

Penshurst Road

Existing situation

The construction compound will be located within Windarra Reserve (refer Figure 8). The reserve is flanked to the:

- south by Windarra Street and associated low density residential development which faces out to both the reserve and the M5 Motorway behind
- east by Penshurst Road with a small townhouse development and two free-standing residences backing onto the reserve, and two residences on the opposite side of the road
- north by the M5 Motorway corridor (refer Figure 56 and Figure 57)
- west by a continuation of the area into Wise Reserve.

The general environs of the reserve comprises a moderate cover of both large mature and smaller trees set within an open, flat mown grass area, broadly creating a native open woodland landscape effect. When viewed from Windarra Street, the M5 Motorway is viewed through the treed landscape as a backdrop to the reserve. Recent work associated with the M5 South West Motorway Widening project has resulted in the clearing of a well vegetated corridor of mature trees between the Motorway boundary and the noise walls to facilitate the augmentation of the noise walls. Notwithstanding the dull grey colour of the walls, these elements and the associated cleared batters below them are visually prominent from Windarra Street, and comprise a visually adverse view from within the reserve, including from a cycle and pedestrian shared path that passes east to west through the site close to the M5 Motorway boundary. Landscape restoration of this corridor edge is proposed to be undertaken as a part of the M5 South West Motorway Widening project.

Proposed upgrade

The compound will be located immediately behind the properties on Penshurst Road, and have an approximate site area of 250 m². The compound will be used for materials laydown and amenities, and will be accessed from Windarra Street and Penshurst Road. Existing trees within the compound site will be retained.

Representative observer types / locations

Representative observer types and locations will comprise:

- residents, including:
 - the western townhouse on the corner of Penshurst Road and Windarra Street (rear wall of townhouse approximately 1m from site boundary), and the adjoining two-storey residence (rear wall approximately 10m from site boundary). that will both directly overlook the compound
 - nine (9) residences on Windarra Street that will look directly onto the compound (front walls 25-30m from compound boundary), and a further 3-4 that will have close oblique views (between 30-60m from compound boundary).
 - residences in addition to those listed above, fronting Windarra Street and Penshurst Road, that will be subject to views of heavy and light vehicle movements associated with the compound
- Recreational users of the reserve, including the shared path.



Figure 55 Panorama showing the site of the proposed Penshurst Road construction compound, looking from the east on the shared pathway adjacent to the Motorway



Figure 56 Photograph showing the existing Motorway noise wall and batter



Figure 57 The noise wall adjacent to the Motorway at the western end of the site of the proposed Penshurst Road construction compound

Assessment criteria

The following assessment criteria are relevant:

- Observer type: recreational users and residents will be impacted which are both sensitive observer types.
- Number of observers: a moderate number of residents and potentially similar number of recreational users (particularly re. the shared path) will be impacted by the works
- Duration: the compound will be visible for a period of at least 18 months
- Frequency: the compound will be subject to traffic movements up to six (6) days a week over the duration of the construction period

Assessment

The sensitivity of the resident and recreational observers is considered to be High, particularly given that the residents currently look onto a pleasant parkland setting.

The magnitude of change is considered to be Moderate, given that existing trees within the compound will be retained; the duration over which the compound will occupy the site is temporary, notwithstanding that it will be for a period of at least 18 months; and a moderate number of observers are directly affected.

The above provides an overall visual impact assessment rating of High to Moderate.

Table 13 Impact Grading Matrix for the Penshurst Road construction compound

		MAGNITUDE			
		HIGH	MOD	LOW	NEG
SENSITIVITY	HIGH	H	HM	M	N
	MOD	HM	M	ML	N
	LOW	M	ML	L	N
	NEG	N	N	N	N

Opportunity

The following opportunity arises:

- If relatively large trees are proposed to be removed to facilitate sufficient working space within the compound, that this matter be addressed as part of a community consultation process.

Opportunities for construction compound sites

The following opportunities arise for all construction compound sites:

- Provision of a tree protection plan for all trees to be retained within the compounds and any affected surrounding areas by an experienced arborist
- Provision of a well presented and maintained fencing / screening treatment
- Undertaking of soil testing and soil amelioration of the area upon completion of the works to facilitate the landscape restoration process
- Undertaking of a formal landscape design process for each compound site with 12 month plant establishment period, to facilitate a well considered landscape restoration outcome upon completion of the Project.

3.4.2.3 Other Perimeter Areas

Visibility of the works

In addition to the Project perimeter areas associated with the construction compounds, as discussed above, the visual amenity of other observers adjoining the Project will be affected, comprising primarily residents and recreational users, as discussed below.

- Residents: Residents other than those described above that may be visually impacted by the Project will include (travelling west to east) those:
 - on Grove Avenue: These residents are located between Penshurst Road and approximately 250 metres west, and back onto a well landscaped bushland area within the Motorway corridor (rear wall of residences between 45-55m from works boundary with exception of three town houses setback between 25-35m from works boundary). The key Project works within this area will comprise the widening of the Motorway including the Penshurst Road bridge. The works will comprise the clearing of a corridor of vegetation adjoining the existing carriageway to facilitate road widening and the construction of new retaining walls and noise walls. Depending upon the extent of screening vegetation within the residential properties, partial views of the construction process may be visible, including: the loss of vegetation associated with the initial clearing works; construction plant and walling associated with the retaining and noise walls.
 - on Windarra Street west of the construction compound: A few residents are likely to have partial views through the retained trees in Windarra Reserve to the Motorway edge (front of residences between 75-80m from works boundary). This area is at the time of writing subject to a substantial visual impact from the M5 South West Motorway Widening project. The key Project works within this area will comprise the construction of new retaining walls and noise walls. The majority of the potentially impacted residents will have views to the works screened by the above described construction compound within Windarra Reserve.
 - adjoining the Motorway between Penshurst Road and King Georges Road: These residents either generally back onto the Motorway corridor on the southern side of the Motorway between Penshurst Road and the northern end of Parry Avenue (rear wall of residences between 20-30m from works boundary, existing noise wall retained); along Rosetta Lane (existing noise wall to be retained between 35-40m from front wall of residences); or present a side wall of the residence to the corridor between Parry Avenue and Rosetta Lane (between 10-15m from existing noise wall to be retained), and between John Mountford Reserve and King Georges Road. The views of these residents towards the corridor have in many cases at the time of writing been substantially impacted by the M5 South West Motorway Widening project, including substantial clearing of mature trees. The Project works that will potentially be visible from these locations comprise: new retaining walls / batters and noise walls to the southern side of the Motorway east of Penshurst Road, for a distance of approximately 100 metres; and from King Georges Road west to both sides of the Motorway, for a distance of approximately 60 metres, where new noise walls will be constructed. In most instances only negligible or partial views are anticipated to be available to the works from these locations.

- between King Georges Road and Cooloongatta Road: These residences either:
 - » front onto the Motorway corridor, comprising seven (7) residences on Allambee Crescent (south), and two (2) on Booragul Street, with these residents having substantial visibility of the Project, and in the case of Allambee Crescent (and potentially Booragul Street), having periodic views of passing construction traffic (refer S3.4.2.4 for separate assessment); or
 - » back onto the corridor (11 residences on Pallamana Parade [between 12-20m from rear wall of residences to back fence] that will be adjoined by the King Georges Road (south) construction compound) and are otherwise anticipated to have limited views to the Project, or have side walls facing the Project (north side of corridor), where in most instances only negligible or partial views are anticipated to be available to the works.
- between Cooloongatta Road and the eastern end of the Project: In most instances, residences in this area either:
 - » back onto or present side walls to the corridor, and are anticipated to have only partial or negligible views to the Project; or
 - » front onto the Project, but will also be looking onto construction compounds as discussed above, and so in most cases are anticipated to have only partial or predominantly screened views of the construction works, with the exception of construction traffic on their streets (refer S3.4.2.4 for separate assessment).
- Recreational Users: Recreational spaces associated with the Project can be divided into two categories as:
 - formal recreation reserves, comprising John Mountford Reserve, that is well serviced by active recreational facilities (tennis courts and playground), informal open spaces, amenities block, playground, park furniture and car park; and Windarra Reserve that comprises a visually attractive open woodland setting, without associated formal recreational facilities and park furniture: and
 - small left over open space pockets from the original M5 Motorway project that consist of turf and limited tree planting, and are linked via a shared path system.

With regard to the:

- formal recreation reserves: John Mountford Reserve can be expected to regularly attract moderate numbers of park users given the extent of active and passive use facilities, although only a relatively small portion of the western end of the reserve will be impacted by the Project; and Windarra Reserve can be expected to attract potentially a lesser number of users given the lack of facilities and park furniture (including seating), but with an anticipated moderate level of use associated with the shared path that passes through it.
- open space pockets: most of these will be used as construction compounds.

Assessment criteria

The following assessment criteria are relevant for:

- Residents:
 - Observer type: Residents are considered to be sensitive observer types, that take a proprietary interest in their local environment;
 - Number of observers: Resident observer numbers are moderate to high
 - Visibility: Most of the residents are anticipated to have either partially screened or negligible views to the Project as described above.
 - Duration: the duration of viewing for most of the affected residents is anticipated to be low, with most having either partially screened or negligible views to the Project from the back of the house or side windows.
 - Frequency: The frequency of viewing is likely in most cases to be low, but for those residences facing onto the Motorway, these are likely to view the Project at least twice daily when leaving and entering the premises, and observing construction traffic in their streets.
- Recreational users:
 - Observer type: Recreational users are considered to be sensitive observer types, particularly those undertaking passive activities, where users are likely to take an interest in the landscape setting.
 - Number of observers: The number observers can generally be anticipated to be low to moderate, with regard to use of both the well resourced John Mountford Reserve, and the shared path through Windarra Reserve.
 - Duration: The duration of recreational use can be expected to be moderate for John Mountford Reserve, particularly with regard to use of the tennis courts and playground, and low for Windarra Reserve where the majority of use is anticipated to be associated with shared path use.
 - Frequency: The frequency of use is anticipated to be moderate for John Mountford Reserve and low to moderate for Windarra Reserve.

Assessment

With regard to:

- Residents:
 - Sensitivity is considered to be Moderate given that some residents will have existing views to bushland edges, and/ or be situated on currently quiet streets, both of which can be expected to be valued attributes, and notwithstanding that many residents are anticipated to have a relatively low level of visibility to the Project, and where they do have visibility, it is of low amenity situations such as tall noise walls with limited associated screening.
 - Magnitude of change is considered to be Moderate, given that in most instances, the key elements of the Project that will be observed will be the demolition of noise walls and replacement with new well designed walls. However, this needs to be seen within the context of the Project taking place over a period of at least 18 months, with construction traffic, including that associated with construction compounds.
 - The above provides an overall visual impact assessment rating of Moderate (refer Table 14).

Table 14 Impact Grading Matrix for the residents of perimeter areas

		MAGNITUDE			
		HIGH	MOD	LOW	NEG
SENSITIVITY	HIGH	H	HM	M	N
	MOD	HM	M	ML	N
	LOW	M	ML	L	N
	NEG	N	N	N	N

- Recreational users:
 - Sensitivity is considered to be Moderate, given that:
 - » both of the formal reserves comprise facilities with considerable visual amenity that are considered likely to attract a low to moderate numbers of users, but most of John Mountford Reserve will not be visually impacted by the Project;
 - » the open space pockets, although of low visual amenity in their own right, are components of an interconnected shared path system that is again likely to attract low to moderate numbers of users who are interested in their landscape setting.
 - Magnitude of change is considered to be High, given that recreational users of the shared path system in particular, will be closely visually impacted along much of the length of the Project, and that this will be in place over a period of at least 18 months.
 - The above provides an overall visual impact assessment rating of High to Moderate.

Table 15 Impact Grading Matrix for recreational users of perimeter areas

		MAGNITUDE			
		HIGH	MOD	LOW	NEG
SENSITIVITY	HIGH	H	HM	M	N
	MOD	HM	M	ML	N
	LOW	M	ML	L	N
	NEG	N	N	N	N

Opportunity

The following opportunity arises:

- Preparation of an integrated landscape master plan that addresses all edges of the M5 Motorway project area, including all disturbed areas, construction compounds, shared path links, etc. and is constructed upon completion of the Project.

3.4.2.4 Sensitive Residential Receptors

Existing situation

The following residential locations are within close proximity to the Motorway, and will be facing directly onto works areas, with residents in these locations considered to be sensitive receivers:

- Allambee Crescent (south): Seven (7) residences looking north, with the nearest front wall of the residences located between approximately 15 and 20 metres from the works edge. It is anticipated that these residences will look out primarily to the construction of new noise walls and installation of new shared path and landscape screen planting works. The street may also be subject to construction traffic associated with the King Georges Road (south) construction compound, and the extension of the Cooloongatta Road bridge.
- Elouera Street (west): Three (3) residences at the northern end of the street looking north-west, with the northern-most residence located one (1) metre off the side boundary to a proposed temporary construction compound and the front wall approximately 10m from the works edge, to the third residence located approximately 20metres from the works edge to the front wall. It is anticipated that these residences will look out primarily to the construction of new noise walls and installation of shared path and landscape screen planting works.
- Kirrang Street (south): Eight residences facing north-west onto the Motorway corridor edge from the cul-de-sac end of the street, with the front walls of the residences located approximately 30 metres from a proposed temporary construction compound opposite, and the northern-most three (3) residences looking directly to the works, at an approximate distance of between 25 and 30 metres from the front walls of the residences. Most of these residences will look directly onto the construction compound and any associated vehicular traffic, with limited views above the construction compound to the works beyond. The three (3) northern-most residences will primarily look out onto the Motorway, with the primary visible construction activities anticipated to be removal of the existing noise mound and associated tree cover, and replacement with a new lower mound with new noise wall atop, and landscape planting.
- Elouera Street (east): Seven (7) residences looking south-east towards the works, with four (4) of those looking directly out to a proposed temporary construction compound located approximately 25 metres from the front faces of the residences, and the southern-most three residences looking out to the works at approximate distances of between 10 and 30 metres to the works edge. The northern-most of these residences will look directly onto the construction compound and any associated vehicular traffic, with limited views above the construction compound to the works beyond. The four (4) southern-most residences will have direct views to the Motorway. The primary works visible from these residences are anticipated to be the demolition of the existing noise walls, followed by underground services installation and reinstatement of new walls, shared path and landscape planting. It is possible that there may be a relatively short period between the demolition of the existing noise walls and replacement with the new walls, during which time these residents may have partial views into the Motorway with associated construction activities.

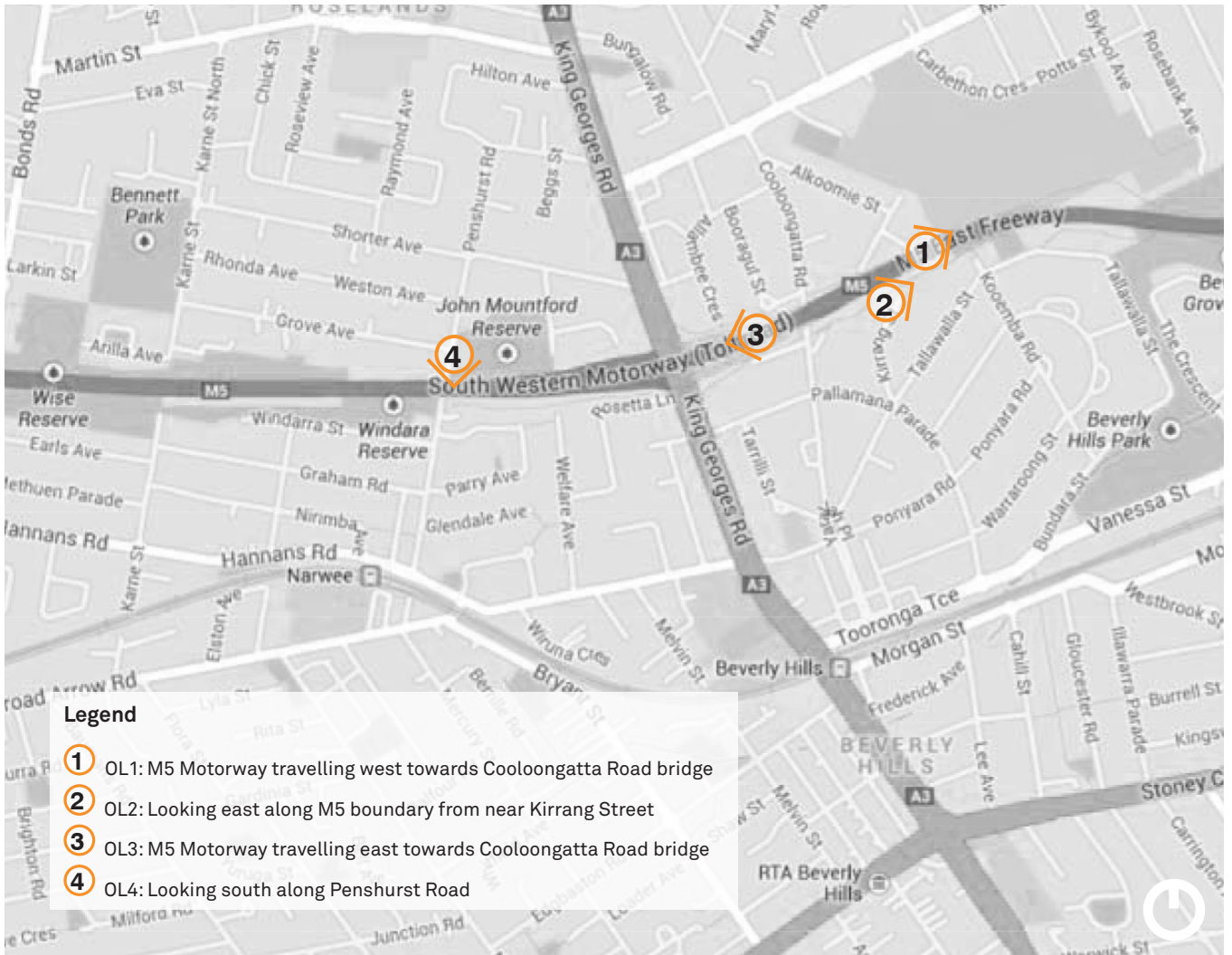


Figure 58 Observer Locations for the visual impact assessment at operation of the Project

0 100 200 300 500m

- Kirrang Street (north): Three residences at the southern- end of the street looking south-west with direct views to the works area, at an approximate distance from the front walls of between 15 and 40 metres. The primary works visible from these residences are anticipated to be the demolition of the existing noise walls, followed by underground services installation and reinstatement of new walls, shared path and landscape planting. As above for Elouera Street (east), it is possible that there may be a relatively short period between the demolition of the existing noise walls and replacement with the new walls, during which time these residents may have partial views into the Motorway with associated construction activities.
- Booragul Street: Two residences looking south, with the nearest walls located approximately 25 metres from the works edge. The primary works visible from these residences are anticipated to be the demolition of the existing noise walls, followed by underground services installation and reinstatement of new walls, shared path and landscape planting. The part of the street may also be subject to construction traffic associated with the extension of the Cooloongatta Road bridge.

These properties look directly onto the Motorway corridor and/ or construction compounds. The residents will view the Project in a substantial level of detail on a daily basis when entering and leaving their homes. Visual impacts will include construction related traffic and plant, with the works taking place over a minimum period of eighteen months.

Assessment

The sensitivity of the residents at the above locations would be High within the context of the currently experienced views to quiet cul-de-sacs, and Booragul Street which is also anticipated to be relatively quiet through street. The magnitude of change for these residents would be High, particularly within the context of the works taking place over a minimum period of 18 months, providing an overall visual impact rating of High (refer Table 16).

Table 16 Impact Grading Matrix for OL1

		MAGNITUDE			
		HIGH	MOD	LOW	NEG
SENSITIVITY	HIGH	H	HM	M	N
	MOD	HM	M	ML	N
	LOW	M	ML	L	N
	NEG	N	N	N	N



Figure 59 Existing view from passenger seat of vehicle travelling west on the M5 Motorway, towards Cooalongatta Road bridge



Figure 60 Artist's impression of the Project as seen from Observer Location 1

3.4.3 Operation Impacts

3.4.3.1 Observer locations

Four representative observer locations have been assessed that encapsulate key visual effects of the Project at operation, as follows (refer Figure 58):

- Observer Location 1: This view is taken from the M5 carriageway travelling east, located approximately 260 metres east of the Cooalongatta Road bridge. The view illustrates the substantial widening and reconfiguration of the carriageway with associated reductions in the extent of adjoining vegetated noise mounding and landscape batters, new noise walls, and new retaining walls (refer Figure 60).
- Observer Location 2: This view is taken approximately 30 metres west of the end of Kirrang Street looking east along the M5 corridor boundary, and illustrates the change in the view from the public domain with reduced noise mound height with new noise wall, and associated loss of existing buffer vegetation (refer Figure 62).
- Observer Location 3: This view is taken from the M5 carriageway travelling west, located approximately 80 metres west of the Cooalongatta Road bridge. The view illustrates the substantial widening of the carriageway with new on and off-ramps, extensions to both ends of the Cooalongatta Road bridge, new retaining walls with increased heights, and reduced extent of vegetated batters (refer Figure 64).
- Observer Location 4: This view is taken from the western edge of John Mountford Reserve, approximately 25 metres from the M5 crossing point looking south along Penshurst Road, and illustrates the change in the view from the public domain and Penshurst Road with widening of the bridge, new transparent noise walls and associated reduction of buffer vegetation within the M5 corridor (refer Figure 68).

A series of further visual effects are then assessed more broadly across the Project Area as follows:

- Adjacent residential properties:
 - Residential properties well set back from the Project
 - Residential properties closely set back from the Project
 - Residential properties backing onto / having their side boundary adjoin the Project
- Other adjacent landuses:
 - Local reserves
 - Pocket parks
- Significant vantage points in the public domain
- Lighting
- Gantries

3.4.3.2 Observer Location 1: M5 Motorway travelling west towards Cooloongatta Road bridge

Existing situation

This Observer Location is located on the M5 travelling west, approximately 260 metres east of the Cooloongatta Road bridge. The view illustrates a generally well vegetated corridor effect, although with varied forms of vegetation, primarily in response to issues such as: planter bed width; distance from the carriageway; and subsequent species choice to suit these conditions (refer Figure 59).

The noise wall to right of frame is partially screened by shrub planting within a relatively narrow planter bed, followed by taller, upright tree planting that does not spread across the carriageway. To left of frame, a steep noise mound batter is locally well vegetated (refer Figure 59). However, for much of the length of this mound, the planting response is substantially less effective. This is likely to be due to issues such as steepness of the batter (2H:1V); relatively poor soil conditions; and lack of run-on from upslope areas, i.e. the batter is highly drought prone. These comments apply equally to planting to steep slopes on the other side of the carriageway. Notwithstanding patchy vegetation cover, the height of the noise mound itself is such that it completely screens views to adjoining residential development.

Immediately east of this Observer Location, the corridor edge planting incorporates visually incongruent plantings of Cabbage Tree Palms (*Livistona australis*), both as a formal narrow edge planting and in small stands within the bushland planting palette (refer Figure 59 to right of frame).

The carriageway in this location is four lanes wide, with a wide shoulder to either side. The tall adjoining vegetation creates a visually substantial frame for the Motorway, albeit somewhat visually inconsistent in form and character, and patchy in extent as described above. Trees outside the Motorway corridor are visible above the noise wall.

The tan coloured retaining and noise walls are in strong visual contrast to the corridor vegetation.

Proposed upgrade

Figure 59 and Figure 60 comprise respectively a photo of the view as seen from this Observer Location, and an artist's impression of the Observer Location 12-18 months after completion of the works.

As can be seen from the artist's impression, key elements of the proposed development comprise:

- Extensions to either end of the Cooloongatta Road bridge and associated widening of the extent of carriageway to incorporate extended on and off-ramps from King Georges Road.
- Integrated architectural detailing with the bridge, retaining walls, safety fencing, and noise walls.
- Fascia panels to bridge piers with matching detailing to the retaining walls.
- New on and off-ramp lane to either side of the corridor separated by Jersey kerb barrier - to right of frame.
- An increased length of retaining wall approximately 5m high (to be confirmed) to right of frame, with noise wall on top.
- For noise mound to left of frame, reduced height from eight metres to three metres and reduced batter slopes from 2H:1V to 3H: 1V, with new noise wall and increased planting response as described below.
- Loss of existing mature vegetation within the Motorway corridor, which will in large measure be replaced to left of frame, albeit requiring an extended period to reach maturity, and which will be lost to right of frame, with some replacement by trees along the public domain edge projecting above the noise wall over time.

Very high numbers of motorists travel on the Motorway, but given the travel speed of 110 kilometres an hour, their views of the Project Area will generally be fleeting. An integrated and readily legible concept design is provided for key vertical elements of retaining walls, bridge abutments, bridge piers and noise walls, creating a seamless vertical edge that will read as a coherent whole at high speed.

However, during periods of traffic congestion, vehicle speeds will be reduced, providing more detailed views of Motorway infrastructure such as the bridge crossing at Cooloongatta Road, retaining walls, noise walls and bridge piers. These will read as visually well detailed and integrated architectural elements.

Additionally the landscape planting will be viewed at a greater level of detail. The combined approach of providing both: reduced batter slopes where possible, in conjunction with well considered soil treatments and new planting to disturbed areas; and soil amelioration and supplementary planting to batters not impacted by the works; will assist in creating a well vegetated and visually consistent corridor landscape.

Assessment

The sensitivity of viewers at this Observer Location is considered to be Low, given that:

- Motorists are generally travelling significant distances, at high speed, within a visually characteristic city Motorway infrastructure corridor of which this Observer Location is a visually consistent element.
- The purpose of the motorist's trip will in most cases be a functional one necessitated by the need to reach various destinations across the city, rather than for example a recreation focussed journey where appreciation of landscape is a primary focus.



Figure 61 View of existing Motorway boundary condition, showing shared path and noise mound near the end of Kirrang Street (south)



Figure 62 Artist's impression of the Project as seen from Observer Location 2. Note that the landscaping is shown at a point 12-18 months after completion of the Project.

The magnitude of change is assessed to be High, given:

- All of the mature corridor vegetation seen from this Observer Location will be removed, which will constitute an initial significant adverse visual impact.
- The widening of the carriageway and subsequent reduction in the proportions of the height of corridor edge vegetation relative to the width of the carriageway, will cause an associated reduction in the sense of visual enclosure experienced by motorists.
- The reduction in the extent of corridor vegetation (i.e. down slope of the new retaining walls) is visually significant, but occurs for only a relatively short distance, and within the context of a Motorway interchange.
- The visual prominence of the tall and relatively dense fringing landscape corridor will still be readily apparent when the reinstated landscape matures, although set further back from and above the carriageway.

The above assessment provides an overall visual impact rating of Moderate (refer Table 17).

Table 17 Impact Grading Matrix for OL1

		MAGNITUDE			
		HIGH	MOD	LOW	NEG
SENSITIVITY	HIGH	H	HM	M	N
	MOD	HM	M	ML	N
	LOW	M	ML	L	N
	NEG	N	N	N	N

Opportunities

Opportunities to provide an increased amenity outcome for this Observer Location and mitigate visual impacts of the Project include:

- Plant taller trees to the Motorway corridor edge to mitigate the reduction in sense of corridor visual enclosure that will occur due to the widening of the carriageway. Where appropriate (e.g. to the new wider planting areas between the noise walls and shared paths) use eucalypts which will attain a greater height than the currently dominant planting of casuarinas.

3.4.3.3 Observer Location 2: Looking east along M5 boundary from near Kirrang Street

Existing situation

This view is taken approximately 30 metres west of the end of Kirrang Street, looking east along the M5 corridor boundary to the back of the noise mound (refer Figure 61). The mound is generally relatively well vegetated along the upper sections, but has less tree cover to the lower sections. As with the other side of the noise wall, the batter has a steep 2V:1H slope which provides patchy results with regard to vegetation cover (particularly at the eastern end), a ground layer consisting entirely of exotic species, and is difficult to maintain. Additionally, the planting is separated from the pedestrian / cycle shared path by a 1.8 metre high, three strand barbed wire topped chain mesh fence, and a mulched drainage swale. The residual adjoining open space pockets left after the M5 construction comprise open grassed areas with sparse tree planting and little amenity value.

Notwithstanding the limitations of the noise mound planting and adjoining pocket open space areas, the broad impression of the noise mound when walking along the shared path is one of a quite well vegetated corridor, albeit behind a barbed wire topped chain mesh fence.

Proposed upgrade

Figure 61 and Figure 62 comprise respectively a photo of the view as seen from this Observer Location, and an artist's impression of the Observer Location 12-18 months after completion of the works.

As can be seen from the artist's impression, key elements of the proposed development comprise:

- A substantially reduced noise mound height, and the addition of an architecturally well considered noise wall approximately five metres in height
- Reduction in noise mound batters from 2V:1H to 3V:1H
- An increased density of planting facing the public domain, including soil amelioration
- Temporary retention of the chain mesh fence for a period of 12-18 months until quick growing, 'nurse' screen planting substantially screens the noise, reducing the likelihood of spray paint vandalism.

A key element of the smaller noise mound to left of frame is that the batter slope both facing the Motorway and the public domain have been reduced from 2H:1V to 3H:1V. This, in conjunction with the proposed landscape soil and planting treatment can be expected to provide a noticeably better landscape response than with the current situation, and increase the capacity for maintenance. This improved response can in turn be expected to provide a more cohesive and densely vegetated edge effect in this locale, with an associated increase in visual amenity to the public domain and increased corridor effect within the Motorway as the trees project above the noise wall. Conversely, the planting on the flatter Motorway facing batter can over time be expected to project well above the noise wall, and contribute significantly to the landscape corridor effect experienced by park and shared path users at this Observer Location.

Residents, shared path and pocket park users will be the key observers for this Observer Location.

Views by residents will be available from the front gardens of the eight residences facing onto the Motorway corridor edge from the cul-de-sac end of Kirrang Street. The view will also be available every time residents leave or enter their premises. Select views may also be available from the rear gardens of some 10-12 residences that back onto the Motorway corridor, particularly of tall tree plantings.

Shared path and pocket park user numbers are unknown. However, shared path user numbers in particular could be reasonably anticipated to be moderately high. These users would have detailed views of the Motorway corridor edge, and generally be expected to be travelling at a leisurely pace with time to observe detail, as well as take in the overall impression of the vegetated open space corridor. Given the relatively low nature of the mound (approximately 3 metres) and future removal of the chain mesh fence, maintenance access will also be more feasible than is currently the case, and the Motorway edge planting will be more visually connected to the public domain.

Assessment

The sensitivity of viewers at this Observer Location is considered to be High. Key criteria informing this decision comprise: the Motorway edge as a component of a green open space corridor with a moderately high anticipated number of users, who will view the landscape in considerable detail; and direct and frequent views to the location from adjacent residences.

The magnitude of change is assessed to be High. Key criteria informing this decision comprise: the extensive loss of early maturity stage trees to the existing noise mound (Note: It can be expected that the tree loss will be more than made-up for over time with the replacement planting to the noise mound in conjunction with the flatter batters).

The above assessment provides an overall visual impact rating of High (refer Table 18).

Table 18 Impact Grading Matrix for OL2

		MAGNITUDE			
		HIGH	MOD	LOW	NEG
SENSITIVITY	HIGH	H	HM	M	N
	MOD	HM	M	ML	N
	LOW	M	ML	L	N
	NEG	N	N	N	N

Opportunities

Opportunities to provide an increased amenity outcome for this Observer Location and mitigate visual impacts of the Project include:

- Landscaping of the pocket park from which the ‘before’ photo is taken after its use as a temporary construction compound, particularly with regard to tall tree planting in close proximity of the shared path to reinforce the landscape character of the open space corridor by creating an enclosed canopy over the path in this location.
- Include a strategically placed planting of fast growing ‘nurse species’ such as acacias to the batter facing the public domain, and potentially retain the chain mesh fence for an initial period (say 12-18 months), until a relatively dense vegetated edge to the noise wall is in place to discourage spray paint vandalism to the noise wall.

3.4.3.4 Observer Location 3: M5 Motorway travelling west towards Cooolongatta Road bridge

Existing situation

This view is taken from the M5 carriageway travelling west, approximately 80 metres west of the Cooolongatta Road bridge. The view illustrates a generally well vegetated corridor effect, although as described above, on closer inspection the density of vegetation on the steep batters within the Project Area is variable, with substantial areas lacking in tree cover. Noise walls are visible through the vegetation, their flat, light colour contrasting with the screening vegetation.

The corridor sits below the adjacent landform, and in conjunction with the vegetative screening provides a strong axial sense of enclosure. Motorists would be unaware of the landscape beyond the corridor.



Figure 63 View of existing Motorway looking east, travelling towards Cooloongatta Road bridge (Source: Google Earth Street View)



Figure 64 Artist's impression of the Project as seen from Observer Location 3.

Proposed upgrade

Figure 63 and Figure 64 comprise respectively a photo of the view as seen from this Observer Location, and an artist's impression of the Observer Location 12-18 months after completion of the works.

As can be seen from the artist's impression, key elements of the proposed development comprise:

- Lengthening of the Coo loongatta Road bridge and associated widening of the carriageway
- New on and off-ramp lane to either side of the corridor separated by Jersey kerb barriers
- Integrated architectural detailing with the bridge, retaining walls, safety fencing, and noise walls
- New transparent noise walls approximately five metres high to the ends of the bridge, and extending for approximately 30 metres along the top of new retaining walls either side of the bridge approaches



Figure 65 Proposed noise wall design including retaining of earth to minimise slope for planted areas, and planter bed to be of adequate width to accommodate substantial landscape treatment



Figure 66 View of existing narrow landscape planting next to a noise wall, typical of that between King Georges Road and Kirrang Street on the northern side of the Motorway corridor.

- New solid noise walls approximately five metres high to both sides of the corridor, setback from the top of the retaining wall a minimum width on average of five metres
- New retaining walls with associated safety fencing to the edges of the carriageway, including the sloping retaining walls to the far side of the bridge - the retaining walls to left of frame are up to approximately eight metres high
- Fascia panels to bridge piers with matching detailing to the retaining walls
- Landscape tree and shrub planting to the existing retained sections of 2V:1H batters between the solid noise walls and the retaining walls within the Motorway corridor, and between the shared path and both the solid and transparent noise walls to the outside edge of the Motorway corridor.

As can be seen from comparing the 'before' and 'after' images, the proposed Motorway landscape is visually more hard-edged than the existing situation. Landscape planting within the corridor that currently runs down to the carriageway will now be restricted to the top of the new retaining walls, to both sides of solid and transparent noise walls, and will comprise of new native tree and shrub planting similar to that existing.

An improvement of the new design over that currently in place is that the new solid noise walls have been located on average a minimum width of three metres from the shared path to the outside edge of the Motorway corridor. This allows for tree planting to the public domain edge in areas where it is currently not available, e.g. from near King Georges Road to Kirrang Street on the northern side of the corridor (refer Figure 66), in lieu of the current situation where only a narrow planting strip is available sufficient for shrub planting (refer Figure 65). This tree planting will project well above the noise walls and contribute to the Motorway corridor landscape as viewed from this Observer Location, as well as providing increased visual and environmental amenity to the public domain edge of the Motorway. Additionally, landscape planting to the far side of the Cooloongatta Road bridge will project above both ends of the bridge, visually reinforcing the continuity of the tall vegetated Motorway corridor.

The comments above for Observer Location 1 with regard to both motorist numbers and travel speed, and the integrated design of infrastructure elements apply equally to this Observer Location.

Assessment

The sensitivity of viewers at this Observer Location is considered to be Low for the same reasons as stated for Observer Location 1.

The magnitude of change is assessed to be High, given that:

- All of the mature batter vegetation to the left of frame will be removed, which will constitute a significant adverse visual impact, until the re-planted batters mature.
- The widening of the carriageway and subsequent reduction in the proportions of the height of corridor edge vegetation relative to the width of the carriageway, and associated reduction in the sense of visual enclosure experienced by motorists.
- The reduction in the extent of corridor vegetation (i.e. down slope of the new retaining walls) is visually significant, but occurs for only a relatively short distance, and within the context of a Motorway interchange.

- The visual prominence of the proposed tall and relatively dense fringing landscape corridor will still be readily apparent, although set further back from and above the carriageway.

The above assessment provides an overall visual impact assessment rating of Moderate (refer Table 19).

Table 19 Impact Grading Matrix for OL3

		MAGNITUDE			
		HIGH	MOD	LOW	NEG
SENSITIVITY	HIGH	H	HM	M	N
	MOD	HM	M	ML	N
	LOW	M	ML	L	N
	NEG	N	N	N	N

Opportunities

Opportunities to provide an increased amenity outcome for this Observer Location and mitigate visual impacts of the Project include:

- Provision for stormwater harvesting and infiltration to landscape areas including batters.
- Incorporating a retaining wall to the base of the noise walls to reduce landscape batter slopes between them and the shared path, thereby improving the planting response (Note: This would result in a commensurate reduction in the height of the noise walls).
- Detail design phase to consider design of the construction process such that existing mature trees to sections of batter that will not be subject to works can be retained, e.g. to the batters between King Georges Road and Cooloongatta Road bridge, construct noise walls from the top of the batter and retaining walls from the base of the batter, so as to retain existing mature trees on the section of retained batter between these two new infrastructure elements.

3.4.3.5 Observer Location 4: Looking south along Penshurst Road

Existing situation

This view is taken from the western edge of John Mountford Reserve, approximately 25 metres from the M5 crossing point looking south along Penshurst Road. In addition to views by park users entering and leaving Mountford Reserve, the Observer Location incorporates views seen by pedestrians walking under the M5 bridge, and motorists travelling along Penshurst Road.

A key element of this view is the landscape corridor located between the M5 Motorway and John Mountford Reserve east of Penshurst Road, and between the Motorway and residential properties west of Penshurst Road which back onto the corridor. The landscape corridor locally ranges in width between approximately 20 metres and 35 metres. Most of the landscape corridor adjoining John Mountford Reserve has been cleared as part of the M5 South West Motorway Widening project, and will be subject to landscape restoration as part of that project. A small pocket of the original bushland landscape planting scheme undertaken as part of the original M5 Motorway project has



Figure 67 Panorama showing existing M5 Motorway bridge spanning Penshurst Road



Figure 68 Artist's impression of the Project as seen from Observer Location 4

been retained at the western end of the Reserve adjoining Peshurst Road. The original planting remains intact to the west of Peshurst Road, with the adjoining residents expected to obtain a subsequent significant screening and visual amenity benefit.

Visually the bridge and associated noise walls comprise visually recessive grey and green colours and are architecturally unadorned.

Proposed upgrade

Figure 67 and Figure 68 comprise respectively a panorama of the view as seen from this Observer Location, and an artist's impression of the Observer Location 12-18 months after completion of the works.

As can be seen from the artist's impression, key elements of the proposed development comprise:

- Bridge widened by approximately 4.5 metres either side.
- New transparent noise walls to bridge approximately five metres high and extending approximately 25 metres either end of the bridge.
- New retaining walls facing out from the Motorway corridor either side of the end of the bridge, and detailed as described above.
- A likely minimum loss of approximately eight to 10 metres width of the existing landscape bushland planting to the northern side of the Motorway west of Peshurst Road (Note: Most of the landscape bushland planting within the Project Area to the northern side of the Motorway east of Peshurst Road, and southern side of the Motorway corridor west of King Georges Road, has been removed as part of the M5 South West Motorway Widening project).

Assessment

The sensitivity of viewers at this Observer Location is considered to be Moderate, given that:

- Residents west of Peshurst Road may have views from their rear gardens to the M5 Motorway (view of noise walls), but the visual impact of these views is likely to be mitigated by the retention of the existing, and reinstatement of new intervening landscape bushland planting.
- Park users of John Mountford Reserve are considered to be sensitive receptors, but the Observer Location is at the western edge of the Reserve and unlikely to be a primary visual focus for most park users. However, the Observer Location does comprise part of the entry and exit experience for park users, as well as for pedestrians walking along Peshurst Road and under the M5 bridge.
- Peshurst Road is likely to be subject to no more than moderate vehicle numbers, and drivers are likely to be more focussed on safe driving than the passing landscape.

The magnitude of change is assessed to be Moderate, given that:

- A substantial amount of clearing will occur to the existing landscape bushland planting corridor, and this may increase over the above noted likely minimum width of eight to 10 metres. Disturbed areas will however be reinstated, and can be expected to achieve a similar visual appearance over the medium to long-term.
- The width of the existing Motorway landscape buffer edge will be reduced

by a likely minimum five metres to either side of the corridor. Five metres comprises a significant proportion of the available landscape corridor space to the south of the Motorway and north east of Penshurst Road (generally in the order of 20-25% of the current area), but a less significant proportion to the northern side.

- The urban design initiatives for the bridge widening, retaining walls and noise walls can be expected to comprise a visual amenity improvement over that of the existing infrastructure.

The above assessment provides an overall visual impact rating of Moderate (refer Table 20).

Table 20 Impact Grading Matrix for OL4

		MAGNITUDE			
		HIGH	MOD	LOW	NEG
SENSITIVITY	HIGH	H	HM	M	N
	MOD	HM	M	ML	N
	LOW	M	ML	L	N
	NEG	N	N	N	N

Opportunities

Opportunities to provide an increased amenity outcome for this Observer Location and mitigate visual impacts of the Project include:

- Maximise the retention of the existing landscape bushland planting to the northern side of the Motorway corridor. Set in place strict clearing and disturbance lines for this area.
- Coordinate the landscape restoration of the works currently disturbed as part of the M5 South West Motorway Widening project that now fall within or adjoin the Project Area, such that the landscape design and delivery of these works are undertaken in an integrated manner, e.g. as part of a single contract.
- Use muted colour for the faces of noise walls that look out from the corridor to bushland or park landscapes where the landscape character intent is for a more natural setting, e.g. adjoining John Mountford Reserve or Windarra Reserve, or for the existing bushland landscape planting west of Penshurst Road, as opposed to a more visually prominent colour where the noise wall adjoins a more urban setting, e.g. where residences are immediately adjacent to the Motorway such as those east of King Georges Road.

3.4.4 Broader impacts

An assessment of the operational visual and amenity impacts of the Project (e.g. height, scale and/or lighting) on the local and regional area is provided below.

3.4.4.1 Adjacent residential properties

A representative assessment of visual impact at operation has been provided above for residential properties associated with Observer Location 2. More generally, residential properties located adjacent to the Project take the following broad forms (refer Figure 69):

- Residential properties well set back from the Project, e.g. properties on Windarra Street looking towards the Project through Windarra Reserve, and properties on Woodlands Avenue looking through John Mountford Reserve.
- Residential properties closely set back from the Project, e.g. properties on Rosetta Lane, on Allambee Crescent (south side of Project), the end of Elouera Street and the ends of Kirrang Street (north and south) looking across an intervening road to the Project.
- Residential properties backing onto, or having their side boundary adjoin the Project: e.g. between the Motorway and Booragul Street, and to parts of Kirrang Street (north and south).

Observer group A: Residential properties well set back from the Project

These properties are well set back from the Project (generally in the order of between 80 and 130 metres) with varied amounts of screening within the intervening reserves. The edge of the Project is proposed to be subject to substantial levels of landscape screen planting where these situations occur.

The sensitivity of these residents would be Moderate given the view is of a Motorway corridor, albeit at a relatively large distance, and the magnitude of change over time would be Low, providing an overall visual impact rating of Moderate - Low.

Table 21 Impact Grading Matrix for residential properties set back from the Project

		MAGNITUDE			
		HIGH	MOD	LOW	NEG
SENSITIVITY	HIGH	H	HM	M	N
	MOD	HM	M	ML	N
	LOW	M	ML	L	N
	NEG	N	N	N	N

Observer group B: Residential properties closely set back from the Project

Existing situation

The following locations are within close proximity to and look directly onto the Motorway, with residents in these locations considered to be sensitive receivers:

- Rosetta Lane: Nine (9) residences looking north, with the nearest front wall of the residences located between approximately 35 and 40 metres from the existing noise wall to be retained

- Allambee Crescent (south): Seven (7) residences looking north, with the nearest front wall of the residences located between approximately 15 and 20 metres from the works edge
- Elouera Street (west): Three (3) residences at the northern end of the street looking north-west, with the northern-most residence located one (1) metre off the side boundary to a proposed temporary construction compound and the front wall approximately 10m from the works edge, to the third residence located approximately 20 metres from the works edge to the front wall
- Kirrang Street (south): Eight residences facing north-west onto the Motorway corridor edge from the cul-de-sac end of the street, with the front walls of the residences located approximately 30 metres from a proposed temporary construction compound opposite, and the northern-most three (3) residences looking directly to the works, at an approximate distance of between 25 and 30 metres from the front walls of the residences
- Elouera Street (east): Seven (7) residences looking south-east towards the works, with four (4) of those looking directly out to a proposed temporary construction compound located approximately 25 metres from the front faces of the residences, and the southern-most three residences looking out to the works at approximate distances of between 10 and 30 metres to the works edge
- Kirrang Street (north): Three residences at the southern- end of the street looking south-west with direct views to the works area, at an approximate distance from the front walls of between 15 and 40 metres
- Booragul Street: Two residences looking south, with the nearest walls located approximately 25 metres from the works edge.

These properties look directly onto the Motorway corridor. The residents will view the Project in a substantial level of detail on a daily basis when entering and leaving their homes. To mitigate the visual impact of the Project, the residents are therefore reliant on either or both:

- Good design of infrastructure elements such as retaining walls and noise walls where a significant level of landscape screening cannot be provided, e.g. due to limitations of space.
- A visually significant level of landscape screening being present.

Proposed upgrade

Perhaps 60% of the Project will be subject to existing noise walls (augmented as part of the M5 South West Motorway Widening project), with the remainder comprising newly designed retaining and noise walls. Development east of King Georges Road will be entirely subject to the newly designed elements. Corridor edge landscape screen planting widths are in the order of 10-12 metres at Rosetta Lane (refer Figure 113), which is ample to provide a moderate to high screening effect. The available screen planting widths at the other above listed locations are either moderately to very narrow or not present, with the visual amenity outcome reliant to a substantial degree on the good design of the noise walls. An opportunity exists for additional landscaping other than the screen planting between the shared path and the noise wall (see 'opportunity' below).

Assessment

The sensitivity of the residents at the ends of Allambee Crescent (south), Elouera Street (west), Booragul Street, Elouera Street (east) and Kirrang Street (north) would be Low given the detailed views they currently have of noise walls and minimal screening between the walls and the shared path. The magnitude of change for these residents would be Low given that the width of the proposed screen planting will generally remain minimal, providing an overall visual impact rating of Low (refer Table 22).

Table 22 Impact Grading Matrix for residential properties on Elouera Street, Kirrang Street (north) and Allambee Crescent (south)

		MAGNITUDE			
		HIGH	MOD	LOW	NEG
SENSITIVITY	HIGH	H	HM	M	N
	MOD	HM	M	ML	N
	LOW	M	ML	L	N
	NEG	N	N	N	N

The sensitivity of the residents at the end of Kirrang Street (south) would be Moderate given they have to date been looking onto a relatively well vegetated noise mound, albeit with a patchy planting outcome behind a barbed wire topped chain mesh fence, and a small, sparsely planted pocket park. The magnitude of change for these residents would be Moderate given the initial loss of all mature vegetation (which would be replaced over time to both sides of the new noise wall). The assessment provides an overall visual impact rating of Moderate (refer Table 23).

Table 23 Impact Grading Matrix for residential properties on Kirrang Street (south)

		MAGNITUDE			
		HIGH	MOD	LOW	NEG
SENSITIVITY	HIGH	H	HM	M	N
	MOD	HM	M	ML	N
	LOW	M	ML	L	N
	NEG	N	N	N	N

Opportunity

Make provision for additional corridor edge screen landscape planting other than between the noise wall and the shared path where this planting width is either moderately narrow, i.e. the end of Kirrang Street (south), or very narrow, i.e. for Allambee Crescent (south), the end of Elouera Street and the ends of Kirrang Street (north), e.g.:

- A landscape design for the pocket parks at the ends of Elouera Street and Kirrang Street (south).
- Carefully located street tree planting to the cul-de-sac end of Elouera Street and Kirrang Street (north).

- Tree and low shrub planting within the road formation of Allambee Crescent (both sides of the street. NOTE: the road appears to be wide enough to readily accept a treatment of this type).

Observer group C: Residential properties backing onto / having their side boundary adjoin the Project

Residential properties backing onto the Project have tall back fences (generally 1.8 metres minimum). The extent of any significant views from these locations is likely to be low, with the exception of tall corridor planting that is seen projecting above the fence line.

The sensitivity of these residents is assumed to be Low given their existing proximity to the Motorway and anticipated lack of significant views to the Project. The magnitude of change over time would be Low, providing an overall visual impact rating of Low (refer Table 24).

Table 24 Impact Grading Matrix for residential properties backing onto the Project

		MAGNITUDE			
		HIGH	MOD	LOW	NEG
SENSITIVITY	HIGH	H	HM	M	N
	MOD	HM	M	ML	N
	LOW	M	ML	L	N
	NEG	N	N	N	N

3.4.4.2 Other adjacent land uses

Adjacent land uses to the Project other than residential are limited to local reserves (John Mountford Reserve and Windarra Reserve), and the pocket parks resulting from the initial construction of the M5 Motorway with the associated shared path corridor that links them and generally defines the Motorway boundary.

Observer group D: Local reserves

Both John Mountford Reserve and Windarra Reserve directly adjoin the Project, and have extensive direct and detail views to the Project. Up until the construction of the M5 South West Motorway Widening project, both reserves had a substantial landscape bushland planting between the shared path and the noise walls. Most of this vegetation has now been removed to facilitate an increase in existing noise wall heights as part of that project.

The widening of the Motorway as part of this Project will now cause additional disturbance to much of the frontage with Windarra Reserve, and the western end of John Mountford Reserve. The areas disturbed as part of this project will be reinstated by the Project. The remaining areas disturbed by the M5 South West Motorway Widening project will be reinstated by that project.

The visual impact caused to these two reserve boundary areas by the M5 South West Motorway Widening project is very high. The additional visual impact caused by this Project will be to a more limited area, focussed mainly around the northern side of the corridor (most of the Project work areas on the southern side of the corridor have already been cleared by the M5 South West Motorway Widening project) to either side of Penshurst Road (approximately 200m west and 70m east).

The sensitivity of the park users for both reserves is assumed to be Moderate, given the recreational nature of the activity, but also considering that the focus of interest is more likely to be on the reserve itself (e.g. playing tennis or using the playground at John Mountford Reserve, or simply contemplating the reserve landscape as part of an activity such as sitting, walking or jogging, etc.), with the Project generally comprising a visual backdrop to these activities.

The magnitude of change for Windarra Reserve would be Moderate given the relative loss of corridor width caused by the Project, and within the context of the existing height of the carriageway and subsequent already steep existing batters, providing an overall visual impact rating of Moderate.

Table 25 Impact Grading Matrix for Windarra Reserve

		MAGNITUDE			
		HIGH	MOD	LOW	NEG
SENSITIVITY	HIGH	H	HM	M	N
	MOD	HM	M	ML	N
	LOW	M	ML	L	N
	NEG	N	N	N	N

The magnitude of change for John Mountford Reserve would be Low given that most of the adjoining corridor vegetation has already been cleared, providing an overall visual impact rating of Moderate to Low.

Table 26 Impact Grading Matrix for John Mountford Reserve

		MAGNITUDE			
		HIGH	MOD	LOW	NEG
SENSITIVITY	HIGH	H	HM	M	N
	MOD	HM	M	ML	N
	LOW	M	ML	L	N
	NEG	N	N	N	N

Observer group E: Pocket parks and shared path corridor

The pocket parks and shared paths that adjoin the Motorway comprise open space elements that appear to be poorly used by the public. The pocket parks generally comprise open turfed areas with limited tree planting that has not been subject to a formal design process, and contain no park furniture such as seating to encourage use. Much of the tree planting to these areas does not appear to be performing well, suggesting poor soil conditions (potentially including compaction from the time of the Motorway construction). It seems likely that public use of these spaces would be low, and mainly comprise of informal kick-about activities. We would estimate that user numbers and duration of use would be low for these areas. The pocket parks contribute little in the way of landscape amenity to the Motorway edge landscape.

The shared paths appear to provide a functional cycle and pedestrian system that is likely to be as a minimum moderately well used for recreational pursuits such as walking the dog, jogging and cycling, as well as providing a practical means for local residents to move through the area, away from local roads. The proposed Motorway edge landscape planting will over time contribute to the creation of a generally tree-lined / wooded corridor to the Motorway / shared path edge system. In contrast to the pocket parks, the shared path system does in places make a positive contribution to the landscape character of the Motorway edge, and can be expected to be a valued element within the Motorway edge landscape.

Assuming the pocket parks retain essentially the same landscape character as currently in place after completion of the works, the sensitivity of park users to change is considered to be Low. The magnitude of change over time would be Low, providing an overall visual impact rating of Low.

Table 27 Impact Grading Matrix for park users

		MAGNITUDE			
		HIGH	MOD	LOW	NEG
SENSITIVITY	HIGH	H	HM	M	N
	MOD	HM	M	ML	N
	LOW	M	ML	L	N
	NEG	N	N	N	N

The proposed landscape treatment to the shared path edge can be expected over time to provide an improved landscape outcome for this potentially moderately well used system. The sensitivity of users to change with the shared path system is considered to be High. The magnitude of change over time would be Moderate, providing an overall visual impact rating of Moderate to High.

Table 28 Impact Grading Matrix for shared path users

		MAGNITUDE			
		HIGH	MOD	LOW	NEG
SENSITIVITY	HIGH	H	HM	M	N
	MOD	HM	M	ML	N
	LOW	M	ML	L	N
	NEG	N	N	N	N

Opportunity

The pocket parks provide an opportunity for landscape design to make these more functional and attractive spaces, including provision of seating areas, and incorporation of structured tree planting that makes provision for kick-about activities in the larger pocket park on the south-east corner of the King Georges Road interchange, and supplements tree planting associated with the shared path system. This opportunity is particularly relevant to the four pocket parks that are proposed to be used as temporary construction compound sites. These enhanced spaces would then contribute to the landscape amenity of both the shared path system, and more generally to the Motorway edge landscape. Any work to these spaces would need to be preceded by detailed soil testing and amelioration prior to the undertaking of landscaping.

3.4.4.3 Significant vantage points in the public domain

Given the relatively flat to gently undulating nature of the regional landscape, there are no other significant vantage points in the public domain other than those discussed above.

3.4.4.4 Lighting

Currently, lighting is installed on the interchange ramps. Reinstatement of lighting has been assumed on the realigned and lengthened ramps and would be designed in accordance with relevant design standards. No significant increase in lighting impacts on adjacent residences or parks is anticipated.

3.4.4.5 Gantries

Gantries are proposed to be located as follows:

- Across the full carriageway: near the western end of the Project; approximately 230 metres west of King Georges Road (including the west-facing on-ramp); approximately 220 metres east of King Georges Road; and near the eastern extent of the Project
- Across the west facing off-ramp; the east facing on-ramp; and the east facing off-ramp.
- The gantries are located in areas where they are unlikely to be visually prominent from adjacent sensitive receptors (residents and recreational users) given:
 - The extent of proposed revegetation to the corridor edges west of King Georges Road;
 - The relative height of noise walls and the lower Motorway carriageway between King Georges Road and Cooloongatta Road; and
 - The gantry near the eastern end of the Project is only likely to be partially visible from a limited numbers of adjacent back garden spaces, and will be viewed as a single relatively small structure within the context of the Motorway.

3.4.5 Conclusion

Visual impacts are generally limited to areas within close proximity to the Project, given that the flat to gently rolling nature of the landscape provides little opportunity for views from a longer distance.

3.4.5.1 Construction Impacts

Construction impacts broadly fall within two ranges as follows:

- Low to Moderate for the:
 - M5 Motorway carriageway, and for the King Georges Road south and north construction compounds, due primarily to the fact that the key observer type is motorists who can be expected to have a relatively low level of sensitivity to the works
 - Elouera Street construction compound that is likely to have low recreational use and is not subject to significant overlooking from nearby residences.
- Moderate, and High to Moderate for the:
 - The remaining construction compounds, due primarily to issues such as substantial overlooking from nearby quiet cul-de-sac residences; the impact of local construction traffic over a minimum period of 18 months; and in the case of Kirrang Street, the existing outlook providing a moderate level of visual amenity
 - Other perimeter areas for:
 - » Residents, due primarily to issues such as views to an existing bushland area being impacted; views being from currently quiet cul-de-sac streets; and the duration of the works with associated increased construction traffic
 - » Recreational users, due primarily to issues such as views from formal recreation reserves being impacted; views from the shared path system which can be expected to generate a moderate numbers of users; and the duration of the works.
- High for the closest residences to the Project which will have direct views to the works.

Refer Table 29.

Key mitigation measures proposed for the construction period comprise provision of tree protection and soil amelioration measures within and around construction compounds, and the preparation of a formal landscape design and post-construction implementation process to be undertaken to these sites.

Table 29 Summary of Visual Impact during the construction period at each Observer Location

Observer Location	M5 Motorway carriageway	Construction compounds						Perimeter areas		
		King Georges Rd (south)	King Georges Rd (north)	Kirrang St	Elouera St (east)	Elouera St (west)	Penshurst Rd	Residents (setback from Project)	Recreational users	Closest residential sensitive receptors
Sensitivity	L	L	L	H	M	L	H	M	H	H
Magnitude	M	L	L	M	M	L	M	M	M	H
Rating	ML	L	L	HM	M	L	HM	M	HM	H

3.4.5.2 Operation

Operation impacts broadly fall within three ranges as follows:

- Low, and Moderate to Low for the:
 - Adjacent residential properties well set back from the works, due primarily to issues such as viewing distance and relatively low level of change
 - Residential properties at the ends of Elouera Street (east and west), Kirrang Street (north), Booragul Street and Allambree Crescent (south) given current close views of the Motorway and relatively low level of change
 - Properties backing onto or with side boundaries facing the works due to limited viewing opportunities
 - Pocket parks which are generally of existing low visual amenity and likely to currently have low user numbers.
- Moderate, and High to Moderate for the:
 - Observer Locations 1 and 3, which have relatively low sensitivity motorists as their predominant user, but with the corridor will be subject to a high level of change including issues such as loss of vegetation, and a wider corridor with an increase in the visual prominence of noise and retaining walls
 - Observer Location 4 due to the sensitivity of adjacent residents that may have their existing bushland views impacted, in addition to the visibility of the works from adjoining formal recreational reserves, and reduction in the width of the landscape buffer area adjoining John Mountford Reserve
 - Residents at the end of Kirrang Street (south) who currently enjoy a moderate level of visual amenity associated with the existing vegetated noise mound
 - Formal recreation reserves which adjoin the Motorway corridor, but acknowledging that the focus of user interest is more likely to be within the reserves, rather than out to Motorway.
- High for:
 - Shared path corridor, which comprises a potentially moderately well used facility by high sensitivity recreational users that directly adjoins most of the Motorway corridor edge, but which over time can be expected to visually soften with the maturing of corridor edge landscaping.

Refer Table 30.

Table 30 Summary of Visual Impact at operation

Observer Location	Observer Location				Broader Impacts							
	1	2	3	4	Adjacent residential properties			Other				
					A	B	C	D		E		
Sensitivity	L	H	L	M	M	L	M	L	M	M	L	H
Magnitude	H	H	H	M	L	L	M	L	M	L	L	M
Rating	M	H	M	M	ML	L	M	L	M	ML	L	HM

Mitigation Measures

04

4. Mitigation Measures

4.1 During Design Development

- Design of project elements will be consistent with the urban design vision, objectives and principles for the project and the WestConnex Draft Urban Design Framework (RMS 2013).
- All vegetation between construction site compounds and adjacent residential areas will be retained where practicable to screen views. Minimise the removal of landscape plantings where practical.
- A detailed landscape plan will be prepared for the project. The landscape plan will build on the findings of the Urban Design, Landscape Character and Visual Working Paper (Appendix I) and the RMS Landscape Guidelines. The landscape plan will include detailed species and planting guides and consideration of refurbishment of existing landscaped areas in the project area.
- Consideration will be given to reducing the gradient of existing steep batter slopes to facilitate an increased planting response and greater accessibility for maintenance.
- The widening of bridges at Penshurst Road and Cooloongatta Road will be consistent with RMS Bridge Aesthetics Design Guideline (RMS 2012b).
- The landscape design for the project will consider the M5 South West Motorway Widening project landscape design approach.
- Noise walls will be designed and constructed consistent with the RMS Noise Wall Guidelines (RMS 2007). Where an existing noise wall requires removal prior to the introduction of a new noise wall, the new walls will be introduced as soon as practicable following removal of existing noise walls to ensure minimal impact on residents.
- Design of pedestrian and bicycle ways will incorporate CPTED principles.
- Design for the Penshurst Road and Cooloongatta Road bridges will incorporate CPTED principles.

4.2 During Construction

- Provide tree protection to significant trees and vegetation to protect trees from damage during construction and retain trees and vegetation to minimise visual impacts.
- All vegetation between construction site compounds and adjacent residential areas will be retained where practicable to screen views.
- Landscape planting and restoration will occur at each site upon completion of construction activities. The landscape design for the project will consider the M5 South West Motorway Widening project landscape design approach.
- Well-presented and maintained fencing and screening will be provided at compound and laydown areas.

4.3 During Operation

- Incorporate landscape maintenance and management requirements into the existing landscape maintenance plans for the M5 Motorway.

This page has been left intentionally blank