

5 Project description

This chapter provides a description of the project including the proposed route alignment, relevant design criteria, key design elements, and ancillary project elements.

Director General's requirements	Where addressed
A description of the project including:	
Route alignment of the project, including an indication of areas for widened or new carriageways.	Sections 5.1, 5.3
Key design elements of the project, including carriageway bridging, underpass design and drainage works.	Sections 5.2, 5.3
Ancillary operational components, including provision of an Operations Management Control System incorporating signage, roadside furniture and control centre at Hammondville.	Section 5.4
Construction facilities, including construction compounds, batching plants, material laydown areas, offices and amenities and spoil and stockpiling areas.	Chapter 6

5.1 The project

The NSW Roads and Traffic Authority (RTA) proposes to widen around 20 kilometres of the M5 South West Motorway between King Georges Road, Beverly Hills and Camden Valley Way, Casula (the project).

The project would include:

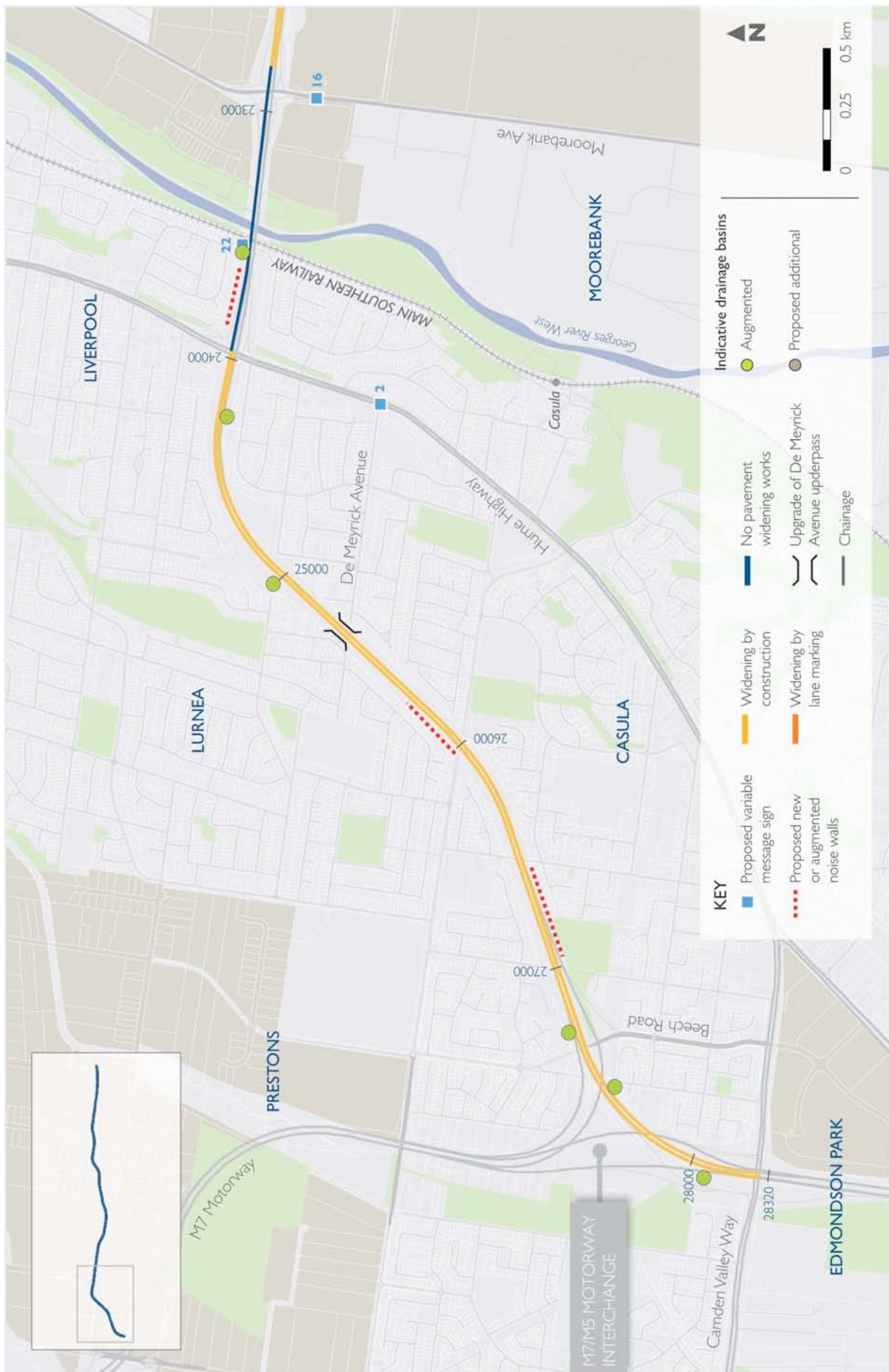
- Providing additional lanes on the M5 South West Motorway for the majority of its length by pavement widening, asphalt overlays and new line-marking.
- An operations management control system on and in the vicinity of the M5 South West Motorway including a new control building at Hammondville and variable message signs on the motorway and surrounding arterial roads.
- Bridge widening by placing new infill decking in the central median between existing bridges over Queen Street and Nuwarra Road. The underpass structures at De Meyrick Avenue would be upgraded. All other bridges can accommodate the proposed widening works without structural modification.
- Noise attenuation measures at various locations along the M5 South West Motorway between King Georges Road and Camden Valley Way.

A more detailed overview of the key features of the project is provided in Table 5.1 and illustrated in Figure 5.1(a)–(d). The concept design for the project is provided in Appendix C.

Table 5.1 Key features of the project

Feature	Location
Pavement widening	The motorway would be widened by line marking from two lanes to three lanes within the existing pavement width of the westbound carriageway between King Georges Road and Fairford Road. An additional eastbound and westbound lane would be provided generally in the median at selected locations between Fairford Road, Beverly Hills and Camden Valley Way, Casula. Widening on the outside of either or both sides of the carriageway would be required at some locations along the alignment. Safety barriers would be provided in the central median and adjacent to bridge piers to protect against collisions. No widening of the motorway is currently planned between the Georges River East and west of the toll plaza, or between Moorebank Avenue and the Hume Highway. Along these sections the motorway, there are currently either three or four lanes in each direction.
Interchanges/intersections	It is not proposed to change the existing access arrangements at interchanges. There would be minor realignment of various motorway on- and off-ramps through lane marking. In some locations, pavement widening would also be required to achieve geometric compliance with the current road design guidelines.
Bridges and underpasses	To accommodate the proposed carriageway widening, new bridge decking would be introduced to provide for an additional lane on each carriageway at the existing bridges that cross over Nuwarra Road and Queen Street. The De Meyrick Avenue underpass would be upgraded.
Drainage works and modified drainage	Drainage for pavement and bridgeworks would be designed to convey at least 1 in 10-year annual recurrence interval flows with no flow onto traffic lanes and seek to accommodate 1 in 20-year annual recurrence interval flows where practicable. New longitudinal drainage pipes would be installed on bridges over Salt Pan Creek and Georges River East to manage existing flows that drain from the carriageway directly into watercourses. A number of existing drainage basins would be augmented and some new basins provided to increase water detention and treatment within the corridor. These basins would, where possible, incorporate vehicle access ramps and an adjacent hardstand area for maintenance. The design philosophy would be to separate motorway drainage and cross-drainage systems where possible.
Noise attenuation	Some noise walls would need to be removed and reinstated. Additional noise walls would be incorporated in some areas. Some residential properties would be offered architectural treatments to provide noise mitigation in areas where the construction of noise walls is not feasible. All new and modified noise walls would all be designed to meet the noise objectives of the project.
Operations management control system	The proposed operations management control system would include a new motorway control centre, variable message signs and closed circuit television. The proposed motorway control centre would be located at Hammondville (refer to Figure 5.1 (a)–(d)) and would operate 24 hours a day, seven days per week to identify and manage traffic congestion and incidents on the motorway. An additional six 'Type C' variable message signs would be introduced on the motorway and 16 'Type B' variable message signs would be introduced on the wider road network around the motorway (refer to Table 5.6 for further detail regarding 'Type B' and 'Type C' variable message signs). Each variable message sign would require connection to a local power supply and connection to the motorway control centre. Connection to the motorway control centre could be either a direct connection or connection via local telecommunications infrastructure.

Feature	Location
Hammondville toll plaza	The optimal configuration for the Hammondville toll plaza is being investigated as part of the design. All options being investigated include provision of both electronic and cash toll booths. Works on the toll plaza could include pavement widening, relocating the cash lane booths, upgrading the concrete safety barriers and extending the access walkways.
Urban and landscape design concepts	The urban design and landscaping concepts would include gateway landscaping treatments and parkland-style landscaping utilising Cumberland Plan Woodland species.
Pedestrian and cyclist facilities	There are no existing pedestrian routes or facilities along the motorway. Pedestrian crossings of the motorway are currently provided at a number of locations in the form of overbridges or underpasses and there would be no change to these facilities as a result of the project. Cyclists travelling in both the eastbound and westbound direction currently use the 2.5-metre-wide outside shoulder of the motorway. There are also marked cyclist crossings provided at interchange entry and exit ramps. There would be no change to these facilities as a result of the project. During construction cyclists would continue to be able to use the motorway shoulder where possible. Some alterations and traffic management measures would be required.
Static directional and notification signage	Static directional and notification signage along the motorway would be modified or replaced where required as a consequence of the motorway widening.
Emergency facilities	There are 35 breakdown bays on the M5 South West Motorway. The breakdown bays would be retained and the emergency phones within breakdown bays would be upgraded. Emergency crossover gates would be provided at several locations along the length of the motorway.
Ancillary construction facilities	A number of construction site compounds would be established as part of the project, including on land within and outside the road corridor. Materials laydown sites and spoil reuse sites would also be introduced as part of the project (refer to section 6.7 for further detail).



Note: Project detail shown is indicative only subject to detailed design.