

## Bridge fact sheet

### M7-M12 Integration project

July 2024



We acknowledge the Dharug people as the Traditional Custodians of the lands on which we work and pay respects to Elders past and present.

The M7-M12 Integration project will support future development growth in Western Sydney by improving travel times and congestion. Once complete, the project will provide direct access to commercial and residential hubs, and the new Western Sydney International Airport.

#### Overview

Bridges play an important role on the M7-M12 Integration project. Along the M7 Motorway, our bridges cross over creeks, rail lines, the shared user path and local roads. These bridges have been carefully designed to match the existing M7 Motorway, associated interchanges and the surrounding environment.

Additionally, there are seven new bridges that connect the M7 Motorway to the new M12 Motorway as well as Elizabeth Drive, Cecil Hills.

#### What is a bridge girder?

The term girder is used to refer to a concrete or steel beam. In a girder bridge, the beams themselves are the primary support for the bridge deck and are responsible for transferring the load down to the foundation. Material type, shape and weight all affect how much weight a beam can hold.

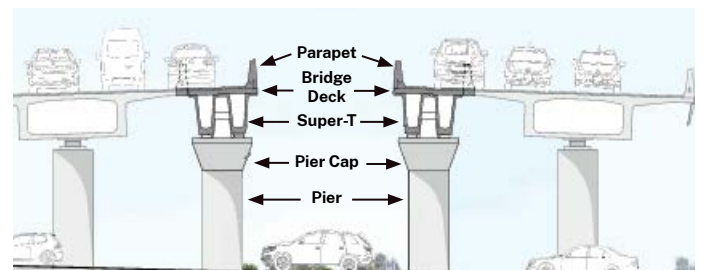
Cowpasture Road and Rooty Hill bridges both have steel girders that will be transported by boat from Launceston to Melbourne.

From there, they will then travel by road to the M7 Motorway.

#### What is a Super-T?

Super-T bridges are the most common type of bridge used for straight and angled bridges. They offer long span capacity and can be adjusted to varying bridge widths. The longest Super-T on this project is 40.6 metres in the M7-M12 Interchange (bridge 12).

The Super-T's for this project are being precast in Tomago and Teralba, NSW and will travel to site via the M1 Pacific Highway, M2 Motorway and finally to the M7 Motorway.



Example of widening a box girder bridge with Super-T's

#### What is a parapet?

A parapet is a safety barrier installed at the edge of bridges and retaining walls to provide protection for vehicles and pedestrians in locations where there is a vertical drop. Parapets can be steel, aluminum or concrete.

On this project we have concrete parapets with a steel safety barrier rail on top. The M7 Motorway bridge upgrades have been designed to match the existing, which varies between concrete and single rails.

## Piling activities

Piling is a technique that sets deep foundations to support the new bridges. Piling prepares the ground to carry heavy loads, by transferring the load to solid ground at a greater depth.

A piling rig will be used to drill to the required pile depth for the bridge structures. All piles are cast-in-place and with an auger. A standard pile depth for the M7 Motorway widening works is approximately 20 metres.



Piling activities at Villiers Road, Cecil Park

## M7 Motorway bridges

The project involves widening the M7 Motorway by adding a third lane in both directions within the median between Richmond Road and the M5 Motorway, Prestons.

There are 41 bridges to be widened along the M7 Motorway. All works to widen the existing bridges including piling, girder install, concrete bridge deck and drainage. The majority of work will be constructed from below the motorway.

### Cowpasture Road bridge

Widening involves installation of steel girders in five spans across the bridge. Overall, this bridge is 145 metres long above Cowpasture Road at Middleton Grange.

### Hoxton Park Bridge

This is the longest bridge to be widened along the M7 Motorway. It has a total of 92 girders, 22 spans on the northbound and 24 spans on the southbound. The overall bridge length is 700 metres above Hoxton Park Road, Wilson Road and three creek crossings.



Concept image of the bridge widening at Hoxton Park Road

## Elizabeth Drive Connection

### M12 Motorway eastbound to the M7 Motorway northbound

This is a gently curving two lane bridge from the M12 Motorway to the M7 Motorway over Elizabeth Drive. This is a two-span bridge, 84.7 metres in length and 12 metres wide. It is an angled bridge with Super-T girders supported on a central cylinder-shaped pier.

A pier cap will be constructed above the central pier which will join the Super-T girders into position.

Pre-cast parapets and steel safety barriers will be installed on the bridge deck. See Bridge 12 on the reference map on the back page.



Artist impression looking towards Bridge 12 from Elizabeth Drive

### M7 Motorway northbound to the M12 Motorway westbound

This bridge accommodates the northbound traffic from the M7 Motorway onto the M12 Motorway heading westbound. The bridge is a single-span bridge, 23 meters in length and 13 meters wide, using solid plank girders. See Bridge 13B on the reference map on the back page.

## M7-M12 Interchange

### Incrementally launched bridges

This major interchange connects the M7 Motorway to the M12 Motorway. This connection consists of two incrementally launched concrete box girder bridges.

Incremental launching is a method used to build a complete bridge deck from one end of the bridge only. This method is highly mechanised and uses pre-stressed concrete, launching the bridge section by section to the other side using hydraulic jacks.

When travelling eastbound the M7-M12 Interchange will provide panoramic views of Sydney CBD for bridge users from the elevated position in Cecil Hills and from within the interchange.

Road users travelling westbound will have distant views toward the new Western Sydney International Airport from the elevated position in Cecil Hills.

The eastbound bridge is 365 metres in length and sits approximately 9.1 metres above the motorway road level below. The westbound bridge is 660 metres in length and sits approximately 16 metres above the motorway road level below and 21 metres above Elizabeth Drive. This is the longest bridge on the M12 project. See Bridges 14 and 15 on the reference map on the back page.



Artist impression of Bridges 14 and 15

### What is a launch nose?

A launch nose is attached to the first bridge section and provides support to the bridge as it is launched across piers. The launch noses move at approximately 100 millimetres per minute.

Both bridges will be launched from the western bridge abutments. This method allows the build to occur over live traffic with no interruptions below.

Fabricated in Tasmania, we have two launch noses, 32 metres and 35 metres in length launching bridges 14 and 15 across the interchange.

The launch noses are temporary and will be removed on completion of the bridges.



Artist impression of a launch nose

## Shared user path bridge

The existing shared user path (SUP) bridge is located over the M7 Motorway south of the intersection at Elizabeth Drive. The western side of the bridge will be supported and extended to accommodate the relocated M7 Motorway northbound off-ramp.

New safety screens and handrail posts will be installed as part of the extension.

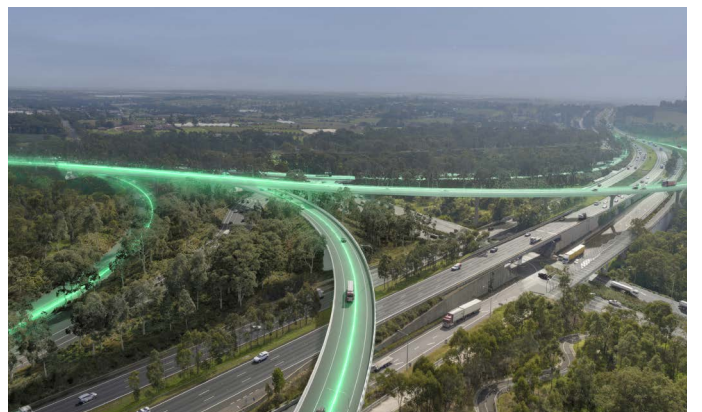
This bridge will continue to provide a vital connection across the M7 Motorway and to the SUP network between the M7 Motorway, M12 Motorway at Cecil Hills and into Western Sydney Parklands. See Bridge 16 on the reference map on the back page.



Artist impression of the M7 Motorway facing north toward the SUP bridge

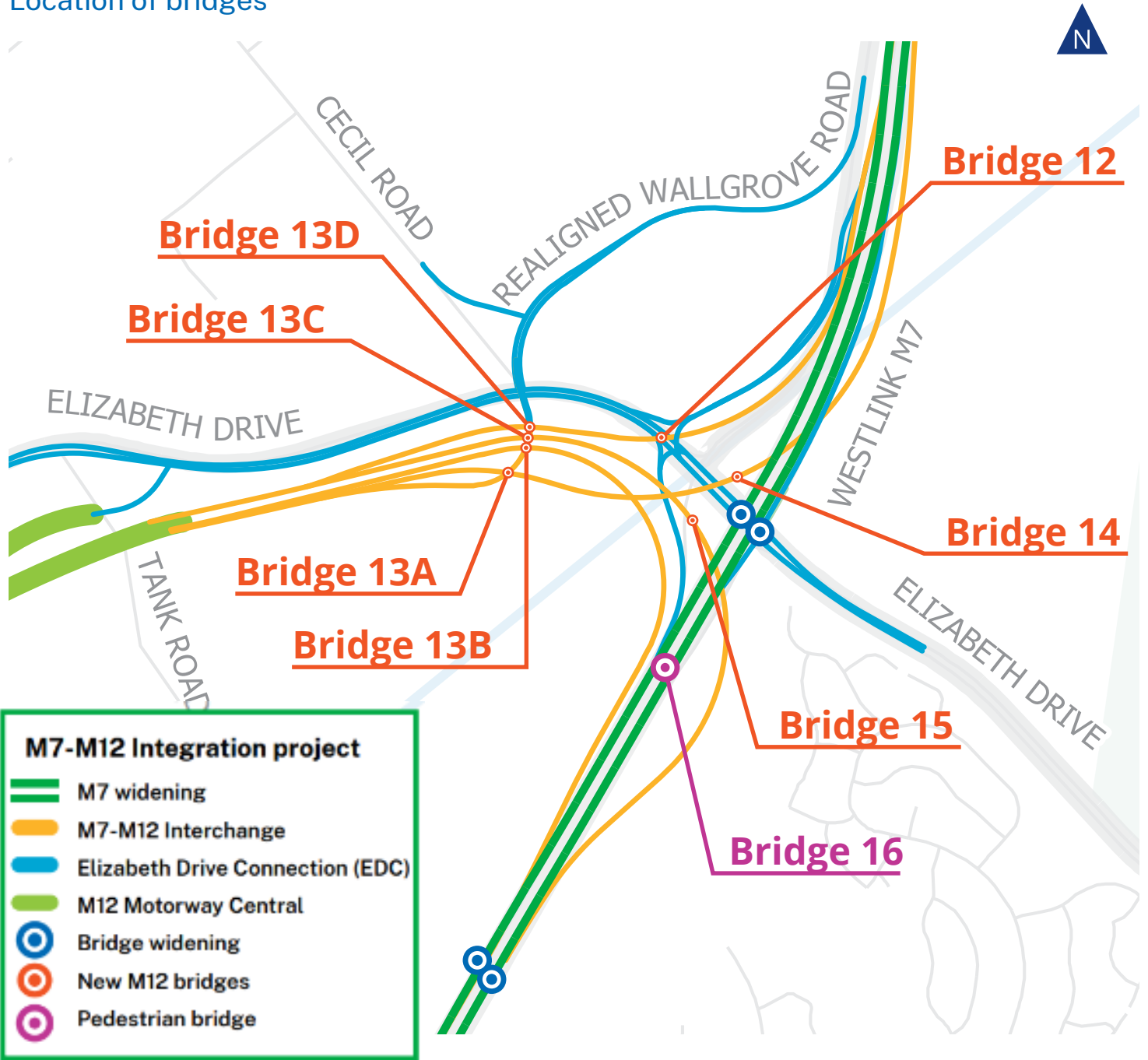
More information on bridge designs can be found in our Design and Landscape Plan located in our virtual engagement room on our website.

- [Chapter 7 - M12 Interchange](#)
- [Chapter 9 - M7 Bridges](#)



Artist impression of the M7-M12 Interchange

## Location of bridges



## Contact us



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