

Building bridges and structures

Warringah Freeway Upgrade

March 2025



The Warringah Freeway Upgrade includes the construction and modification of twelve structures, including bridges, ramps and underpasses, some of which were built over 50 years ago. These structures are being built or modified as part of the Warringah Freeway Upgrade, connecting communities across the freeway from east to west and streamlining traffic movement onto the freeway northbound and southbound.

Bridges are a key element of the project and have been designed to link communities with pathways and cycleways, making walking and cycling safer and easier. Designated bus on ramps and lanes will improve traffic flow by separating bus movements from general traffic.

The bridge structures provide a unique opportunity to embed cultural storytelling through integrated artwork aimed at building community connection to the local place.

Each structure is complex to design and build while maintaining traffic flow on New South Wales' busiest road. In 2024, there will be some nights where traffic will have to be diverted off the Warringah Freeway while the team install large bridge girders and beams safely.

Bridges for pedestrians and cyclists

The new bridges for pedestrians and cyclists are:

- Ridge Street shared user bridge
- Falcon Street shared user bridge
- 10 metre-wide addition for shared use on Ernest Street bridge
- 4.5 metre-wide addition for shared use on High Street bridge.

Road bridges

The new dedicated ramps are:

- Miller Street southbound on ramp
- Falcon Street southbound bus on ramp
- Alfred Street southbound off ramp
- Mount Street bridge southbound bus on ramp
- High Street northbound on ramp.

Vehicle underpasses

Two new vehicle underpasses will be delivered for new lanes underneath:

- Mount Street
- Ernest Street.





Ernest Street shared user bridge girder installation September 2023



Artist's impression of Ernest Street shared user bridge

Pedestrian and cyclist bridges

Ernest Street shared user bridge

Ernest Street bridge is being widened to incorporate a 10 metre-wide shared user path with dedicated pedestrian and cycle lanes, helping to form a green link between the open spaces to the east and west.

The new bridge is structurally independent from the existing Ernest Street bridge. The new bridge is one metre higher than the existing bridge to allow for clearance for the traffic on the Warringah Freeway and additional utilities required to connect across the freeway.

All girders for the new bridge were installed in 2023 during a series of weekends.

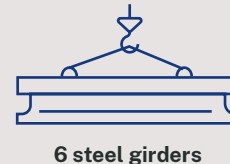
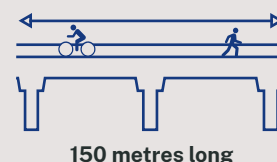
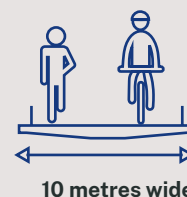
In 2024 we connected utilities that run across the bridge including a large 600mm diameter water main. The screens with Aboriginal art will be installed later in the year.

For safety reasons, the widened bridge element will not be accessible to the public until after the Western Harbour Tunnel has completed construction of the tunnel area in Cammeray. Pedestrians and cyclists will continue to use the existing Ernest Street footpath until this time.



Aerial view of Ernest Street shared user bridge works taken in January 2025.

Fast facts



To keep disruptions to traffic and residents to a minimum, we prefabricated the steel girders at a facility in western Sydney and the pre-cast concrete elements at a facility in Tomago, just north of Newcastle.

[Watch a video about the concrete pre-cast facility.](#)

[Watch a video about the steel girder fabrication process.](#)

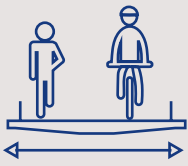
Falcon Street shared user bridge

The new Falcon Street shared user bridge spans the Warringah Freeway between Merlin Street, Neutral Bay and Falcon Street, North Sydney. The new bridge is approximately 10 metres north of the existing structure because the piers of the existing bridge would be located within the realigned and widened freeway lanes.

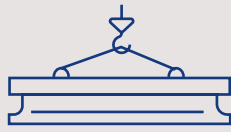
The bridge is a four-span steel box girder bridge, with a concrete deck built on top. The bridge has an overall deck length of 187 metres and offers a 4.8 metre-wide shared path. A total of six girders were installed in 2024, with their weight varying from 30 tonnes to 115 tonnes.

The project team installed the new girders over a series of weekend lane closures on the Warringah Freeway which began on 9 June 2024.

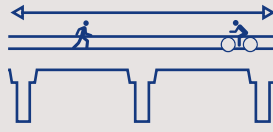
Fast facts



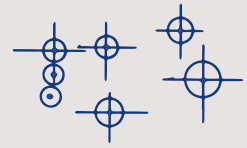
5.2 metres wide



6 steel girders



187 metres long



Sky Aboriginal art theme



Artist's impression of Falcon Street shared user bridge.



Artist's impression of Ridge Street shared user bridge.

Ridge Street shared user bridge

The existing Ridge Street bridge was replaced with a new five metre-wide shared user bridge approximately 40 metres south of the current structure in December 2024. The design is a simple and elegant structure, embedding the bridge into the landscape in a highly visible location.

It spans the Warringah Freeway from Ridge Street in North Sydney to Alfred Street North, Neutral Bay.

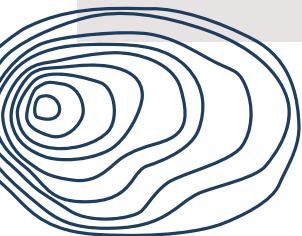
The Ridge Street shared user bridge has a span across the freeway that is 95 metres long. It consists of a steel girder with a concrete deck on top, divided in two segments. The heaviest segment weighs 120 tonnes.

We installed the new girder segments during two weekend closures in May and June 2024. A 750 tonne crane was used to lift the segments into place.

Watch the girder lift video from 25 May 2024.

Fast facts

- 5 metres wide
- 1 girder in two segments
- 95 metres long
- Sea Aboriginal art theme



Artist's impression of High Street bridge.

High Street bridge widening

The High Street bridge will be widened along its southern facade. The bridge has an overall deck length of 108 metres, spanning the freeway to connect Neutral Bay to North Sydney. With the overall widening, a 4.5 metre-wide shared path will be provided on the southern edge of the upgraded structure. The bridge is made up of 24 steel girders, topped with a concrete deck slab, which is poured on site. Construction of the bridge abutments (the support structures on either end) began in 2023.

Fast facts

- 4.5 metre wide shared user path
- 108 metres
- 24 steel girders

Freeway on and off ramps

Miller Street southbound on ramp

The new Miller Street southbound on ramp will join together with Brook Street on ramp to form a single viaduct structure that passes over the new dedicated southbound bus lane.

The ramp has been built with 40 pre-cast “T” shaped girders, known as Super-T girders. Each weighs about 48 tonnes. A concrete bridge deck, divided into eight spans, will then be mounted onto the top of the girders. Construction of the bridge piers began in November 2023 and the first Super-T girder lift was in April 2024.

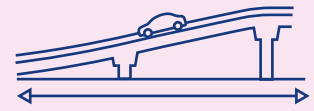
[Click here to read the notification about the Super-T girder installation and potential traffic impacts.](#)

[Watch the girder lift video from 18 April, 2024.](#)



Progress on the on Miller Street ramp, January 2025.

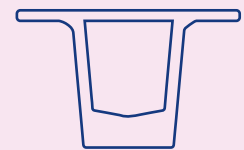
Fast facts



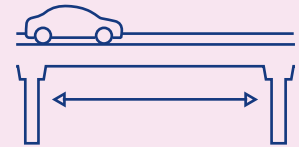
200 metre on ramp



10 metres wide



40 precast Super-Ts



8 spans long



Artist's impression of Miller Street southbound on ramp.



Artist's impression of Falcon Street southbound bus on ramp.

Falcon Street southbound bus on ramp

Falcon Street bridge is an existing structure with two separate bridges constructed in 1969 over the Warringah Freeway. The addition of a new dedicated southbound bus ramp provides buses a seamless entry onto the freeway at Neutral Bay, eliminating conflicts with merging general traffic.

The new bridge is a two-span structure with six pre-fabricated steel girders each weighing up to 80 tonnes with a concrete deck.

The girders were installed in 2024.

[Click here to see the draft Place, Design and Landscape Plan which describes the key elements of the bridge.](#)

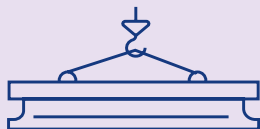
Fast facts



101 metres long



7-8.4 metres wide



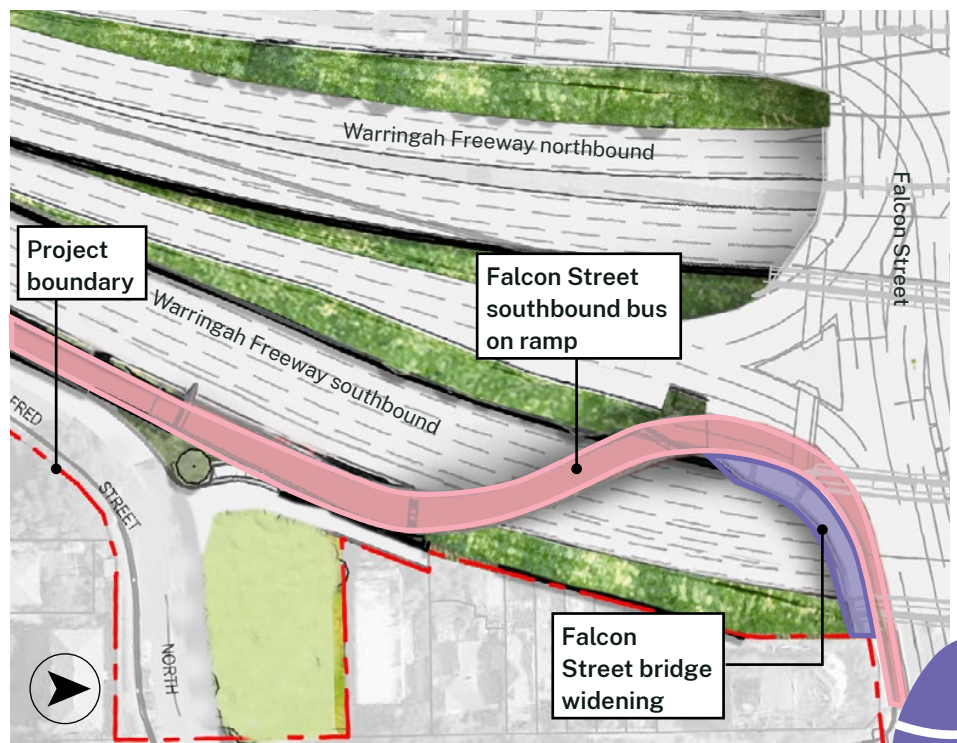
6 steel girders

Falcon Street bridge widening

The Falcon Street bridge widening is a single, steel-concrete composite span with a length of 28 metres.

The bridge widening is to accommodate the Warringah Freeway northbound and southbound carriageways. It involves the reconstruction of the existing footpath and installation of new traffic barriers and 3.4 metre-high safety screens along the outer edge.

[Click here to read the notification about the Falcon Street southbound bus on ramp.](#)

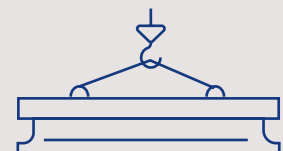


Falcon Street southbound bus on ramp and bridge widening.

Fast facts



28 metre span



6 steel girders



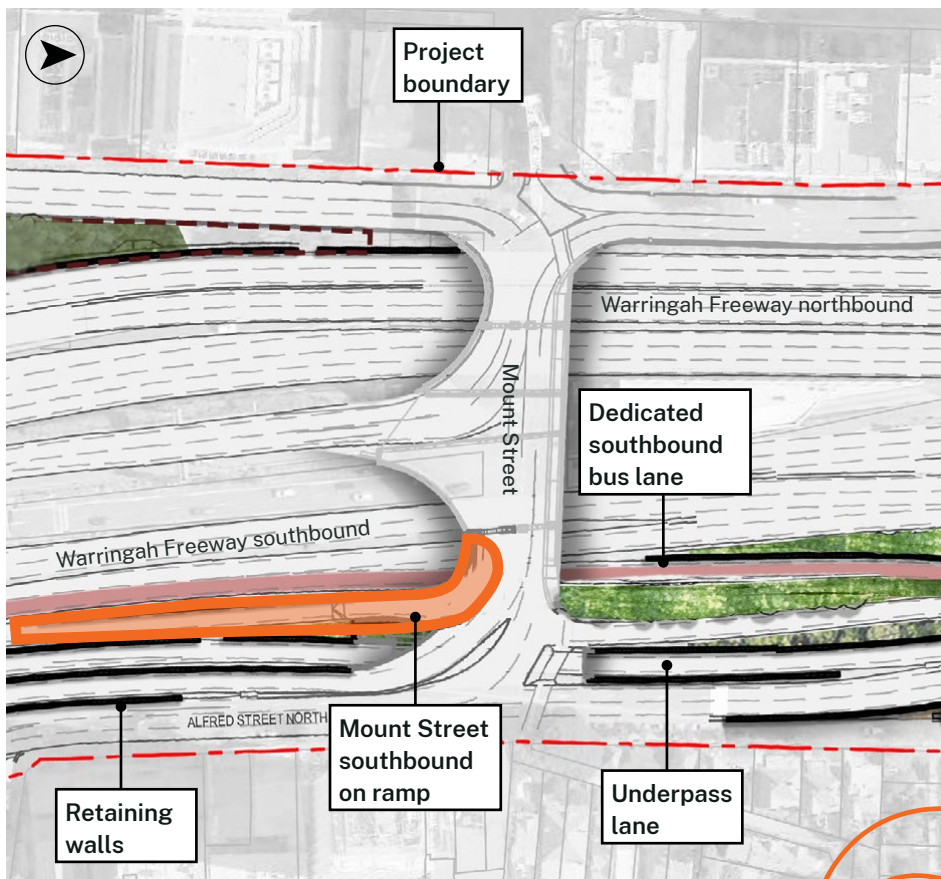
Aerial photograph of Mount Street in January 2025.

Mount Street bridge southbound bus on ramp

A new on ramp connected to the widened Mount Street bridge will facilitate a new bus lane right-hand turn from Mount Street heading southbound onto the Cahill Expressway.

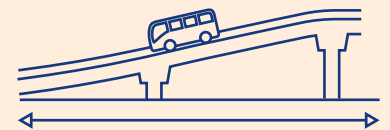
Work to install the six girders weighing up to 36 tonnes each was undertaken over the Christmas/ New Year lower peak traffic period in 2023/24. Additional 56-hour weekends were required in 2024 to complete the installation work.

Why do we carry out extended closures



Location of the Mount Street bridge southbound on ramp.

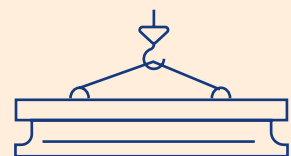
Fast facts



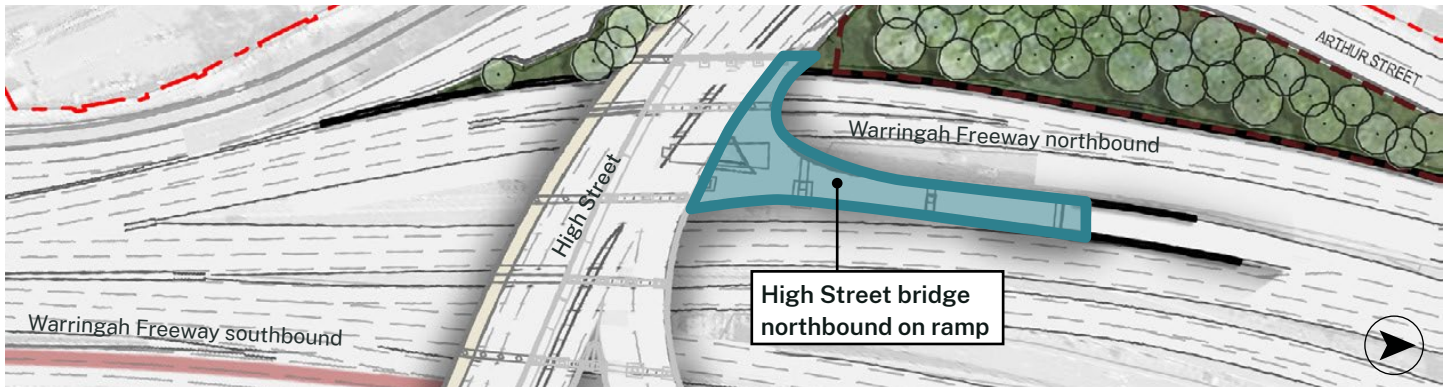
46.6 metres long



5.8 metres wide



6 steel girders



High Street northbound on ramp.

High Street bridge northbound on ramp

The new High Street bridge northbound on ramp will provide access to northbound Warringah Freeway lanes from North Sydney. The on ramp has an overall bridge deck length of 96.5 metres and comprises four spans. There will be 18 steel girders and box girders used in the span with a total weight of 182 tonnes.

Construction of the on ramp began in 2023. For safety reasons, the new ramp will not be accessible to the public until after the Western Harbour Tunnel has completed construction.

Read about the upcoming work notifications and potential traffic impacts.

Fast facts

96.5 metres long

6.5 metres wide

18 steel girders and steel box girders

Alfred Street southbound off ramp

The new Alfred Street southbound off ramp is part of the Alfred Street North and Cahill Expressway off ramp from the Warringah Freeway. It passes over the new southbound bus lane and connects the southbound lanes of the Warringah Freeway to the Cahill Expressway and High Street.

The bridge is three spans, with an overall length of 86.5 metres. Eighteen Super-T girders weighing around 55 tonnes each were installed over the three spans in January 2025.

Read about the traffic changes in place which are facilitating the construction of the new off ramp.



Artist's impression of Alfred Street southbound off ramp.

Fast facts

86.5 metres long

12 metres wide

6 Super-T girders

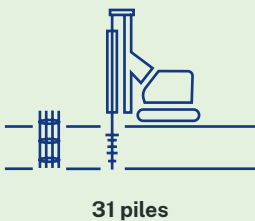
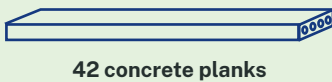
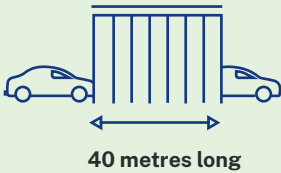
New underpasses

Ernest Street underpass

The new underpass beneath Ernest Street will be located on the east side of the existing southbound freeway lanes and is being built for the new dedicated southbound bus lane.

To construct the new underpass, 13,000 cubic metres of rock is being removed. The underpass bridge deck consists of pre-cast concrete planks which are quickly installed during day shifts.

Fast facts



Mount Street underpass

The new underpass beneath Mount Street will connect the Warringah Freeway with the southbound lane of the Cahill Expressway. This new underpass will allow uninterrupted flow for buses using the new Mount Street southbound on ramp.

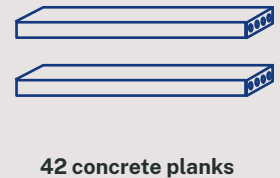
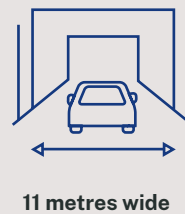
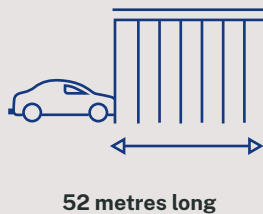
The underpass bridge deck is constructed using precast planks and reinforced concrete troughs with a composite top slab poured on site. The overall length of the underpass is approximately 52 metres.

Read more about the work undertaken in this area throughout 2024 and upcoming work.



Artist's impression of Mount Street underpass.

Fast facts



Contact us



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