14 LANDSCAPE CHARACTER AND VISUAL AMENITY

This chapter presents an assessment of the impacts of the project on landscape character and visual amenity. It is based on the full assessment in the Technical Paper 10 –Landscape character and visual amenity (Spackman Mossop and Michaels, 2015). The assessment addresses the Secretary's Environmental Assessment Requirements, which are provided below.

Secretary s Environmental Assessment Requirement	Where addressed
▪ Consideration of the urban design and visual amenity implications of the proposal, including supporting infrastructure, during construction and operation. The assessment must identify:	Section 14.3
o Urban design and landscaping objectives to enhance the design of the alignment and associated structures (including batters, cuttings, bridge and viaduct structures), interchanges, road infrastructure facilities, and Croom Regional Sporting Complex works	Section 5.19
o Consider uses for resulting surplus land	Section 15.3.2
o Demonstrate how the proposed hard and soft urban design elements of the proposal would be consistent with the existing and desired future character of the area	Section 14.3 and Section 5.19
▪ Identification and evaluation of the visual impacts and urban design aspects of the proposal (and its components) on surrounding areas	Section 14.3.2
▪ A consideration of impacts on views and vistas, streetscapes, key sites and buildings	Section 14.3.2
▪ Measures to manage lighting impacts both during construction and operation	Section 14.5
▪ Artist's impressions and perspective drawings of the proposal from a variety of locations along and adjacent to the route.	Section 14.3.2

14.1 ASSESSMENT METHODOLOGY

The landscape character and visual impact assessment was carried out concurrent with the engineering design in an iterative and collaborative process that allowed coordination of engineering, urban design and landscape aspirations. Section 5.19 provides a summary of the urban design and landscape principles and outcomes for the project.

The purpose of the landscape character and visual assessment was to improve design outcomes, identify impacts and propose mitigation strategies. The assessment process involved:

- An assessment of landscape character
- An assessment of the impacts of the project on landscape character in terms of the sensitivity of affected areas and the magnitude of the project
- An assessment of the visual impact of the project when seen from various viewpoints.

The methodology used in these assessments is discussed in the following sections.

14.1.1 LANDSCAPE CHARACTER ASSESSMENT

The landscape character assessment was carried out in accordance with the Guideline for Landscape Character and Visual Impact Assessment (Roads and Maritime, 2013d). The assessment involved:

- Carrying out site visits and field investigations
- Reviewing relevant literature, analysing aerial photographs and topographic maps to understand the study area
- Reviewing the engineering, urban design and landscape concept designs, and other supporting material to gain an appreciation of the project
- Defining landscape character through a study area analysis
- Identifying and describing landscape character zones
- Evaluating the impact of the project on these landscape character zones by combining the sensitivity of the zone and the magnitude of the project to provide an overall impact rating as indicated by the impact assessment grading matrix (Table 14-1).

The project area was divided into 12 landscape character zones (shown in Figure 14-1 in Section 14.2.1). Each zone comprises a consistent landscape character type and extends 500 metres on either side of the motorway.

The impact on landscape character is determined by a review of the magnitude of the change to each landscape character zone, and the sensitivity of each zone to change.

Magnitude of landscape change

The magnitude of landscape change refers to the characteristics of the project (scale, form and character) when compared to the existing landscape character. The scale of the elements, as well as their location or setting, has a bearing on the magnitude of the physical presence of a project. The magnitude rating also considers whether the project would have a positive or negative impact on the landscape. Four levels of magnitude are used in the assessment:

- A high magnitude of landscape change would result if the project is a major development or piece of road infrastructure that would contrast highly with the surrounding landscape, or entail heavy modification of the landscape (such as through large-scale vegetation removal)
- A moderate magnitude of landscape change would result if the project would be moderately integrated into the landscape
- A low magnitude of landscape change would result if the project is small scale and would integrate well into the landscape
- A negligible magnitude of landscape change would result if the project created no discernible change to the landscape.

Landscape sensitivity

Sensitivity refers to how sensitive the character of the setting is to the proposed change. A judgement was made as to the quality of the landscape, its cultural importance to the community, scenic quality, and overall composition of the place and its inhabitants. The following sensitivity judgements were used as the basis for this assessment:

- Places with high social, recreational and historical significance to local residents have higher sensitivity

- Generally, water and natural environments are more highly valued than modified areas – though views over rolling farmland are still highly valued – and these places have higher sensitivity
- Areas of unique scenic quality have higher sensitivity
- A pristine environment has greater sensitivity with less ability to absorb new elements in the landscape than modified landscapes or those areas with contrast and variety of landscape types
- The number and frequency of viewers affects sensitivity; places that are viewed by more people have higher sensitivity
- Places that are viewed by people in retail, residential and open space areas are generally more sensitive than places viewed by workers and motorists.

Landscape impact

Landscape impact is the combination of the magnitude and sensitivity rating in accordance with the impact assessment grading matrix shown in Table 14-1.

Table 14-1 Landscape impact assessment grading matrix

		Magnitude			
		High	**Moderate**	**Low**	**Negligible**
Sensitivity	**High**	High	High-moderate	Moderate	Negligible
	Moderate	High-moderate	Moderate	Moderate-low	Negligible
	Low	Moderate	Moderate-low	Low	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

14.1.2 VISUAL IMPACT ASSESSMENT

The method used for the visual impact assessment follows the Guideline for Landscape and Visual Impact Assessment (Roads and Maritime, 2013d) and is described below.

Viewpoint identification

The visual impact of the project was assessed in relation to 39 viewpoints (shown in Figure 14-2 in Section 14.3.2). The locations and directions of chosen viewpoints are representative of the range of viewpoints within the visual catchment of the project.

About 80 per cent of the viewpoints would be within 500 metres of the motorway. The remaining 20 per cent were selected from key locations within three kilometres of the motorway. Views beyond this range were not assessed as it was considered that the new infrastructure would blend with the surrounding landscape beyond this distance.

The extent to which the project would be visible from adjoining areas would vary along the length of the project, and would depend on the topography, vegetation, land uses and buildings within the visual catchment. The visual receivers of the project would include residents, tourists, shoppers, workers, park users, pedestrians, cyclists and motorists.

The visual impact for each viewpoint location would be the combination of the magnitude and sensitivity rating in accordance with impact assessment grading matrix (Table 14-1).

Magnitude of visual change

The magnitude of visual change refers to the nature and scale of the project, and the extent and proximity of the view to it. Magnitude represents the contrast in scale, form and type of project to the location and context to which it is to be placed. Three levels of magnitude are used in the assessment:

- A high magnitude of visual change would result if the project is of a major scale and is considered out of scale or uncharacteristic of the existing visual character, or if there would be considerable modification to the landscape
- A moderate magnitude of visual change would result if the project is prominent but not considered to be substantially uncharacteristic of the existing visual character
- A low magnitude of visual change would result if there is minimal alteration to the existing view and the project is considered to be of a scale and nature that is consistent with the existing visual character
- A negligible magnitude of visual change would result if the project created no discernible change to the existing visual character.

Visual sensitivity

Visual sensitivity is the measure of the visual importance of a view and depends on:

- The distance between the viewer and the project
- The category of viewer; for example resident, worker, shopper, open space user
- The importance of the view; for example if it is identified in tourist guides, if it is a static or moving viewpoint, and / or if people deliberately seek the view.

Visual sensitivity includes the consideration of the perceived cultural and historical values of the visual environment and the elements within it. Generally, viewers with the highest sensitivity include:

- Residents who have attractive views that would be affected by the project
- Users of public open space (such as lookouts or other scenic natural areas) whose attention is focused on the visual landscape
- Communities that place high cultural and historical significance on the visual landscape.

Viewers with the lowest sensitivity are most likely to be:

- Employees focused on their work
- Motorists whose attention is focused on driving; however, passengers would have a higher sensitivity.

Visual impact

Visual impact is the combination of the magnitude and sensitivity rating in accordance with the impact assessment grading matrix (Table 14-1).

14.2 EXISTING ENVIRONMENT

Albion Park Rail and Albion Park are suburbs situated in the Macquarie Valley, which is in the Shellharbour local government area. Dapto is to the north and Jamberoo is to the south. Shellharbour is east of these suburbs. These suburbs make up part of the greater Wollongong metropolitan area and are about 21 kilometres from the centre of Wollongong City.

The Illawarra Regional Airport, the South Coast Rail Line stations and the shoreline of Koona Bay on Lake Illawarra are key features that define Albion Park Rail. Albion Park is surrounded by a 'green belt' of farms and open space with views of the Macquarie Valley.

To the west the Illawarra escarpment is the dominant landform in the area and is the backdrop against which the Macquarie Valley is formed. The landscape in this area has two distinctive characters: flat open country on the floodplain, and the visually impressive rolling hills that rise up to the escarpment.

The urban form within the landscape is heavily influenced by its location in the Macquarie Valley. The undulating lowland areas are well suited for farming and dairy production. Residences are mostly in the Calderwood and Marshall Mount area. The elevated areas with sloping hills provide district views for the residential areas of Dapto, Albion Park, Oak Flats and Blackbutt. These areas generally have post-war suburban residential development patterns with curvilinear and fragmented parallel streets. The close proximity of the Princes Highway, South Coast Rail Line and Illawarra Regional Airport have resulted in an industrial and business corridor mixed with residences in Albion Park Rail, Haywards Bay and Yallah.

The urban areas of Albion Park and Albion Park Rail are surrounded by agricultural land that characterises the Macquarie Valley rural hinterland. The rural hinterland is distinguished by the geometric layout of the agricultural fields, which establishes a regular pattern across the landscape irrespective of topography. The geometry of the property boundaries is clearly visible in the landscape through the long straight roads, the fence lines, and lines of trees that follow the patterns of land division.

Both Albion Park and Albion Park Rail are well served by public open space areas. In addition to public parks, the towns connect to, and are located on either side of, the Croom Regional Sporting Complex, which offers a range of active recreational opportunities. The adjacent Terry Reserve also offers active recreational opportunities.

14.2.1 LANDSCAPE CHARACTER ZONES

The landscape character assessment identified 12 landscape character zones across the project area. These are shown in Figure 14-1 and described below. Additional information and views for each landscape character zone are provided in Technical Paper 10 – Landscape character and visual amenity.

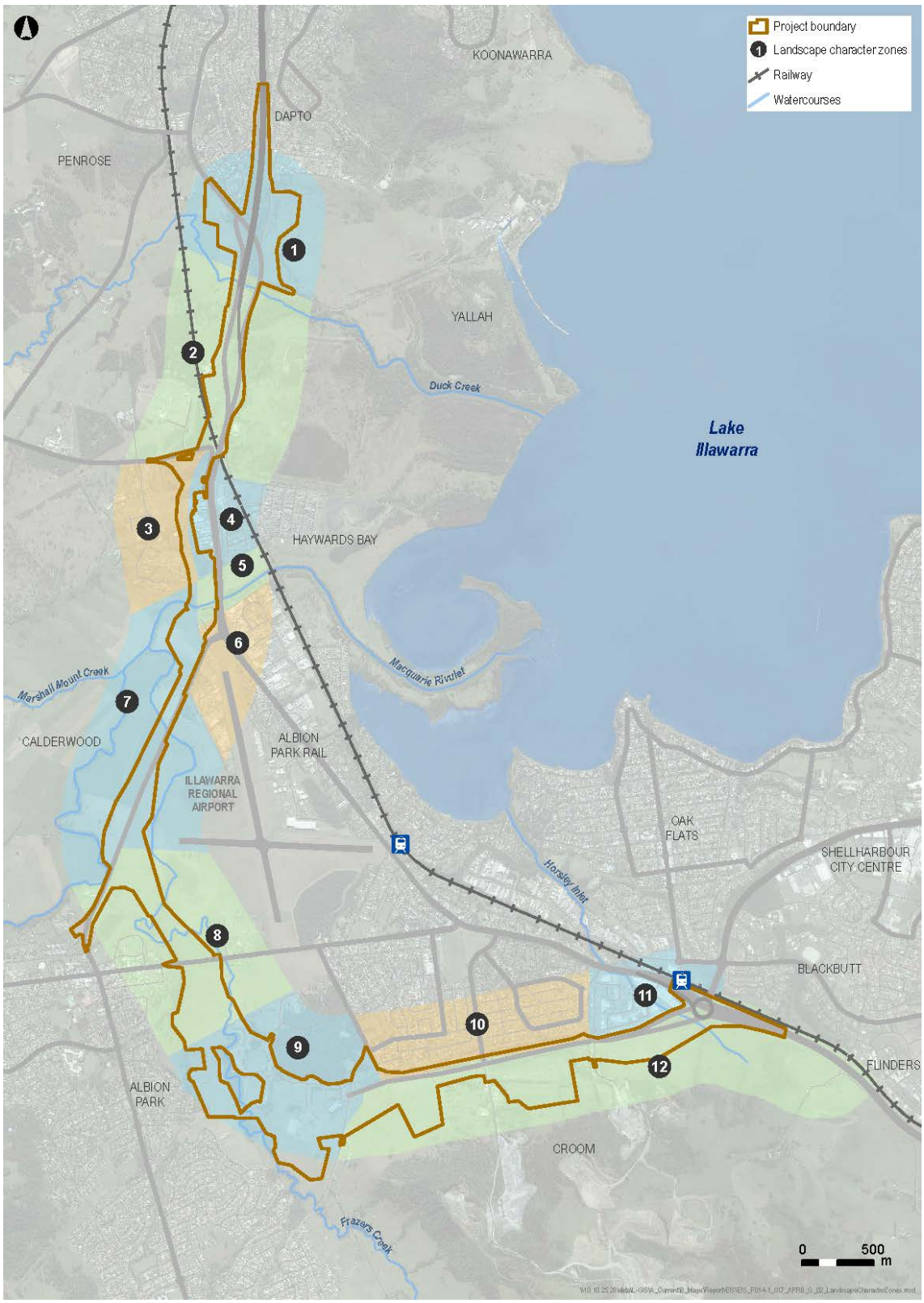


Figure 14-1 Landscape character zones

Landscape character zone 1 – southern Dapto

The landscape character of the northern section of the project area at southern Dapto is that of a hillside residential area, along the northern edge of Macquarie Valley. The landscape has a generally open character due to the sloping hillside, which provides extensive views looking south onto pasture lands and urban development in the distance.

Within the existing road reserves of the Princes Highway and Princes Motorway are native and exotic woodland tree plantings. Beyond the road reserves the vegetation is dominated by pasture lands. Further west, Mount Brown Reserve is heavily vegetated with native forest of sclerophyll and temperate rainforest.

The buildings in the zone are characteristic of low density, suburban residential developments clustered at the top of the hill overlooking the surrounding area.

View looking south from Carlyle Close

View of Shiraz Drive neighbourhood

Landscape character zone 2 – central Yallah

The area between Yallah Bay Road in the north and Yallah Road in the south is dominated by substantial utility and transport infrastructure, contrasted against a rural and natural landscape. The terrain is sloping and undulating with some views looking south.

Views are partially obscured by dense roadside vegetation and scattered forest comprising native and exotic woodland plantings. Outside the road reserve the vegetation is dominated by dense areas of scattered forest and pasture lands.

The only dwelling in this zone is part of an active farm located between the South Coast Rail Line and the Princes Highway. The TransGrid Central Region Substation (the TransGrid site) is located to the west of this farm, adjacent to the South Coast Rail Line. On the eastern side of the Princes Highway are large lots of vacant land, which are earmarked for future development.

View looking south towards electrical substation

View along Yallah Road

Landscape character zone 3 – southern Yallah

Between Yallah Road and the Macquarie Rivulet, on the western side of the motorway, the landscape comprises rural residential properties set within a rural landscape. The zone is characterised by changing terrain. The northern portion of this zone has a higher elevation with soft slopes, while the southern portion slopes more steeply down towards the Macquarie Rivulet.

The zone includes the rural residential area of Larkins Lane, comprising 27 large houses on rural residential parcels of land. There are several lots that are vacant or under construction. The dwellings are situated on each property to maximise the views of the surrounding area. These include views of Lake Illawarra to the east, and views of rolling hills and escarpment to the west and south. In the north-western corner of the zone is a large industrial facility.

The zone also includes scattered woodland forest and pasture lands. The original vegetation composition has generally been maintained and some plantings serve as visual screening and wind breaks for the residential dwellings.

View east across Larkins Lane

View south from Larkins Lane

Landscape character zone 4 – southern Yallah and Haywards Bay

On the eastern side of the project area at Haywards Bay, the landscape character is that of a transitional area that moves from rural pasture land to urban development. The area gently slopes downhill toward the Macquarie Rivulet.

The zone is dominated by industrial services and retail outlets along the Princes Highway. These buildings tend to be large warehouse tilt-up structures of modest height. The residential development east of the Princes Highway is part of the Haywards Bay project, which is mostly completed. These different urban environments are located east of the Princes Highway and are separated by the South Coast Rail Line.

There is a large fragmented expanse of Illawarra Lowlands Grassy Woodlands vegetation located at the north-east corner of the zone. The only other major stand of vegetation is located along the Princes Highway. There are sporadic street trees within the Haywards Bay residential area.

View from Yallah Road

View from Princes Highway overpass

Landscape character zone 5 – Darcy Dunster Reserve

This zone includes a recreational reserve along the Macquarie Rivulet, land immediately to the north, on the eastern side of the motorway, and a small portion of land on the western side of the motorway. The Darcy Dunster Reserve comprises the majority of this area. It includes a shared path extending for about 1.8 kilometres along the Macquarie Rivulet to the east, and a car park and two covered picnic shelters at the western end of the reserve.

This zone also includes a broad variety of vegetation types. Estuarine lagoons and channels, and coastal swamp forest dominate the area. There are also areas of the Freshwater Wetlands endangered ecological community on the northern bank of the Macquarie Rivulet.

View looking west from the picnic grounds

View of the Darcy Dunster Reserve car park

Landscape character zone 6 – northern Albion Park Rail

The area south of the Macquarie Rivulet on the eastern side of the motorway is characterised by intensive urban development around major infrastructure elements. The area is on flat, low ground, adjacent to the Illawarra Regional Airport.

The built form in this area is heavily influenced by the obstacle limitation surface for the Illawarra Regional Airport, which places an upper limit on the height of structures in this area, and is dominated by automotive dealerships, industrial services and highway retail outlets. These are primarily located along the eastern side of the Princes Highway. There is a small pocket of residential development located between the Illawarra Regional Airport and the Princes Highway.

Due to the obstacle limitation surface for the Illawarra Regional Airport and intensive urban development within this area, most of the vegetation has been cleared. The northern runway of the Illawarra Regional Airport, which is a locally listed heritage item, is located within this area.

View east from Croome Lane

View north along Croome Lane

Landscape character zone 7 – western Albion Park Rail

This zone comprises the extent of the dairy that is located within 500 metres of the motorway. Consequently, the landscape character is that of a rural environment dedicated to dairy cattle grazing and crops. It comprises low, flat ground within the Macquarie Rivulet floodplain.

There are three residences in this rural setting, two of which are part of the active dairying operations.

View looking west from Croome Lane

View looking south along the Illawarra Highway

Landscape character zone 8 – east of Albion Park

The area on either side of the motorway to the north and south of Tongarra Road comprises a mix of rural and urban environments. It is located on low ground within the Macquarie Rivulet floodplain.

Most of the zone has been cleared for crop production, dairy cattle grazing and urban development. There are areas of floodplain wetlands, including Freshwater Wetlands endangered ecological community. Some smaller areas of artificial wetlands are located north-west of the Albion Park Showground.

The heritage listed Ravensthorpe guesthouse, grounds and works cottages are located north of Tongarra Road on the eastern side of the motorway. The Albion Park Showground comprises public recreation land that transitions between the rural and urban built form. This transition into a more formal and regular urban pattern is complete at the intersection of the Illawarra Highway and Tongarra Road. The associated residential development comprises low-density dwellings.

View from the Albion Park Showground

View of the Ravensthorpe guesthouse

Landscape character zone 9 – Terry Reserve and Croom Regional Sporting Complex

This zone comprises the Croom Regional Sporting Complex, Croom Reserve and a portion of Terry Reserve. The zone is a combination of natural parkland environments, organised recreational facilities and cleared pasture land.

The main built structures relate to the Croom Regional Sporting Complex and are used by sporting organisations. There are also two residential dwellings within the zone.

Croom Reserve is classified as Illawarra Lowlands Grassy Woodland and consists of both South Coast Grassy Woodland and Illawarra Lowland Swamp Woodland vegetation communities. There is also Illawarra Lowland Swamp Woodland and Coastal Warm Temperate Rainforests and Freshwater Wetlands endangered ecological community along Frazers Creek.

View of the BMX skate park

View of the grass netball courts

Landscape character zone 10 – southern Albion Park Rail

The area north of the existing East West Link between Croome Road and Durgadin Drive comprises a residential suburb. The area is gently sloping rising up along the southern edge of the Macquarie Valley and the Croom suburb.

The buildings in the area are all low-density residential developments. The pattern of development is focused around curvilinear and fragmented parallel street arrangements. The Albion Park Rail Cemetery is a locally listed heritage item located in the north-western part of this zone.

An important feature of this zone is the long, linear public recreation area that separates the residential area from the existing East West Link. While most of the zone allows for passive recreation, there is a children's playground located at the eastern end of the space, accessible from Jarrah Way. Most of the vegetation has been cleared for intensive urban development. The greenway along the East West Link consists of South Coast Grassy Woodland. This creates a visual buffer between the local residence and the existing East West Link.

View along Kauri Street

View of the linear park from the playground

Landscape character zone 11 – Albion Park Rail and Oak Flats

This zone is an intensive urban development area comprising the Albion Park Rail Central Business Park, clustered around major infrastructure elements. The area rises gently along the southern edge of the Macquarie Valley and the Croom suburb.

The built form in this zone is dominated by industrial services, mixed use and highway retail outlets. These are primarily located along either side of the Princes Highway. Due to the intensive urban development most of the vegetation has been cleared. The only major stands of vegetation are located along the Princes Highway.

View looking north along Durgadin Drive

View looking north along Colden Drive

Landscape character zone 12 – Croom

The area to the south of the existing East West Link between Croome Road and the Princes Highway comprises a rural environment dedicated to horse agistment, cattle grazing and resource extraction.

The built form is consistent with a rural production area. There are a few residential dwellings and industrial facilities associated with the active quarries, but no formal land development pattern.

Most of the vegetation on the lower slopes of the area have been cleared for grazing livestock and resource extraction. Near the East West Link, South Coast Grassy Woodland and Coastal Warm Temperate Rainforest vegetation species remain.

View to the south-west along the East West Link

View from Blackbutt residential area

14.3 ASSESSMENT OF POTENTIAL IMPACTS

The long-term impacts of the completed project on landscape character and visual amenity, and temporary impacts during construction, are assessed below.

14.3.1 CONSTRUCTION PHASE IMPACTS

During construction, there would be temporary landscape and visual impacts mainly around the ancillary sites. These impacts would include views of large earthmoving and construction equipment, construction activities, stored materials and stockpiles, vegetation clearing, and excavations.

Construction, particularly out-of-hours work (as identified in Section 5.20.12), would require lighting at some ancillary sites. These locations could result in light spill impact on adjoining properties. This would result in a visual impact at night, particularly where near public areas and residences.

Mitigation measures have been identified for temporary ancillary sites during and on completion of construction to manage visual impacts. Visual impacts from specific viewpoints are further discussed in Section 14.3.2.

14.3.2 OPERATIONAL PHASE IMPACTS

Landscape character impacts

Due to the large scale of the project, and the high sensitivity of the surrounding landscape, there would be an adverse impact on the landscape character in almost all the landscape character zones. Areas with industrial and commercial land uses would generally be better able to absorb the impacts than those of higher landscape quality.

Section 5.19 and Technical Paper 10 – Landscape character and visual amenity describe the urban design principles applied to the project. The project seeks to provide a balance between the hard elements of the projects (such as bridges, noise walls, road furniture, detention basins, cuttings and embankments) and soft elements of the project (such as plantings). The potential impact on the landscape character assessed in Table 14-2 considers the extent to which the project scale, form and materials have been integrated into the landscape.

Table 14-2 Potential impacts on landscape character

Magnitude	Sensitivity	Impact
Landscape character zone 1 – southern Dapto		
High magnitude The project would increase the scale of the road and related infrastructure in this zone. It requires the removal of vegetation to construct the interchange at Yallah. The areas required for construction activities would alter the pleasant rolling pastures in the short term. Overall, the magnitude of landscape change would be high. The impact would be reduced over time as new vegetation plantings are established and mature.	**High sensitivity** The project would straddle an established residential area in the north (which has a high sensitivity) and open pastures further south (with moderate sensitivity). Overall, the zone has high sensitivity due to the residents' views to the south that would be impacted.	**High impact**

Magnitude	Sensitivity	Impact
Landscape character zone 2 – central Yallah		
High magnitude The project would increase the scale of the road and related infrastructure in this zone. It would require the removal of vegetation to construct the interchange at Yallah. The area required for construction activities would alter the attractive rolling pastures in the short term. Overall, the magnitude of landscape change from the project would be high. The impact would be reduced over time as new vegetation plantings are established and mature.	**Low sensitivity** The zone is made up of rolling pasture land within stands of thick native forest and a residential farm. There are also large amounts of utility infrastructure, including a substation and electricity towers, which reduce the overall sensitivity of this zone. Overall, the zone has low sensitivity to the project.	**Moderate impact**
Landscape character zone 3 – southern Yallah		
High magnitude The project would introduce new road infrastructure into the landscape of rolling green pastures. The scale of the project would be substantial and located close to residential dwellings. The magnitude of landscape change from the project would be high.	**High sensitivity** The zone is made up of rolling pasture land with large rural residential allotments. The zone has high sensitivity to the project.	**High impact**
Landscape character zone 4 – southern Yallah and Haywards Bay		
High magnitude The project would introduce new road infrastructure into the landscape of rolling green pastures. The zone is already highly modified with road and rail infrastructure, commercial / industrial buildings and dwellings. The scale of the project would be substantial. The magnitude of landscape change would be high. The impact would be reduced over time as new vegetation plantings are established and mature.	**Low sensitivity** While the zone has attractive views of adjoining scenic landscapes to the west and east, it is highly modified and developed with light industrial uses. The zone has low sensitivity to the project.	**Moderate impact**
Landscape character zone 5 – Darcy Dunster Reserve		
High magnitude The project would introduce a highly visible built element into a low floodplain environment. It would require the removal of vegetation and relocation of a picnic shelter at the Darcy Dunster Reserve. The magnitude of landscape change would be high. The impact would be reduced over time as new vegetation plantings are established and mature.	**High sensitivity** Darcy Dunster Reserve is an important recreational resource in the local and wider area, and contains areas of an endangered ecological community. The zone has high sensitivity to the project.	**High impact**

Magnitude	Sensitivity	Impact
Landscape character zone 6 – northern Albion Park Rail		
Low magnitude The project would directly impact a small section of this zone. It would mainly be visible to motorists on the Illawarra Highway and would obscure their view over the pastures to the mountains in the west and south. The magnitude of landscape change from the project would be low.	**Low sensitivity** The zone is dominated by the Illawarra Regional Airport and commercial and industrial buildings to the east of the Princes Highway. The zone has low sensitivity to the project.	**Low impact**
Landscape character zone 7 – western Albion Park Rail		
High magnitude The project would replace the Illawarra Highway with an elevated four-lane motorway, including twin bridges over the Macquarie Rivulet and an interchange. The project would therefore be highly visible in this low-lying, open rural landscape. The magnitude of landscape change from the project would be high.	**Moderate sensitivity** The zone is highly modified and has been extensively cleared for agriculture. The landscape is scenic, with pleasant rural views over the pastures to the distant mountains. The zone has moderate sensitivity to the project.	**High-moderate impact**
Landscape character zone 8 – east of Albion Park		
High magnitude The project would be highly visible in this low-lying, open rural landscape. In this zone, it would comprise a four-lane motorway on large fill embankments, with twin bridges over Frazers Creek. Overall, the magnitude of the landscape change from the project would be high. This may reduce slightly over time as revegetation becomes established and matures.	**High sensitivity** The zone is highly modified and has been extensively cleared for agriculture. The landscape is comprised of open paddocks with a backdrop of the Illawarra escarpment. The views from Ravensthorpe guesthouse and Showground are highly valued by the community and tourists. The zone has high sensitivity to the project.	**High impact**

Magnitude	Sensitivity	Impact
Landscape character zone 9 – Terry Reserve and Croom Regional Sporting Complex		
High magnitude The project would be highly visible in this low-lying, open rural landscape. It would comprise a four-lane motorway on large fill embankments, with twin bridges over Frazers Creek. The magnitude of the landscape change from the project would be high. The impact would be reduced over time as new vegetation plantings are established and gradually mature. The project would physically separate the existing recreational facilities within the Croom Regional Sporting Complex. The project would include the reconfiguration of the Complex. The project would highly impact the landscape character within the complex. Appendix I of the Technical Paper 10 –Landscape character and visual amenity shows the master plan for the reconfiguration, including proposed landscaping and urban design.	**High sensitivity** The zone is highly scenic with agricultural and recreation activities. The zone has high sensitivity to the project.	**High impact**
Landscape character zone 10 – southern Albion Park Rail		
High magnitude The project would replace a two-lane road with a four-lane motorway with major interchange, and a new two lane service road. The motorway and service road would be a major piece of infrastructure and would contrast highly with the surrounding landscape. Noise walls would partially obstruct the motorway. The magnitude of the landscape change would be high. The impact would be reduced over time as new vegetation plantings are established and mature.	**Low sensitivity** The zone is residential with good linkages to the open space along the existing East West Link. The relatively dense vegetation along the open space shields views of the residential properties form the road and would most likely continue in the future. The zone has low sensitivity to the project.	**Moderate impact**
Landscape character zone 11 – Albion Park and Oak Flats		
Moderate magnitude The project would replace a two-lane road with a four-lane motorway, including major interchange and two lane service road. While the motorway and service road would be major pieces of infrastructure and contrast highly with the surrounding landscape, they would not be highly visible from the zone. The magnitude of landscape change would be moderate. The impact would be reduced over time as new vegetation plantings are established and mature.	**Low sensitivity** The zone is highly modified and has been cleared for industrial services, mixed use and highway retail development. Most of the development backs to the existing East West Link with no views of the surrounding area. The zone has low sensitivity to the project.	**Moderate-low impact**

Magnitude	Sensitivity	Impact
Landscape character zone 12 – Croom		
High magnitude The project would replace a two-lane road with a four-lane motorway, including major interchange, and two land service road. The project would be highly visible in the open and rural landscape. The motorway and new service road would be major pieces of infrastructure and contrast highly with the surrounding landscape. The magnitude of landscape change would be high. The impact would be reduced over time as new vegetation plantings are established and mature.	**Moderate sensitivity** The zone is highly modified and has been cleared for pastoral activities. The landscape is highly scenic, with pleasant rural views over the pastures to the distant mountains. The zone has moderate sensitivity to the project.	**High-moderate impact**

Visual impacts

The visual impact assessment is a separate assessment to the landscape character assessment (as discussed in 14.1.2). The visual assessment identifies the impact of the project on views, vistas, streetscape, key sites and building, rather than the whole landscape character precinct. The results of the visual impact assessment are discussed below.

The visual impacts of the project were assessed from 39 viewpoints across the project (shown in Figure 14-2). It was found that the project would have a:

- High visual impact on eight viewpoints
- A high to moderate impact on 15 viewpoints
- A moderate visual impact on 10 viewpoints
- A moderate to low impact on four viewpoints
- A low visual impact on two viewpoints.

The impacts on individual viewpoints are identified in Table 14-3. Artistic impressions have been provided for Viewpoints 11, 17 and 26 to illustrate the indicative form and scale of the motorway. To provide additional information on how the project would look and the extent that it would integrate into the landscape, Roads and Maritime have prepared a 'fly through' simulation of the project. The fly through provides views of the project from different perspectives, and is available on the project webpage:

http://www.rms.nsw.gov.au/projects/illawarra/albion-park-rail-bypass/index.html

Indicative cross sections of the project are also included in Figure 5-8 to Figure 5-10 in Chapter 5.

High and high to moderate impacts would occur in residential, heritage, open space and recreation areas, and the picturesque hillside setting, where sensitivity to change is the highest and the large scale of the project would be readily noticed.

Moderate and low impacts would occur in areas of lower sensitivity, such as the Albion Park Rail industrial area.

The visual impact of the project is considered appropriate for the scale of the project and the landscapes through which it would pass. Mitigation measures have been identified (refer to Section 14.5) and would be implemented as part of the urban design and landscape strategy.

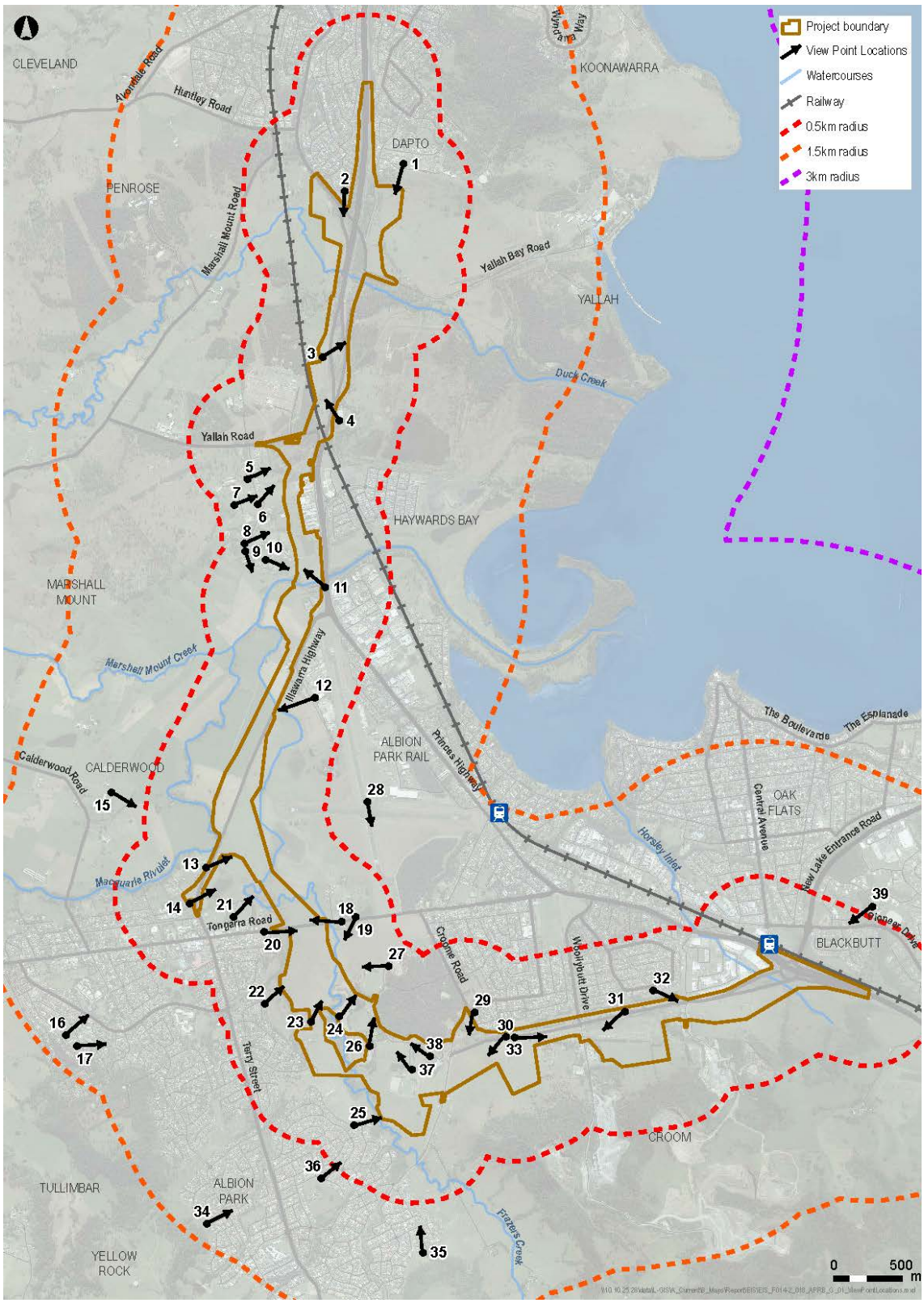
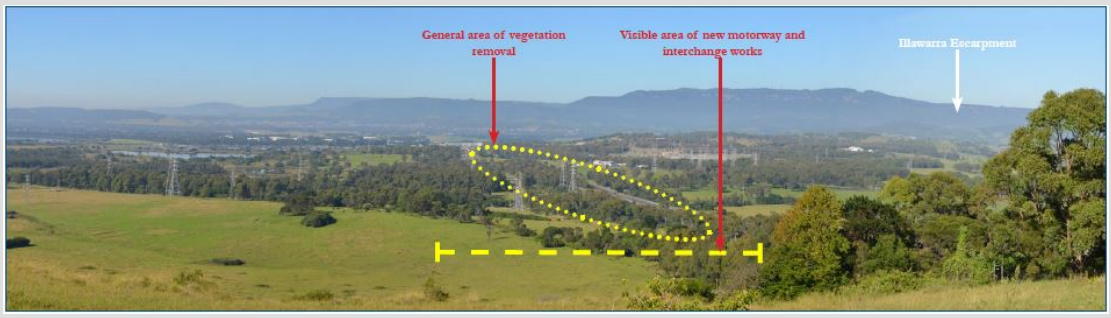
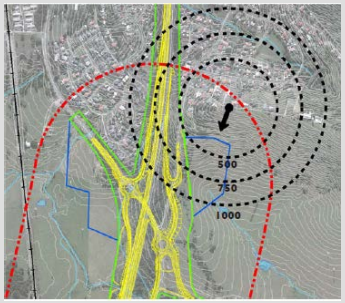
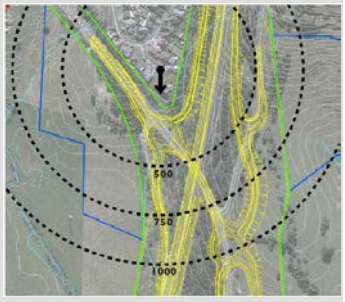
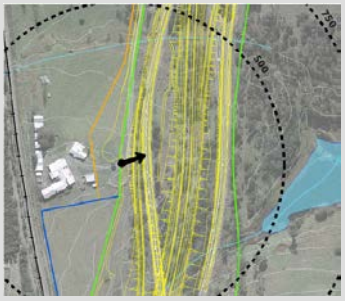
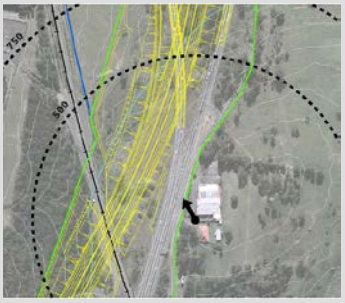
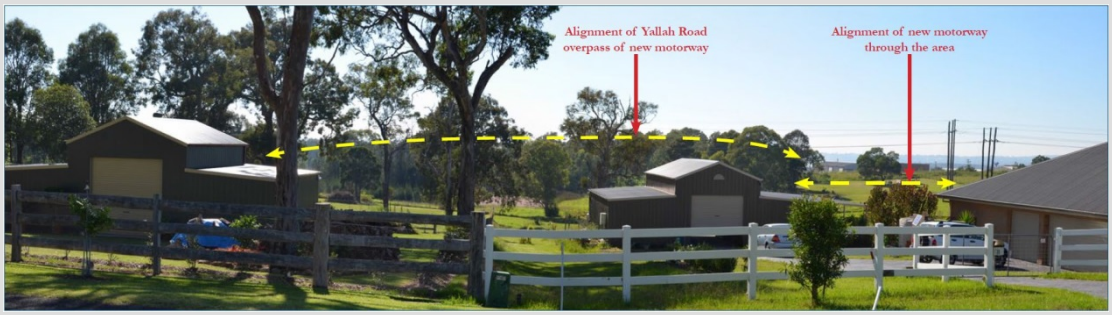
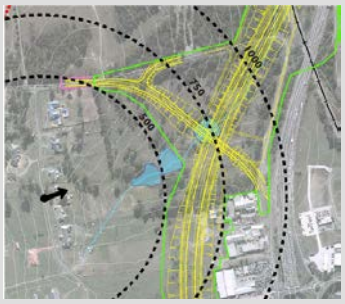
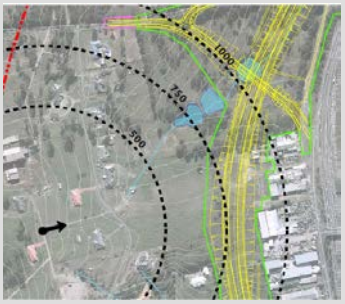


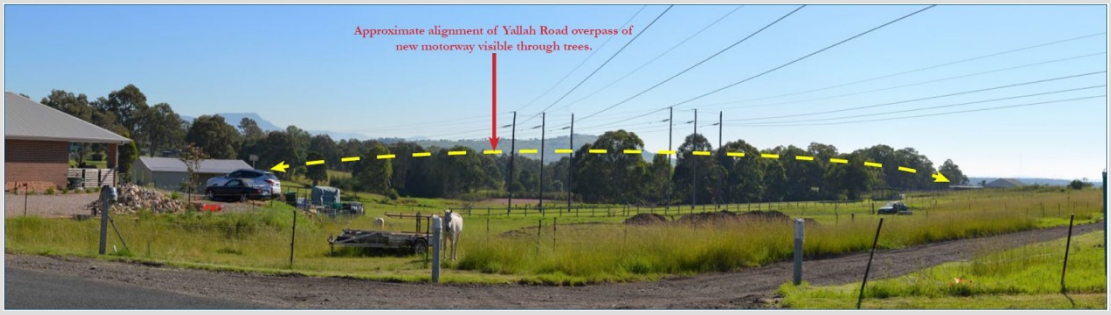
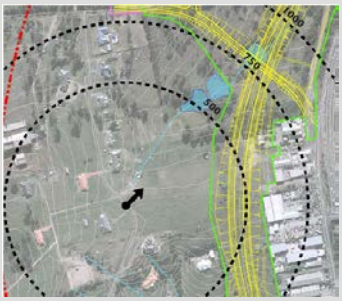
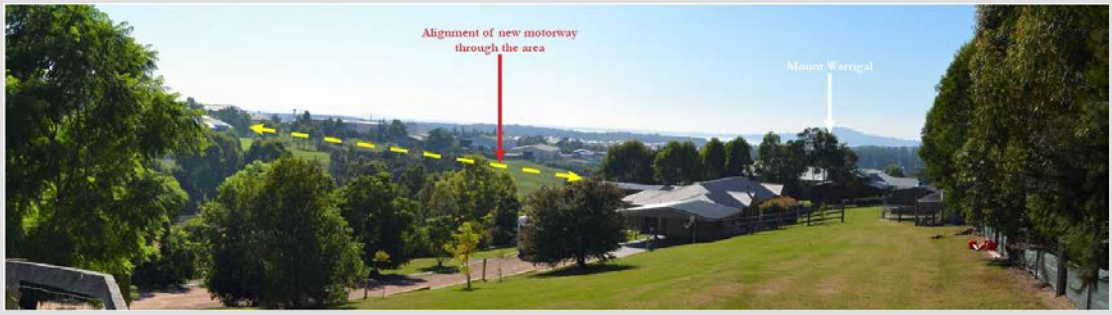
Figure 14-2 Viewpoint locations

Table 14-3 Visual impacts of the project from select viewpoints

Sensitivity	Magnitude	Impact
Viewpoint 1		
		
High sensitivity Residents would have high sensitivity to the project due to the existing attractive views across the Macquarie Valley and Lake Illawarra.	**Moderate magnitude** The interchange at Yallah would be considered out of scale and uncharacteristic of the existing landscape. The loss of woodland vegetation would modify the landscape. Since the view overlooks a downhill slope, portions of the view would be obscured, or would not be overly dominant in the existing landscape. Construction activities would be highly visible from this viewpoint. The impact would be reduced over time as new woodland plantings are established and mature.	**High–moderate impact** 
Viewpoint 2		
		
High sensitivity Residents would have high sensitivity due to the attractive views across the Macquarie Valley.	**Moderate magnitude** The interchange at Yallah would be considered out of scale and uncharacteristic of the existing landscape. The loss of woodland vegetation would modify the landscape. From street level these changes would generally be obscured from view, or would not be dominant in the landscape. Elevated and multi-story residences may experience higher magnitude impacts if they are able to see over the existing landscape to the project. Construction activities would be highly visible from this viewpoint. The impact would be reduced over time as new woodland plantings are established and mature.	**High–moderate impact** 

Sensitivity	Magnitude	Impact
Viewpoint 3		
		
Low sensitivity A residential property is located adjacent to the Illawarra Highway and the South Coast Rail Line in this location. The residents would therefore have a low sensitivity.	**High magnitude** Due to the existing infrastructure in the area the project would not be out of scale or uncharacteristic of the existing landscape. Substantial vegetation clearing would result in a high impact on the visual character. Construction activities would be highly visible from this viewpoint. The impact would be reduced over time as new woodland plantings are established and mature.	**Moderate impact** 
Viewpoint 4		
		
Low sensitivity A commercial property is located adjacent to the existing Princes Highway. Viewers would have a low sensitivity to the project.	**Low magnitude** While the project would be of a substantial scale, it would result in minimal alteration to the existing view. The scale and nature of the project would be consistent with the existing visual character, resulting in a low impact. Construction activities would be highly visible from this viewpoint. The impact would be reduced over time as new woodland plantings are established and mature.	**Low impact** 

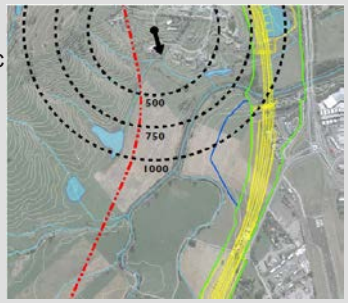
Sensitivity	Magnitude	Impact
Viewpoint 5 		
Moderate sensitivity Residents would have a moderate sensitivity as there is substantial infrastructure in the area. Areas of native trees screen views to the north-east.	**Low magnitude** While the introduction of the project would be a major change, it would not be substantially uncharacteristic with the landscape due to the presence of existing infrastructure. Intervening trees would screen parts of the motorway from this viewpoint. Construction activities would be visible from this viewpoint.	**Moderate impact** 
Viewpoint 6 		
High sensitivity Residents would have high sensitivity to the project due to the existing attractive views across Lake Illawarra towards Mount Warrigal.	**Low magnitude** The motorway would be a major change and would be substantially uncharacteristic of the existing visual character. Most of the motorway would be in a large cutting and would not be readily visible. Construction activities would be visible from this viewpoint.	**Moderate impact** 

Sensitivity	Magnitude	Impact
Viewpoint 7		
		
Moderate sensitivity Residents would have a moderate sensitivity as there is substantial infrastructure in the area. Areas of mature trees partially restrict views to the north-east.	**Moderate magnitude** While the introduction of the project would be a major change, it would not be substantially uncharacteristic of the existing landscape due to the existing infrastructure. Trees would screen parts of the project from this viewpoint. Construction activities would be visible from this viewpoint.	**Moderate impact** 
Viewpoint 8		
		
High sensitivity Residents would have high sensitivity due to the attractive views across Lake Illawarra towards Mount Warrigal.	**Moderate magnitude** The large amount of earthworks required in this location would be out of scale and uncharacteristic of the existing landscape. The earthworks would generally be below the roof line of existing industrial buildings and would not overly dominate the scenic vistas in the landscape. Trees would screen parts of the project from this viewpoint. Construction activities would be visible from this viewpoint.	**High–moderate impact** 

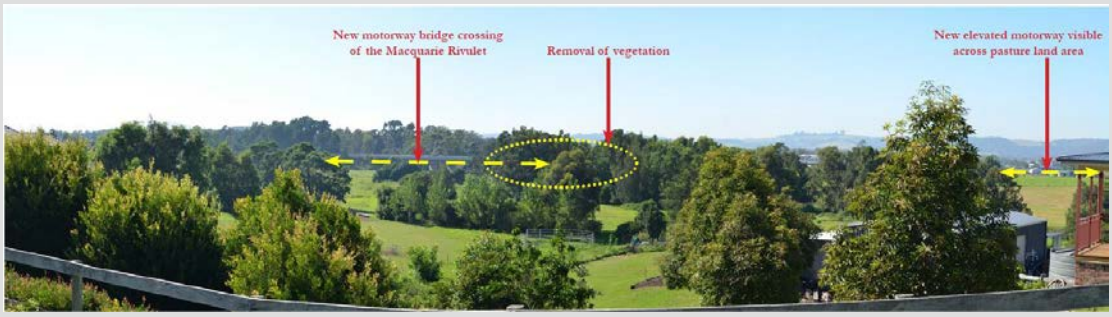
Sensitivity	Magnitude	Impact

Viewpoint 9

Sensitivity	Magnitude	Impact
High sensitivity Residents would have high sensitivity due to the existing views across the Macquarie Valley and of the Macquarie Rivulet.	**Moderate magnitude** While the introduction of the motorway would be a major change within the landscape, the overall distance to the project and its low position within the landscape would not make it uncharacteristic of the existing landscape. Vehicles on the elevated motorway would be clearly visible. Construction activities would be visible from this viewpoint.	**High–moderate impact**



Viewpoint 10



Sensitivity	Magnitude	Impact
High sensitivity Residents would have high sensitivity due to the existing attractive views across the lower Macquarie Valley towards Blackbutt and Croome.	**Moderate magnitude** The close proximity and scale of the project would make it uncharacteristic of the landscape. The loss of well-established vegetation in Darcy Dunster Reserve and along the Macquarie Rivulet would have a high impact. Vehicles on the elevated bridge would be highly visible. Construction activities would be highly visible from this viewpoint.	**High-moderate impact**

Sensitivity	Magnitude	Impact

Viewpoint 11

High sensitivity

Darcy Dunster Reserve has civic and cultural value in the local area, particularly for its' scenic quality. It is used by locals and visitors who would have a high sensitivity to the project.

High magnitude

The route of the project through the Reserve would make it highly uncharacteristic of the landscape, although the twin bridges of the existing Princes Highway are already located at the eastern end of the reserve. The loss of established vegetation in the reserve would have a high impact.

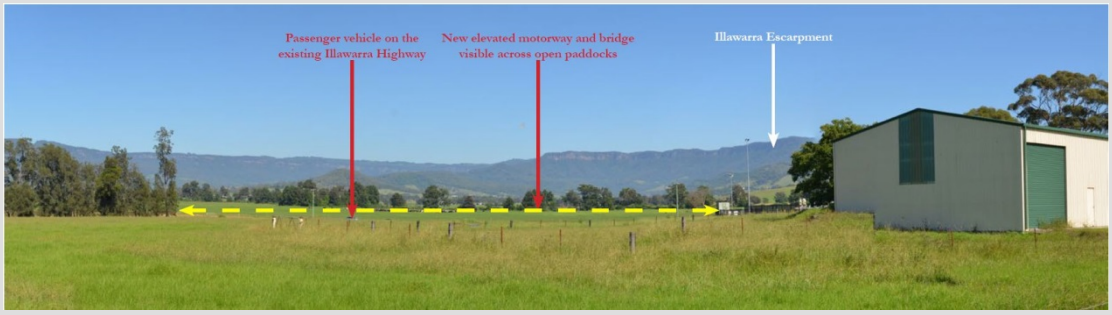
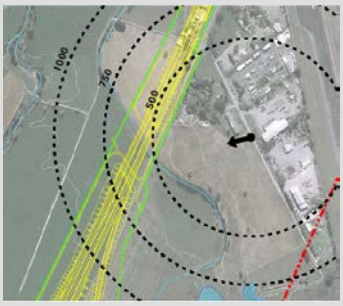
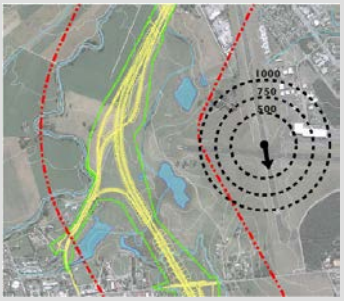
Construction activities would be highly visible from this viewpoint.

The impact would be reduced over time as new grassland and woodland plantings are established and mature.

High impact

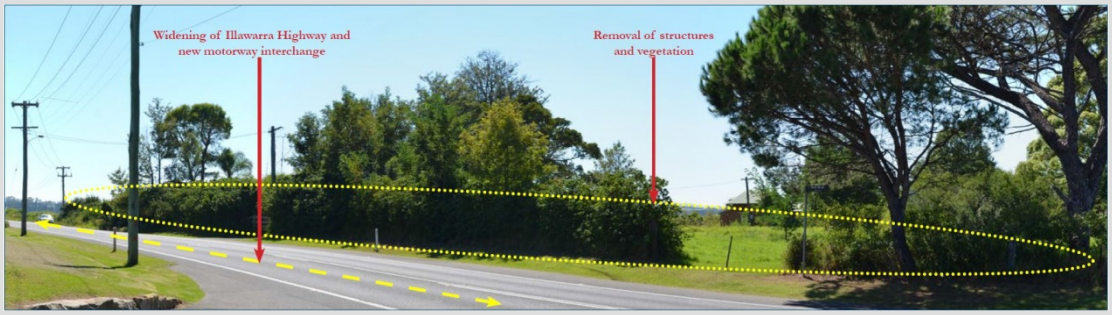
Viewpoint 11 – current view

Viewpoint 11 – artist's impression of view with project

Sensitivity	Magnitude	Impact
Viewpoint 12		
		
Low sensitivity Commercial and industrial properties, located on flat land adjacent to the Illawarra Regional Airport looking towards Frazers Creek, would have low sensitivity to the project.	**Moderate magnitude** While the introduction of an elevated motorway would be a major change, the distance to the project means it would not be substantially uncharacteristic of the landscape. Intermediate views of the Calderwood and Marshall Mount hillside would potentially be obscured by the fill embankments. Motor vehicles are currently recessed in the landscape and would consequently become a more dominant element. Vehicles would be partially screened by additional plantings beside Frazers Creek. Construction activities would be highly visible from this viewpoint.	**Moderate–low impact** 
Viewpoint 13		
		
Moderate sensitivity Aeroplane passengers would have high sensitivity to the visual landscape during take-off and landing. Pilots focus on flying and therefore would have a lower sensitivity. Overall, viewers from this location would have a moderate sensitivity.	**Low magnitude** The project would be prominent but not substantially uncharacteristic of the landscape as it would mostly be near urban environments. To a pilot or passenger on an aeroplane, the project would be similar to the rest of the character of the eastern portion of the Macquarie Valley, and would have a low impact.	**Moderate–low impact** 

Sensitivity	Magnitude	Impact

Viewpoint 14



Moderate sensitivity

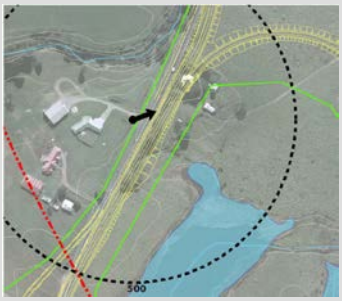
A residential property is located adjacent to, and has intermittent views of, the Illawarra Highway. Viewers would have a moderate sensitivity.

Moderate magnitude

While an elevated motorway would be prominent from this viewpoint, it would not be substantially uncharacteristic of the landscape.

Construction activities would be visible from this viewpoint.

Moderate impact



Viewpoint 15

Moderate sensitivity

A residential property is located adjacent to the Illawarra Highway, and has intermittent views of the existing highway and open space across the highway. Viewers would have a moderate sensitivity.

Moderate magnitude

While the motorway would be prominent in the landscape, it would not be substantially uncharacteristic of the landscape.

Construction activities would be visible from this viewpoint.

The impact would be reduced over time as new grassland and woodland plantings are established and mature.

Moderate impact

Sensitivity	Magnitude	Impact

Viewpoint 16

High sensitivity

The Albion Park Showground, which is an important civic and cultural venue, is highly valued by the community. The view includes a mix of sporting facilities and informal playing fields that define the character of the Croom Regional Sporting Complex. Viewers would have a high sensitivity.

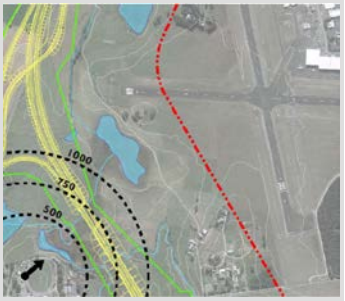
High magnitude

The close proximity of the project (roughly 400 metres to the bridge over Frazers Creek) would make it highly uncharacteristic of the landscape. The distant view across to the Illawarra Regional Airport (roughly 1.8 kilometres) would also be lost.

Construction activities would be highly visible from this viewpoint.

The impact would be reduced over time as new grassland and woodland plantings are established and mature.

High impact



Sensitivity	Magnitude	Impact

Viewpoint 17

Moderate sensitivity

Pedestrians and cyclists on Tongarra Road would have high sensitivity to the visual landscape and scenic views. Motorists would focus on driving and would have a lower sensitivity, resulting in an overall moderate sensitivity rating for viewers.

High magnitude

The close proximity and major scale of the motorway over Tongarra Road would be considered highly uncharacteristic of the landscape. The skyline and long-range views would also be considerably changed.

The impact would reduce over time as new tree plantings are established and mature. The use of noise walls in this location would partially screen the motorway.

Construction activities would be highly visible from this viewpoint.

High-moderate impact

Viewpoint 17 original view

Viewpoint 17 artistic impressions of view with project

Sensitivity	Magnitude	Impact

Viewpoint 18

High sensitivity

Viewers, (including Ravensthorpe guesthouse patrons, residents, and pedestrians and cyclists on Tongarra Road) would have a high sensitivity to the visual landscape between Albion Park and Albion Park Rail. Motorists on Tongarra Road would mostly focus on driving and would have a lower sensitivity.

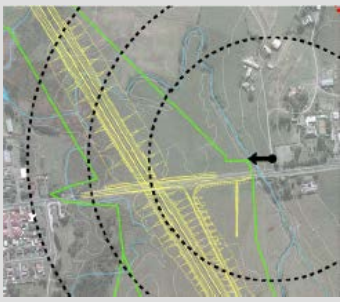
High magnitude

The close proximity and major scale of the project over Tongarra Road would make it highly uncharacteristic of the landscape. The skyline and long-range views would also be considerably changed.

Construction activities would be highly visible from this viewpoint.

The impact would be reduced over time as new grassland and woodland plantings are established and mature.

High impact



Viewpoint 19

Moderate sensitivity

Pedestrians and cyclists on the East West Link would have high sensitivity to the visual landscape and the scenic views of natural areas to the south-west. Motorists would mostly focus on driving and would have a lower sensitivity, resulting in an overall moderate sensitivity rating for viewers.

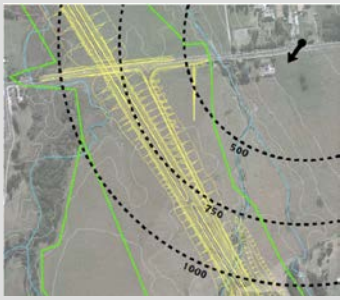
Moderate magnitude

While the scale of the project would make it uncharacteristic of the existing landscape, it would sit relatively low compared to the background, allowing it to blend into the landscape. The bridge over Frazers Creek would be visible in the distance. Motor vehicles would be a new element in the landscape but would be partially screened by additional plantings along Frazers Creek.

Construction activities would be visible from this viewpoint.

The impact would be reduced over time as new plantings are established and mature.

Moderate impact



Sensitivity	Magnitude	Impact

Viewpoint 20

Moderate sensitivity

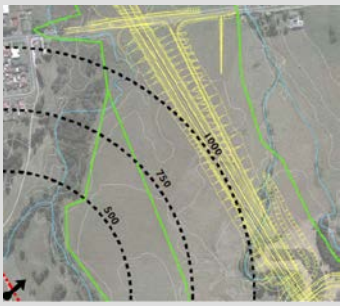
Residents in the Fraser Crescent neighbourhood, and users of the shared path, have attractive views of Terry Reserve. They have a distant view to the Croom Regional Sporting Complex through breaks in scattered creek-side vegetation. Viewers would have a moderate sensitivity.

Moderate magnitude

While the scale of the project would be uncharacteristic of the existing landscape, the motorway would be relatively distant, allowing it to blend into the surrounding landscape. Glimpses of vehicles would potentially occur through gaps in the vegetation along Frazers Creek. The use of a noise wall in this location would partially screen the motorway.

Temporary construction activities would be visible from this viewpoint. The impact on this viewpoint would be reduced over time as new plantings are established and mature.

Moderate impact



Viewpoint 21

High sensitivity

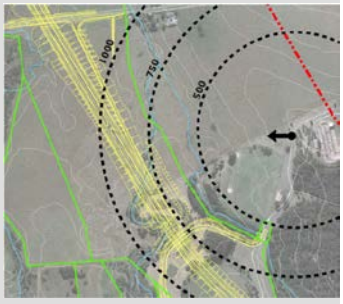
The BMX track and athletics field form parts of the Croom Regional Sporting Complex. They have substantial civic and cultural value. This area is heavily used by a wide variety of user groups. This results in a high sensitivity rating for viewers.

High magnitude

The scale of the project would considerably modify, and would be uncharacteristic of, the rural landscape. Views across the rural landscape would be interrupted by the elevated motorway and vehicles on the motorway would be visible.

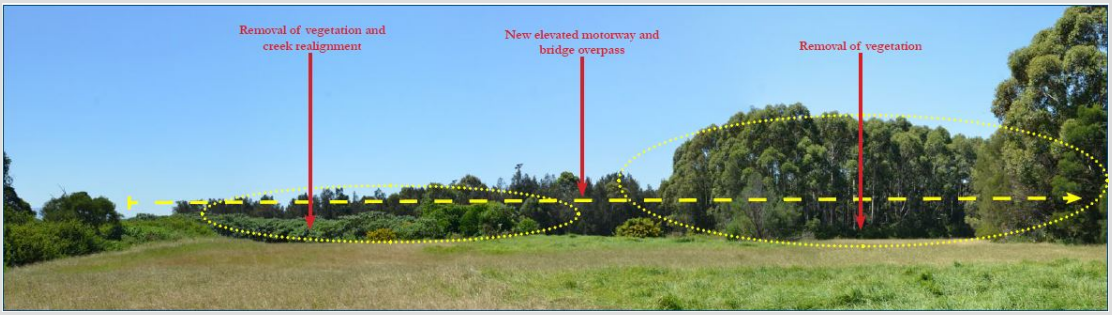
Construction activities would be visible from this viewpoint.

High impact



Sensitivity	Magnitude	Impact

Viewpoint 22



High sensitivity

The openness and connections across the Croom Regional Sporting Complex and Terry Reserve are valued components of the user experience. These connections are heavily used. This results in a high sensitivity for viewers.

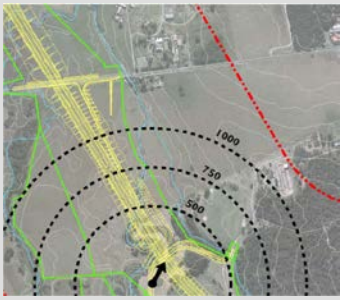
High magnitude

The scale of the project would considerably modify, and would be uncharacteristic of, the landscape.

Construction activities would be visible from this viewpoint.

The impact would be reduced over time as new plantings are established and mature.

High impact



Viewpoint 23

High sensitivity

The equestrian facilities in both Terry Reserve and Croom Regional Sporting Complex are unique in the region and have substantial civic and cultural value. A number of different groups use these facilities. This results in an overall high sensitivity for viewers.

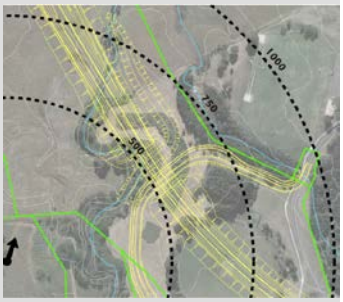
High magnitude

The scale of the project would considerably modify, and would be substantially uncharacteristic of, the rural landscape. The use of a noise wall in this location would screen the motorway.

Temporary construction activities would be visible from this viewpoint.

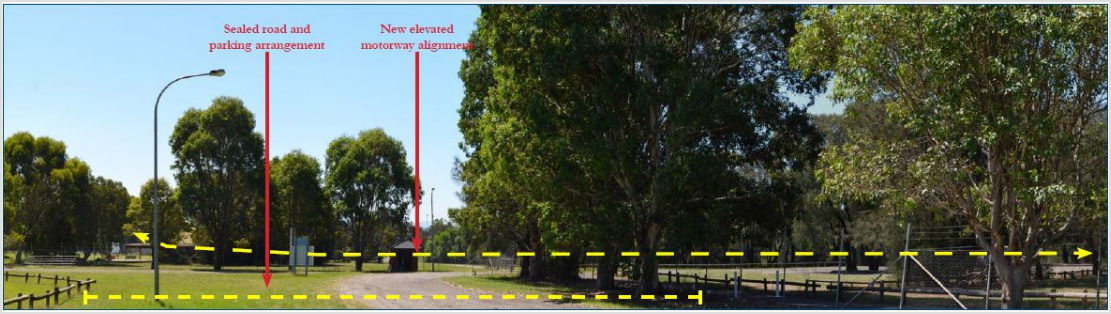
The impact on this viewpoint would be reduced over time as new plantings are established and gradually mature.

High impact



Sensitivity	Magnitude	Impact

Viewpoint 24



High sensitivity

As part of the Croom Regional Sporting Complex, the senior rugby league field has substantial civic and cultural value. This area is heavily used by a wide variety of groups. This results in an overall high sensitivity rating for viewers.

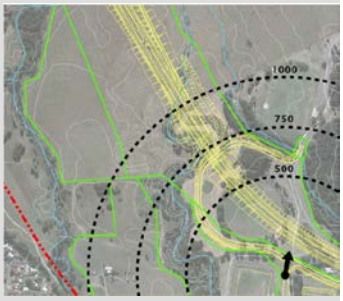
Moderate magnitude

Although the close proximity of the motorway would be highly uncharacteristic of the landscape, the mature vegetation, and plantings, would shield most of the view. The access road in the foreground would be consistent with the character of the Croom Regional Sporting Complex. The recessed rugby field would also reduce the visual impact.

Construction activities would be highly visible from this viewpoint.

The impact would be reduced over time as new plantings are established and mature.

High–moderate impact



Viewpoint 25

High sensitivity

The Mary Marley Hockey Centre and junior rugby league fields have substantial civic and cultural value. The highly attractive landscape character of the area has the Illawarra Escarpment in the background. This area is heavily used by a wide variety of groups. This results in an overall high sensitivity rating for viewers.

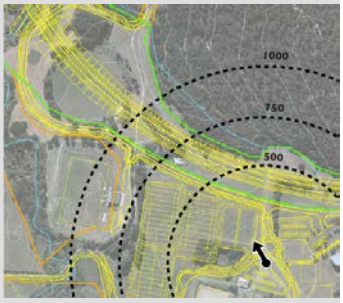
High magnitude

The close proximity of the motorway to this location would be highly uncharacteristic of the landscape. The relocation of fields and amenity structures, and the removal of established vegetation in the foreground, would result in a major impact.

Construction activities would be highly visible from this viewpoint.

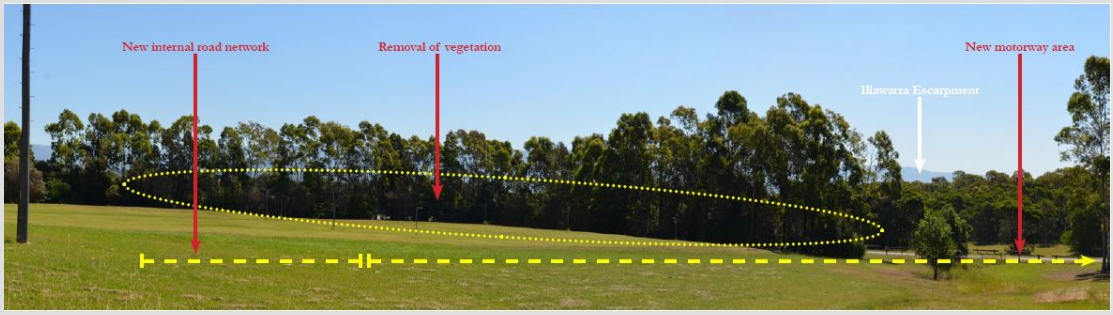
The impact would be reduced over time as new plantings are established and gradually mature.

High impact



Sensitivity	Magnitude	Impact

Viewpoint 26



High sensitivity

The Shellharbour City Stadium has substantial civic and cultural value in the local government area. The highly attractive landscape includes the Illawarra Escarpment in the distance which is visible through breaks in the vegetation. The mix of developed and informal sporting facilities defines the character of the Croom Regional Sporting Complex. This results in an overall high sensitivity rating for viewers.

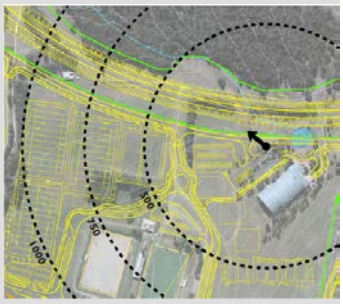
High magnitude

The close proximity of the motorway and entry road to this location would be highly uncharacteristic of the landscape. The loss of informal fields directly across from Shellharbour City Stadium, and removal of established vegetation in the foreground, would be a major impact.

Construction activities would be highly visible from this viewpoint.

The impact would be reduced over time as new plantings are established and gradually mature.

High impact



Viewpoint 26 original view

Viewpoint 26 artistic impression of view with project

Sensitivity	Magnitude	Impact

Viewpoint 27

Moderate sensitivity

Residents would have moderate sensitivity to the project. This is due to the existing location of the nearby East West Link and Croome Road, and the substantial amount of established vegetation that would be removed, which currently provides visual screening of the road and a sense of separation.

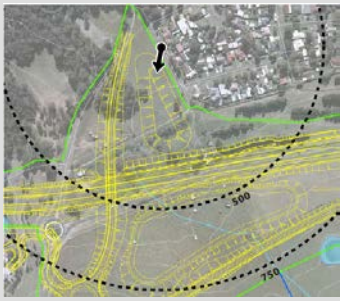
High magnitude

While only moderate in scale, the realignment of Croome Road would be uncharacteristic of the neighbourhood environment. The change to the landscape would result in a high impact. The noise wall in this location would screen the motorway.

Construction activities would be visible from this viewpoint.

The impact would be reduced over time as new plantings are established and mature.

High–moderate impact



Viewpoint 28

Moderate sensitivity

The equestrians, pedestrians and cyclists on the East West Link would have a high sensitivity due to the scenic views to the south-west. The prominence of the Illawarra Escarpment in the background adds substantially to the scenic value of this viewpoint.

Motorists would mostly focus on driving and would therefore have a lower sensitivity.

The overall sensitivity rating for viewers would be moderate.

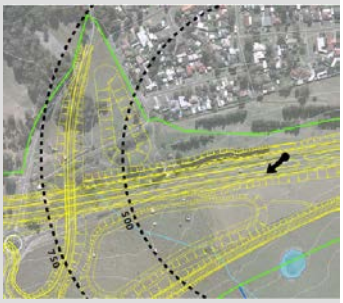
Moderate magnitude

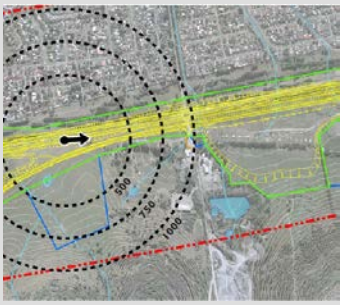
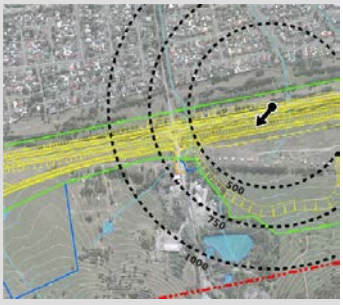
While the scale of the project would be considered uncharacteristic of the landscape, it would be set into a low sloping hillside, blending into the surrounding landscape. Croome Road over the motorway would be visible in the distance, but would not be substantially inconsistent with the existing East West Link.

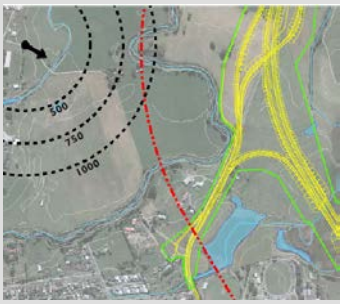
Construction activities would be visible from this viewpoint.

The impact would be reduced over time as new plantings are established and mature.

Moderate impact



Sensitivity	Magnitude	Impact
Viewpoint 29  **Moderate sensitivity** Equestrians, pedestrians and cyclists on the East West Link would have high sensitivity due to views of natural areas to the south-east. The scenic hills create an attractive backdrop. Motorists would mostly focus on driving and would have a lower sensitivity. The overall sensitivity rating for viewers would be moderate	**High magnitude** The scale of the project would be uncharacteristic of the landscape. The loss of the roadside mound, vegetation and agistment area would considerably modify the landscape. The use of a noise wall would screen the motorway from visually sensitive residential areas. Construction activities would be highly visible from this viewpoint. The impact would be reduced over time as new plantings are established and mature.	**High–moderate impact** 
Viewpoint 30  **Moderate sensitivity** Equestrians, pedestrians and cyclists on the East West Link would have high sensitivity due to views of natural areas to the south-west. The attractive scenic hills create a scenic backdrop. Motorists would mostly focus on driving and would have a lower sensitivity. This results in an overall moderate sensitivity rating for viewers.	**High magnitude** The scale of the project would be uncharacteristic of the landscape. The loss of vegetation and the agistment area as a result of earthwork cuttings would considerably modify the landscape. The use of a noise wall would screen the motorway from visually sensitive areas, such as adjacent residential areas Construction activities would be visible from this viewpoint. The impact would be reduced over time as new plantings are established and mature.	**High–moderate impact** 

Sensitivity	Magnitude	Impact
Viewpoint 31		
		
Low sensitivity Residents would have moderate sensitivity to changes, due to the existing location of the nearby East West Link. Established vegetation provides visual screening of the road and a sense of separation and apparent noise attenuation.	**Low magnitude** While the project would be of a substantial scale within this area, existing vegetation would provide a visual barrier to the project. The existing vegetation would remain, and the view would be minimally impacted. The use of a noise wall would screen the motorway from visually sensitive areas, such as adjacent residential areas. Construction activities would be intermittently visible from this viewpoint. The impact would be reduced over time as new plantings are established and gradually mature.	**Low impact** 
Viewpoint 32		
		
Moderate sensitivity A residential property located on a small hilltop in this location, overlooks the Macquarie Rivulet and the Illawarra Highway. The distance to the project would be about one kilometre, and the proposed infrastructure would be similar to the existing Illawarra Highway. There would be a moderate sensitivity rating for viewers.	**Low magnitude** While the introduction of an elevated motorway would be a major change, the overall distance to the project would mean it would not be prominent within, or substantially uncharacteristic of, the landscape. Intermediate views would be of riparian vegetation. Construction activities would be moderately visible from this viewpoint. The impact would be reduced over time as new plantings are established and mature.	**Moderate–low impact** 

Sensitivity	Magnitude	Impact

Viewpoint 33

High sensitivity

There is currently no large-scale road infrastructure in this area, and the project would be less than two kilometres away from residences. Viewers would have very high sensitivity to the project due to the existing attractive panoramic views of Lake Illawarra and of open space. The runways at the Illawarra Regional Airport recede into the landscape of the surrounding pasture land.

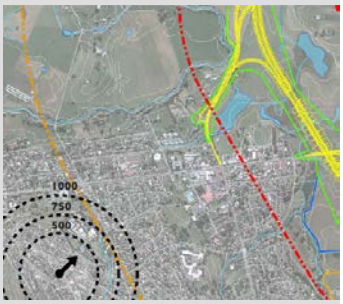
Moderate magnitude

While the introduction of an elevated motorway would be a major change, the overall distance to the project and revegetation would reduce the visual contrast with the landscape.

Construction activities would be highly visible from this viewpoint.

The impact would be reduced over time as new plantings establish and mature over time.

High–moderate impact



Viewpoint 34

High sensitivity

There is currently no large-scale road infrastructure in this area, and the project would be less than two kilometres from the hillside residences. Due to the attractive panoramic views of Lake Illawarra and of the open space area, viewers at these residences would have very high sensitivity.

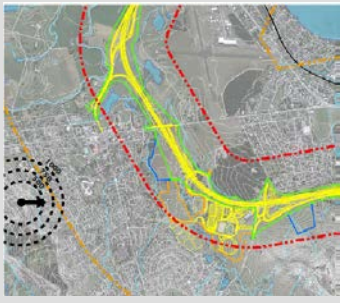
Moderate magnitude

While the project would be a major change, the overall distance to it and revegetation would reduce the visual contrast with the landscape.

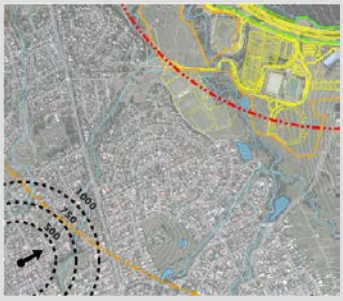
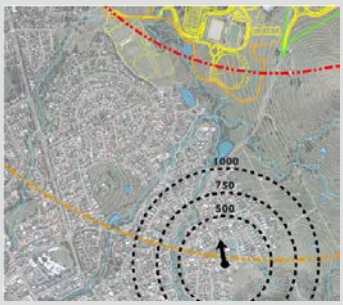
Construction activities would be highly visible from this viewpoint.

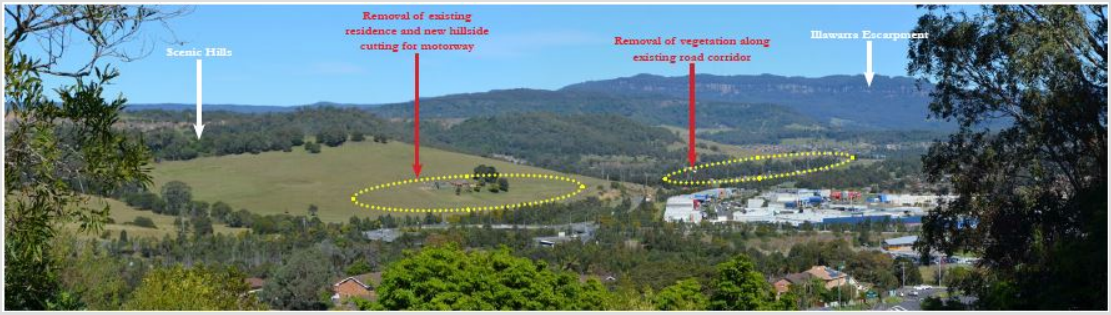
The impact would be reduced over time as new plantings establish and mature over time.

High–moderate impact



Sensitivity	Magnitude	Impact
Viewpoint 35		
		
High sensitivity Residents would have high sensitivity to the project due to the existing attractive views of the open space area that separates the neighbourhood from the Croom Regional Sporting Complex.	**Moderate magnitude** Due to the proximity to the Croom Regional Sporting Complex, the redesign of the complex, structures and lighting elements would be a change and would be considered out of scale or uncharacteristic of the landscape. Lighting elements within the complex would be visible. Construction activities would be highly visible from this viewpoint. The impact would be reduced over time as new plantings establish and mature over time.	**High–moderate impact** 
Viewpoint 36		
		
High sensitivity Residents have attractive views of the open space area that separates the residential neighbourhood from the Croom Regional Sporting Complex. Viewers from this area would have high sensitivity.	**Moderate magnitude** Due to the close proximity to the Croom Regional Sporting Complex, the redesign of the complex, structures and lighting elements would be a change and, would be considered out of scale or uncharacteristic of the existing visual character. Lighting elements within the complex would be visible. Construction activities would be highly visible from this viewpoint. The impact would be reduced over time as new plantings establish and mature over time.	**High–moderate impact** 

Sensitivity	Magnitude	Impact
Viewpoint 37		
		
Moderate sensitivity Residents have views of the open space area that separates the neighbourhood from the Croom Regional Sporting Complex. Due to the distance to the project (1.3 kilometres), viewers from this area would have a moderate sensitivity.	**Low magnitude** While the loss of open space would be a major change, the overall distance to the project and similarity of redesigned sporting grounds would not be substantially uncharacteristic of the landscape. Lighting elements of the project would be visible. Construction activities would be highly visible from this viewpoint. The impact would be reduced over time as new plantings establish and mature over time.	**Moderate–low impact** 
Viewpoint 38		
		
High sensitivity Residents have attractive views of the open space area that separates the neighbourhood from the Croom Regional Sporting Complex. The rolling hills ensure that most residences currently have a prominent view of the complex. Viewers from this area would have high sensitivity.	**Low magnitude** While the loss of open space would be a major change, the overall distance to the project (1.3 kilometres) and similarity of the redesigned sporting grounds would not be substantially uncharacteristic of the landscape. The proposed lighting elements of the project would be visible. Construction activities would be highly visible from this viewpoint. The impact would be reduced over time as new plantings establish and mature over time.	**Moderate impact** 

Sensitivity	magnitude	impact
Viewpoint 39 		
High sensitivity Residents within this area have attractive views of the Scenic Hills in Croom and the Illawarra Escarpment in the distance. The rolling hills ensure that most residences have prominent views of these features. The location of the public open space takes advantage of and focuses on the landscape and scenic natural environment. Viewers from this area would have high sensitivity.	**Moderate magnitude** The substantial scale of the project would be uncharacteristic of the landscape. The landscape would be modified by the removal of a house and its associated landmark trees on the hill in the background, and by the loss of the roadside trees along the East West Link. Construction activities would be highly visible from this viewpoint. The impact would be reduced over time as new plantings establish and mature over time.	**High–moderate impact** 

14.3.3 ARTISTIC IMPRESSIONS

Additional artistic impressions of the project are provided in Figure 14-4 to Figure 14-13. The artistic impressions show how the project sits in the landscape. They show the shape, scale and form of the project as viewed from different locations in the project area. All of the artistic impressions are taken from ground level, except for those of the interchanges, for which elevated views are provided.

The points from which these impressions have been developed are identified in Figure 14-3. Table 14-4 provides a description of each location and the extent to which the project would be visible.

These artistic impressions are not intended to provide a visual impact assessment; rather, they are intended to provide some indication of the visibility of the project from different locations in the project area. Not all locations from which the artistic impressions were captured are accessible, and some are taken from an elevated position above ground level to give a better view of what the project looks like. They are indicative only.

Table 14-4 Description of additional artistic impression viewpoint locations.

Location	Description	Visibility of the project
A	Location A is near Shiraz and Cabernet Drives, Dapto, looks down on the project in a south-south-easterly direction across the Princes Motorway and towards the future interchange at Yallah. The existing Motorway is highly visible from this location	The project would be highly visible from this location

Location	Description	Visibility of the project
B	The motorway is viewed from Location B looking in a south-south-easterly direction from Larkins Lane near Condon Place	It would be possible to view traffic travelling on the motorway as far down as the twin bridges on the motorway over the Macquarie Rivulet (BR06)
C	Location C is further south of Location B near the rural residential properties on Larkins Lane. The project is viewed from this location looking in a south-easterly direction towards the Macquarie Rivulet	The elevated motorway is visible from this location and is partially screened by trees
D	Location D is between the Illawarra Highway / Terry Street and the Macquarie Rivulet, corresponding to the view northbound motorists would have when accessing the motorway via the Albion Park interchange entry ramp, looking in a north-easterly direction	The embankments and existing vegetation partially obscure the main carriageway when viewed from this location. The entry and exit ramps at the interchange are visible from this location
E	Location E is in Albion Park near the Frasers Crescent and Badgery Street, and is looking to the north-east	The project would not be visible from this location due to the presence of screening vegetation in the adjacent Sporting Complex
F	Location F is on Tongarra Road around 730 metres east of Terry Street, and is looking toward the project in almost a southerly direction. This corresponds to the point from which motorists and pedestrians / cyclists travelling along Tongarra Road would view the project	The southbound entry ramp at the interchange at Albion Park would be visible from this location, but the main carriageway would not be visible
G	Location G is located in Terry Reserve east of Hughes Drive / Dudgeon Street and is looking north-east across Croom Regional Sporting Complex	The twin bridges carrying the motorway over Frazers Creek and the Croom Regional Sporting Complex access road (BR11) would be visible from this location
H	Location H is near Churnwood Place / Jarrah Way and is looking across the open space in a roughly southerly direction	The noise wall on the northern side of the motorway would be visible from this location, but partially screened by trees. The carriageway is not visible
I	Location I is near Westwood Road in Blackbutt, and the view is taken from an elevated position above ground level looking in a roughly westerly direction towards the Oak Flats Interchange	The viewpoint provides an elevated view of the Oak Flats Interchange where the project would be highly visible. It is noted that a much lesser extent of the project would be visible at ground level
J	Location J is agricultural land south-west of the airport, and east of Frazers Creek. It is looking in a roughly north-westerly direction from a point elevated above the actual ground level	The interchange at Albion Park is highly visible from this location. It is noted that a much lesser extent of the project would be visible at ground level

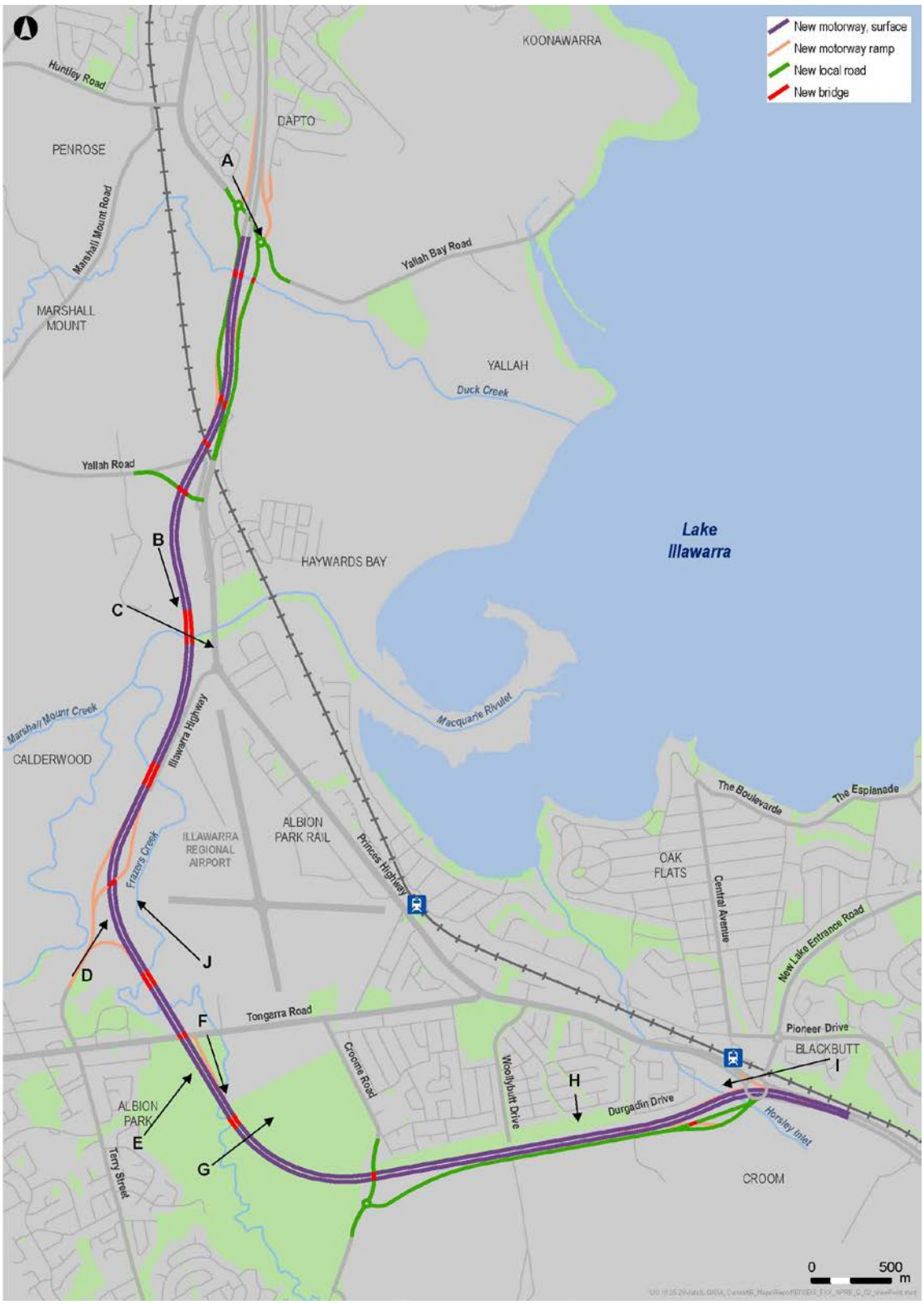


Figure 14-3 Location of viewpoints for additional artistic impressions

Figure 14-4 Artistic impression of the project from Location A

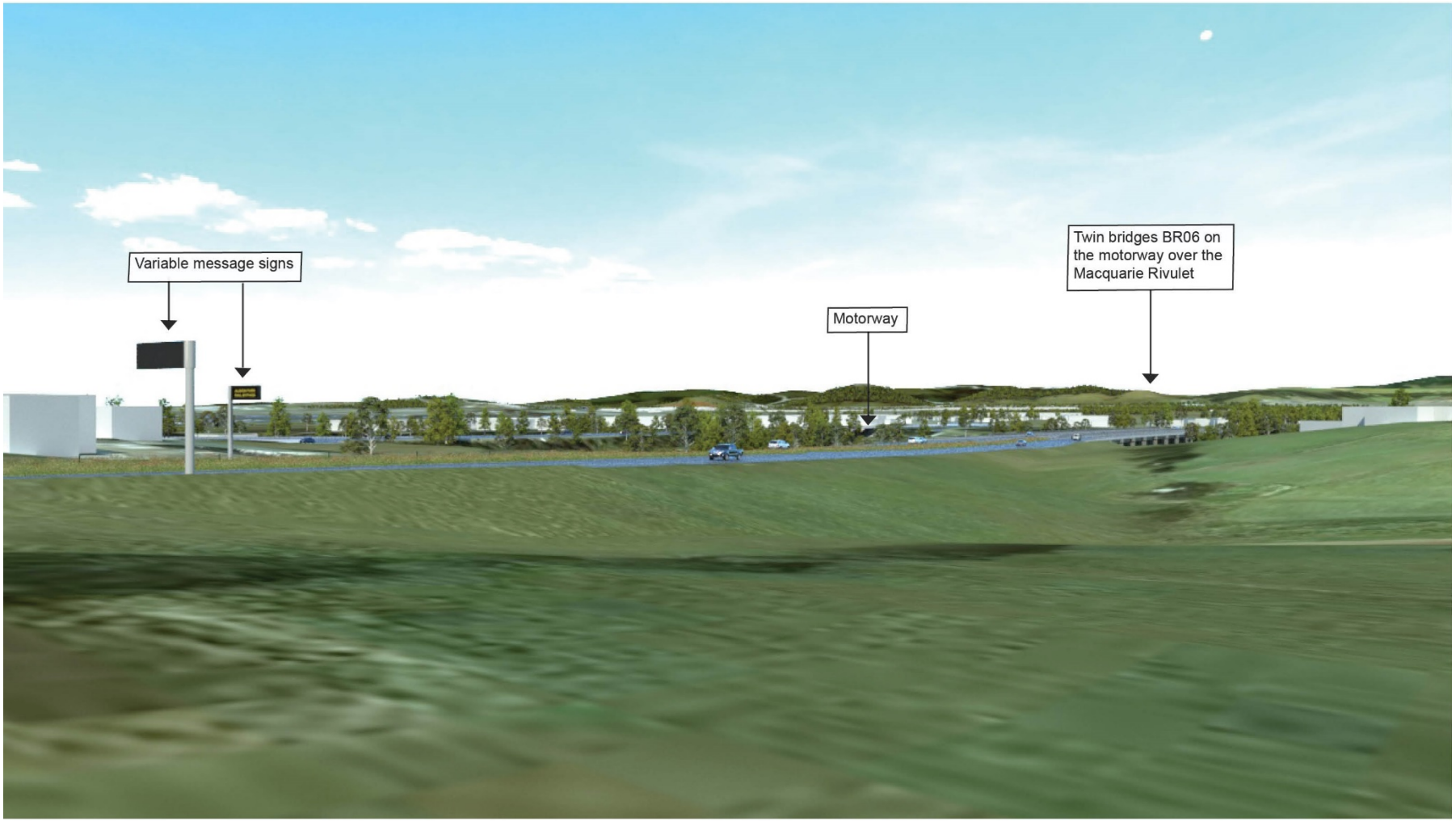


Figure 14-5 Artistic impression of the project from Location B

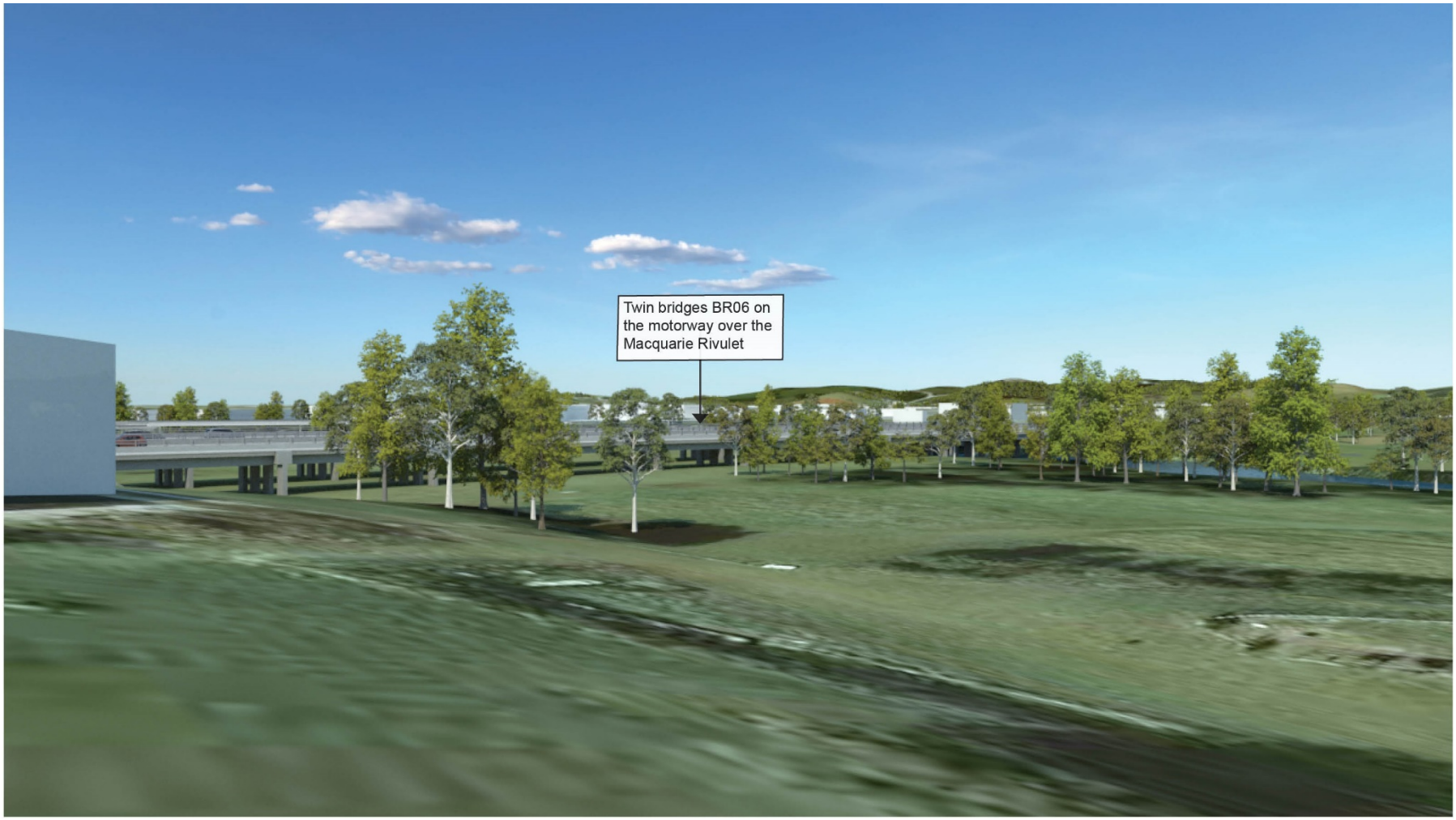


Figure 14-6 Artistic impression of the project from Location C

Figure 14-7 Artistic impression of the project from Location D

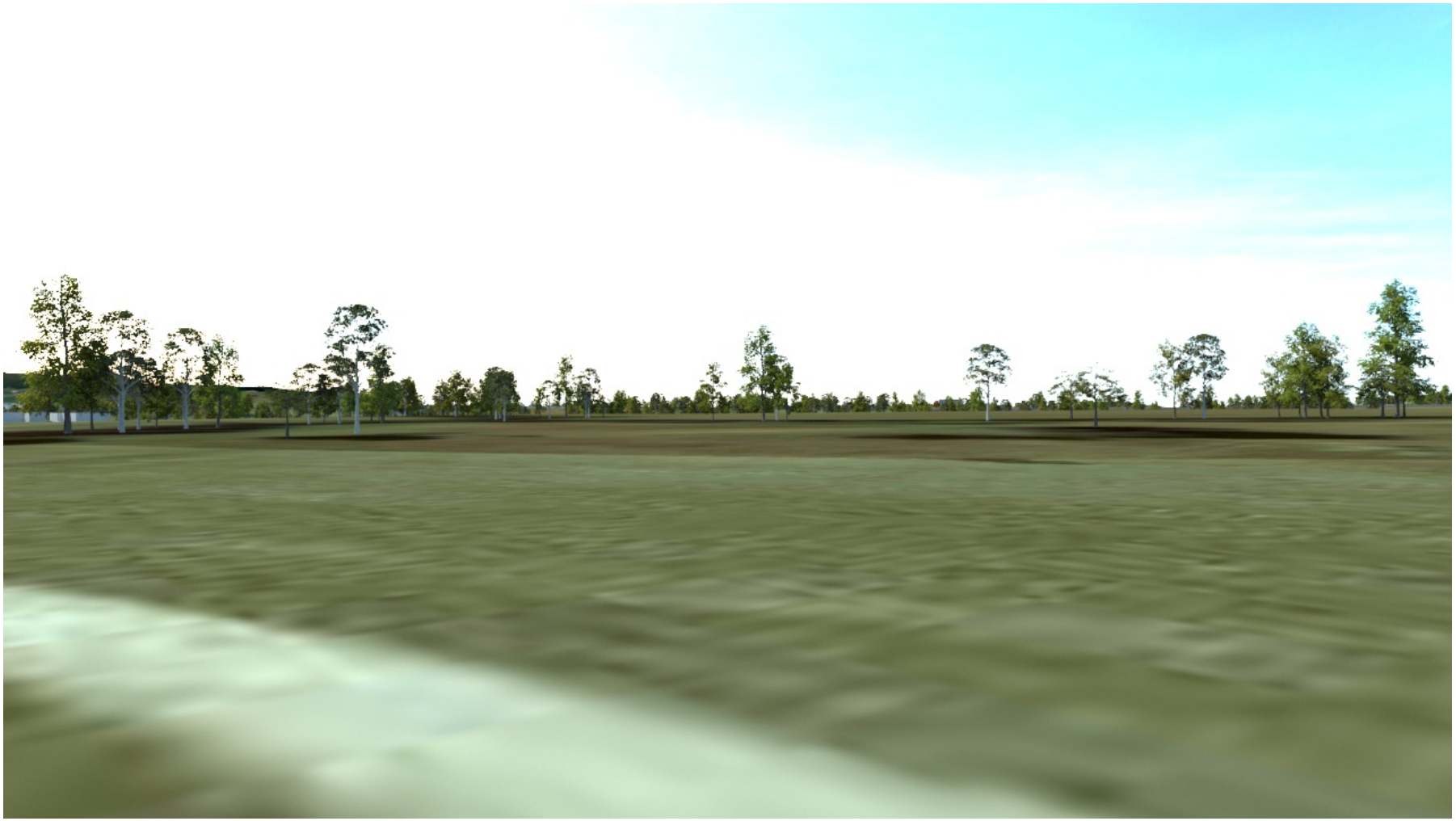


Figure 14-8 Artistic impression of the project from Location E (project not visible due to intervening terrain)

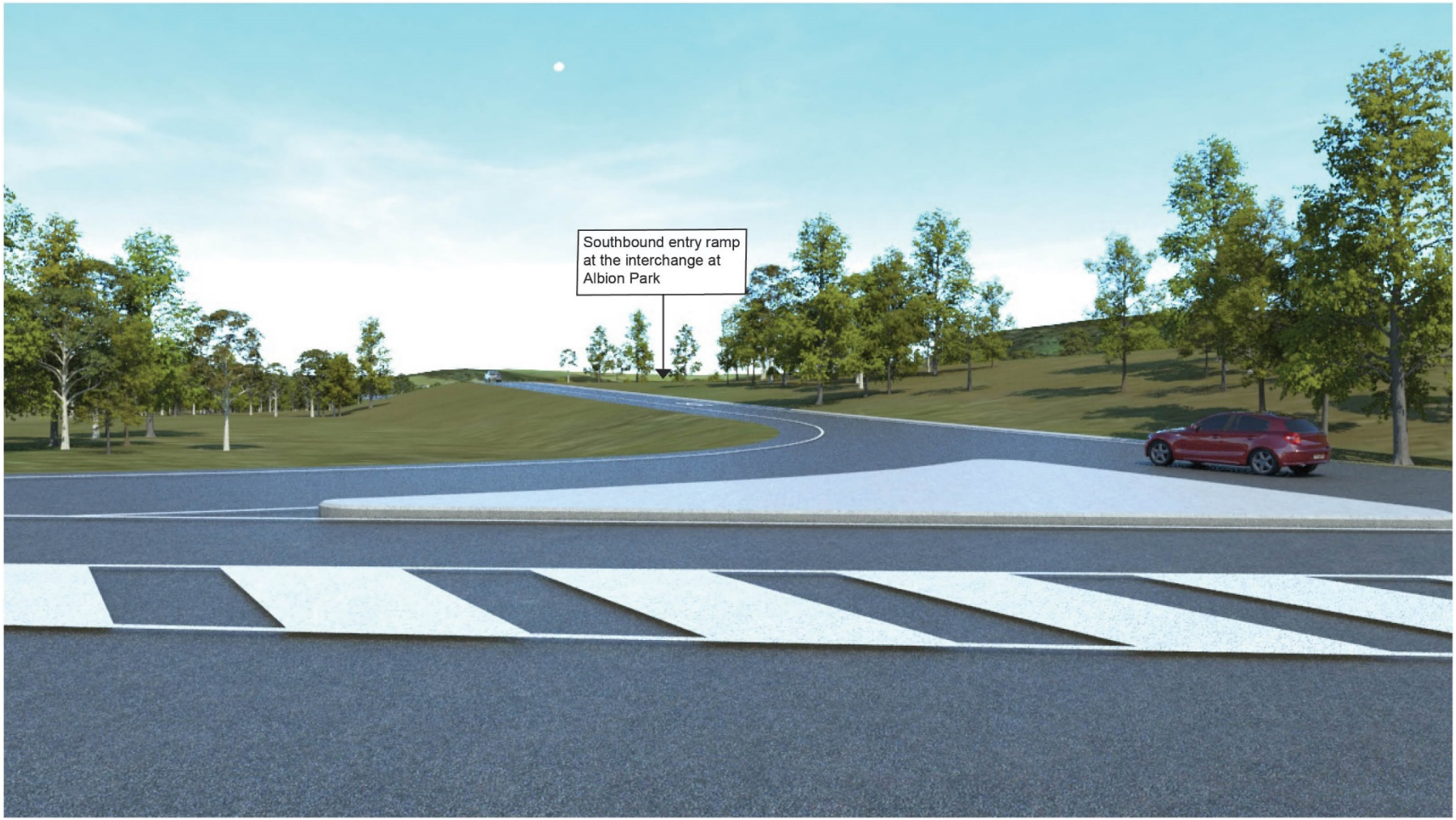


Figure 14-9 Artistic impression of the project from Location F

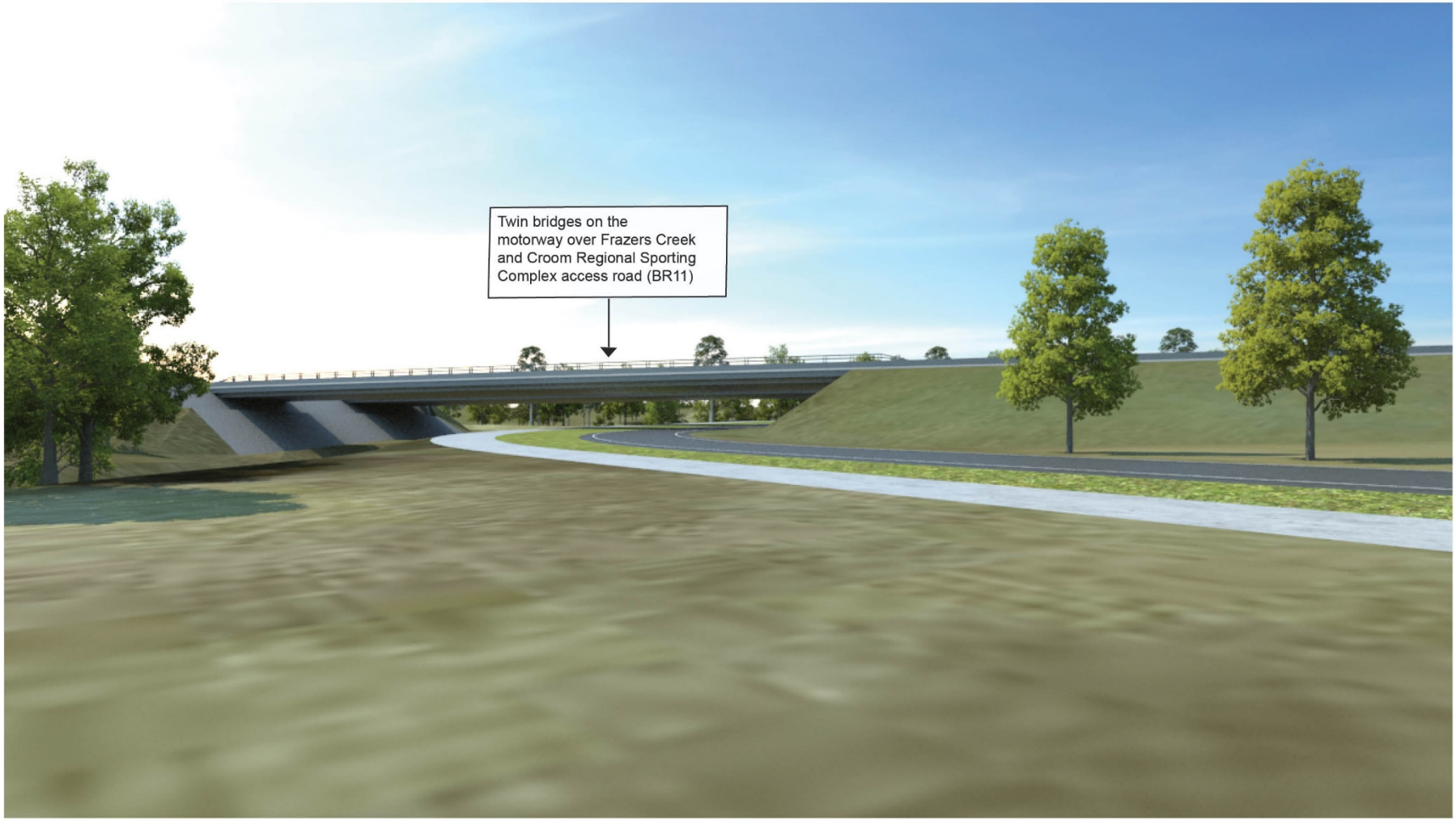


Figure 14-10 Artistic impression of the project from Location G

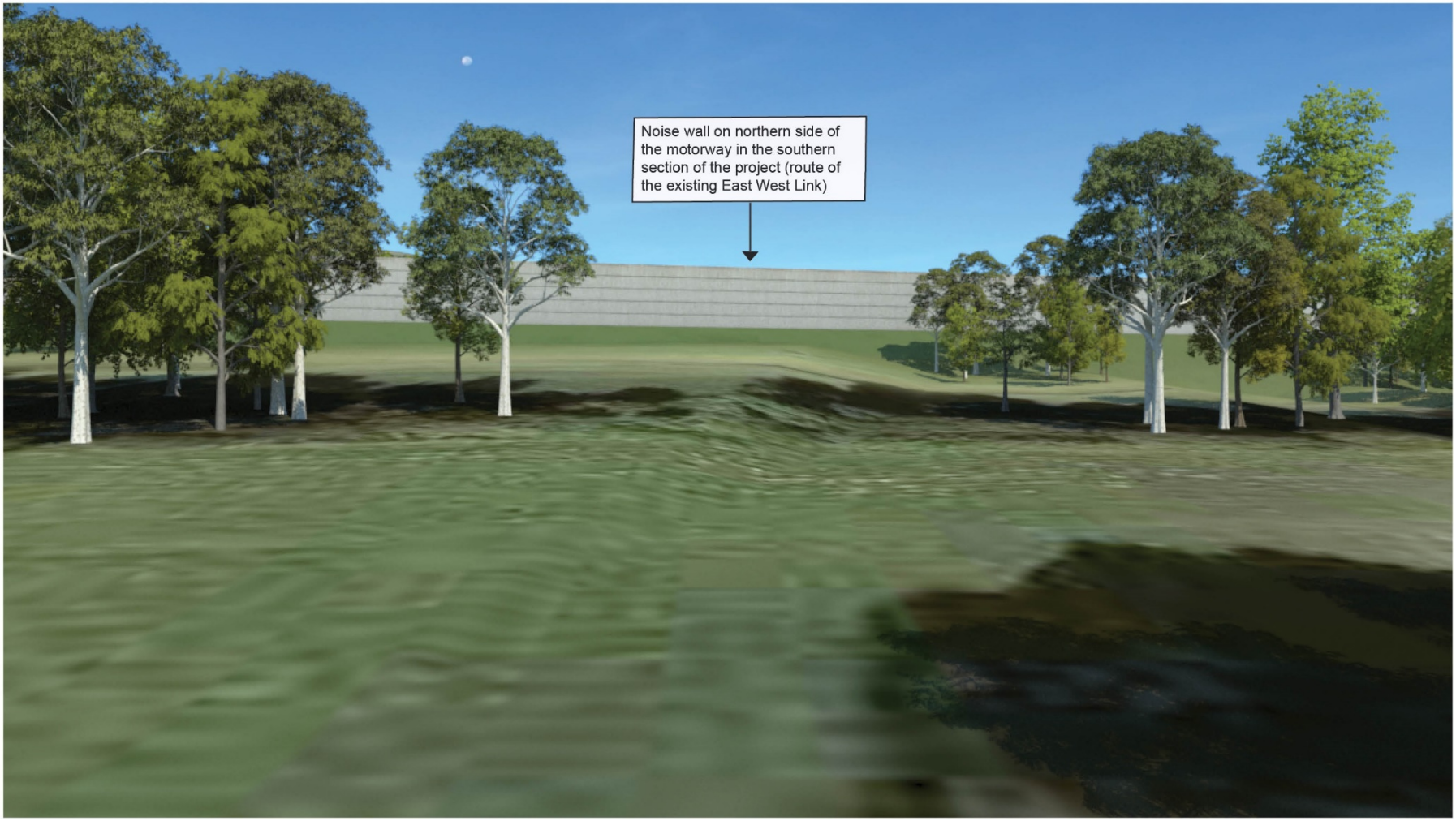


Figure 14-11 Artistic impression of the project from Location H

Figure 14-12 Artistic impression of the project from Location I

Figure 14-13 Artistic impression of the project from Location J

14.4 SUMMARY OF IMPACTS

- Due to the large scale of the project, and the high sensitivity of the surrounding landscape, there would be an adverse impact on the landscape character for most areas surrounding the project
- The project would have a:
  - High visual impact on eight viewpoints
  - A high to moderate impact on 15 viewpoints
  - A moderate visual impact on 10 viewpoints
  - A moderate to low impact on four viewpoints
  - A low visual impact on two viewpoints
- The visual impact of the project would be reduced over time as new pasture and woodland plantings establish and mature over time.

14.5 ENVIRONMENTAL MANAGEMENT MEASURES

Table 14-5 Management of impacts relating to landscape character and visual amenity

Issue	ID	Environmental management measure	Responsibility	Timing
Visual impacts	LC01	Operational water quality devices will be designed to avoid the use of fencing.	Contractor	Detailed design
	LC02	The detailed design will minimise visual impacts and demonstrate integration of urban design principles and objectives adopted for the project. Detailed design of structural elements, including noise barriers, bridges, retaining walls and retaining walls finishes, will be in accordance with Beyond the Pavement, urban design policy, procedure and design principles (Roads and Maritime, 2014b) and the associated design guidelines.	Contractor	Detailed design
Light spill	LC03	The design of temporary and permanent lighting will be undertaken in accordance with AS 1158.1-1986 and will avoid unnecessary light spill on adjacent residents or sensitive receivers.	Contractor	Construction
Structures	LC04	The detailed design of the Green Meadows basin should demonstrate that the footprint and visual impacts have been minimised.	Contractor	Detailed design
Landscaping implementation	BD05	Construction programming will show how progressive rehabilitation of disturbed areas will be undertaken to minimise soils exposure and the potential for dust generation, erosion and sedimentation, and visual impacts.	Contractor	Construction
	LC05	Landscape planting will be in accordance with the landscape plan, and will consider the operational airspace requirements of the Illawarra Regional Airport and the biodiversity offsetting requirements (including for aquatic habitat).	Contractor	Construction
	LC06	Landscaping and design of the Croom Regional Sporting Complex will be in accordance with the Croom Regional Sporting Complex concept design, and will consider the visual impact of the reconfiguration of the complex.	Contractor	Construction
Darcy Dunster Reserve	SE02	Darcy Dunster Reserve will be rehabilitated following construction and any adjustments for the site discussed with Shellharbour City Council.	Roads and Maritime	Detailed design
Croom Regional Sporting Complex	SE03	The construction planning for the reconfiguration of the Croom Regional Sporting Complex will be developed in consultation with Shellharbour City Council and the Sporting Complex user groups so as to minimise impacts on the ongoing use of the Sporting Complex during construction.	Roads and Maritime	Construction