

B17

AIRPORT AND SURROUNDS

LANDSCAPE AND VISUAL



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17.1 INTRODUCTION

The purpose of this chapter is to identify the potential impact of the Sunshine Coast Airport Expansion Project (the Project) on the landscape and visual amenity of the site and surrounding areas. The aim is to recognise any potential landscape and visual impacts in order to incorporate appropriate mitigation measures into the design and management of the Project to reduce impacts where possible.

The study uses a viewpoint based approach, beginning with the identification of the existing landscape and visual conditions of the study area, followed by an assessment of the daytime landscape and visual impacts and assessment of night-time lighting effects without mitigation. Landscape and visual mitigation measures are then identified and the impacts are re-assessed to identify areas where the impact has been mitigated. This chapter evaluates the visual impacts of the Project on local residents, workers, and road users through the assessment of representative publicly accessible viewpoints.

The visual impacts of the Project will be derived not only from the runway and Air Traffic Control tower, but also from the landing light system, and additional air traffic (see Chapter D5, Social Impacts). There will also be a construction program including the clearing of vegetation and a pipeline to deliver sand from a dredger using a pump-out site off Marcoola Beach. Each of these activities and elements is likely to have associated visual impacts. These impacts will vary from day to night.

SCA is located on a broad floodplain, which is surrounded by rising ridgelines, hills and the Conondale mountain range. There are a range of elevated vantage points from which the airport is currently seen. Mt Coolool is located nearby and to the north of the site is a National Park which serves as a regional recreation resource with popular walking trails and panoramic views over the SCA and coast. The profile of this mountain is a visually distinctive feature of this region.

The Marcoola and Mudjimba Beaches and adjacent holiday apartment complexes are tourist destinations that depend on their scenic amenity to attract customers.

17.1.1 Methodology and assumptions

17.1.1.1 Methodology

The assessment of visual impact is based on the identification of the level of visual modification created by the Project, and the sensitivity of the viewer. Combined, these characteristics of the view are then considered to assign a level of likely visual impact. This methodology is explained further in the following paragraphs.

17.1.1.2 Baseline visual conditions

This assessment begins with a description of the existing visual conditions of the airport site and surrounding area. An understanding of the visual character of the landscape acts as a baseline for the visual impact assessment, as

the characteristics of the landscape will inform the type and extent of potential views. For example, this description will identify areas of visual enclosure where landform and vegetation limit views as opposed to visually open landscapes where widespread inter-visibility between communities and visual features exist.

17.1.1.3 Visual modification

Visual modification refers to the change to the landscape that would occur as a result of development from a given viewpoint. This includes what has changed, and how it has changed. Visual modification describes the extent of change and identifies elements which are removed or added, changed in scale, form, shape, pattern, colour and texture, and compatibility of new elements with the existing landscape. The distance from the viewpoint to the proposed modification also contributes to the scale of modification. Visual modification can result in an improvement or reduction in visual amenity.

A high degree of visual modification would result if the development contrasts strongly with the existing landscape. A low degree of visual modification occurs if there is minimal visual contrast and a high level of integration of form, line, shape, pattern, colour or texture values between the development and the environment in which it sits. In this situation the development may be noticeable, but does not markedly contrast with the existing modified landscape.

Table 17.1a lists the terminology used to describe the level of visual modification.

Table 17.1a: Visual modification level definitions

Level of visual modification	Description
Considerable reduction or improvement in visual amenity	Substantial part of the view is altered.
Noticeable reduction or improvement in visual amenity	Alteration to the view is clearly visible.
No perceived reduction or improvement in visual amenity	Either the development is not visible, or if it is, the change in the view is generally unlikely to be perceived by viewers.

17.1.1.4 Visual sensitivity

Visual sensitivity refers to the nature, duration and quality of views. Viewers who are expected to experience views for a longer duration, where there are higher numbers of potential viewers and where visual amenity is important to viewers would be regarded as having a higher visual sensitivity.

In order to assist in the assessment of visual impact, viewpoints should be considered in the broadest possible context of views, from those of national importance through to those considered to have a less than local visual importance. For this reason the terminology in **Table 17.1b** is used to describe the level of visual sensitivity.

Table 17.1b: Visual sensitivity level definitions

Level of visual sensitivity	Description
National	Heavily experienced, high quality view to a national icon, e.g. view to Glass House Mountains from Mary Cairn Cross Park, view to Parliament House Canberra along Anzac Parade.
State	Heavily experienced, high quality view to a feature or landscape that is iconic to the State, e.g. views to Mt Coolum from national parks.
Regional	Heavily experienced, high quality view to a feature or landscape that is iconic to a major portion of a city or a non-metropolitan region, or an important view from an area of regional open space, e.g. views to Mt Coolum from parkland or sunshine motorway.
Local	High quality view experienced by concentrations of residents and/or local recreational users, and/or large numbers of road or rail users, e.g. expansive urban or bushland views from residential areas or local open space. Views to and from Mt Ninderry or Mt Cooroy, which are local visual features.
Neighbourhood	Views from locations where visual amenity is not a key feature or not important to the viewer; these may be lesser quality views, or where views are glimpsed. These may include views briefly glimpsed from roads, those which currently include visual detractors, places where there is no designated protection for visual amenity.

17.1.1.5 Visual impact

Although there are no recognised standards for determining the significance of visual impact, there is a need to assign significance to this assessment so there can be a clear and consistent means of evaluating visual impact. The following significance criteria have been developed specifically for this Project to allow for this consistency to occur. These criteria are shown in **Table 17.1c** and **Table 17.1d**.

Table 17.1c: Visual significance criteria definitions

Visual significance	Criteria
Very high	These impacts are considered critical to the decision making process. They tend to be permanent, or irreversible, or otherwise long term, and can occur over large scale areas. Environmental receptors are extremely sensitive, and/or the impacts are of national significance.
High	These impacts are likely to be of importance in the decision making process. They tend to be permanent, or otherwise long to medium term, and can occur over large or medium scale areas. Environmental receptors are high to moderately sensitive, and/or the impacts are of State significance.
Moderate	These impacts are relevant to decision making, particularly for determination of environmental management requirements. These impacts tend to range from long to short term, and occur over medium scale areas or focused within a localised area. Environmental receptors are moderately sensitive, and/or the impacts are of regional or local significance.
Minor	These impacts are recognisable, but acceptable within the decision making process. They are still important in the determination of environmental management requirements. These impacts tend to be short term, or temporary and at the local scale.
Negligible	Minimal change to the existing situation. No adverse or beneficial change is likely to be perceived by viewers.

Table 17.1d: Visual significance criteria table

		Visual sensitivity				
		National	State	Regional	Local	Neighbourhood
Visual modification	Considerable reduction	Very High Adverse	High adverse	High adverse	Moderate adverse	Minor adverse
	Noticeable reduction	Very High Adverse	High adverse	Moderate adverse	Minor adverse	Negligible
	No perceived reduction or improvement	Negligible	Negligible	Negligible	Negligible	Negligible
	Noticeable improvement	Very High beneficial	High beneficial	Moderate beneficial	Minor beneficial	Negligible
	Considerable improvement	Very High beneficial	Very High beneficial	High beneficial	Moderate beneficial	Minor beneficial

17.1.1.6 Assessment of night time impacts

The assessment of night time impacts has been undertaken in a similar methodology. However, rather than assessing particular viewpoints, this assessment draws upon the guidance of the Institution of Lighting Engineers (UK), and their 'Guidance for the reduction of obtrusive light' (2005). This guidance note identifies environmental zones, useful for the categorising of night time landscape settings. These zones have been developed in the UK, and are described as follows, annotated with Australian examples:

- **E1: Intrinsically dark landscapes** – National Parks, State Forest, undeveloped Bushland, etc.
- **E2: Low district brightness areas** – Rural, small township, or relatively dark urban locations
- **E3: Medium district brightness areas** – Small town centres or urban locations
- **E4: High district brightness areas** – Towns, city centres with high levels of night time activity.

Specific features of the lit landscape are then described in terms of:

- **Sky glow** – the brightening of the night sky above our towns, cities and countryside
- **Glare** – the uncomfortable brightness of a light source when viewed against a dark background
- **Light Trespass** – the spilling of light beyond the boundary of the property or area being lit.

From this analysis, the level of impact (refer **Table 17.1e**) is assessed according to the impact levels identified in **Table 17.1a** in **Section 17.1.1.3**.

Table 17.1e: Night time visual impact table

		Visual Sensitivity			
		E1: Intrinsically dark landscapes	E2: Low district brightness	E3: Medium district brightness	E4: High district brightness
Visual Modification	Considerable reduction	Very High Adverse	High Adverse	Moderate Adverse	Minor Adverse
	Noticeable reduction	High Adverse	Moderate Adverse	Minor Adverse	Negligible
	No perceived reduction or improvement	Negligible	Negligible	Negligible	Negligible
	Noticeable improvement	High Beneficial	Moderate Beneficial	Minor Beneficial	Negligible
	Considerable improvement	Very High Beneficial	High Beneficial	Moderate Beneficial	Minor Beneficial

17.1.1.7 Mitigation and residual effects

For those areas identified as likely to result in a visual impact as a result of the Project, methods for reducing these impacts have been considered and specific mitigation approaches recommended. Incorporating these proposed mitigation approaches into the assessment, impacts of specific viewpoints are then re-assessed and the residual effects of the Project can then be identified.

17.1.1.8 Photography and photomontages

A number of photographs were taken to record key views to the site. These photographs were taken with a digital camera at a 50 mm equivalent focal length. Where multiple shots were taken in the same location, each photograph was taken with a minimum 40 per cent to maximum 70 per cent overlap to allow for merging into panoramas. The photograph properties, including dimension and resolution, were adjusted in Adobe Photoshop to achieve a manageable file size. These photographs were then merged using the Photomerge™ command in Photoshop using the Reposition Layout option. This command merges several photographs into one continuous image. The Reposition Layout option *“Aligns the layers and matches overlapping content, but does not transform (stretch or skew) any of the source layers”*. (Adobe Photoshop User Guide, <http://help.adobe.com>, 2012)

A number of photomontages were prepared for the Project based on the proposed development as discussed in Chapter 4 and with reference to the construction elements and processes outlined in Chapter A5, Project Construction. These photomontages are intended to act as artist's impressions, illustrating the general location, scale, and relationship of key visual elements with the surrounding landscape. These simulations were created using site photographs, computer modelling and photo editing as follows:

1. A 3D computer model was developed based on a digital terrain model with one metre contour data.
2. The model was positioned over the existing photograph using the GPS coordinates of the location, and a minimum of three existing elements within the photograph as reference points.
3. The photographs have been edited using Photoshop to reflect the likely changes to the view.

There is an element of judgement used in the changes shown in these photomontages. The location of these visual simulations was selected to illustrate the range of impacts likely for the Project.

17.1.1.9 Assumptions and technical limitations

The following assumptions and technical limitations have informed this study:

The terms of reference states the following ... *“night flights, operations/maintenance and effects of lighting on residents and terrestrial and marine fauna.”* Terrestrial and marine fauna has been excluded from this assessment and will be

addressed in the terrestrial and marine fauna chapters of this EIS (Chapters B8, Terrestrial Fauna and B10, Marine Ecology respectively).

17.2 POLICY CONTEXT AND LEGISLATIVE FRAMEWORK

A range of existing national, state, regional and local plans and policies provide the planning framework that applies to the use of land and development in the study area.

17.2.1 Commonwealth planning policies

The Glass House Mountains National Park is located within the 40 km consultation area for the Project.

17.2.2 State legislation and planning policies

State Planning Policies establish the Queensland Government's position in regard to planning matters of State significance. They are applicable to development assessment, designation of community infrastructure and the making and amending of planning schemes across the State.

17.2.2.1 South East Queensland Regional Plan 2009-2031

The South East Queensland (SEQ) Regional Plan guides regional growth and change within SEQ with the goal to protect and enhance quality of life. The regional plan is now managed by the Department of State Development, Infrastructure and Planning (DSDIP).

Through the SEQ Regional Plan, Implementation Guideline 8: Scenic Amenity affords additional priority to the visual experience of major transport routes. In this guidance, the protection of coastal landscapes, particularly ocean views, are identified as particularly important. Views to vegetated areas, particularly hillsides, are also highly valued. The visual exposure of roadside landscapes is also considered important to the image of South East Queensland and requires the protection of their scenic amenity and management within defined limits.

17.2.2.2 Nature Conservation Act - National Parks

Mt Coolum National Park is designated under the *Nature Conservation Act 1992* as a national park and will be managed in accordance with s17(1) of the Act which sets out principles for management to *“...present the area's cultural and natural resources and their values”*.

The Mt Coolum National Park is centred on the visually prominent Mt Coolum which has a distinctive form and is a visual landmark on the Coast. It is located only a few kilometres to the north of the site.

The National Parks and Wildlife Services Plan of Management for the park includes the following description ...

“Mt Coolum, bounded on all sides by either precipitous cliffs or very steep slopes, is an imposing local landmark. Rising

208 m above the flat coastal plains, the mountain is a drawcard for visitors. The summit provides panoramic views of the area, extending from Moreton Island to the south-east. Buderim and the Glass House Mountains to the south, the Blackall Ranges to the west, the Cooloola sand mass to the north and the Pacific Ocean to the east". (Department of Environment, Management Plan Mt Coololum National Park, 1998)

17.2.3 Local planning scheme and policies

17.2.3.1 Sunshine Coast Planning Scheme 2014

The Sunshine Coast Planning Scheme 2014 has been prepared in accordance with the *Sustainable Planning Act 2009* as a framework for managing development in a way that advances the purpose of the Act. In seeking to achieve this purpose, the planning scheme sets out the Sunshine Coast Council's (SCC) intention for the future development in the planning scheme area over the next 17 years to 2031. The planning scheme seeks to advance state and regional strategies, including the State Planning Policy, and the SEQ Regional Plan 2009-2031 through more detailed local responses taking into account the local context.

The strategic framework sets the policy direction for the planning scheme area and forms the bases for ensuring appropriate development occurs for the life of the planning scheme. The strategic framework defines a series of themes that respond to the strategic intent of the framework. These themes include:

- Settlement pattern
- Economic development
- Transport
- Infrastructure and services
- Natural environment
- Community identity, character and social inclusion
- Natural resources
- Natural hazards.

The themes of particular relevance to this Project and the associated 'Special Outcomes' have been captured in the following sections.

Settlement pattern – Character, lifestyle and environment attributes - specific outcomes

"...(a) The character, lifestyle and environment attributes of the Sunshine Coast are recognised as essential contributors to the region's natural (competitive) advantage by:

- (i) protecting and enhancing the natural environment and undeveloped rural and coastal landscapes that create large, uninterrupted and diverse areas of open space which weave throughout the region and define the boundaries of urban and rural residential areas;..."

Economic Development - Tourism and tourism focus areas - specific outcomes

".....To support the preferred pattern of settlement, development provides for tourist oriented activities and services to be concentrated within the tourism focus areas (as shown in **Table 17.2a**)."

Table 17.2a Tourism focus areas

Tourism focus areas	Location
<p>Coastal tourism focus areas</p> <p>Areas within the coastal urban area accommodating a concentration of visitor accommodation and related tourism services.</p>	<ul style="list-style-type: none"> • (i) Alexandra Headland • (ii) Bokarina Beach • (iii) Bulcock Beach and Kings Beach • (iv) Coololum Beach • (v) Cotton Tree and Maroochydore • (vi) Golden Beach • (vii) Marcoola/Mudjimba • (viii) Mooloolaba • (ix) Twin Waters • (x) Yaroomba

Community identity, character and social inclusion - Landscape elements and features - specific outcomes

“...*(d) Scenic routes are protected and enhanced as major transport routes providing a high level of scenic and visual amenity to travellers.*

(e) The prominent landscape features identified (captured in Table 17.2b). Regionally significant landscape features) and important views to these features are protected from intrusion from buildings and other aspects of urban development.

(f) The landscape features contained within National Parks, Conservation Parks, State Forest Reserves and other areas of conservation estate are protected.

(g) Other views and vistas, including those identified in local plans or which are important in a local context are also protected, particularly from development which exceeds specified building heights.

(h) Development maintains and where possible and appropriate, enhances public access to landscape features...”

Table 17.2b Regionally significant landscape features

Landscape features	
Mountains, ridgelines, escarpments and foothills	<ul style="list-style-type: none"> • Blackall Range • Conondale Range • Mooloolah Range • Glass House Mountains • Mt Coolum • Mt Eerwah • Mt Emu • Mt Mellum • Mt Ninderry • Mt Peregian • Peachester escarpment • Maleny escarpment • Buderim escarpment
Waterways	<ul style="list-style-type: none"> • Mary River • Maroochy River • Mooloolah River • Pumicestone Passage • Stanley River
Water bodies	<ul style="list-style-type: none"> • Cooloolabin Dam • Ewen Maddock Dam • Lake Baroon • Wappa Dam • Lake Weyba
Other landscape elements	<ul style="list-style-type: none"> • Beaches • Parabolic high dunes • Coastal headlands • Islands, particularly Mudjimba Island and Bribie Island • Ocean

17.2.3.2 Sunshine Coast Open Space Strategy 2011

This strategy sets out the long term intentions for recreation parks, sports grounds and recreation trails across the region. In doing so it also proposes a desired level of service for how much land is required, where it should be located and how such recreation and open space land should function. The strategy indicates that a number of natural features and open space areas provide significant amenity to the local area, namely Mt Coolum, the Maroochy River and Maroochy River National Park,

and the vegetation on either side of the Sunshine Motorway, north of the Maroochy River which provides an intra-urban break between Maroochy and Coolool. The strategy identifies a shortfall of open space for both local and district recreation parks.

Located south-east of RWY 18/36, Keith Royal Park is a district level recreation park (Open Space Strategy, 2011). This park currently includes fields, amenities and a recently upgraded playground. A district recreation park should ideally serve a population within a 5 km radius.

17.3 EXISTING CONDITIONS

17.3.1 Visual character of the airport and surrounds

The character of this landscape is important in determining the landscape's ability to visually absorb the proposed development, and is therefore based primarily on topography, land use and vegetation cover. The following section describes the landscape character in greater detail.

17.3.1.1 Airport

SCA is situated on a low lying coastal plain between the Maroochy River and the Maroochy Beach. The site is bound by the Sunshine Motorway to the west and David Low Way to the south and east. The airport facility includes two intersecting runways with Runway (RWY) 12/30 aligned in a north-west to south-east direction and RWY 18/36 aligned in a north to south direction. The existing Air Traffic Control (ATC) tower is situated to the west of the existing airport development, measuring 17 m in height. The runways include a series of tarmac taxiways within a wide band of maintained grassland. The airport terminal and aeronautical service buildings are clustered along the southern side of the general aviation runway and south western edge of the main runway. These buildings are one and two storey in height and of a shed scale and character. Jets, small planes and helicopters can be seen using the runways and service buildings.

17.3.1.2 Maroochy River plains

The South Maroochy River meanders to the west of the site, connecting the Maroochy Wetland Sanctuary and Mt Coolool National Park to the sea. The river plains have historically been used for sugar cane farming due to their fertile soils and flat topography. These plains, like many others, are prone to flooding and have seen considerable change over the past few decades due to rapid population growth, development and activities unrelated to sugar cane farming.

The eastern boundary of the airport is defined in part by David Low Way and residential properties within Mudjimba. Residential properties to the west of David Low Way are largely single storey and two storey residential properties often with direct rear elevation views towards both RWYs

12/30 and 18/36. To the east of David Low Way, residential apartments and resorts line the coastline with upper storeys experiencing views above adjacent properties towards the runways. The resorts are primarily orientated to maximise coastal views with a mature band of dunal vegetation restricting views west from the coast and Mudjimba beach towards the airport.

The SCA is serviced by two major transport corridors, Sunshine Motorway and David Low Way. Running generally north to south is the Sunshine Motorway. This road is two lanes wide, with a large overpass at the David Low Way turnoff. Running to the south and east of the airport is David Low Way, a two lane road that generally parallels the coast. The Sunshine Motorway sits above the river plains, increasing the visual dominance of this infrastructure corridor.

Coastal views north and south along the Mudjimba and Maroochy beaches are visually sensitive due to their scenic qualities and the coastal tourism value. The visual setting of Mudjimba Island and the Maroochy River Conservation Park at the Maroochy River mouth are considered to be particularly sensitive.

17.3.1.3 Mountains, elevated ridges and the Conondale Range

Scattered across the Maroochy River plains are a number of mountains which are distinctively characteristic of the Sunshine Coast region.

Rising prominently to the north is the iconic Mt Coolool, which includes recreational trails terminating in panoramic regional views. Rising abruptly to 208 m, Mt Coolool has a dome shape that covers approximately 1 km square at its base. One of the most notable features of the mountain geology is the striking columnar / crystal jointing patterns clearly visible both on the main cliffs and the faces of what is a former quarry. The visual setting of this mountain is sensitive as a regionally important iconic landscape and National Park.

Mt Ninderry is located approximately 9 km west of SCA and rises to 304 m. Mt Ninderry comprises of a number of ridgelines and therefore does not rise as abruptly as Mt Coolool.

Mudjimba Island, located approximately 1 km off the coast from Mudjimba and 3 km from Maroochy beach, is often referred to as 'Old Woman Island' and similarly acts as a visual marker and feature of the Maroochy beachscape.

The Conondale mountain ranges running generally north to south some 20 km from the site in the west, create a visual backdrop to the plains, and define the visual catchment.

17.3.2 Visual influence of the site

A Zone of Visual Influence (ZVI) has been used to establish the theoretical area from which the Project would be visible. The theoretical extent is based on 55 m high tower.

From the east, views to the site are possible from:

- David Low Way, which forms part of the site boundary
- Residential properties located between the site and David Low Way at Marcoola, including residential properties with direct rear elevation views towards the airport runway
- The east of David Low Way, views to the airport exist from the upper storeys of beachside holiday apartments and resorts at Marcoola

Residential areas of Mudjimba do not see the site as intervening vegetation and landform prevent views to the airport.

Dunal landform and vegetation prevent views to the airport site from the beaches at Coolum, Marcoola and Mudjimba.

From the north, views to the site are possible from:

- Mt Coolum, situated approximately 2 km to the north of the airport, with elevated views from Mt Coolum towards the airport from the summit
- From the residential area of Mt Coolum
- Properties on the south facing slopes of Yaroomba in the vicinity of Point Arkwright, approximately 4 km from SCA.

Views from residential areas directly north of the site at Marcoola are limited by intervening vegetation of the Mt Coolum National Park.

From the west, views to the site are possible from:

- Bli Bli, a small residential hamlet to the west of the Maroochy River, which rises above the surrounding flood plain
- Mt Ninderry, and the residential areas on the elevated ridgeline as well as the elevated areas of Valdora roughly 8 km north west of the site.

From the south, views to the site are possible from:

- The elevated residential properties at Buderim, roughly 7 km to the south
- Properties of Rosemount and Keils Mountain roughly 8 km to the south west
- Upper levels of multi-storey development in Maroochydore town centre.

17.3.3 Key landscape features

The key landscape features within the vicinity of the airport consist of:

- Keith Royal Park
- Marcoola and Mudjimba Beach
- Mt Coolum National Park.

Keith Royal Park is a district park which is being developed in line with a Master Plan recently prepared by SCC in consultation with the local community. Stage 1 works have

been completed and includes a multi-use sports field with concrete cricket pitch; newly fenced dog park and dog agility equipment; upgraded play equipment; electric barbecue, shelter and amenities building. A rehabilitation area has also been allocated for the protection of rare wallum species in the area with fencing and interpretive signage.

Marcoola and Mudjimba Beach are important open space areas used by regional visitors and locals alike. These places are particularly sensitive to impacts due to their intensive use and scenic qualities.

Mt Coolum National Park extends from the mountain to lowland areas surrounding the airport site. The landscape value of this park is primarily focused on the mountain itself and trails through the park of which an 800 m track leading to the summit is the most notable.

17.3.4 Selection of representative viewpoints

A ZVI was undertaken to determine the potential visual influence of the site. Site inspections were subsequently undertaken within the area of potential visual influence to identify the location and nature of major views to the site. Ten viewpoints were then selected as representative of the range of views toward the Project.

These representative viewpoints are locations where a reduction in visual amenity would have some visual impact either because of the duration of the view (such as views from residential areas), the importance of visual amenity to the experience of the location (such as recreational areas) or where there are large numbers of potential viewers (such as busy roads). The location of these representative viewpoints is shown in **Figure 17.3a**.

Photographs have been taken from all locations during daylight hours.

The visual impact from each representative viewpoint is evaluated in **Section 17.4.2**.

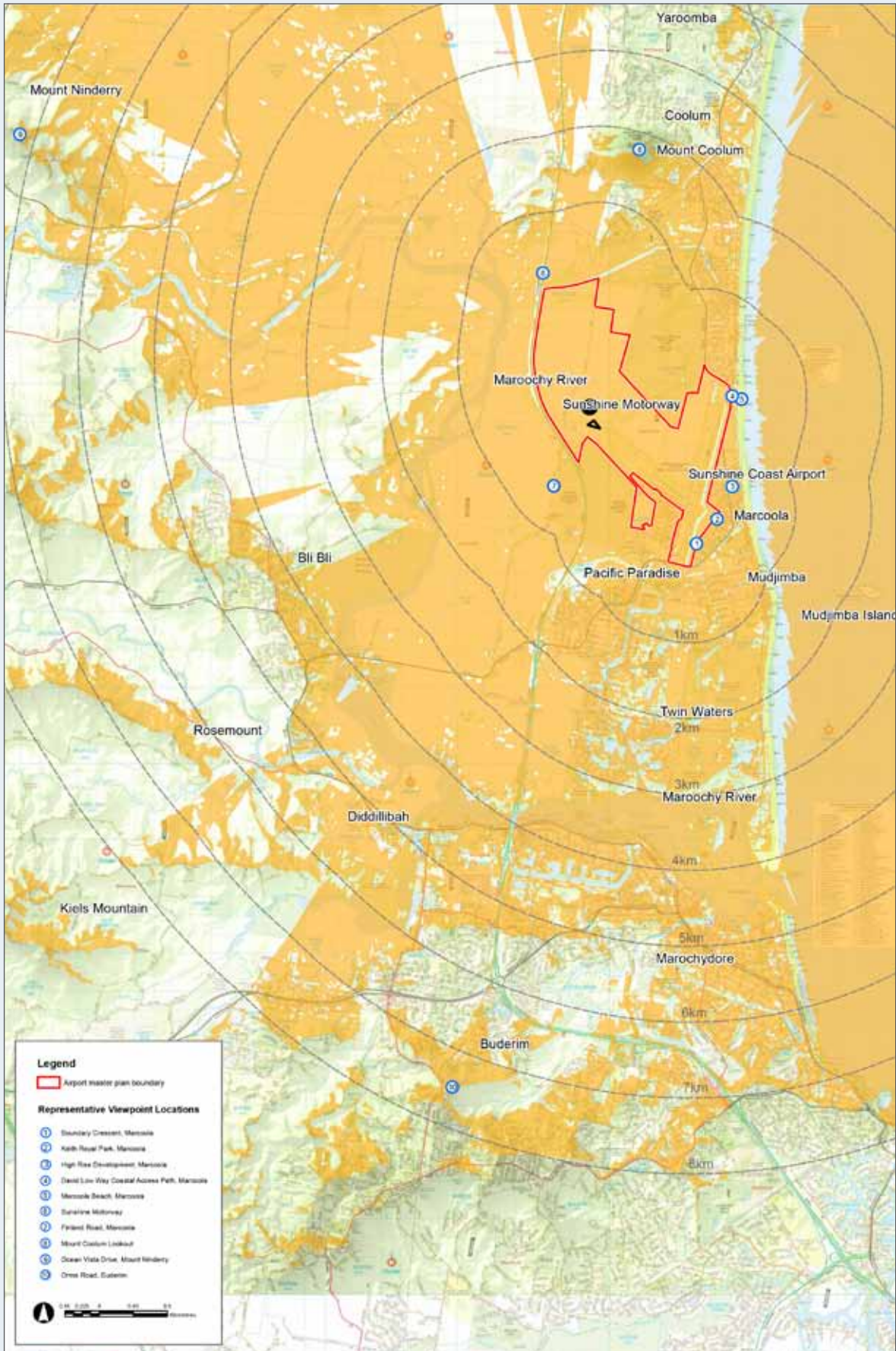
17.4 ASSESSMENT OF POTENTIAL IMPACTS AND MITIGATION MEASURES

17.4.1 Visible components of the Project

The Project will comprise a number of processes and elements that will change the character of the site. This section describes these processes and elements in terms of their visibility and character during construction and operation, both during the day and night.

The elements that make up the Project are located on SCA land and land surrounding the airport. They will change continually during construction, some elements will be visible during the day and others will be illuminated at night. There will also be changes to the air traffic situation as viewed from the ground. The proposed Project elements are described in the following paragraphs.

Figure 17.3a: ZVI and viewpoint Locations



17.4.1.1 Construction phase

Construction of the runway is expected to take up to 4 years and include a number of work packages including: Enabling Works; Dredging Works; Civil Works; Runway and ATC tower and Aviation Rescue and Fire Fighting Service (ARFFS) station construction (which is specifically an Airservices Australia responsibility). The following elements and processes will be visible during construction:

Enabling Infrastructure

- Relocation of the VHF omnidirectional radio range (VOR) from its current location to an area near the north-west end of Runway 13/31
- Relocation of the existing helipads to a location near the new VOR site
- Construction of a new airside perimeter fence to ensure the security of the new runway
- Construction of an airside perimeter road to facilitate access around the runway for maintenance and emergency response
- Upgrade of Finland Road including an additional signalised intersection, widening and improvements to provide construction access
- Extension to Airport Drive with a single lane each way to the new ATC tower and ARFFS station.

Civil Works

- Perimeter fencing to separate the operational airport from the construction site
- Clearing or modification of 56 ha of native, remnant vegetation communities
- Removal of the existing RWY 12/30 and stockpiling of material
- Stripping and stockpiling of topsoil and future fill material
- Construction of perimeter drains to the north, west and south of the runway
- Construction of a polishing pond to the west of the runway fill platform
- Pavement construction and commissioning phases, including asphalt batching plant, stockpiling of material and associated machinery
- Buildings works including the construction of the ATC tower and ARFFS station.

Dredging Works at Marcoola Beach

- Pump-out site, with buoy and navigational lights, located between 500 m to 1,000 m offshore from Marcoola Beach
- Pipeline (steel with a diameter of approximately 1 m) construction to transport sand to the sand placement area

- A temporary construction compound and pipe laydown area will be established to the west of David Low Way to the northern extent of the existing runway
- Vegetation will be removed and a construction access corridor will be created through the existing dune between David Low Way and Marcoola Beach (approximately 20 m wide)
- The pipeline will be constructed along the beach to a length of 500 m and swung out to meet the mooring (3-4 weeks)
- Public pedestrian access will be closed during pipeline construction
- During pumping, public pedestrian access will be provided over the pipe by creating a sand ramp from the adjacent beach area and may include a temporary stair crossing
- A booster pump station will be constructed on the airport site to assist with pumping the dredging material to the receiving site. The pump station would typically have overall dimensions in the range of 15 m length, 5 m width and under 10 m height
- Bull dozers will be used to move sand around the sand deposit site
- A trailing suction hopper dredger (TSHD) will be used to dredge and transport sand to the pump-out mooring location.

17.4.1.2 Operation phase

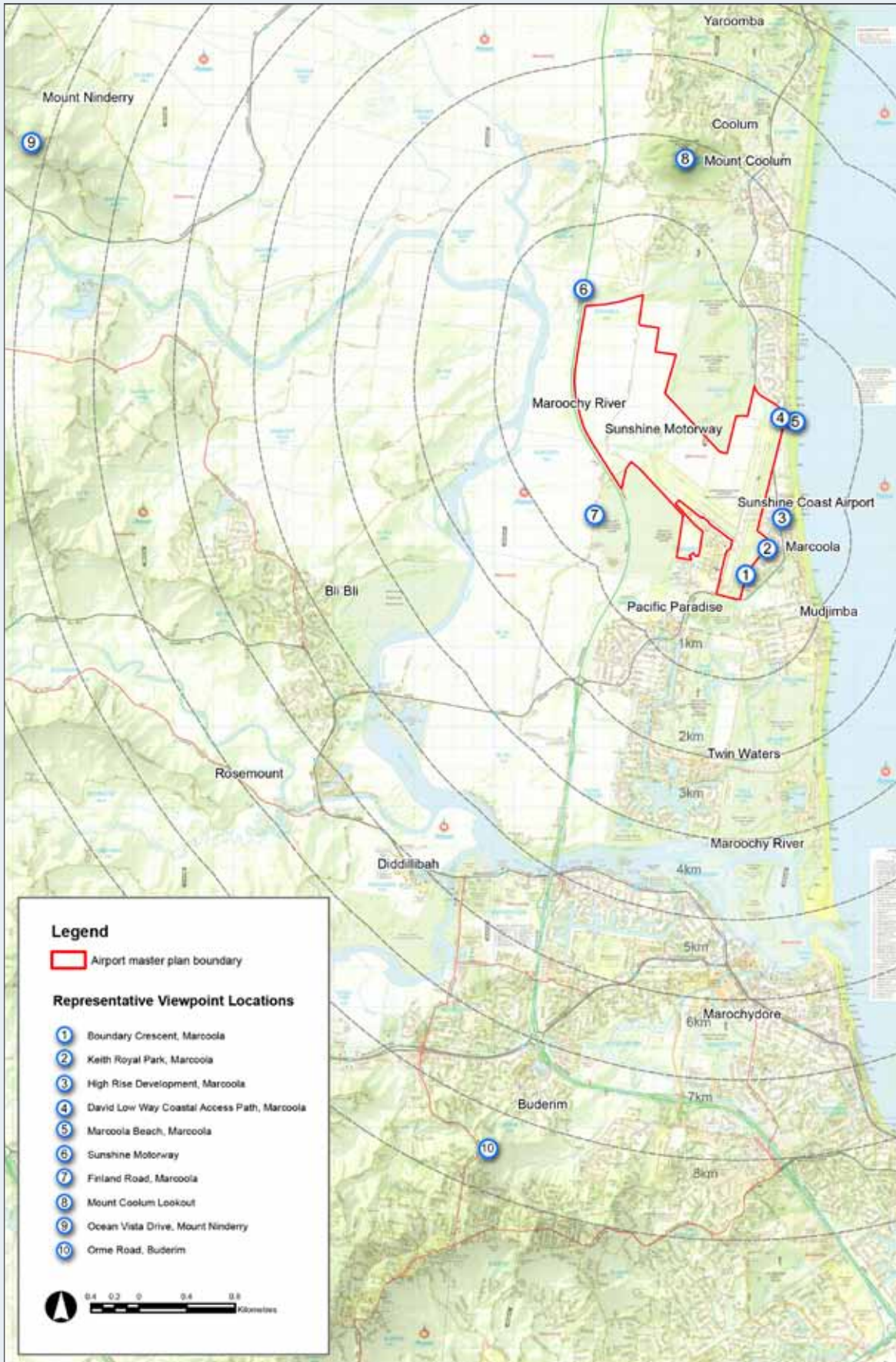
The following elements and processes will be visible during operation:

- ATC tower (55 m high) and ARFFS station
- A 45 m wide and 2,450 m long runway with associated apron and taxiways
- Planes including Boeing 787 or equivalent using the new runway
- Security fencing around the perimeter of the site
- Upgraded drain running along the southern, western and northern perimeter of the site
- Increased air traffic aligned in a northwest-southeast direction; Simple Approach Lighting System (SALS)
- General lighting to the runway and access roads
- Lighting of ATC tower
- Hazard lighting to Mt Ninderry.

17.4.2 Assessment of representative viewpoints

The following assessment of visual impacts identifies unmitigated impacts from each of the 10 representative viewpoints shown in **Figure 17.4a**. Mitigation measures and the residual impacts (impacts occurring after the implementation of mitigating measures) are discussed at the end of this section.

Figure 17.4a: Representative viewpoints



VIEWPOINT 1: Boundary Crescent, Marcoola



VIEWPOINT 1: Boundary Crescent, Marcoola

LOCATION: Located directly adjacent to the airport security fence. View west from footpath.

Existing visual conditions

Broad, open panoramic views across the open grassed areas of the airport towards the airport terminal and control tower. Mt Ninderry to the west and Mt Coolum to the north are prominent visual features in this view with their distinctive profile adding variation on the horizon.

RWY 18/36 runs in a north-south direction across the foreground of this view with the airport terminal, hangars and the control tower visible through the boundary fence. The arrival and departure of aircraft is currently visible intermittently with jets travelling across the view, and general aviation travelling toward the viewer.

At night these views would include the brightly lit airport buildings and sky glow associated with the airport. The mountains will largely disappear from view with some residential lights likely to be visible. Flickering point source lights of aircraft moving across the view will also be visible. Existing hazard obstacle light at the summit of nearby mountains is also likely to be visible from this location.

Visual sensitivity

Local visual sensitivity

This viewpoint is representative of views from residential properties and footpath users. Mt Ninderry and Mt Coolum are prominent features in the background of the view; however, the view is dominated by the airport and boundary fence in the foreground which contributes to the character of the view. Residential viewers would largely be static and appreciate the view for a long duration. Minimal use at night reduces the sensitivity during night time hours.

Visual modification

Construction

Construction of the new runway would be visible in the middle ground of the view, seen against

vegetation in the far distance. This would include the pump station and pipeline running along, across and away from the viewpoint. This would be followed by the establishment of the worksites, pavement construction compound, site shaping, laying of the runway and construction of the ATC tower and the ARFFS station. Oblique views towards the dredging pipe site compound and stockpile area would be achievable from this location. Additional lighting would be seen at night, associated with night construction activities and security lighting for the worksite.

Operation

During operation, the runway would be visible in the middle ground of the view. Aircraft movements on the runway would be clearly visible. The ATC tower would be prominent in the view protruding above the skyline and rising considerably higher than the existing structure. The airport would continue to be a dominant feature in the landscape; it would be clearly visible and over time, would become more active. The runway light system would be located along the runway and directed to aircraft above the site. Lights associated with aircrafts and the ATC tower would be clearly visible at night.

ASSESSMENT

Construction

During construction there would be a noticeable reduction in the amenity of this view resulting in a minor adverse impact during the day and night.

Operation

The viewpoint will have the existing RWY 18/36 in the foreground, making the new ATC tower the only noticeable change in the view resulting in a minor adverse visual impact.

VIEWPOINT 2: Keith Royal Park, Marcoola – existing view



VIEWPOINT 2: Keith Royal Park, Marcoola - photomontage during construction



VIEWPOINT 2: Keith Royal Park, Marcoola - photomontage during operation



VIEWPOINT 2: Keith Royal Park, Marcoola

LOCATION: Located directly adjacent to the airport. View west from local park.

Existing visual conditions

Broad, open views across the managed grassed areas of the airport, to a layering of mountain ranges in the background. The distinctive profile of Mt Ninderry is visible at a distance of approximately 11.5 km to the north west of the view; Mt Cooroy visible at a distance of approximately 13 km in the north of the view; the Conondale Range are visible in the distant background to the south of the view.

The airport is visible in the middle ground of this view and spans the entire width of the panorama. Both runways are visible from this location, with the 12/30 runway running across the view, and the 18/36 runway running away from the viewer. The terminal buildings and control tower are visible in the middle ground of the view. The arrival and departure of aircraft is currently visible intermittently with jets travelling across the view, and general aviation generally travelling towards the viewer.

At night these views would include the brightly lit airport buildings and sky glow associated with the airport. The mountains would largely disappear from view with some residential lights, hazard lights on nearby mountain tops, and flickering point source lights of aircraft moving across the view.

Mt Ninderry and Mt Coolum are prominent features in the background of the view; however, the view is dominated by the airport and boundary fence in the foreground which contributes to the character of the view.

Visual sensitivity

Local visual sensitivity

This viewpoint is representative of views from residential properties and recreational park and footpath users. The quality of this view is heavily influenced by the airport in the foreground. Residential viewers would be static and appreciate the view for a long duration. There would be minimal use of this park at night.

Visual modification

Construction

Construction of the new runway would be visible in the centre of the view, seen against a backdrop of vegetation in the distance. Construction works would include site clearing, establishment of the pump station and pipeline, and surcharge piles covering the western tip of the future runway area. The pump station will be subject to final design, with consideration given to providing a noise bund around the pump station if required during the detailed design stage. This would be followed by the establishment of construction compounds, site shaping, laying of the runway, and construction of the ATC tower and ARFFS station. Additional lighting would be seen at night, associated with night construction activities and security lighting for the worksite.

Operation

During operation, the runway would be visible and more closely aligned with the direct line of sight from this location, with clear views along the length of RWY 13/31. Aircraft movements on the runway would also be clearly visible and more frequent in the view. The ATC tower would be prominent in the view, protruding above the skyline and rising considerably higher than the existing structure and surrounding terminal buildings.

The airport would continue to be a dominant feature in the landscape; it would be clearly visible and over time, would become more active. The aircraft landing light system would be located beyond the western tip of the runway in the background of the view and directed to aircraft above the site. Lights associated with the aircraft and the ATC tower would be visible at night.

ASSESSMENT

Construction

During construction there would be a noticeable reduction in the amenity of this view, resulting in a minor adverse impact during the day and night.

Operation

During operation the airport would continue to be a dominant feature in the landscape. The incremental enlargement of the existing airport infrastructure and the noticeable reduction in the amenity of the view would result in a minor adverse visual impact during the day and at night.

VIEWPOINT 3: High Rise Development, Marcoola



VIEWPOINT 3: High-rise development, Marcoola

LOCATION: 300 m from the airport. View west from elevated, privately let holiday apartment.

Existing visual conditions

The high rise development is orientated to maximise coastal views and access to Marcoola Beach. Upper storey apartments have elevated westerly views across David Low Way and adjacent properties towards SCA, Sunshine Motorway and low-lying farmland in the middle ground. The view is encircled by mountains and ridges including Mt Ninderry to the west, Mt Coolum to the north, and the Conondale Range in the far distance to the south-west.

RWY 18/36 runs in a north-south direction across these views with the airport terminal, hangars and the control tower visible. The arrival and departure of aircraft is currently visible intermittently with jets travelling across the view, and general aviation travelling towards the viewer from RWY 12/30.

At night these views would include the lit airport buildings and sky glow associated with the airport and other coastal development. The mountains would largely disappear from view with some residential lights, mountain top hazard lights, and flickering point source lights of aircraft moving across the view being visible.

Visual sensitivity

Local visual sensitivity

This viewpoint is representative of views from privately let holiday units and hotels, capturing views experienced by tourists and employees.

Mt Ninderry and Mt Coolum are prominent features in the background of the view; however, the view is dominated by the airport, David Low Way and a commercial strip development in the fore and middle ground of the view, which defines the character of the view. This view would also be experienced at night.

Visual modification

Construction

Construction of the new runway would be visible in the middle ground of the view and seen against a backdrop of vegetation in the distance. Visible construction works would include site clearing, establishment of the pump station and pipeline, and surcharge piles covering the western tip of the future runway area. This would be followed by the establishment of construction compounds, site shaping, laying of the runway, and construction of the ATC tower and ARFFS. Additional lighting would be seen at night, associated with night construction activities and security lighting for the worksite.

Operation

During operation, the runway would be visible in the centre of the view. Due to the angle of view created by this elevated position, a larger portion of the runway would be seen. The ATC tower would be visually prominent and contrast with the scale of development currently in the view. Aircraft movements will also be clearly visible and considerably more prominent and frequent in the view.

The runway lighting system would be located along the runway in the view and directed to aircraft above the site. Lights associated with the aircraft on the runway and the ATC tower would be visible at night.

ASSESSMENT

Construction

During construction there would be a noticeable reduction in the amenity of this view, resulting in a minor adverse impact during the day and night.

Operation

During operation the airport would continue to be a dominant feature in the landscape. The incremental enlargement of the existing airport infrastructure and the noticeable reduction in the amenity of the view would result in a minor adverse visual impact during the day and at night.

VIEWPOINT 4: David Low Way, Coastal Access Path



VIEWPOINT 4: David Low Way, Coastal Access Path

LOCATION: At a distance of approximately 30 m. View south-west from road corridor and footpath.

Existing visual conditions

This view is defined to the east and north by dunal vegetation. In the centre of the view is an open vista to the airport along RWY 18/36 towards the airport buildings seen through the boundary security fencing. The arrival and departure of aircraft is currently visible intermittently in the middle of the view with jets travelling towards and away from the viewpoint, and general aviation travelling across the view. The background of the view includes elevated areas of Buderim and Rosemount with the Conondale range beyond in the far distance.

At night these views would include the lit airport buildings and sky glow associated with the airport and coastal development. The mountains would largely disappear from view with some residential lights likely to be visible. Infrequent flickering point source lights of aircraft moving across the view would also be visible.

Visual sensitivity

Local visual sensitivity

This viewpoint is representative of views from David Low Way and this dune-side public footpath. The airport is a key component of the existing view. Viewers in cars would be moving past this view at speed, whereas pedestrians would move more slowly and appreciate the view for a more prolonged duration. Minimal use at night, particularly by pedestrians, reduces the sensitivity during night time hours.

Visual modification

Construction

During the early phases stages of construction, substantial works in the foreground of this view would be present for a period of approximately 21 months, including the establishment of a site compound to the east and west of David Low Way to support the dredging works. It will be necessary to directional bore under David Low Way to enable the pipeline to be pulled through from the east. This work would be visible for a short period of time. Vegetation would be cleared to the east of the road on the dunes to a width of 20 m to provide access for construction vehicles to the beach. The coastal access path, footpaths and informal car parking area will be

closed for this period. Within the airport, vegetation clearance and the setup of the dredge pipeline and pumping station would be visible. The following construction phase would include construction of the new runway seen against the airport terminal and ancillary buildings. This would include establishment of site compounds, site shaping, laying of the runway tarmac and construction of the ATC tower and the ARFFS station.

At night, some additional lighting associated with night construction activities and security lighting for the worksite would be visible.

Operation

During operation, the dune and roadside areas will be re-vegetated and the new runway would be visible from this location in the background and running across the view. The ATC tower would be visually prominent and contrast with the scale of development currently seen from this location. The airport would continue to be a dominant feature on the landscape; it would be clearly visible and is likely to further detract from the amenity of the view. Aircraft movements will also be clearly visible and more frequent.

The aircraft landing light system would be located beyond the western tip of the runway and not likely to be seen in this view. At night the view would include the lit aircraft moving across the view, and lit ATC tower seen prominently above the site.

ASSESSMENT

Construction

During construction there would be a considerable reduction in the amenity of this view, due to the proximity to the directional bore works, site clearing and site compound, resulting in a moderate adverse impact during the day. During night time hours this would reduce to minor adverse as there would be a noticeable reduction in the amenity of the view at night.

Operation

During operation, the incremental change to the airport and associated infrastructure and noticeable reduction in the amenity of the view would result in a minor adverse visual impact during the day and at night.

VIEWPOINT 5: Maroola Beach



VIEWPOINT 5: Maroola Beach – Photomontage during construction



VIEWPOINT 5: Marcoola Beach

LOCATION: At a distance of approximately 150 m to the airport site. View south from the sand dune.

Existing visual conditions

Unobstructed panoramic views along Marcoola Beach. Mudjimba Island is visible in the ocean approximately 3 km off the coast. Mature sand dune coastal vegetation visually encloses the coastline and restricts views to the east. The coastline curves to the east, allowing views towards high-rise development at Marcoola protruding above the mature sand dune coastal vegetation. Approximately 8 km to the south, coastal development at Alexandra Headland and Mooloolaba are visible in the background. The coastal extent to the south is marked by Beacon Lighthouse Reserve at Buddina.

Overhead aircraft movement associated with the 12/30 and 18/36 runways are apparent in views at intervals throughout the day.

At night these views would include the brightly lit coastal development to the south and sky glow from surrounding residential areas, including Alexandra Headland, Mooloolaba, and high-rise development at Marcoola. The rotating point source light at Beacon Lighthouse is likely to be visible on the horizon, and overhead aircraft traffic would also be seen from this location.

Visual sensitivity

Regional sensitivity

The viewpoint is representative of views from Marcoola Beach for recreational users and tourists.

Marcoola Beach is considered to be of regional importance as a valued landscape feature and tourist attraction. The quality of the view is an essential part of this experience and highly valued by users. This viewpoint includes the attractive coastal feature of Mudjimba Island, a regionally significant landscape feature. SEQ Regional Plan, Implementation Guideline 8: Scenic Amenity, identifies the protection of the coastal landscape, particularly ocean views, as particularly important.

Visual modification

Construction

Marcoola Beach would be required for the dredging phase of the construction process. Initially a 20m corridor

of vegetation would be cleared through the dunes, located on the alignment of the existing coastal access path. A worksite would be set up along the beach, running parallel to the dune. Pipeline segments of up to 18m long will be brought to site with cranes and set up to a length of 500m. This will comprise a worksite in the centre of the view, running along the beach. The assembled pipeline will then be swung out to sea. The pipeline will meet an anchored buoy and floating pipeline, visible at approximately 500m out to sea to the east of the view. The floating pipeline will be visible whilst at rest, tethered to the anchored buoy. At night it is anticipated that lighting would be required during pumping works. Lights would be used on the support vehicles at the beach, safety lights on the mooring buoy and also potentially some level of security lighting.

Sand, and a timber ramp structure if required, will be provided to maintain public access along the beach during the construction phase.

Operation

During operation, vegetation on the dune will be re-established and the beach access path will be restored.

ASSESSMENT

Construction

During construction there would be a considerable reduction in the amenity of this view, resulting in a **high adverse** visual impact. During night time hours this would reduce to **negligible** as lighting would be limited to infrequent support vehicles on the beach and safety lighting at the mooring buoy. There would be no perceived reduction or improvement at night due to limited use and visibility.

Operation

During operation, the incremental enlargement of the airport and associated infrastructure would not be perceived from this location. Impacts associated with overhead aircraft movement have been assessed in Volume D of the EIS. The dunal vegetation removed as part of the construction phase would re-establish and overtime, soften the appearance of the construction phase works. As the vegetation re-establishes, there would be no perceived reduction or improvement to the view, resulting in a **negligible** impact during the day and at night.

VIEWPOINT 6: Sunshine Motorway



VIEWPOINT 6: Sunshine Motorway

LOCATION: View south along the Sunshine Motorway adjacent to the airport site boundary.

Existing visual conditions

The Sunshine Motorway is situated directly adjacent to the airport site boundary. The motorway is visually contained to the east and west by mature vegetation, screening views towards the airport from this location. Views are channelled along the road corridor to the elevated ridgeline of Buderim in the distance. Aircraft movement associated with the RWY 12/30 is intermittently visible overhead.

At night, lights from vehicles using the Sunshine Motorway would be visible and dominate the view. The airport lighting would be largely screened by the intervening vegetation, although sky glow may be visible above the boundary vegetation. The ridgeline in the background would include some lights from residential properties, but these would not be dominant.

Prior to the commencement of the Project, utility relocation work would require the removal of much of the vegetation bordering the motorway to the east. It is assumed that as the motorway is elevated above the surrounding landform, the removal of this vegetation would open up views across the existing airport site, including the existing runway and terminal in the background of the view.

At night, the view may include the brightly lit terminal buildings, aircraft lights in the middle ground of the view, with the residential area of Marcoola in the distance.

This view without the existing boundary vegetation would form the baseline for this assessment.

Visual sensitivity

Regional sensitivity

This viewpoint is representative of views from road users who are moving quickly and would therefore appreciate the view for a short duration. The SEQ Regional Plan, Guideline 8: Scenic Amenity prioritises views from major roads due to the volume of viewers and purpose of roads as local gateways and regional tourist routes.

Visual modification

Construction

Construction of the new runway would be visible to the east of the view in the background. Works visible in the

view would include site clearing, establishment of the pump station and pipelines, and surcharge piles covering the western tip of the future runway area, nearest to the viewer. This would be followed by the establishment of construction compounds, site shaping, laying of the runway and construction of the ATC tower and runway lighting system. Additional lighting would be seen at night, associated with night construction activities and security lighting for the worksite.

Operation

During operation, the runway would be visible with the ATC tower and ARFFS station being prominent in the view, protruding above the skyline and rising considerably higher than the existing airport buildings. From this location the ATC tower would potentially be seen in the context of high rise development at Marcoola, however, the tower would rise considerably higher than these existing buildings.

Aircraft movements on the runway would also be visible and considerably more prominent than those currently experienced.

The aircraft landing light system would be located beyond the western tip of the runway in the middle ground of the view. However, the lights would be directed to aircraft above the site and the light sources will not be seen directly from this location. As this view is located perpendicular to the runway, the lights associated with the aircraft on the runway and the ATC tower would be visible at night.

ASSESSMENT

Construction

During construction there would be a noticeable reduction in the amenity of this view, resulting in a moderate adverse impact during day, reducing to a minor adverse impact during night time hours. With due regard to the transient nature of road users, the impact would be momentary and localised.

Operation

During operation, there would be a noticeable reduction in the amenity of the view, resulting in a moderate adverse visual impact during the day, reducing to minor adverse impact during night time hours. With due regard to the transient nature of road users, the impact would be momentary and localised.

VIEWPOINT 7: Finland Road, Marcoola



VIEWPOINT 7: Finland Road, Marcoola

LOCATION: At a distance of approximately 475 m to the airport boundary. Representative view from rural properties, road users and park users.

Existing visual conditions

Finland Road is a narrow rural road with an informal edge and grassed verges with approximately 20 mainly rural properties scattered along the length. Views along this route are directed towards the visually distinctive profile of Mt Coolum. Views from this location are visually contained to the east by wallum woodland within the Mt Coolum National Park. Views to the west, however, are more open and include low lying redundant cane fields stretching to the wetland edge adjacent to the Maroochy River. This view is bounded with a background of ridgelines punctuated by Mt Ninderry. The airport is situated to the east and screened by vegetation. Users of Finnish Memorial Park, located to the east of Finland Road, experience similar views.

At night, views of aircraft lighting would be visible during approach and take-off. There is likely to be sky glow visible from the Sunshine Motorway which is not visible in this view but lies behind the vegetation in the east of the view. In the foreground, a scattering of illuminated windows from farm dwellings would be visible, and although the distant ridgelines would largely disappear from view, spotted lights from dwellings and streetlights would be visible on the hillsides.

Visual sensitivity

Neighbourhood sensitivity

This viewpoint is representative of views from a few rural dwellings, road users, and recreational users of the Finnish Memorial Park. Views are oriented toward a local visual landmark in Mt Coolum, and west to the broad open landscape. This is a working landscape, the purpose of which is not reliant on visual amenity. Viewers are both static and moving slowly along the roadway, meaning that views are appreciated for a more prolonged duration.

Visual modification

Construction

In order to enable construction of the site, Finland Road will be widened and upgraded to accommodate construction traffic. This route would be used for haulage of equipment and materials to and from the worksite with a construction compound located to the north of the Sunshine Motorway.

From the view point location, views towards the airport site itself are heavily screened by existing vegetation within Mt Coolum National Park, situated to the east of the road.

Construction work would be limited to approximately 7am to 6pm. Occasional night time work may be required during the pavement works phase, however it is anticipated that the required material will be stockpiled on site to minimise construction movement on Finland Road during night time hours.

Operation

During operation, the Mt Coolum National Park vegetation would continue to screen views towards the operational airport infrastructure.

ASSESSMENT

Construction

During construction, there would be a considerable reduction in the amenity of this view resulting in a minor adverse impact during day time, reducing to negligible during night time hours.

Operation

During operation there would be no perceived reduction or improvement to the view, resulting in a negligible impact during the day and at night.

VIEWPOINT 8: Mt Coolum Lookout



VIEWPOINT 8: Mt Coolum Lookout

LOCATION: Mt Coolum, an isolated volcanic dome measuring 208 m in height. View south from Mt Coolum Lookout, at a distance of approximately 1.7 km from the airport boundary. Represents views by recreational users.

Existing visual conditions

Wide and distant panoramic views across the surrounding low lying farmland and residential areas along the coastline, including Coolum, Marcoola and Mudjimba. At approximately 12 km to the south, coastal development at Alexandra Headland and Mooloolaba stretch to the east, with the coastal extent marked by Beacon Lighthouse Reserve in Buddina. This view is of interest as a view of the patterning of development and natural landscapes of the coastal fringe.

At night these views would include street lighting from residential area and cars on the Sunshine Motorway, lighting from lit airport buildings and sky glow associated with the airport and coastal development. However, this viewpoint is unlikely to be accessed at night.

Visual sensitivity

Regional sensitivity

Mt Coolum is designated as a National Park under the Nature Conservation Act and of regional importance. The track leading to Mt Coolum Lookout is used for recreation and attracts visitors to designated viewpoints where views of a long duration are likely.

Visual modification

Construction

The runway is located running perpendicular to the view and therefore comprises a wide expanse of the view. The removal of a large block of vegetation and the construction of the new runway would be visually prominent to the east of the wide panoramic view, seen within the context of the existing RWY 18/36. The construction of the pump station and pipeline would be visible, followed by the establishment of the worksites, pavement construction compound, site shaping, laying of the runway and construction of the ATC tower and the ARFFS station.

Lighting associated with night construction activities and security lighting for the worksite would be visible in the context of coastal development lighting, existing airport lighting and lighting associated with the Sunshine Motorway. However, this viewpoint is unlikely to be accessed at night.

Operation

During operation the Project would result in an enlargement of the airport infrastructure in the view. The ATC tower and ARFFS station would be a visually prominent feature, extending above surrounding vegetation and viewed against the backdrop of the airport terminal buildings and residential development beyond.

Lights associated with runway aircraft and the ATC tower would be visible at night, however, this viewpoint is unlikely to be accessed at night.

ASSESSMENT

Construction

Due to the removal of existing vegetation and views towards the construction work, during construction there would be a noticeable reduction in the amenity of this view. This would result in a moderate adverse visual impact during the day. At night there is limited access to the viewpoint and therefore the impact is considered to be negligible.

Operation

During operation there would be a noticeable reduction in the amenity of this view. This would result in a moderate adverse visual impact during the day. At night there is limited access to the viewpoint and therefore the impact is considered to be negligible.

B17 AIRPORT AND SURROUNDS LANDSCAPE AND VISUAL

VIEWPOINT 9: Ocean Vista Drive, Mt Ninderry



VIEWPOINT 9: Ocean Vista Drive, Mt Ninderry - Photomontage during operation (Zoom)



VIEWPOINT 9: Ocean Vista Drive, Mt Ninderry

LOCATION: View south east from Ocean Vista Drive, Mt Ninderry at a distance of 7.5 km and elevated at approximately 160 m AOD.

Existing visual conditions

Views are from residential properties and streets and include broad, open views across the coast from Coolum in the north to Buderim in the south. The view is characterised by a mosaic of farmland and bushland reserves, punctuated by the visually distinctive profile of Mt Coolum to the north. This view includes residential and high-rise development clustered along the coastline, with Mudjimba Island visible in the ocean to the east (in the centre of the panorama).

The airport is visible at a distance of approximately 7.5 km in the centre of the view. The runway lies across the view screened somewhat by neighbouring bushland at this angle. The upper portions of the existing terminal buildings and control tower are also visible protruding above surrounding vegetation. The arrival and departure of aircraft is currently visible intermittently and travelling across the view.

At night these views would include light sources scattered across the panorama, sky glow and points of light would be concentrated along the coastal fringe emanating from the Sunshine Motorway, high-rise and residential development clustered and along the coast. Lighting associated with the airport would be visible, the visual prominence of these elements are likely to be diminished by the context of lit development.

Visual sensitivity

Local sensitivity

These views are of high scenic quality, and contribute to the amenity of the area; they are visible from local roads and private properties. Viewers would be residents whose homes are oriented toward these views and it is expected that views would be appreciated for a longer duration.

Visual modification

Construction

From this elevated position, construction of the new runway would be visible in the centre of the view. The runway is located running away from the viewing location and is therefore foreshortened in

the view. In particular the clearance of vegetation and the construction of the ATC would be seen. Other works including the establishment of the pump station and pipeline, establishment of the construction compound, site shaping, laying of the runway, and construction of the ARFFS station would potentially be visible but difficult to distinguish at this distance.

Additional lighting would be seen at night, associated with night construction activities and security lighting for the worksite. These elements would again be difficult to distinguish from the context of lighting at the existing airport and development at Marcoola.

Operation

During operation the Project would result in an incremental enlargement of the airport in views across the coastal plain. The ATC tower and ARFFS station would be visible, contrasting with the scale of development currently seen in this area.

Lights associated with the runway and the aircraft would be visible at night. The runway approach lighting system would include lights directed towards aircraft overhead and not be seen from this location. These elements would be difficult to distinguish from the context of lighting at the existing airport and development at Marcoola.

ASSESSMENT

Construction

During construction there would be a barely perceptible change in the amenity of this view, resulting in a negligible impact during the day and night.

Operation

During operation, there would be a barely perceptible change in the amenity of the view, resulting in a negligible visual impact during the day and night.

B17 AIRPORT AND SURROUNDS LANDSCAPE AND VISUAL

VIEWPOINT 10: Orme Road, Buderim



VIEWPOINT 10: Orme Road, Buderim - Photomontage during operation (zoom)



VIEWPOINT 10: Orme Road, Buderim

LOCATION: Orme Road, Buderim. At a distance of approximately 7.5 km to the airport boundary and elevated at approximately 130 m AOD. Representative view from residential properties.

Existing visual conditions

The Maroochy River traverses the low lying coastal plains to the east of this view with medium density residential areas, including Twin Waters to the north and Maroochydore to the south and bordering the river corridor. The Sunshine Coast Motorway is visible from this location, becoming a more prominent feature as it crosses the Maroochy River. The western portions of the view is characterised by the low lying arable farmland and bushland reserves, with the distinct profile of Mt Coolum punctuating the horizon in the centre background of the view.

The open cleared ground associated with the airport runway is visible to the north of the river, with residential and high-rise development clustered along the coastline. The flat nature of the runway is sympathetic to the surrounding landform and landcover, being a relatively discrete, congruous feature in this distant view.

At night these views will include light sources scattered across the panorama, sky glow and points of light will be concentrated along the coastal fringe emanating from the Sunshine Motorway, high-rise and residential development clustered and along the coast. Lighting associated with the airport will be visible, the visual prominence of these elements are likely to be diminished by the context of lit development.

Visual sensitivity

Local sensitivity level

These views are of high scenic quality, and contribute to the amenity of the area; they are visible from local roads and private properties. Viewers would be residents whose homes are oriented toward these views and it is expected that views would be appreciated for a longer duration.

Visual modification

Construction

From this elevated position, construction of the new runway would be visible in the centre of the view above surrounding residential properties on the lower slopes of

Buderim. The runway is located running perpendicular to the view and therefore comprises a wide expanse of the view. In particular the clearance of vegetation and the construction of the ATC would be seen. Other works including the establishment of the pump station and pipeline and sand surcharge, establishment of a construction compound, site shaping, laying of the runway, and construction of the ARFFS station would potentially be visible but difficult to distinguish at this distance, and partially obstructed by vegetation to the south of the site.

Additional lighting would be seen at night, associated with night construction activities and security lighting for the worksite. These elements would again be difficult to distinguish from the context of lighting at the existing airport and development at Maroocha.

Operation

During operation the runway would be visible with the ATC tower and ARFFS station extending above surrounding vegetation, viewed against a backdrop of rising terrain of Mt Coolum and the lower residential areas. The tower would be visible; however it is not anticipated to rise above the skyline in this view.

Lights associated with runway and the aircraft would be visible at night. The runway approach lighting system would include lights directed towards aircraft overhead and not be seen from this location. These elements would be difficult to distinguish from the context of lighting at the existing airport.

ASSESSMENT

Construction

During construction there would be a noticeable reduction in the amenity of this view, resulting in a minor adverse impact. During night time hours this would reduce to negligible as there would be no perceived reduction or improvement in the amenity of the view at night.

Operation

During operation the ATC tower and ARFFS station would be viewed against the rising terrain of Mt Coolum in the context of the existing airport infrastructure, resulting in a noticeable reduction in the amenity of the view and a minor adverse visual impact during the day. During night time hours this would reduce to negligible as there would be no perceived reduction or improvement in the amenity of the view at night.

17.5 SUMMARY AND CONCLUSIONS

The following table summarises the visual impacts identified for the Project.

17.5.1 Construction

Table 17.5a: Visual impacts of the Project - construction

Initial assessment with mitigation inherent in the preliminary design in place		Residual assessment with additional mitigation in place (i.e. those actions recommended as part of the impact assessment phase)						
Primary impacting processes	Mitigation inherent in the design	Significance of impact	Likelihood of impact	Risk rating	Additional mitigation measures proposed	Significance of impact	Likelihood of impact	Residual risk rating
Viewpoint 1, Viewpoint 2 Viewpoint 3, Viewpoint 7 and Viewpoint 10								
Site clearing, construction of runway, pump station, surcharge piling, pipeline, construction compounds, site shaping, construction of the ATC tower and ARFFS, dredging pipe compound and stockpile areas, lighting. Upgrades to Finland Road to accommodate construction traffic.	N/A	Minor adverse during the day and night	Likely	Medium	Construction equipment to be located and stored to minimise impact outside of construction working hours, e.g. behind fencing. Lighting of compounds and works sites would be restricted to agreed hours and security needs and in accordance with a Construction Environmental Management Plan. Cut off and directed lighting would be used to ensure glare and light spill is minimised. Regular maintenance of site hoarding and perimeter site areas would be undertaken, including the prompt removal of graffiti. Visual mitigation would be implemented as soon as feasible and remain for the duration of the construction period.	Minor during the day and night	Likely	Medium
Viewpoint 9								
Construction of the ATC tower and ARFFS	N/A	Negligible impact during the day and night	Likely	Negligible	No visual mitigation works are proposed	Negligible	Likely	Medium

Viewpoint 4, Viewpoint 6 and Viewpoint 8

Site clearing, construction of runway, pump station, surcharge piling, pipeline construction and the directional bore works under David Low Way, site shaping, construction of the ATC tower and ARFFS, dredging pipe compound and stockpile areas, lighting	N/A	Moderate adverse during the day and minor adverse during the night	Likely	Medium	Construction equipment to be located and stored to minimise impact outside of construction working hours, e.g. behind fencing. Lighting of compounds and works sites would be restricted to agreed hours and security needs and in accordance with a Construction Environmental Management Plan. Cut off and directed lighting would be used to ensure glare and light spill is minimised. Regular maintenance of site hoarding and perimeter site areas would be undertaken, including the prompt removal of graffiti. Visual mitigation would be implemented as soon as feasible and remain for the duration of the construction period.	Moderate adverse during the day and minor adverse during the night	Likely	Medium
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Viewpoint 5

20 m corridor of vegetation clearance, pipeline construction, alternative access/crossing arrangements (timber ramp)	N/A	High adverse during the day and negligible at night	Likely	High	Construction equipment to be located and stored to minimise impact outside of construction working hours, e.g. behind fencing. Lighting of compounds and works sites would be restricted to agreed hours and security needs and in accordance with a Construction Environmental Management Plan. Cut off and directed lighting would be used to ensure glare and light spill is minimised. Regular maintenance of site hoarding and perimeter site areas would be undertaken, including the prompt removal of graffiti. Visual mitigation would be implemented as soon as feasible and remain for the duration of the construction period.	High adverse during the day and negligible at night	Likely	High
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17.5.2 Operation

Table 17.5b: Visual impacts of the Project - operation

Initial assessment with mitigation inherent in the preliminary design in place		Residual assessment with additional mitigation in place (i.e. those actions recommended as part of the impact assessment phase)						
Primary impacting processes	Mitigation inherent in the design	Significance of impact	Likelihood of impact	Risk rating	Additional mitigation measures proposed	Significance of impact	Likelihood of impact	Residual risk rating
Viewpoint 1, Viewpoint 2, Viewpoint 3 and Viewpoint 10								
Incremental enlargement of the existing airport infrastructure, specifically views towards new runway, ATC tower and ARFFS	N/A	Minor adverse during the day and night	Likely	Medium	During detailed design, consideration to airport boundary planting to filter views towards the airport infrastructure. A landscape plan would need to adhere to aviation design guidance, considering implications on airport safety, security and any operational and environmental constraints, such as managing risks associated with bird strike	Minor during the day and night	Possible	Low
Viewpoint 4								
Incremental enlargement of the existing airport infrastructure, specifically views towards new runway, ground level aircraft movement, ATC tower and ARFFS	Re-instatement planting	Minor adverse during the day and night	Likely	Medium	During detailed design, consideration to airport boundary planting to filter views towards the airport infrastructure. A landscape plan would need to adhere to aviation design guidance, considering implications on airport safety, security and any operational and environmental constraints, such as managing risks associated with bird strike	Minor during the day and night	Possible	Low
Viewpoint 5								
As the vegetation re-establishes, there would be no perceived reduction or improvement to the view	Re-instatement planting	Negligible impact during the day and night	Likely	Negligible	No visual mitigation works are proposed	Negligible		Negligible
Viewpoint 6								

Incremental enlargement of the existing airport infrastructure, specifically views towards new runway, ATC tower and ARFFS	N/A	Moderate adverse during the day and minor adverse at night. With due regard to the transient nature of road users, the impact would be momentary and localised	Likely	Medium	No visual mitigation works are proposed	Moderate adverse during the day and minor adverse at night. With due regard to the transient nature of road users, the impact would be momentary and localised	Likely	Medium
Viewpoint 7								
During operation there would be no perceived reduction or improvement to the view.	N/A	Negligible impact during the day and night	Likely	Negligible	No visual mitigation works are proposed	Negligible	Negligible	Negligible
Viewpoint 8								
Incremental enlargement of the existing airport infrastructure, specifically views towards new runway, ground level aircraft movement, ATC tower and ARFFS	N/A	Moderate adverse during the day and negligible at night	Likely	Medium	No visual mitigation works are proposed	Moderate adverse during the day and negligible at night	Likely	Medium
Viewpoint 9								
Incremental enlargement of the existing airport infrastructure is considered to be barely perceptible in the context of the existing view and from this distance.	N/A	Negligible impact during the day and night	Likely	Negligible	No visual mitigation works are proposed	Negligible	Likely	Negligible

17.6 REFERENCES

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