

Figure 5.1(d) Key components of the project – Fairford Road to King Georges Road

5.2 Design criteria

5.2.1 Technical criteria

The M5 South West Motorway was constructed in two stages – in 1992 and 1996 – and first opened to traffic in 1992.

In the original motorway design, provision was made for the future addition of a traffic lane in each direction in the central median. The parameters utilised in developing the design for this project were therefore guided by the existing carriageway and its characteristics and, as such, are relatively fixed.

The concept design for the project has therefore been developed to take advantage of the space provided in the original motorway design, while also satisfying the project objectives (refer Chapter 4) and considering community and environmental constraints. All project components would be designed to be generally consistent with the RTA's *Road Design Guide* (RTA, 2000).

An indicative cross-section is provided in Figure 5.2. Cross-sections would be consistent with the super-elevation of the existing motorway and would be suitable for the adopted horizontal alignment.

5.2.2 Urban design objectives

Design principles and objectives have been considered throughout the development of the project, in accordance with the publication *Beyond the Pavement: RTA urban design policy, procedures and design principles* (RTA, 2009b). This document provides guidelines and procedures for urban design considerations to be incorporated into all stages of the project development and emphasises the importance of considering urban design at an early stage in the design development of the project.

The urban design and landscape objectives for the project are to:

- Develop an integrated engineering and urban design outcome for the addition of two traffic lanes to the M5 South West Motorway that is both cost effective and consistent with the principles in the RTA's *Beyond the Pavement: RTA urban design policy*.
- Maintain the essential qualities of the corridor and the sense of place imparted by the motorway experience, particularly the well-established Cumberland Plain Woodland plantings.
- Maintain and enhance key landmarks along the route, including notable views and vistas.
- Enhance the sense of a distinct beginning and an end to the motorway but ensure consistency with the Sydney Orbital desired character.
- Maintain the provision of safe, convenient and enjoyable pedestrian and local access connections across the motorway.
- Maintain and protect the hydrological system through improved stormwater detention devices.
- Minimise maintenance requirements and ensure ease of maintenance.

The urban design and landscaping concepts for this project include gateway landscaping treatments and parkland style landscaping utilising Cumberland Plain Woodland species.

Further detail regarding lighting is provided in section 5.4.2.

5.3 Route alignment and key design elements

The road corridor would be generally 90 metres wide and the design speed would be 100 kilometres per hour. The project would be designed with a maximum vertical grade of six per cent and the horizontal alignment would consist of minimum radius curves of 600 metres and 800 metres west and east of the toll plaza, respectively.

5.3.1 Route alignment and description

King Georges Road to Fairford Road

Between King Georges Road and Fairford Road (refer Figure 5.1 (d)) an additional westbound lane would be provided within the existing pavement width of the westbound carriageway to increase the number of lanes in this direction from two to three (a distance of about four kilometres). This would be generally achieved by altering the line-marking to suit the new lane configuration.

Existing lanes in this section of the motorway are 3.5 metres wide. The traffic lanes would be reconfigured to each be generally 3.5 metres wide and a 2.5 metre wide breakdown/shoulder lane would be provided on the outside of the carriageway (refer to Figure 5.3).

The eastbound carriageway would remain as two through lanes, as an exit lane for the King Georges Road off-ramp already exists at this location. A merging lane would be provided between the Fairford Road off-ramp and the Fairford Road overpass to reduce the lane configuration to two lanes. Traffic lanes would not increase from two to three lanes and back to two lanes under this scenario. A short section of new pavement would be provided on the Belmore Road on-ramp to maintain shoulder widths (refer Table 5.2).

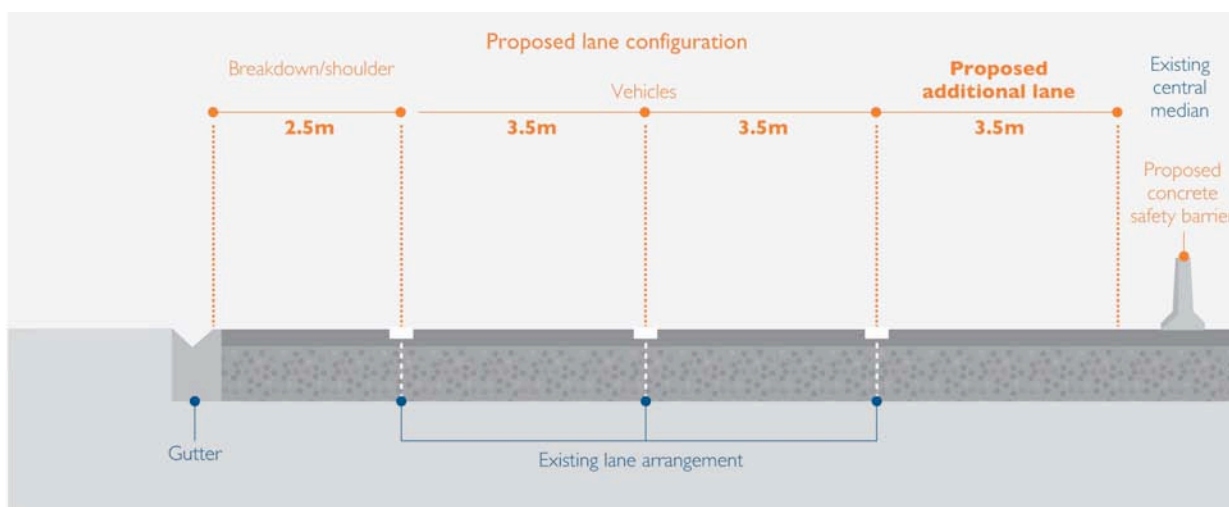


Figure 5.3 Indicative cross-section of the widened carriageway showing the effect altered lane marking

Other proposed changes in this section of the motorway are:

- Replacement of the wire rope barrier within the median with a concrete safety barrier, similar to the barrier already across Salt Pan Creek.
- Construction of noise walls at various locations (refer to section 5.3.5).
- Installation of one additional variable message sign on the motorway (there is already one variable message sign on this section of the motorway) and installation of new variable message signs on arterial roads within the vicinity of this section of the motorway (refer to section 5.4.1). The proposed locations of the new variable message signs, as well as locations of existing variable message signs, are shown in Figures 5.1 (a)–(d).

Table 5.2 Carriageway widening between King Georges Road and Fairford Road

Location	Length of widening	Extra width of carriageway
Belmore Road on-ramp, westbound	230 metres	2.3 metres

Fairford Road to Moorebank Avenue

Between Fairford Road and Moorebank Avenue – a distance of about 10 kilometres – an additional eastbound and westbound lane would be provided by widening the carriageways into the central grassed median. This would involve constructing new pavement and providing a central concrete safety barrier and a paved median shoulder (typically 1.2 metres wide) on each side to separate the eastbound and westbound carriageways (refer Figures 5.1 (b)–(d)).

Existing lanes in this section of the motorway are 3.5 metres wide. The traffic lanes would be reconfigured to each be generally 3.5 metres wide and a 2.5 metre wide breakdown/shoulder lane would be provided on the outside of the carriageway (refer to Figure 5.2). The works would typically increase the carriageway from two to three lanes in each direction and require removal of the grassed median.

To allow for appropriate stopping sight distances, the motorway would also be widened on either the outside or both sides of the carriageway at a number of locations. New pavement would be constructed to accommodate the additional lanes (refer to Table 5.3).

Table 5.3 Carriageway widening between Fairford Road and Moorebank Avenue

Location	Length of widening	Extra width of carriageway ¹
East of Gibson Avenue	380 metres	0.5 metres
West of Queen Street	630 metres	2.5 metres (10 metres at emergency bay)
Beaconsfield Street	300 metres	1.5 metres (3 metres)
West of Horsley Road	270 metres	0.4 metres
Toll plaza (possible element)	500 metres	1.1 metres
East of Heathcote Road	340 metres	1.1 metres

1. The figures provided are the average width for widening, with the maximum width in brackets, if it differs along the section.

These works would generally involve new pavement construction, some new drainage components and some changes to existing drainage infrastructure (refer section 5.3.4 for details on drainage requirements). The extra widths of carriageway would be sufficient to accommodate three lanes in each direction as well as a 2.5-metre-wide shoulder, as described in Figure 5.2. Traffic would generally be the same distance from the road boundary as a result of carriageway widening.

No additional lanes are proposed between the Georges River East and the toll plaza (a distance of about 800 metres), as the motorway currently has three to four lanes in each direction at this location.

Other proposed changes in this section of the motorway are:

- Construction of a new motorway control centre (refer to section 5.4.1), which would be located to the east of the existing building adjacent to the toll plaza.
- Modification of the bridges over Queen Street and Nuwarra Road to accommodate the proposed widening (refer to section 5.3.3).
- Construction of noise walls at various locations (refer to section 5.3.5).
- Installation of four new variable message signs (refer to section 5.4.1 below) and new variable message signs on local roads within the vicinity of this section of the motorway. The proposed locations of these new variable message signs are shown in Figure 5.1 (a)–(d).

Moorebank Avenue to Hume Highway

This one-kilometre section of the M5 South West Motorway is already four lanes wide in each direction, with lanes 3.5 metres wide (refer Figure 5.1 (a)). No further widening is proposed, but some lane marking may be required.

Proposed changes in this section of the motorway are:

- Installation of a new variable message sign would be installed along the eastbound carriageway (refer to section 5.4.1 below). On this section of the motorway, there are no existing variable message signs.
- Construction of noise walls on the northern side of the motorway.

Hume Highway to Camden Valley Way

Between the Hume Highway and Beech Road – a distance of about 3.5 kilometres – an additional eastbound and westbound lane would be provided by widening the carriageway into the central grassed median (refer Figure 5.1 (a)). This would involve constructing new pavement and providing a central concrete safety barrier (instead of the existing wire rope barrier) and a median typically 1.2 metres on both sides to separate the eastbound and westbound carriages. Existing lanes in this section of the motorway are 3.5 metres wide.

Existing lanes in this section of the motorway are 3.5 metres wide. The traffic lanes would be reconfigured to each be generally 3.5 metres wide and a 2.5 metre wide breakdown/shoulder lane would be provided on the outside of the carriageway (refer to Figure 5.2). This would increase the carriageway from two to three lanes in each direction and require the removal of the grassed median.

To allow for appropriate sight distances, the motorway would be widened either on the outside or on both sides of the carriageway at the locations shown in Table 5.4.

Table 5.4 Carriageway widening between the Hume Highway and Camden Valley Way

Location	Length of widening	Extra width of carriageway ¹
West of Hume Highway	750 metres	2 metres (6 metres for emergency bay)
De Meyrick Avenue	500 metres	1.5 metres (3 metres)
Kurrajong Road	360 metres	2 metres (2.5 metres)

1. The figures provided are the average width for widening, with the maximum width in brackets, if it differs along the section.

These works would generally involve new pavement construction and drainage modifications (refer section 5.3.4 for details on drainage modifications).

Other proposed changes in this section of the motorway are:

- Upgrading of the De Meyrick Avenue underpass (refer to section 5.3.3).
- New pavement to provide a third lane for the eastbound carriageway between Beech Road and Camden Valley Way (a distance of about one kilometre).
- Construction of noise walls at various locations (refer to section 5.3.5).
- Installation of variable message signs (refer to section 5.4.1 below) would be installed on local roads in the vicinity of this section of the motorway (no new variable message signs would be installed within the corridor itself). The proposed locations of these new variable message signs are shown in Figure 5.1(a)–(d).

5.3.2 Intersections and access

All intersections along the existing motorway are grade separated. This provides for uninterrupted flow of traffic by separating motorway traffic from traffic using the local road network.

The project would not alter existing access arrangements at interchanges.

However, the project would require a minor realignment of various motorway on- and off-ramps through lane marking and, in some locations, pavement widening to improve geometric compliance with the road design guidelines.

5.3.3 Carriageway bridging, underpass design and other structures

To accommodate the proposed carriageway widening, new infill bridge decking would be placed in the central median areas between the existing bridges crossing over Nuwarra Road and Queen Street. New bridge designs and additional widening works would be designed to Australian Standard AS5100 and would be consistent with the RTA's *Bridge Technical Direction Manual Issue 2010/02* (RTA, 2010a).

In addition, the De Meyrick Avenue underpass would be upgraded. The extent of works would be confirmed during detailed design, but may include reconstruction to current standards for the full width of the motorway (including infilling the median area with a new structure). The existing 2.4-metre height clearance for De Meyrick Avenue would be maintained along with the current lane configuration and retaining walls and base of the existing bridge structures.

All other bridges and underpasses can accommodate the proposed widening works without structural modification.

5.3.4 Pavement and drainage

Pavement

The new pavement would interface with the existing pavement, and both the new and existing pavement would be overlaid with an open-grade asphalt surface (except in locations that currently have a concrete surface). This would:

- Allow for correction of existing uneven surfaces.
- Remove temporary construction lane marking.
- Assist in noise mitigation.

Where there is an existing concrete surface, the new adjoining pavement would have a dense-grade surface and the existing concrete surface would not be overlaid.

The approach to constructing the proposed lanes is provided in section 6.3.

Drainage and stormwater

Pavement drainage would be designed to convey at least 1 in 10-year annual recurrence interval flows with no flow onto traffic lanes and would seek to accommodate 1 in 20-year annual recurrence interval flows where practicable. The design philosophy would be to separate motorway drainage and cross-drainage systems where possible. Potential climate change impacts on the design requirements for drainage systems are considered in section 9.4.

New longitudinal drainage pipes would be installed along bridges over Salt Pan Creek (eastbound) and Georges River East (both eastbound and westbound bridges) to collect the water from the drainage scuppers that currently drain directly into these watercourses. These drainage structures would convey stormwater flows from these bridges to the closest drainage basin or pavement drainage structure.

The increase in pavement width and, as a consequence, impervious ground surface, would cause an increase in peak overland flows in the catchment areas of the motorway and works to increase the capacity of existing water detention and treatment systems would be required. There are currently 31 drainage basins and two gross pollutant traps located between King Georges Road and Camden Valley Way. In order to minimise potential flooding impacts on surrounding catchments as a result of the project, any increases in peak flow volumes that are likely to cause adverse impacts would be captured on site in new and augmented basins.

Preliminary design work undertaken to date has identified that nine of the 31 existing drainage basins would need to be augmented and there would be 16 new drainage basins introduced along the alignment. Where possible, vehicle access ramps and an adjacent hardstand area would be incorporated for ease of maintenance. Drainage basin details are based on preliminary design only and may be subject to change following further detailed hydrological studies at the detailed design stage. Table 5.5 and Figure 5.1(a)–(d) provide indicative locations for new and augmented drainage basins.

Drainage basins would be designed to incorporate first-flush storage, accidental spillage storage and stormwater detention. Retaining wall structures would be required for some drainage basins and water dissipation devices may also be required.

The considerations underpinning the sizing and function of these basins are discussed in section 9.1. Potential hydrology and flooding impacts are provided in section 9.2.

Table 5.5 Information regarding augmented and new drainage basins¹

Approx chainage ²	N or S of M5 carriageway	Access	Approx capacity
12040 (A)	South	Bryant Street	2000 m ³
12130 (N)	North	Motorway	400 m ³
14520 (N)	South	Queen Street	100 m ³
15230 (N)	South	Alliance Avenue	200 m ³
16750 (N)	South	Bransgrove Road	1600 m ³
16850 (N)	South	Bransgrove Road	1600 m ³
18430 (N)	North	Motorway	200 m ³
18940 (A)	South	Hammondville maintenance yard	300 m ³
18970 (N)	South	Nuwarra Road	800 m ³
19780 (A)	North	Phone bay 19 on motorway	800 m ³
21020 (N)	South	Preda Place	200 m ³
21120 (N)	North	Nuwarra Road	200 m ³
21290 (N)	South	Heathcote on-ramp	500 m ³
21500 (N)	North	Centenary Avenue	300 m ³
21650 (N)	South	Motorway	200 m ³
21690 (N)	South	Motorway	400 m ³
21690 (N)	North	Motorway	500 m ³
22390 (N)	South	Moorbank Avenue off-ramp	300 m ³
22390 (N)	North	Moorebank Avenue on-ramp	300 m ³
23580 (A)	North	Motorway	600 m ³
24270 (A)	South	Future service station site	400 m ³
24980 (A)	North	Motorway	3000 m ³

Approx chainage ²	N or S of M5 carriageway	Access	Approx capacity
27260 (A)	North	Beech Road	800 m ³
27530 (A)	South	Motorway	300 m ³
28060 (A)	North	M5 off-ramp to the M7 Motorway	800 m ³

1. Drainage basin size and location is based on preliminary design only and may be subject to change based on detailed design.

2. A = Augmented, N = New.

5.3.5 Noise attenuation features

Additional noise walls and infilling between existing noise walls is proposed as part of the project and are discussed in detail in section 8.2.5. The indicative heights and extents of noise walls would be reviewed during the detailed design process.

New noise walls are proposed at the following locations:

- Northern side of the motorway, east of Kurrajong Road – 4.5 metres high and 275 metres long.
- Southern side of the motorway, west of Box Road – six metres high and 400 metres long.
- Northern side of the motorway, infill barrier between Hume Highway and railway – 4.5 metres high and 240 metres long.
- Southern side of the motorway, between Horsley Road and Panania North Public School – four metres high and 510 metres long.
- Southern side of the motorway, infill barrier behind Parry Avenue – four metres high and 155 metres long.

An existing noise wall on the southern side of the motorway between Beaconsfield Street and Queen Street would be raised from three metres to five metres in height for a length of 950 metres.

Some spoil material from the widening work may be placed in mounds in the areas shown in Figure 6.3, which may provide some contribution to mitigation of motorway traffic noise.

5.4 Operational components

5.4.1 Operations management control system

The operations management control system would include:

- A motorway control centre at Hammondville.
- Operations management control system (control software and equipment).
- Closed circuit television to identify incidents.
- Vehicle detection sensors to monitor traffic.
- Variable message signs to provide information to motorists.
- Trunk cabling (electricity and fibre optic cabling within conduits in a trench).
- Emergency telephones.

Motorway control centre building

The motorway control centre building would be located at Hammondville (refer to Figure 5.4). This building would house control equipment for all electronic operations management control system components (variable message signs, closed circuit television etc).

It would be a conventional single-storey building constructed of concrete, steel and lightweight framing. It would provide about 220 square metres of office and control room working space. The dimensions of the building would be subject to detailed design, but are likely to be 11 metres by 20 metres.

The building would be occupied 24 hours a day, seven days a week. About four specialist operations management control system staff would work in the new building, with up to five maintenance contractors attending at any one time. During a major incident, up to 20 personnel may attend the purpose-built incident room.

The control centre building would be located adjacent to the existing toll plaza building and access would be via the same access as the toll plaza building. Parking would be provided at the rear (north) of the building and the area would be landscaped once construction is completed.

All design elements associated with this structure would be subject to detailed design.

Roadside furniture and signage

Roadside furniture is included as part of the proposal. The majority of existing roadside furniture would be removed in areas of widening by construction and reinstated following construction.

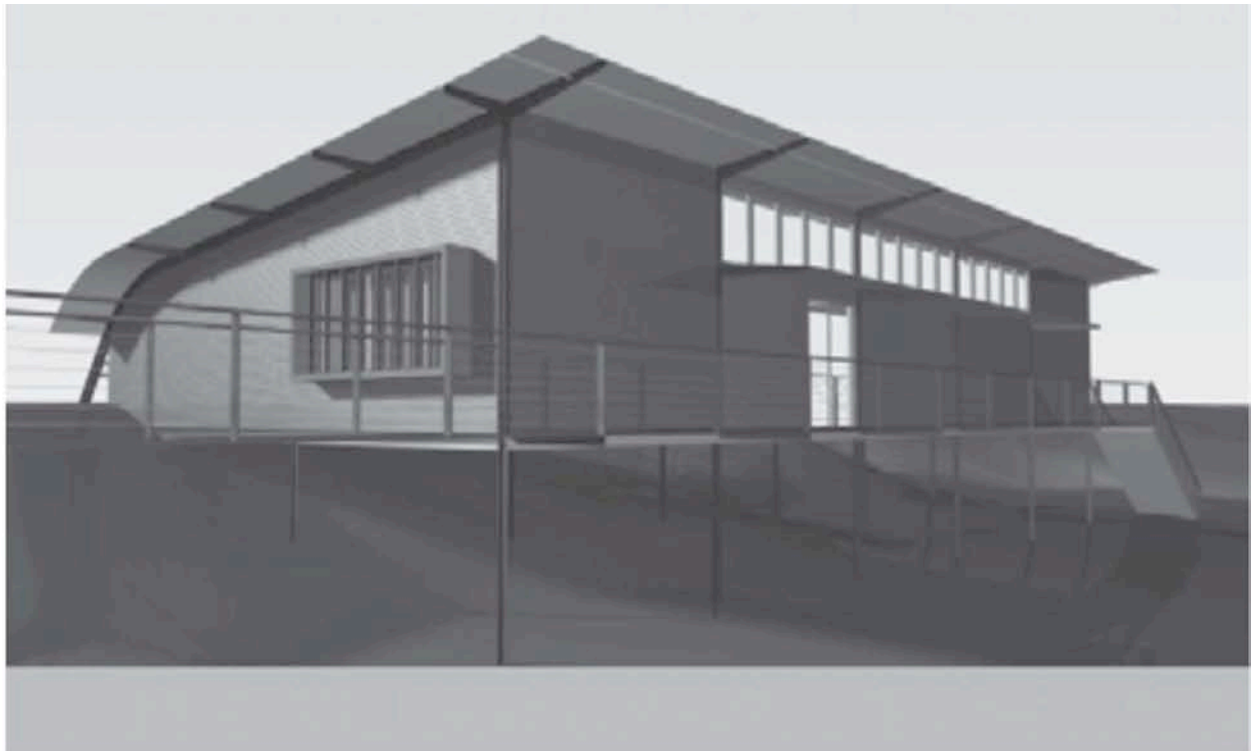
There would be significant overlap between elements of the operations management control system and roadside furniture. Roadside furniture and operations management control system elements include:

- Closed circuit television poles and brackets.
- Variable message sign structures.
- Roadside cabinets to house operations management control system electrical equipment.
- Emergency telephones.
- Lighting and poles.
- Safety barriers.

Variable message signs

Variable message signs are large electronic traffic message devices that display traffic information and provide advice to road users with both real-time information about road and traffic conditions and incident management and advance information about potential traffic impacts and changes to road networks as a result of major events or road maintenance activities. There are a number of variable message signs already installed on the M7 and the M5 East motorways, as well as on the arterial road network surrounding these motorways.

There are two existing variable message signs on the M5 South West Motorway. 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. The dimensions of these variable message signs are shown in Table 5.6. Figure 5.5 provides an illustration of a typical non-motorway variable message sign. The variable message signs would be permanent and are a standard RTA structure with minimalist design and clean lines. The signs would be suspended above the roadway or adjacent to the roadway, on a cantilever gantry structure incorporating a maintenance platform for access to the back of the sign.



a Indicative illustration of the proposed operations management control system building



b Proposed location of the proposed operations management control system building

Figure 5.4 Proposed operations management control system building

Table 5.6 Dimensions for Type B and Type C variable message signs

VMS type	VMS sign length	VMS dimensions (approximate)	
		VMS sign height	Sign height above road
Type B	7.2 metres	1.7 metres	5.5 metres (minimum)
Type C	8.7 metres	1.8 metres	5.5 metres (minimum)

The controller for each sign would be contained within the sign itself with all other control equipment located in a roadside cabinet. The roadside cabinet would be about 1.2 metres high, 600 millimetres wide and 500 millimetres deep and would be finished in 'gull grey' as specified in AS2700. Protective barriers may also need to be installed at the variable message sign site to prevent injuries to people in vehicles that would occur if the vehicle were to hit the structure.

Each variable message sign would need to be connected to a local power supply and connection to the motorway control centre via either the local telecommunications network or direct connection to the motorway control centre building. The dimensions of these variable message signs are outlined in Table 5.6.



Figure 5.5 Photo of a variable message sign at Pacific Highway, Osborne Park

Table 5.7 and Figure 5.1(a)–(d) provide information on the general localities where variable message signs are proposed. Note that in Table 5.7, variable message signs 1–16 are 'Type B', while 17–22 are 'Type C'.

Table 5.7 General localities where variable message signs are proposed

VMS ID	General localities where variable message signs are proposed ¹	For vehicles travelling
1	Hume Highway, south of Liverpool	Southbound between Memorial Avenue and Macquarie Street
2	Hume Highway, north of Casula	Northbound approaching the M5 South West Motorway
3	Newbridge Road, west of Moorebank Avenue,	Eastbound approaching Moorebank Avenue
4	Newbridge Road, east of Moorebank Avenue	Westbound approaching Moorebank Avenue
5	Heathcote Road, south of the M5 South West Motorway	Northbound approaching Nuwarra Road
6	Henry Lawson Drive, north of the M5 South West Motorway	Southbound approaching Bullecourt Avenue
7	Henry Lawson, Drive, south of the M5 South West Motorway	Northbound approaching the M5 South West Motorway
8	The River Road, south of the M5 South West Motorway	Northbound approaching the M5 South West Motorway
9	Milperra Road	Eastbound approaching The River Road
10	Canterbury Road, west of Fairford Road	Eastbound approaching Fairford Road
11	Canterbury Road near Moxon Road	Westbound approaching Moxon Road
12	Stacey Street, near Macauley Avenue	Southbound prior to the Stacey Street diversion
13	Fairford Road, south of the M5 South West Motorway	Northbound approaching the M5 South West Motorway
14	Belmore Road, north of the M5 South West Motorway	Southbound approaching the M5 South West Motorway
15	Belmore Road, south of the M5 South West Motorway	Northbound approaching the M5 South West Motorway
16	Moorebank Avenue, south of the M5 South West Motorway	Northbound approaching the M5 South West Motorway
17	M5 South West Motorway (westbound) approaching Salt Pan Creek	Westbound
18	M5 South West Motorway (eastbound) west of the Gibson Avenue overbridge	Eastbound
19	M5 South West Motorway (westbound) west of the Horsely Road overbridge	Westbound
20	M5 South West Motorway (eastbound) east of the Georges River	Eastbound
21	M5 South West Motorway (westbound) between Heathcote Road and Moorebank Avenue	Westbound
22	M5 South West Motorway (eastbound) between the Hume Highway and Moorebank Ave	Westbound

Interlink Roads and its contractors, in consultation with the RTA, would determine the exact location of each variable message sign within the general localities identified above. The locations would be consistent with relevant standards and requirements and all variable message signs would be positioned to comply with relevant light spill limitations onto the surrounding properties (ie AS 4282-1997 *Control of the obtrusive effects*

of outdoor lighting). Variable message signs are silent during operation. The electronic display lights are recessed into the display board ensuring that while clearly visible to road users, they do not shine into adjacent homes or business premises.

The variable message signs would need to be inspected on a regular basis, in accordance with the manufacturer's specifications. Parking bays would be constructed at each of the six on-motorway variable message sign locations to provide a safe parking area for maintenance vehicles without the need to undertake shoulder or lane closures.

Safety barriers

Wire rope safety barriers and a central grassed median currently separate the carriageways of the M5 South West Motorway. Widening of the motorway into the central grassed median would require the removal of the wire rope safety barriers. These barriers would be replaced with a new concrete safety barrier providing for an inside shoulder adjacent a continuous concrete ('Type F') safety barrier (refer to Figure 5.3).

The continuous concrete safety barrier would continue at bridge abutments. However, the width of the inside shoulder of the motorway adjacent to bridge structures would be reduced to about 0.5 metres.

5.4.2 Lighting

Lighting is currently provided at intersections, ramps and the underside of bridge decks at Fairford Road and Moorebank Avenue. Some modification may be required to local road lighting under widened bridges. Any modifications to lighting, or any new lighting, would be designed and installed consistent with the provisions of AS 4282-1997 *Control of the Obtrusive Effects of Outdoor Lighting*.

5.4.3 Pedestrians and cyclist facilities

Cyclists currently use the motorway's 2.5-metre wide outside shoulder to travel in both eastbound and westbound directions. Marked cyclist crossings are provided at some interchange on-ramps and off-ramps. Cyclists would continue to be able to access the motorway shoulder during construction with some alterations. Existing on-motorway cyclist facilities would be reinstated following construction.

No additional cyclist facilities are proposed as part of this project. Existing shoulders used by cyclists would be reinstated.

Pedestrian crossings of the motorway are provided at motorway overbridges and underbridges and would not be affected by the project. There are no pedestrian facilities along the motorway, and no adjustment to existing facilities is proposed as part of the project.

5.4.4 Emergency facilities

Thirty-five breakdown bays equipped with emergency telephones are located along the motorway. They are typically spaced every 800 to 1200 metres and are generally opposite each other. The emergency telephones would be upgraded as part of the work.

There are also four emergency cross-overs along the motorway. The RTA is currently reviewing the need for emergency cross-overs and, if deemed beneficial to the motorway, cross-overs would be incorporated into the design of the median.

5.4.5 Utilities and services

The Interlink optical fibre used for toll plaza communications between Henry Lawson Drive and the Georges River East bridge is located in the central median area and would need to be relocated to the side area in the new conduit system to be installed as part of the project.

Some minor sewer pipes and water mains may also need to be adjusted at a number of locations along the motorway.

Off-motorway works to connect the variable message signs to the control centre may include closer interaction with existing services, particularly at road crossings, but the extent of impacts would not be identified until the detailed design is finalised. The introduction of variable message signs may require some adjustment to existing services; consultation with relevant service providers would occur prior to commencement of these works. Table 5.8 provides an indication of the utilities that may be affected by the proposed variable message signs.

Table 5.8 Existing utilities that may be affected by proposed variable message sign construction

VMS ID	General VMS locality ¹	Element(s) that may be affected
1	Hume Highway, between Memorial Avenue and Macquarie Street	Underground power assets
2	Hume Highway, north of Casula	Overhead services
3	Newbridge Road, west of Moorebank Avenue	Potentially various utilities
4	Newbridge Road, east of Moorebank Avenue	Overhead power lines
6	Henry Lawson Drive, north of the M5 Motorway	Overhead services
8	The River Road	Overhead powerlines Existing signage
9	Milperra Road, eastbound approaching The River Road	Overhead services Underground services
10	Canterbury Road, west of Fairford Road	Overhead services Underground services
11	Canterbury Road at Moxon Road	Overhead services
12	Stacey Street, near Macauley Avenue	Existing signage
17	Motorway (westbound) approaching Salt Pan Creek	Other fixed and advertising signage
18	Motorway (eastbound) west of the Gibson Avenue overbridge	Other fixed and advertising signage
19	Motorway (westbound) west of the Horsely Road overbridge	Other fixed and advertising signage
20	Motorway (eastbound) east of the Georges River	Other fixed and advertising signage
21	Motorway (westbound) between Heathcote Road and Moorebank Avenue	Other fixed and advertising signage
22	Motorway (eastbound) between Hume Highway and Moorebank Avenue	Other fixed and advertising signage

1. Variable message sign localities are indicative only and subject to detailed design.

