

36 Landscape and visual amenity

36.1 Introduction

An assessment of potential visual impacts due to the long term development was undertaken based on indicative concept designs with the inclusion of two operating runways at close to maximum capacity. This is anticipated to occur in approximately 2063. The indicative flight paths were used in the assessment to provide an idea of the extent of impacts that could arise from the future development of the airport site.

It is expected that there would be progressive development of the airport site as part of the long term development. Such development may modify the environmental conditions at and around the airport site beyond what has been assessed for the proposed Stage 1 development. However, such development has not been considered as part of this strategic level assessment of the indicative long term development.

36.2 Methodology

Consistent with the approach adopted for the Stage 1 development, the methodology for the landscape and visual amenity assessment of the long term development has been adapted from the approach set out in the NSW Roads and Maritime Services document *Environmental Impact Assessment Practice Note – Guideline for Landscape Character and the Visual Impact Assessment and Guidelines for Landscape Visual Impact Assessment* (RMS 2013).

The assessment focuses on the effect on visual amenity, including specific viewpoints in the surrounding area, and considers both the sensitivity of the area and the magnitude (or visual effect) of the long term development in that area. Because of uncertainty about the characteristics of the visual environment over the long term, ratings for each viewpoint have not been assigned for sensitivity, magnitude and visual impact. A discussion of these aspects is provided instead.

36.3 Visual context

The existing visual context for the airport site is described in Chapter 22 (Volume 2a). The existing environment is expected to undergo significant change over the 40 years from the commencement of operations at the proposed airport. Changes would occur both on the airport site and more broadly in south-western Sydney. The character of the region will change with further development of the South West and Western Sydney Priority Growth Areas, development in line with the Western Sydney Infrastructure Plan and the establishment of the Western Sydney Employment Area, as well as the extension of the South West Rail Link and the Outer Sydney Orbital. The result would be a substantial transition of the area surrounding the airport site from a predominantly rural character to an urban character where the proposed airport would be integrated into its surroundings. It is also expected that future development of the surrounding area would be undertaken with the proposed airport in place and, therefore, would consider the visibility of the proposed airport in any necessary development decisions.

36.4 Assessment of impacts during operation

Figure 36–1 illustrates the indicative visibility of the long term development. Theoretically, the airport site would be visible from the pink shaded areas, based on existing topography and the maximum allowable heights of key buildings and structures on the airport site such as the air traffic control tower, terminal buildings and other major structures. While existing structures or vegetation in the surrounding areas were not taken into account in the development of the view shed, their presence would further reduce visibility from surrounding sensitive viewpoints.

As outlined in Chapter 7 (Volume 1), the proposed airport would operate on a 24-hour basis with flights expected to occur during the day and night. Chapter 30 outlines the indicative flight paths for the operation of dual runways in the preferred 05/23 orientation.

There is expected to be a substantial increase in the number of aircraft using the proposed airport – from approximately 10 million annual passengers five years after opening to an anticipated 82 million annual passengers in 2063. The corresponding increase in daily aircraft movements is quantified shown in Table 36–1.

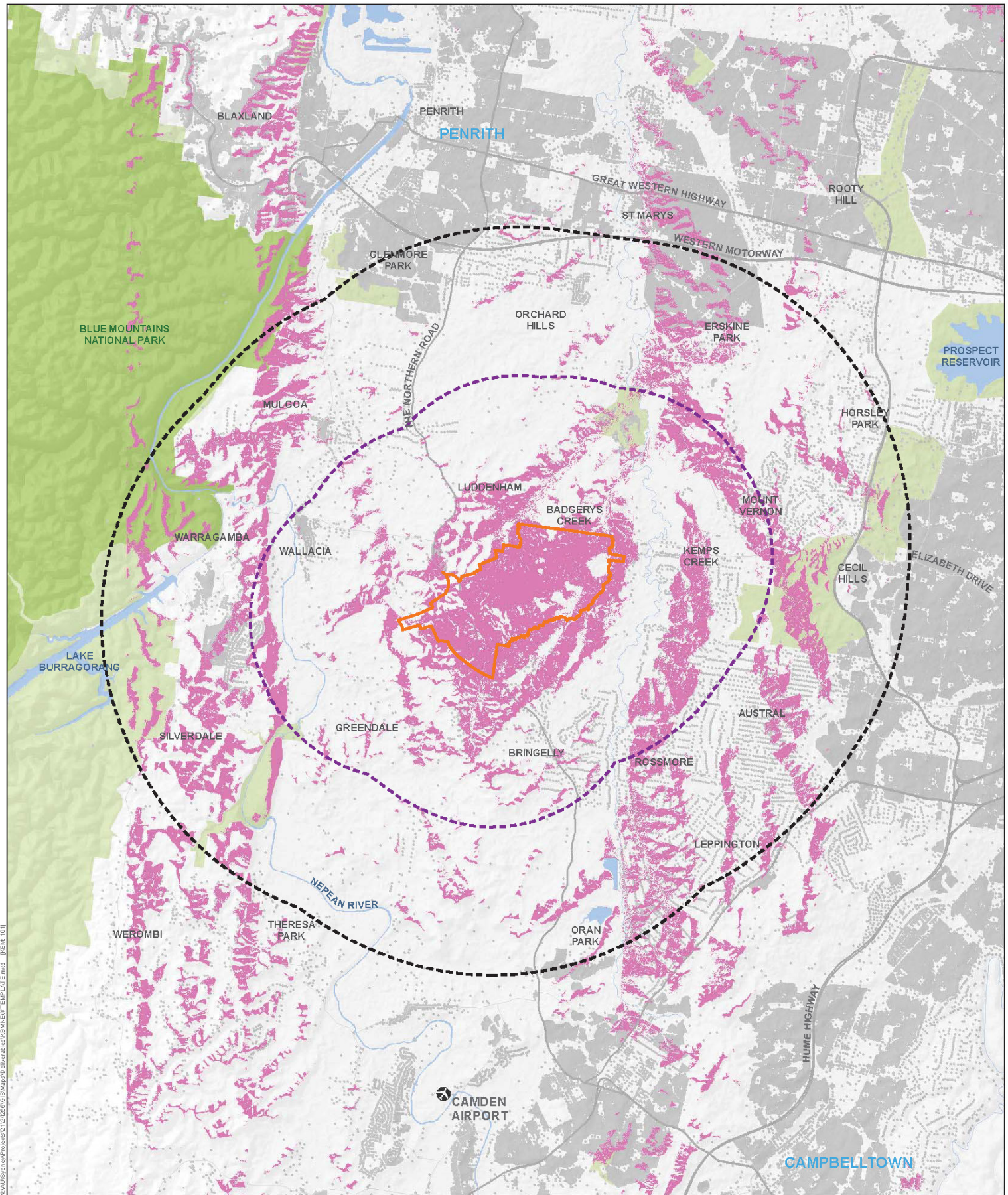
Table 36–1 Predicted aircraft movements

Year	Aircraft movements per day		
	Freight	Passenger	Total
2030	28	170	198
2050	74	480	554
2063	104	1006	1110

As discussed in Chapter 30, it is difficult to accurately determine the likely flight paths and airport modes of operation so far into the future. However, as demand and the number of aircraft using the airport increases, the general visibility of aircraft over surrounding suburbs would also increase. The increase would occur incrementally over a long period, building on the existing quantities of visible aircraft approaching and leaving during Stage 1 operations.

Further detailed analysis of the Sydney basin airspace will be required to be undertaken by Airservices Australia, particularly prior to commissioning of the second runway. The visual impact of aircraft overflights would be one consideration among others in that analysis.

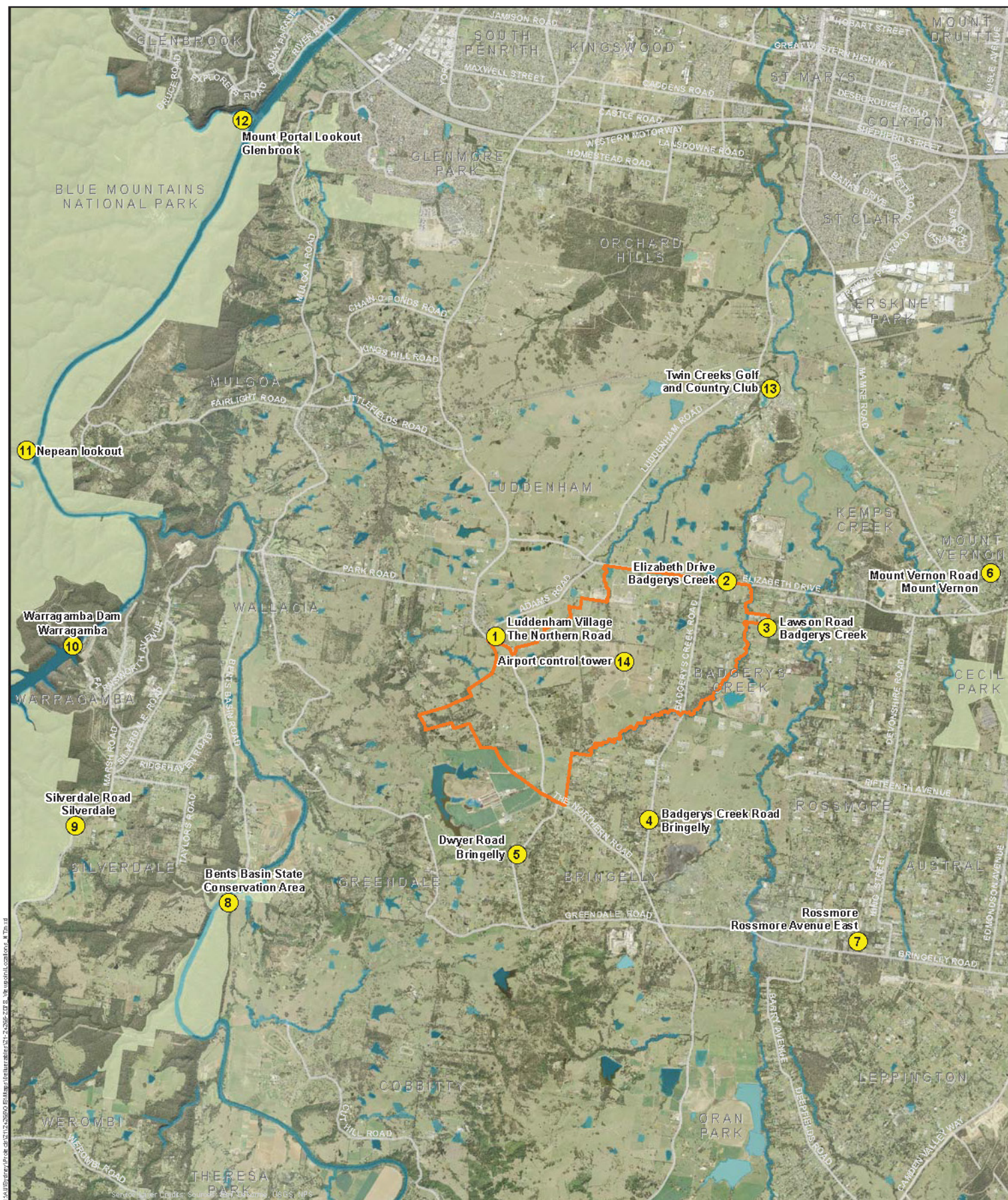
An assessment of likely visual impacts at particular viewpoints during operation of the long term development is presented in Table 36–2. The location and orientation of each viewpoint is shown on Figure 36–2. Further details of the assessed viewpoints are provided in Chapter 22 (Volume 2a).



- LEGEND
- Airport site
 - 5km Site Buffer
 - 10km Site Buffer
 - Areas of no theoretical visibility
 - Areas of theoretical visibility

Data Source: Please refer to "Digital Data Sources" on the second page of the EIS

Figure 36-1 - Visibility of the long term development



- LEGEND**
- Badgerys Creek site boundary
 - Waterways
 - Parks and reserves
 - Roads
 - Viewpoints

Data Source: Please refer to "Digital Data Sources" on the second page of the EIS

Figure 36-2 - Location of viewpoints used for long term assessment



Table 36–2 Operation impact assessment from representative viewpoints

Viewpoint	Assessment
1. Luddenham Village, east of The Northern Road, Luddenham	<p>Sensitivity</p> <p>The rural character of the broader area is expected to change from rural and become more urban with development in line with the Western Sydney Infrastructure Plan, the Western Sydney Employment Area and the South West and Western Sydney Priority Growth Areas, as well as the proposed South West Rail Link extension and the Outer Sydney Orbital. In this context, the sensitivity of viewers would be expected to decrease.</p> <p>Magnitude</p> <p>There would be an increased visual prominence caused by the expansion of the airport terminal complex, the second runway, and maintenance, cargo, commercial and car parking facilities. There would likely also be an increased number of aircraft taking off and landing from the second runway and a general overall increase in air traffic. The magnitude of the visual impact would therefore likely increase.</p>
2. Elizabeth Drive, Badgerys Creek	<p>Sensitivity</p> <p>Minimal increases to sensitivity could be expected to occur over time with higher air traffic levels.</p> <p>Magnitude</p> <p>The context of the view would change over time with areas north of Elizabeth Drive expected to be developed as part of the Western Sydney Employment Area and future construction of the M12 Motorway. However, it is also expected that aircraft would become more visually prominent due to expected increases in aircraft movements over Elizabeth Drive. The magnitude of the visual impact would likely increase.</p>
3. Lawson Road, Badgerys Creek	<p>Sensitivity</p> <p>The character of the broader area is expected to change from rural and become more urban with the development of the industrial precincts and employment areas as part of the Western Sydney Priority Growth Area and Western Sydney Employment Area. In this context, it could be expected that the sensitivity of viewers would decrease over time.</p> <p>Magnitude</p> <p>There would be a significant increase in the visual prominence of the proposed airport through the expansion of the terminal complex, maintenance, cargo, commercial and long term employee car park and the second runway one and a half to two kilometres to the east. Aircraft are expected to be prominent with aircraft movements over Lawson Road and an increased number of aircraft taking off from the second runway. The magnitude of the visual impact would likely increase.</p>
4. Badgerys Creek Road, Bringelly	<p>Sensitivity</p> <p>The character of the broader area is expected become more urban with the development of the industrial precincts and employment areas as part of the South West and Western Sydney Priority Growth Area, the Western Sydney Infrastructure Plan and the proposed South West Rail Link extension. In this context, the sensitivity of viewers would be expected to decrease over time.</p> <p>Magnitude</p> <p>There would be a significant increase in the visual prominence of the proposed airport through the expansion of the terminal complex, maintenance, cargo, commercial and other airport facilities as well as a second runway. There would also likely be continued increase in the number of aircraft taking off and landing after the second runway commences operations and an overall increase in visible aircraft with aircraft movements over Badgerys Creek Road on 05/23 orientation. The magnitude of the visual impact would likely increase.</p>

Viewpoint

Assessment

5. Dwyer Road, Bringelly

Sensitivity

The landscape character south of the airport site is expected to change over time. The urbanisation of these areas would decrease the sensitivity for visual receivers in the area.

Magnitude

Increased development in the region of the airport site as part of the planned South West and Western Sydney Priority Growth Areas, the Western Sydney Infrastructure Plan and the proposed South West Rail Link extension would further reduce the relative prominence of the proposed airport and decrease the magnitude of its visual impact.

6. Mount Vernon Road, Mount Vernon

Sensitivity

The character of the broader area is expected to become more urban with the development of the Western Sydney Employment Area, the Western Sydney Priority Growth Area, and the future implementation of the M12 Motorway. In this context, the sensitivity of viewers would be expected to decrease over time.

Magnitude

There would be an increased visual prominence of the airport site through the expansion of the terminal complex, the additional second runway, maintenance, cargo, commercial development and car parking facilities. There would also likely be a continued increase in the number of aircraft taking off and landing after the second runway commences operations and an overall increase in air traffic orientated north-east. The magnitude of the visual impact would likely increase.

7. Rossmore, Rossmore Avenue East

Sensitivity

The character of the broader area is expected to become more urban with the development of the industrial precincts and employment areas as part of the South West and Western Sydney Priority Growth Area, development in line with the Western Sydney Infrastructure Plan and the proposed South West Rail Link extension. In this context, the sensitivity of viewers would be expected to decrease over time.

Magnitude

There would be an increased visual prominence of the airport site through the expansion of the terminal complex, the additional second runway, maintenance, and cargo facilities in the southern half of the airport site. There is expected to be an increased number of aircraft taking off and landing from the second runway and overall increase in air traffic with the flight paths from the second runway orientated north-west over Bringelly Road. The magnitude of the visual impact would likely increase.

8. Bents Basin State Conservation Area

Sensitivity

The location is expected to remain a state recreation area and it is assumed that there is significant value placed on the natural landscape by visitors. Additional recreation activity could be expected in the future. In this context an increase in sensitivity is expected.

Magnitude

There would be no direct views of the proposed airport operation, however, aircraft would be more prominent, with the location of an indicative flight path over the recreation area and an expected increase in air traffic having a greater visual impact. The magnitude of the visual impact would likely increase.

Viewpoint

Assessment

9. Silverdale Road, Silverdale

Sensitivity

The sensitivity of this view is expected to remain similar to that considered for the Stage 1 development because the number of viewers and the duration of the views would be unlikely to change.

Further development of the areas both north and south of the airport site is expected to alter the existing visual landscape from rural/semi-rural to increasingly urbanised. This change to a more urban character is likely to result in a decrease in the sensitivity of visual receivers in this area.

Magnitude

The overall landscape would have greater capacity to absorb views with the expected urbanisation of areas north and south of the airport site. After the opening of the second runway, views of aircraft are expected to be more prevalent and closer to viewers at this viewpoint resulting in a greater degree of visual impact.

10. Warragamba Dam Recreation Area

Sensitivity

Increased recreational visitors over time would increase the visual sensitivity. It is unlikely that the use or function of this location would change or that development would occur in the immediate surrounding area.

Magnitude

There would be no direct views of the airport site and aircraft. However, increased aircraft movements would be expected at a distance of approximately three kilometres to the north and five kilometres to the south from the recreation area and visitors centre. There would be a potential minor increase in the magnitude of visual impact.

11. Glenbrook Nepean Lookout

Sensitivity

The value placed on the visual qualities of the natural landscape at this location would be expected to remain or possibly increase over time. Visitors to the lookout would also be expected to increase, thereby slightly increasing the level of sensitivity.

Magnitude

There would be no views of the proposed airport's features; however, it would be expected that there would be views of aircraft overflights, based on indicative flight paths. There would be a potential minor increase in the magnitude of visual impact.

12. Mount Portal Lookout

Sensitivity

Increased population and visitation of the lookout would be expected to increase use and therefore visual sensitivity. However, it is also expected that the character of the areas within the broader views will continue to change to increasingly urban with the development of the Western Sydney Priority Growth Area and the Western Sydney Employment Area, particularly looking south from the lookout, towards the airport site.

Magnitude

The visibility of the airport site would be unlikely to change, however, flight paths may bring aircraft closer to the lookout. An increase in aircraft visibility has the potential to result in a greater visual impact and reduced visual amenity.

13. Twin Creeks Golf and Country Club

Sensitivity

The Twin Creeks Golf and Country Club is likely to perform a similar role into the future. Development of the residential estate is expected to continue, thereby increasing visual sensitivity.

Magnitude

There would be no direct views likely of the proposed airport's features; however, visual receivers would be expected to be affected by increased air traffic. The magnitude of the visual impact would likely increase.

36.5 Considerations for future development stages

Chapter 22 (Volume 2a) sets out the broad mitigation and management measures that are proposed to address the visual impacts of the Stage 1 development. These measures would also generally apply to the construction and operation of the long term development.

Mitigation for future stages of development would be considered as part of any future design and approval process. Key considerations would be final flight paths and modes of operation, which would have implications for the visibility of overflight aircraft on surrounding communities. Measures minimise visual impact of aircraft would be considered in this process.

36.6 Summary of findings

Future development of the areas surrounding the airport site through the Western Sydney Infrastructure Plan, the Western Sydney Employment Area and the South West and Western Sydney Priority Growth Areas, as well as the proposed South West Rail Link extension and Outer Sydney Orbital, would lead to a significant transition from an environment that is predominantly rural in character to one that has a more urban form. In general terms, this is expected to reduce the visual impact of the proposed airport development, including night-time lighting effects, as the proposed airport is integrated into the changing urban visual character of the area.

While the increasingly urban character of the area would contribute to reduced visual sensitivity, visual impacts have nonetheless been identified for the viewpoints at Elizabeth Drive and Lawson Road in Badgerys Creek; Badgerys Creek Road in Bringelly; and Bents Basin State Conservation Area. All these areas would have higher levels of visual sensitivity, with visual impacts that would largely be the result of views of aircraft taking off and landing, as well as a larger number of overflights.