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5.1 VISUAL IMPACT ANALYSIS



Illustration 64: Approximation of the visual catchment of the existing Motorway, representing a conservative area from where the Motorway is able to be seen. The darker area is the extent of the visibility of the proposed works

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Message Signs (VMS) have been assessed separately and are attached as Appendix A of the report. The gradings are measured on their impact relative to each other within the scope of the proposal rather than to an absolute scale covering all potential forms of impact.

Through this process, the visual impact of the proposal as a whole has been identified. Design opportunities and areas requiring mitigation have emerged and these are discussed following the assessment.

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5.2 VISUAL IMPACT ASSESSMENT

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Illustration 65: Visual Impact Assessment summary from each viewpoint

Viewpoint	Location	Elements of proposal visible	Visual Sensitivity	Magnitude of visual effect	Overall rating of visual impact	Comment
1	View west along motorway from the King Georges Road interchange	Linemarking for additional westbound lane and concrete safety barrier	L	L	L	Low impact due to the minimal works being undertaken. Concrete barrier replacing the wire rope barrier will reduce visibility across the carriageways.
2	View north to the motorway corridor from Lance Hutchinson Oval pavilion	No proposed elements visible	L	Neg	Neg	Vegetated embankments with noise walls to the top, screen the motorway, therefore visual impacts from this viewpoint will be negligible.
3	View north to the motorway corridor from Salt Pan Creek reserve	Conduits fixed to the outside face of the southern parapet of the existing bridge. Additional westbound carriageway traffic	M	L	ML	Impact will be low due to the distance of viewers to the proposed work. Conduits to be designed to integrate with existing bridge structure.
4	View south to the motorway corridor from MacKenzie Street, adjacent to Sir Joseph Banks High School	No proposed elements visible	L	Neg	Neg	Existing noise walls and vegetation screen the motorway, therefore visual impacts from this viewpoint will be negligible.
5	View north to the motorway corridor from Albert Street Revesby, 50m south of the motorway	No proposed elements visible	L	Neg	Neg	Vegetated embankments with noise walls to the top, screen the motorway, therefore visual impacts from this viewpoint will be negligible.
6	View west along the motorway at Queen Street overpass	Eastbound and west bound carriageways located within grassed median, replaced with a concrete safety barrier, and infill of Queen Street bridge	M	M	M	The removal of the grassed median and associated planting increases rating as they currently provide a visual buffer between the carriageways.
7	View south to the motorway corridor from Horsley Drive, 100m north of the motorway corridor, adjacent to the University of Western Sydney	No proposed elements visible	L	Neg	Neg	Existing noise walls and vegetation screen the motorway, therefore visual impacts from this viewpoint will be negligible.

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Viewpoint	Location	Element of proposal visible	Visual Sensitivity	Magnitude of visual effect	Overall rating of visual impact	Comment
8	View north to the motorway from Whitfield Parade in the vicinity of the motorway control centre	Possible sighting of building roof	M	L	ML	The will be little or no vegetation loss due to the construction of the building. The building design is integrated with the existing building and into the landscape setting.
9	View south east to the motorway corridor from the New Brighton Golf Club clubhouse	No proposed elements visible	M	Neg	Neg	Vegetated embankments with noise walls to the top, screen the motorway, therefore visual impacts from this viewpoint will be negligible.
10	View east along motorway from the Heathcote Road interchange	Eastbound and west bound carriageways located within grassed median, replaced with a concrete safety barrier.	M	M	M	The removal of the grassed median and associated tree planting increases rating as they currently provide a visual buffer between the carriageways. Planting improvements to the Heathcote Road interchange will help to mitigate this to some extent.
11	View west along motorway 200m west of the Heathcote Road interchange	Eastbound and west bound carriageways located within grassed median, replaced with a concrete safety barrier. Sedimentation basins on both sides of the carriageway	M	L	ML	The removal of the grassed median increases rating. Planting works associated with proposed sedimentation basins will help to mitigate the impact.
12	View south to the motorway corridor from Greenhills Avenue, 75m north of the motorway corridor, within Moorebank industrial area	No proposed elements visible	L	Neg	Neg	Vegetated verge screens the motorway, therefore visual impacts from this viewpoint will be negligible.
13	View eastbound along the motorway, adjacent to the refuse storage area	Eastbound and west bound carriageways located within grassed median, concrete safety barrier.	M	M	M	The removal of the grassed median and associated shrub planting increases rating as they currently provide a visual buffer between the carriageways. Mitigate by additional planting to verges.

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Viewpoint	Location	Element of proposal visible	Visual Sensitivity	Magnitude of visual effect	Overall rating of visual impact	Comment
14	View west to the motorway corridor from Verbeena Avenue, 25m east of the motorway corridor	No proposed elements visible	ML	Neg	Neg	Existing noise wall screens the motorway, therefore visual impacts from this viewpoint will be negligible.
15	View east to the motorway corridor from Ash Road Sports Ground, 225m east of the motorway corridor	No proposed elements visible	L	Neg	Neg	M7 Westlink road infrastructure screens the motorway, therefore visual impacts from this viewpoint will be negligible.

Neg = Negligible; VL = Very Low; L = Low; ML = Medium Low;
M = Medium; MH = Medium High; H = High; VH = Very High

The motorway generally sits within cut areas with well vegetated embankments to both sides. The project would not generally be seen by those outside of the motorway as the works are to be undertaken within the motorway corridor.

For motorists travelling within the motorway context, the changes will have moderate to low visual impact due to the removal of the grassed and sparsely vegetated median. This is a consistent visual element of the motorway from west of Salt Pan Creek. The motorway would be vegetated to the verges and embankments, and planting improvements to the gateways and major interchanges are also proposed.

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Illustration 66: Visual Impact Assessment summary for noise walls

Location	Element of Proposal Visible	Visual Sensitivity	Magnitude of visual effect	Overall rating of visual impact	Comment
N1. Southern side of motorway, parallel to Parry Avenue	115 metre long, 4 metre high lightweight concrete panel infill wall	L	L	L	This wall is a small section of infill wall between two sections of existing wall. It is located at the top of a vegetated embankment (when viewed from the motorway) and will be partially screened by trees and shrubs on both sides of the wall, minimising its impact. The wall would be consistent with existing treatments along the motorway.
N2. Southern side of motorway, between Beaconsfield Street and Queen Street	950 metre long, 5 metre high lightweight concrete panel to replace existing barrier	L	L	L	The wall will replace the existing wall which is located adjacent to the motorway for the majority of its length, before moving to the top of a small vegetated embankment prior to Beaconsfield Street. The major impact will be an increase in the height of the wall, but this impact remains low due to it being a replacement of an existing wall.
N3. Southern side of motorway, between Horsley Road and Panania North Public School	510 metre long, 4 metre high lightweight concrete panel infill wall	M	ML	M	This wall is a reasonably long section of infill wall. It is located at the top of a vegetated embankment and will be partially screened from the motorway by trees and shrubs, but will be more visible to the residences, open space and school on the other side. For this reason, it will have a moderate visual impact.
N4. Northern side of motorway, between Hume Highway and railway	240 metre long, 4.5 metre high lightweight concrete panel infill wall	L	L	L	This wall is a section of infill wall between the Hume Highway and the railway. It is located at the top of an embankment, well vegetated on the motorway side. The wall will be reasonably screened by existing vegetation on both sides, limiting its impact.

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Location	Element of Proposal Visible	Visual Sensitivity	Magnitude of visual effect	Overall rating of visual impact	Comment
N5. Northern side of motorway, east of Kurrajong Road	275 metre long, 4.5 metre high lightweight concrete panel	ML	L	ML	This is a new section of wall to be located toward the top of a vegetated embankment. It will be reasonably screened from the motorway by the vegetation, but will be more visible to the adjoining residences on the other side. Due to this, it will have a moderate to low impact.
N6. Southern side of motorway, west of Box Road	400 metre long, 6 metre high lightweight concrete panel	ML	L	ML	This is a new section of wall to be located toward the top of a sparsely vegetated embankment. It will be visible to both the motorway and the adjoining residences, but due to the wall being consistent with existing treatments along the motorway, will have a moderate to low impact.

Neg = Negligible; VL = Very Low; L = Low; ML = Medium Low;
M = Medium; MH = Medium High; H = High; VH = Very High

The proposed noise walls are to replace existing degraded walls or to infill locations where noise walls aren't present and are now required due to recent residential development. Noise walls are a common element along the motorway, and in most cases the new walls will be partially screened by existing vegetation, and will generally have a moderate to low visual impact.

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Illustration 67: Visual Impact Assessment summary for construction compounds

Location	Element of Proposal Visible	Visual Sensitivity	Magnitude of visual effect	Overall rating of visual impact	Comment
A. Moorebank Avenue (24 hour use) Main office	Prefabricated office buildings and site fencing	L	L	L	Site is zoned for industrial and transport uses and surrounded by industrial land uses. Use of this site as a construction compound would not be inconsistent with surrounding land uses, therefore visual impacts will be low.
B. M5/Graham Avenue – 1 (24 hour use) Satellite office	Prefabricated office buildings and site fencing	L	L	L	Existing area is currently grassed and contains some hardstand areas and millings from previous resheeting works. Compound site would be visible from the motorway corridor only.
C. M5/Graham Avenue - 2 Satellite office, materials laydown	Prefabricated office buildings, materials stockpiles, and site fencing	L	M	L	The site is flat and grassed with some mature trees. It would be accessed from the motorway. No specific mitigation is required. The site would be visible from the motorway corridor only.
D. M5/Graham Avenue - 3 Satellite office, materials laydown	Prefabricated office buildings, materials stockpiles, and site fencing	ML	M	ML	The site is sloping and grassed with mature trees and shrubs. It would be accessed from the motorway. Maximise retention of mature trees adjacent to residences. Siting of temporary offices to consider impact on adjacent residential properties.
E. Bransgrove Road (24 hour use) Satellite office, materials laydown	Site fencing only	L	M	LM	Formerly used as landfill site. The site is screened by vegetation and mounding and would not be visible from adjoining areas.
F. Henry Lawson Drive Satellite office, materials laydown	Site fencing only	L	L	L	Site sits below motorway and Henry Lawson Drive off-ramp and is edged with native tree planting, therefore visual impacts will be low.

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Location	Element of Proposal Visible	Visual Sensitivity	Magnitude of visual effect	Overall rating of visual impact	Comment
G. Beaconsfield Road (24 hour use) Satellite office, materials laydown	Prefabricated office buildings, materials stockpiles and site fencing	L	L	L	Located within an existing industrial area. Possible reuse of existing building for offices. Use of this site as a construction compound would not be inconsistent with surrounding land uses, therefore visual impacts will be low.
H. North side of Heathcote Road Materials laydown	Materials stockpiles and site fencing	M	M	M	Located adjacent to rear of residential properties, other open space, and industrial areas. Siting of compound elements to be located to minimise tree losses.

Neg = Negligible; VL = Very Low; L = Low; ML = Medium Low;
M = Medium; MH = Medium High; H = High; VH = Very High

The majority of locations for the proposed construction site compounds are degraded areas of open space close to the motorway corridor, and adjacent to industrial landuses.

Due to the relatively short timeframe (approximately two years) that the construction site compounds will be in use, mitigation measures are limited to siting elements to reduce their impact, minimising the loss of existing trees and temporary screening of the compounds using mesh to the fences.

Following the construction period, all structures and hardstand areas will be removed. All construction compound sites will be returned to at least their pre-construction state, or to designs indicated on the Urban Design and Landscape Plan to be developed during the detailed design stage.

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Illustration 68: Visual Impact Assessment summary for spoil disposal sites

Location	Element of Proposal Visible	Visual Sensitivity	Magnitude of visual effect	Overall rating of visual impact	Comment
S1. Western side of motorway, south of Camden Valley Way between the motorway and the northbound exist ramp	Approximately 3 to 5 metre high excess spoil stockpile and site fencing	L	HM	M	Located on a grassed area between the motorway and the northbound exist ramp, with no loss of trees. Size of the stockpile causes a moderate visual impact.
S1A. Western side of motorway, south of Camden Valley Way between the northbound exist ramp and golf driving range	Approximately 3 metre high excess spoil stockpile and site fencing	ML	M	ML	Located on a grassed area adjacent to the golf driving range. The visual impact would be moderate to low due to the loss of a number of small trees.
S1B. Eastern side of motorway, south of Camden Valley Way	Approximately 2 to 3 metre high excess spoil stockpile and site fencing	L	ML	ML	Long, narrow stockpile located on a grassed area adjacent to the motorway. Some tree losses may occur. The visual impact will be moderate to low due to the length of the stockpile.
S3. Western side of motorway, south of De Meyrick Avenue between the motorway noise wall and residences	Approximately 2 metre high excess spoil stockpile and site fencing	HM	M	HM	Located on a grassed and treed area opposite existing residences. The loss of trees and the location of the stockpile cause a high to moderate rating.
S4. Western side of motorway, north of De Meyrick Avenue between the motorway noise wall and residences	Approximately 4 metre high excess spoil stockpile and site fencing	M	M	M	Located on a grassed and treed area behind the back fences of existing residences. The loss of trees and the size of the stockpile cause a moderate visual impact.
S5. Eastern side of motorway, north of Verbena Avenue behind the motorway noise wall	Approximately 2 metre high excess spoil stockpile and site fencing	HM	L	M	This is a small stockpile site located on a predominately grassed area with some small trees. It will have a moderate rating due to its location opposite existing residences.

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Location	Element of Proposal Visible	Visual Sensitivity	Magnitude of visual effect	Overall rating of visual impact	Comment
S6. Eastern side of motorway, between Verbena Avenue and Carnation Avenue, between the motorway noise wall and residences	Approximately 3 to 4 metre high excess spoil stockpile and site fencing	M	HM	HM	Located on a long, well vegetated site behind the back fences of existing residences. The loss of a large quantity of trees causes a high to moderate rating.
S19. Northern side of motorway, east of Belmore Road, adjacent to motorway	Approximately 2 to 3 metre high excess spoil stockpile and site fencing	HM	HM	HM	Located on a well vegetated and sloping site adjacent to the motorway. The sites prominent location and the loss of a large number of trees and shrubs cause a high the moderate rating.
S20. Southern side of motorway, east of Belmore Road, adjacent to motorway	Approximately 2 to 3 metre high excess spoil stockpile and site fencing	HM	HM	HM	Located on a well vegetated and sloping site adjacent to the motorway. The sites prominent location and the loss of a large number of trees and shrubs cause a high the moderate rating.
S21. Southern side of motorway, west of Belmore Road, adjacent to motorway and Riverwood Community Centre	Approximately 2 to 3 metre high excess spoil stockpile and site fencing	HM	HM	HM	Located on a well vegetated and sloping site adjacent to the Belmore Road westbound on ramp and the skate facility and parklands associated with the Riverwood Community Centre. The sites location and the loss of a large number of trees and shrubs cause a high the moderate rating.
SZ. Southern side of motorway, adjacent to main toll booths and golf course	Approximately 3 to 4 metre high excess spoil stockpile and site fencing	HM	HM	HM	Located adjacent to the main toll booths in an area with good tree cover. The rating is high to moderate due to the removal of this vegetation.

Neg = Negligible; VL = Very Low; L = Low; ML = Medium Low;
M = Medium; MH = Medium High; H = High; VH = Very High

The locations for the proposed excess spoil stockpiles are located within the existing motorway environment and are grouped in clusters spread along the length of the motorway. The removal of existing established vegetation increases the potential visual impact of the stockpiles during the construction period.

Following the construction period, the sites will be returned to at least their pre-construction state, or to designs indicated on the Urban Design and Landscape Plan to be developed during the detailed design stage.

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URBAN DESIGN OBJECTIVES AND PRINCIPLES 6.0

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Based on the landscape character and visual impact assessment in sections 4 and 5, the following Urban Design Objectives and Principles for the M5 South West Motorway have been identified:

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

The objectives reflect the most important goals to be achieved as a result of the proposed widening works, taking into account not only the corridor itself but also its relationship with surrounding areas. These would be implemented in accordance with the Beyond the Pavement performance themes of safety, cost effectiveness and sustainability.