTLEREAGH CONNECTION RESPONDS TO THIS ISSUE

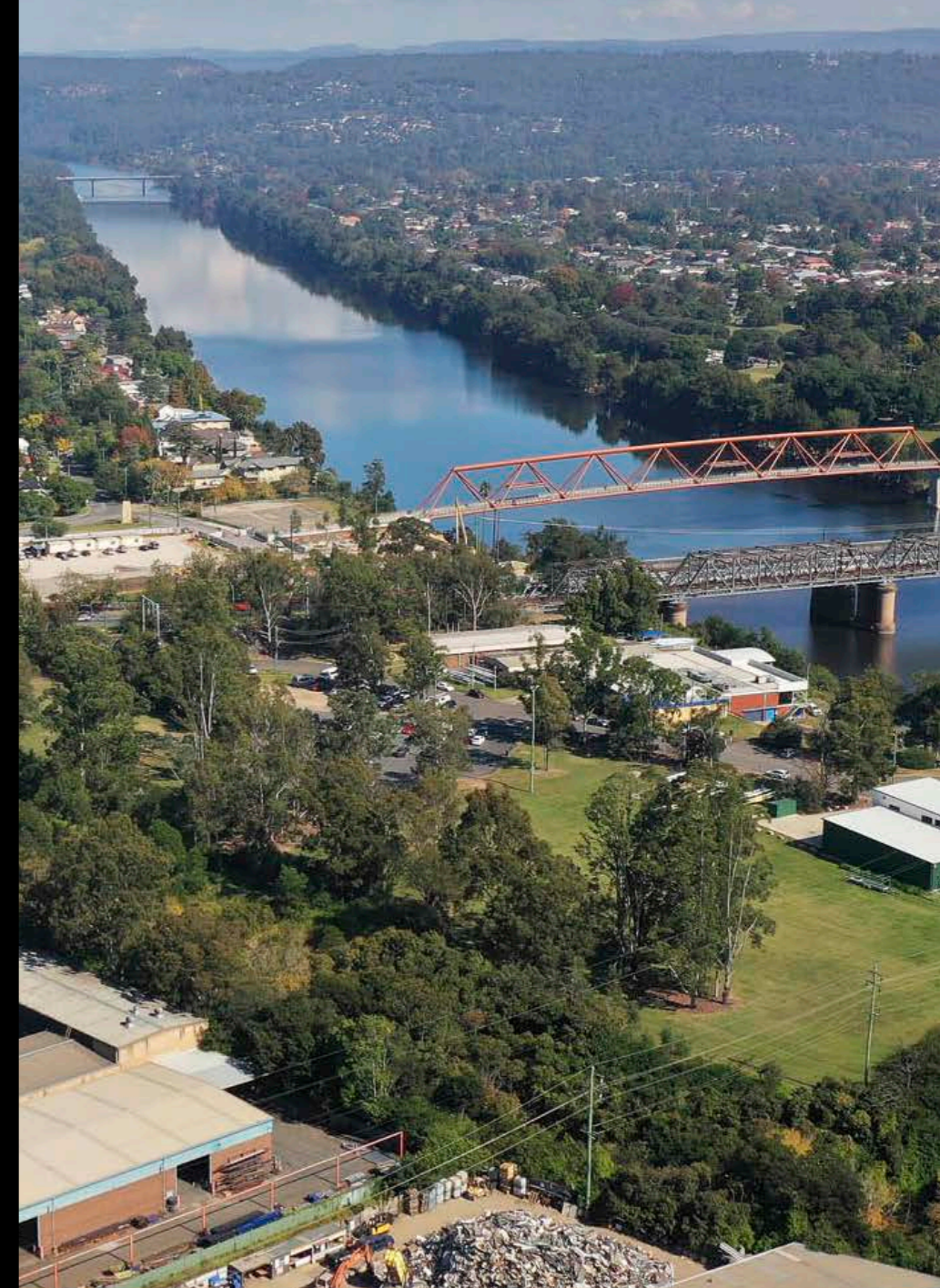
The Castlereagh Connection would provide effective regional connectivity by meshing key centres and network links with the existing motorway. This will enable freight access across the region, supporting the growth of diverse new industries.

The Castlereagh Connection would also allow a more seamless link with Bells Line of Road and any future upgrades to this route, or an extension west.

## Conclusion

**Our initial studies show Castlereagh Connection will provide swifter, safer evacuation, improve east-west connectivity and regional transport movement and deliver significant economic benefits to the region.**

**Council is responding to community needs and aspirations for increased resilience, regional connectivity, access to jobs close to home and economic development in advocating for funding and resources to develop a strategic business case for the Castlereagh Connection. A strategic business case will enable detailed exploration of the service needs, benefits, possible constraints and options for a staged approach for this important project for the region.**





To find out more, contact:

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