BNE AUTO MALL

DRAFT MAJOR DEVELOPMENT PLAN 2019

7 June 2019

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Executive Summary

Brisbane Airport Corporation Pty Ltd has prepared this draft Major Development Plan for the construction and operation of the BNE Auto Mall. The BNE Auto Mall will include a performance track, flagship automotive dealerships, brand experience centres and track operations and management centre. It will be designed to operate day and night, seven (7) days a week, offering a variety of experiences and opportunities for both the visiting public as well as the on-site tenants and workers.

The automotive performance track is envisaged to host events such as:

- Corporate driving events;
- Shared test drive days;
- Motorbike test days;
- Driving experience days;
- Driver training days;
- 4WD training days; and
- Special and major event days.

The automotive dealerships and brand experience centres will be located around the perimeter of the performance track to create a new landmark destination and will generate significant economic and social activity for Brisbane Airport.

The Project site is 51.3 hectares of undeveloped land enclosed by Moreton Drive, Airport Drive and Nancy Bird Way and located in close proximity to the Brisbane Airport's International Terminal. Preparatory works are currently underway, having commenced in 2017, and are due for completion in 2020.

BAC, as the Airport Lessee Company under the Airports Act 1996, is responsible for the submission of this Major Development Plan.

Key Findings

An assessment of the operational and environmental considerations from the BNE Auto Mall was conducted. The development will create significant commercial activities (including automotive dealerships and brand experience centres), which are expected to generate direct employment opportunities.

It was identified that the BNE Auto Mall will have negligible negative impact on operational, environmental and/or social factors, with the exception of those matters identified below. Where separate matters have been identified as having the potential to generate more than negligible impacts, it is considered that these impacts can be mitigated through deliberate scheduling of developments and appropriate design and construction.

The key findings of the assessment are outlined below.

Ground Transport

The construction and operation of the BNE Auto Mall will directly and indirectly create a number of job opportunities and therefore generate additional vehicle movements near to the Project site. The additional number of vehicle movements likely to be generated during construction are not considered significant enough to cause adverse impacts on the network and as such, traffic impacts associated with construction of the proposed development will be **negligible**.

For the operation of the BNE Auto Mall, a suitable level of car park rates will be adopted across each tenancy with a suitable mix of staff and visitor parking as well as temporary parking for special and major events. An analysis of the two access points into the Auto Mall (from Airport Drive and Nancy Bird Way) determined that there would be no discernible impact on the external road network

Specific lot layouts detailing car parking spaces, aisle and circulation road dimensions will be developed at the detailed design stage of the Project. As a consequence of the proposed improvements, traffic impacts associated with the operation of the proposed development will be **low**.

Aviation Operations and Safety

There are a number of operational restrictions within the BNE Auto Mall due to prescribed airspaces:

- OLS surface elevation varies across the BNE Auto Mall from 35 m AHD to 47.5 m AHD as a result of Brisbane's New Runway;
- Wind shear assessment zone from the existing runway has a surface elevation rising from 34.7 m AHD to 39.0 m AHD across the development area; and
- Lighting options and arrangements, as well as any large digital advertising, will be required to be investigated during detailed design by an experienced lighting designer.

The assessment of the potential aviation operational and safety impacts concluded that any impacts will be **negligible** due to both the location and the scale of development planned.

Acoustics

Sound level predictions for nine 'typical' operational scenarios for the BNE Auto Mall has been undertaken and compared against the daytime and evening noise level criteria for a series of locations near the Project site. The locations were selected to include the nearest affected sensitive and commercial receptors.

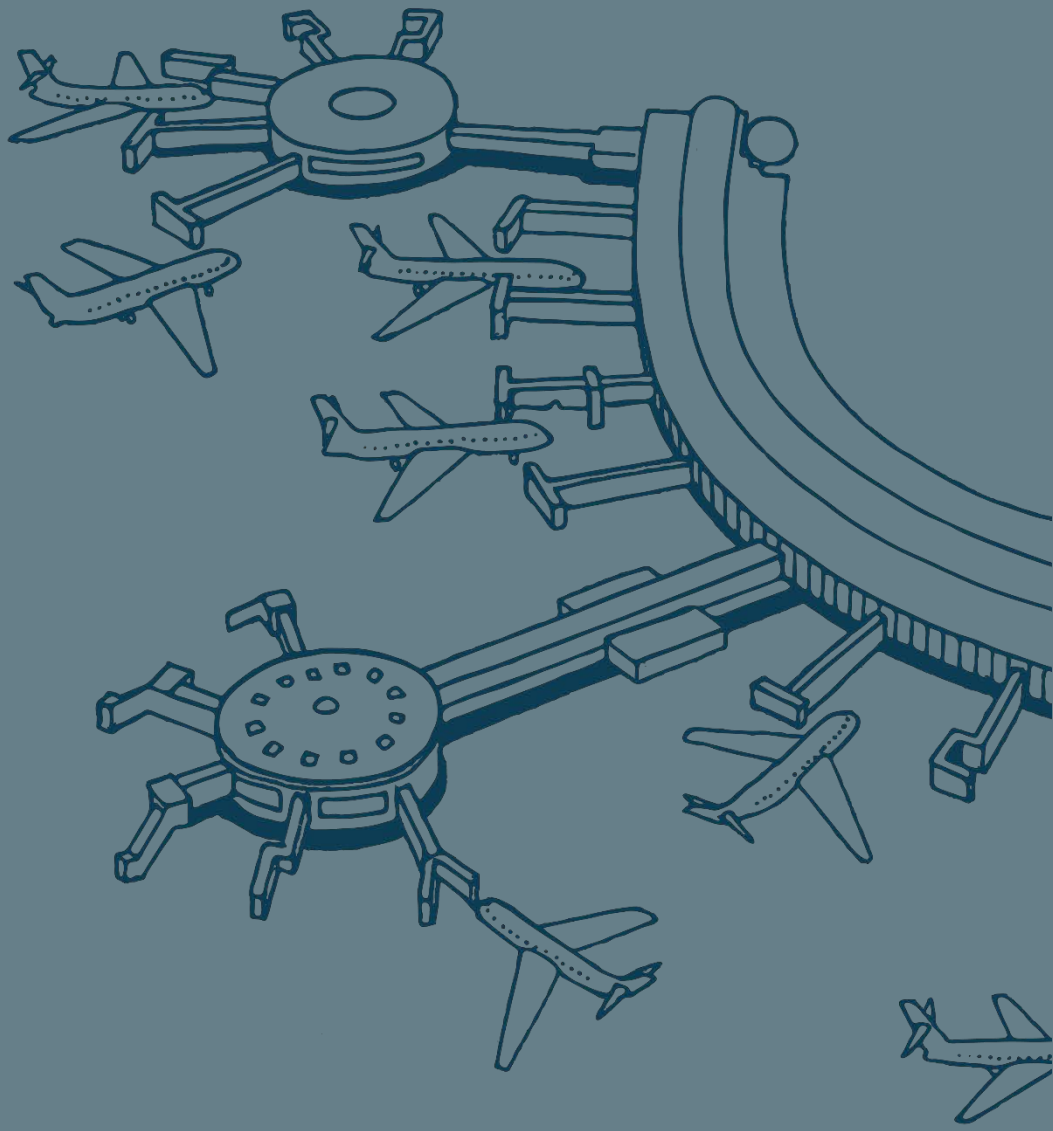
While minor noise level exceedances have been predicted for seven locations, there are no exceedances beyond the extent of the Brisbane Airport. As such, noisy activities are considered to be heard in the context of what is already a high noise environment and there are no predicted noise level exceedances to surrounding residential areas.

A comprehensive list of best practice noise mitigation measures are considered appropriate to mitigate potential noise impacts associated with the construction and operation of the BNE Auto Mall. As such, the potential noise impacts for the construction phase is considered **negligible** and for the operation phase is considered **low**.

Environment

The assessment considered a range of environmental matters to evaluate potential impacts associated with the construction and operation of the BNE Auto Mall. Of particular note to the BNE Auto Mall were the following considerations:

- During construction, loss of topsoil and sedimentation of drainage lines and watercourses due to inadequate erosion and sediment control measures and high rainfall incidence may result in a **low** impact; and
- During operations, storage and use of fuels, oils, solvents and other potentially hazardous chemicals as a result of testing and maintaining vehicles may occur at the BNE Auto Mall. These activities may result in soil and/or groundwater contamination, particularly if incorrectly used or stored, thereby resulting in a **low** risk.



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INTRODUCTION

1. Introduction

1.1 Background

Brisbane Airport Corporation Pty Ltd (BAC) is the operator of Brisbane Airport which serves as the premier gateway to Queensland. Brisbane Airport currently operates one runway, with a second runway to open in 2020. Brisbane Airport currently consists of two major Terminals, accommodating 35 airlines flying to 84 domestic and international destinations. Brisbane Airport is the largest capital city airport in Australia by land size with 2,700 hectares (ha) of land and is located approximately 12 km from the Brisbane central business district (CBD).

BAC's extensive landholding in close proximity to Brisbane CBD offers a unique planning opportunity to capitalise on Brisbane Airport's aim to become a major multimodal transport hub and provide world class commercial opportunities. Over the last three decades, Brisbane Airport has seen substantial growth and diversification of land uses to complement its ongoing development and function. This growth has led to the creation of distinct precincts and characteristics within the local environment.

BAC has commenced work on its latest broad scale development – the BNE Auto Mall (the Project). The Project aims to deliver a multi-purpose auto retailing hub that sees flagship automotive dealerships (dealerships) sitting alongside brand experience centres and a multi-purpose automotive performance track (performance track).

The first phase of site preparatory works involved the clearing, filling and surcharging of the Project site. BAC prepared and submitted an Environmental Assessment Report (EAR), which was endorsed by the former Department of Infrastructure and Regional Development (DIRD) to manage potential environmental issues and impacts associated with these preparatory works, including clearing, earthworks and surcharging. The preparatory works are currently underway to deliver an improved Project site that has been cleared and filled (as per Section 2.8).

At completion, the preparatory works and BNE Auto Mall will deliver:

- A cleared, filled, surcharged and serviced site of 51.3 ha of developable land, that will accommodate a range of land uses;
- Fully serviced and landscaped roadways providing access and connections to Airport Drive and Nancy Bird Way;
- A range of automotive dealerships and brand experience centres; and
- A multi-purpose performance track.

1.2 Purpose and Objectives

The BNE Auto Mall is set to be Australia's benchmark automotive precinct designed for new and used car buyers, motoring enthusiasts and the public. This draft Major Development Plan (MDP) has been prepared for the construction and operation of the BNE Auto Mall.

Under the *Airports Act 1996* (Airports Act), section 91 (1A) states that *"the purpose of an MDP in relation to an airport is to establish the details of a major airport development that:*

relates to the airport; and

is consistent with the airport lease for the airport and the final master plan for the airport."

An MDP must be prepared by the airport-lessee company in accordance with the contents outlined in section 91 of the Airports Act and submitted to the Minister of the Department of Infrastructure, Transport, Cities and Regional Development and Cities (the Department) for approval. Accordingly, this MDP outlines the:

- Details of the development including design considerations, supported infrastructure and staging;

- Legislative requirements; and
- Operational and environment assessment.

1.3 Report Structure

The structure of this MDP is shown in Table 1.

Table 1 MDP Structure

Section number	Aspects addressed in this MDP	Overview of section
1	Introduction	• Background • Purpose and objectives • Details on the report structure • Details of the Project proponent
2	Project description	• Project description • Project justification • Project location • Proposed land uses • Design considerations • Civil infrastructure • Development stages • Consistency with EAR
3	Legislative requirements	• Consistency with Commonwealth legislation • Airport development and building approvals • Consistency with Brisbane Airport Master Plan • Consistency with Brisbane Airport Ground Transport Plan • Consistency with Brisbane Airport Environment Strategy • Consistency with State and Local Government legislation and planning documents
4	Operational and Environmental Assessment Methodology	• Scope of the assessment and the methodology used in the assessment of environmental impacts associated with the proposal
5	Operational Assessment	• Environmental assessment and mitigation measures proposed
6	Environmental Assessment	• Summary of the sustainability elements and environmental effects of the proposal
7	Building Sustainability	• Summary of the key sustainability initiatives that are being investigated as part of the design
8	Summary of impacts	• Summary of the potential operational, environmental and social impacts associated with the proposal
9	References	• List of references that have been used to development the MDP.

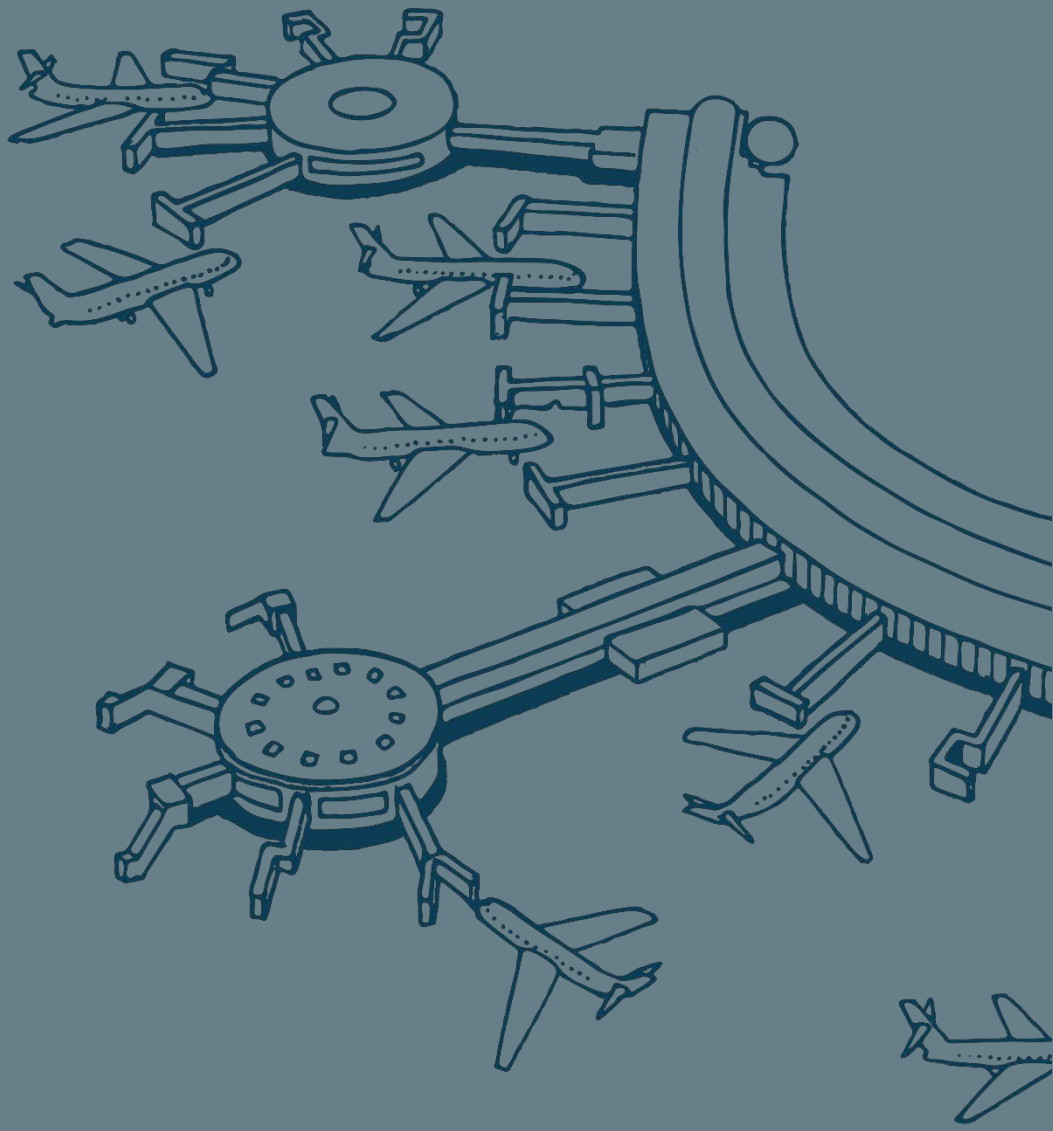
1.4 Project Proponent

All works associated with the proposed development are on land within the existing boundary of the Brisbane Airport. Brisbane Airport Corporation (BAC) is an “airport-lessee-company” under the *Airports Act 1996*. The proponent for this proposed MDP as defined under the Act is:

Brisbane Airport Corporation Limited

11 The Circuit, Brisbane Airport Qld 4008

The contact in connection with this Project is Paul Lutz, Infrastructure Planner, telephone (07) 3406 3156.



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PROJECT DESCRIPTION

2. Project Description

2.1 Project Summary

The Project involves the construction of the BNE Auto Mall on an unused 51.3 ha parcel of land bordered by Moreton Drive, Airport Drive and Nancy Bird Way. The Project will include an automotive performance track, associated manoeuvring and handling courses, skidpan and 4WD testing circuit, automotive dealerships, brand experience centres and a track operations and management centre.

The intention of the BNE Auto Mall is to operate day and night, seven (7) days a week, offering a variety of experiences and opportunities for both the visiting public as well as the on-site tenants and workers. The performance track is envisaged to host regular (>75 times a year), semi-regular (between 25 and 75 times a year) and annual events such as:

- Corporate driving events;
- Shared test drive days;
- Motorbike test days;
- Driving experience days;
- Driver training days;
- 4WD training days; and
- Special and major event days.

The automotive dealerships are anticipated to be located around the perimeter of the performance track to create a new landmark destination, with brand experiences centres showcasing leading automotive brands and promoting a combination of retail, commercial, service and cultural activities to generate significant economic and social activity. The brand experience centres will be centrally located in the BNE Auto Mall to accommodate a diverse range of events and allow flexible capacity.

2.2 Project Justification

The *2014 Airport Master Plan* (Master Plan) defines the vision for Brisbane Airport "*to be world class – a distinctive place that visitors keep coming back to, and to be the best possible partner for airlines and businesses*"*, by*:

- Promoting and evolving Brisbane Airport's role as a major economic engine for Australia;
- Developing Brisbane Airport as a premier gateway airport and a multi-modal transport hub;
- Creating a prosperous airport business community within a sustainable environment; and
- Achieving growth and development by balancing economic benefits and environmental impacts.

The vision is delivered through Brisbane Airport's Land Use Strategy which aims to increase Brisbane Airport's contribution to the regional economy and respond to market demand with opportunities identified to provide for a mix of business, retail, industrial and tourism activities.

The Project aligns with the vision for Brisbane Airport through the development of a currently unused parcel of land to provide for land uses that will create an affluent business community, promote growth and development activity and contribute as a major economic engine for South-East Queensland.

The 51.3 ha site is an optimal location for the BNE Auto Mall as motorsport complexes require a substantial amount of vacant land in commercial and/or industrial areas, located away from residential suburbs. As such, there is limited land suitable to accommodate a motorsport complex in Brisbane which is easily accessible from the CBD. Further, there are numerous examples of car dealerships and performance tracks co-existing with airports within Australian and internationally such as:

- Essendon Fields Car Dealerships – located immediately adjacent to Essendon Fields Airport, Melbourne;
- Mick Doohan Raceway (motorbikes) – near to Brisbane Airport;
- Archerfield Speedway – located immediately adjacent to Archerfield Airport, Brisbane;
- Fairbairn Park Motorplex – immediately adjacent to Canberra Airport;
- Geelong Motorsports Complex – located immediately adjacent to Avalon Airport;
- Sepang International Circuit (Malaysia) – located immediately adjacent to Kuala Lumpur Airport;
- Donnington Park (England) – located immediately adjacent to East Midlands Airport; and
- New Jersey Motorsports Park (US) – located immediately adjacent to Millville Executive Airport.

2.3 Location of Proposed Development

The Project is situated on an unused 51.3 ha parcel of land bordered by Moreton Drive (west), Airport Drive (east) and Nancy Bird Way (north), formally described as Lot 10 on SP238997 (Project site).

Land uses in close proximity to the Project site include Kingsford Smith Memorial (95 m east), the Brisbane Service Centre to the north-east and Secure Parking for the International Terminal and Multi-level Car Park to the south-east. Distance to nearby residential suburbs is over 2 km and is illustrated in Figure 1.

The Project site is illustrated in Figure 2.

2.4 Proposed Land Uses

The Project will provide for a range of land uses over nominally 27 lots, with each lot located around the centralised performance track (refer Figure 2). Future land uses will facilitate a high quality commercial environment with a density and form of development that generates vibrant activities. The Project will be designed to co-exist within the Brisbane Airport, activate the public realm and provide opportunities for visitors, tourists and businesses to thrive.

A summary of the land uses with the corresponding lot is further discussed below. It should be noted that final development plans for land uses within the BNE Auto Mall are yet to be determined and may result in some lots being amalgamated. Nevertheless, the following descriptions provide an indication of the likely nature and scale of the Project. These descriptions have been used to assess the potential operational and environmental impacts.

It is noted that the Project includes vacant lots to cater for future development opportunities within the Project site. Where triggered, future developments may be subject to a further MDP within the BNE Auto Mall.

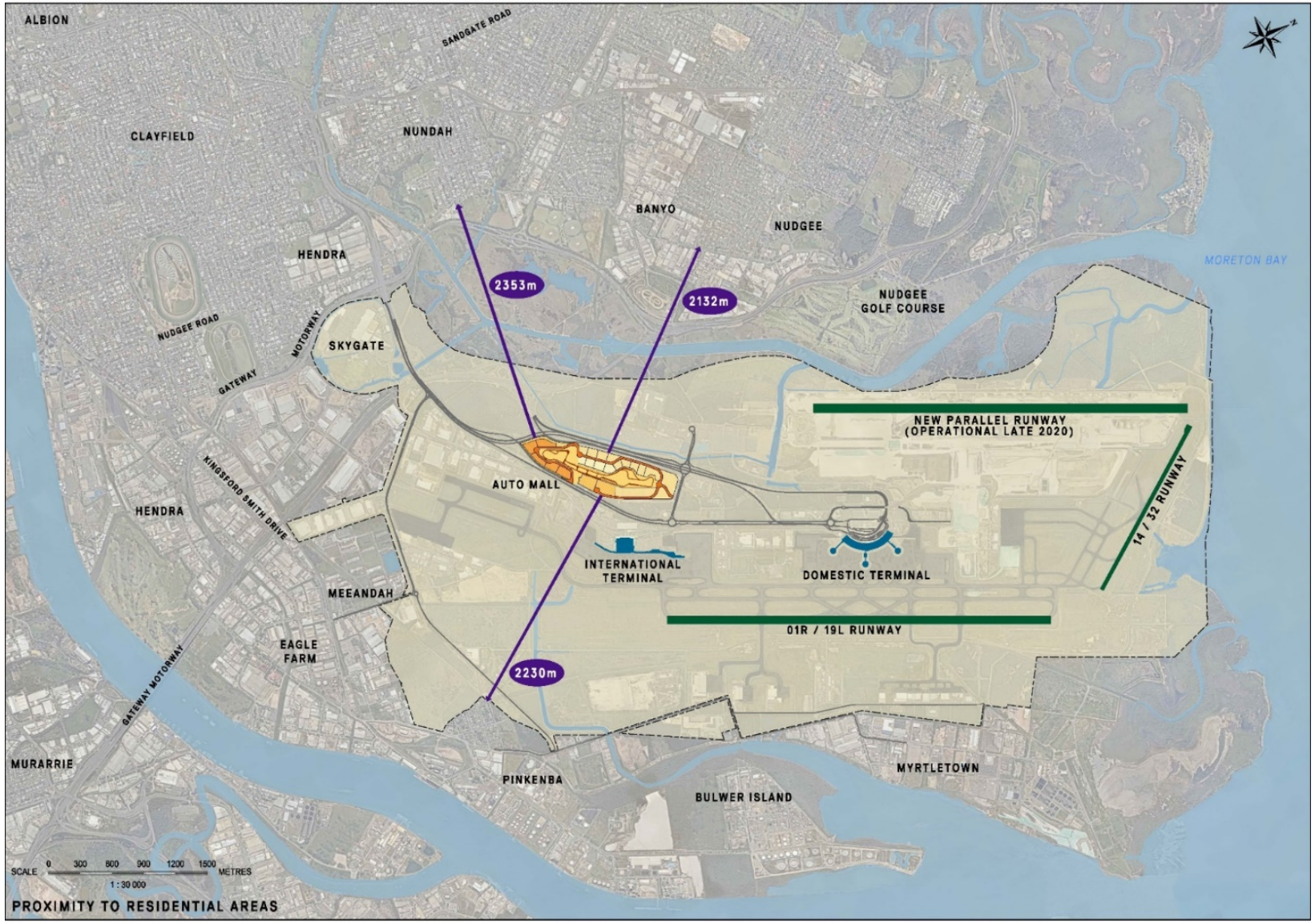


Figure 1 Proximity of Auto Mall to residential areas

Figure 2 BNE Auto Mall indicative building locations

2.4.1 Performance track

The performance track will be a key feature of the BNE Auto Mall and will promote a range of active sport and outdoor recreational pursuits. The performance track will include a 2.5 km performance track, skid pan, kick plate, manoeuvring course, dedicated slalom area, 4WD demo course, low friction handling circuit and associated driver trainer facilities.

The performance track has been designed to target certification under the Confederation of Australian Motor Sports (CAMS), the official governing body of motorsport in Australia. A CAMS certification ensures the performance track has been designed in accordance with the highest standards of safety, such as through the consistency of curve trajectory, design of deceleration zones, development of impact-absorbing trackside protection and suitability of signalling to CAMS standards. Verification of the safety level of the performance track will be performed by a qualified inspector, prior to achieving certification. The performance track will operate to a national and international standard and promote safety, fairness and social responsibility in the conduct of motorsport (CAMS 2019).

Vehicles utilising the performance track will include:

- Standard road vehicles;
- High performance vehicles;
- Four wheel drive vehicles;
- Motor bikes; and
- Racing cars on special or major event days only.

With the exception of racing cars and certain resident track vehicles, all vehicles will be registered.

The definition of ‘high performance vehicles’ can be defined as:

- A registered vehicle that complies with Australian Design Rules (ADR) (eg for safety, noise, emission control etc);
- A vehicle which contains a higher capacity engine (with higher power output) than standard road vehicles and may generally have a louder exhaust system (although must still comply with ADR requirements, such as ADR 28/01 – External Noise of Motor Vehicles).

The point of difference between high performance vehicles and racing cars is that racing cars do not require vehicle registration and are therefore not subject to the ADRs. However, racing cars will be required to comply with the CAMS Manual of Motor Sports. These CAMS requirements include various safety measures and a maximum noise emission limit of 95dB(A) when measured 30m from the track edge.

The performance track can operate seven days a week. The proposed usage of the performance track is provided in Table 2 which includes estimated frequency, operating hours and estimated number of people to attend each of the events. While it is anticipated that the events will be held on singular days, the special and major events may run over the course of up to three days (ie Friday, Saturday and Sunday).

Table 2 Proposed usage of performance track

Track Use	Estimated Frequency (Events per year)	Estimated duration	Estimated people (per event)
Corporate driving events The Corporate Driving Events will allow priority tenants to host events for their guests with exclusive use of the performance track. The Corporate Driving Events will be	50	9am – 6pm	80

Track Use	Estimated Frequency (Events per year)	Estimated duration	Estimated people (per event)
closed to the public and operate on a strict 'invitation only' basis.			
Shared test drive days The drive days provide an opportunity for the public to test drive a range of vehicles on the performance track, skid pan and/or 4WD area.	150	9am-10pm	60
Motorbike test days Motorbike test days will provide an opportunity for the public to test drive a range of motorbikes on the performance track.	25	9am – 10pm	60
Driver experience days The Track Operator will facilitate a range of driving experiences at the performance track, which will be open to the public, including exotic drive experiences, (e.g. sports cars) where guests will be able to drive laps in the car of their choice. An example of the types of driving experiences that could be offered include: • *Precision training* which focuses on the fundamentals of vehicle control for first time participants • *Precision plus* which teaches driving dynamics and how to correctly respond to critical scenarios with an instructor • *Performance training* that develops knowledge of vehicle control at higher speeds using the correct racing lines with an instructor • *Master training* that provides one-on-one training to optimise skills required for motor racing • *Expert training* which focuses on providing the highest level of performance with a race car, including one-on-one coaching, race data analysis and race engineering debriefing	100	9am – 10pm	48
Driver training days The Driver Training Days will be operated by an accredited driving academy to cater to all levels from L-Platers to P-Platers, corporate and fleet as well as race car tuition onsite.	30	9am – 6pm	30
4WD training days 4WD days will provide an opportunity for the public to test drive a range of 4WDs on a test course to demonstrate features of 4WD vehicles	75	9am – 6pm	30

Track Use	Estimated Frequency (Events per year)	Estimated duration	Estimated people (per event)
Special and major event days The Special and Major Event Days may include classic car events, single automotive brand model launches, industry-wide events for new vehicles, as well as showcasing other vehicles and products.	2	9am – 10pm	1,000 (Special events) 5,000 (Major events)

2.4.2 Dealerships

The dealerships will generally contain a showroom, reception area, visitor centre, vehicle servicing, administration area and may also provide dining and entertainment areas. Where applicable, BAC will require tenants to provide end-of-trip facilities in accordance with *Queensland Development Code (QDC) Mandatory Part 4.1 - Sustainable Buildings.* While the peak times of use is expected to be on the weekends, the dealerships will have a level of economic and social activity to serve visitors and workers seven days a week with opening hours generally from 9am to 10pm.

The key strategy to delivering a point of difference at the BNE Auto Mall, setting it apart from more typical automotive dealerships, is to create a distinctive shop frontage and carefully manage the visual dominance of vehicles from the street. Preliminary research has identified 17 automotive brands that are considered potential dealership tenants. These tenants comprise a mix of standard and luxury brands:

- Toyota
- Mazda
- Holden
- Hyundai
- Ford
- Nissan
- Volkswagen
- Subaru
- Mercedes-Benz
- BMW
- Audi
- Land Rover
- Lexus
- Volvo
- Porsche
- Peugeot
- Mini

The dealerships will be sited adjacent to the performance track to provide opportunities for activated roof spaces and customer viewing terraces.

2.4.3 Brand experience centres

The brand experience centres are proposed to be located on Lots 7 to 10, although one of the lots will accommodate the performance track operations centre.

The brand experience centres are expected to provide access to the performance track, a car showroom, workshop and lobby, as well as function rooms, lounge areas, office space and meeting rooms. The brand experience centres will be designed to provide state of the art facilities for manufacturers to introduce customers to new vehicle models and technology, while maintaining connection with the performance track in the design. The brand experience centres are adjacent to the performance track and will seek opportunities to activate the roof space and create customer viewing terraces and function rooms.

Where applicable, BAC will require tenants to provide end-of-trip facilities in accordance with *Queensland Development Code (QDC) Mandatory Part 4.1 - Sustainable Buildings.* Open seven days a week, the brand experience centres will generally operate from 9am to 10pm.

2.4.4 Vacant lots

Lots 21 to 27 are proposed as vacant lots and will not be developed as part of this Draft MDP. The vacant lots will be grassed or stabilised, and appropriately vegetated stormwater swales will be installed. On-going monitoring of the ground condition for the vacant lots will be undertaken to ensure there are no adverse impacts on the amenity of the BNE Auto Mall. Where future development requires an MDP under the provisions of Section 91 of the Airports Act, a separate MDP will be submitted for assessment.

2.4.5 Special and major events

The BNE Auto Mall may hold special and major event days at an estimated frequency of two per year (i.e. bi-annual). These events may include classic car events, single automotive brand model launches, industry-wide events for new vehicles, as well as showcasing other vehicles and products.

It is noted that special events may attract more visitors than typical day-to-day operations. As such, an Event Management Plan will be established prior to any events to ensure the civil infrastructure will be appropriate to support larger crowds. The Event Management Plan will include a venue management plan, pedestrian management plan and risk management plan. A template of the Event Management Plan is provided in Appendix B. While it is anticipated that the special and major events will be held on singular days, there may be occasions where the events are run over the course of up to three days (ie Friday, Saturday and Sunday). If a special or major event is planned to run more than one day, potential impacts on sensitive receptors will be considered and managed through a specific Event Management Plan.

2.5 Design considerations

While no design has been prepared for inclusion in this Draft MDP, all design within the BNE Auto will be undertaken in accordance with the *BNE Auto Mall Development Plan* (refer Appendix C).

2.5.1 Built form and construction materials

The built form of the BNE Auto Mall will be controlled by Building Design Guidelines within the *BNE Auto Mall Development Plan* (refer Appendix C). The Building Design Guidelines aim to provide a basis for a consistent and high-quality built form which will be achieved through flexible and varied use of colours, designs, roofing heights, building materials, façade treatments and recesses, overhangs and shading.

The construction material for the buildings will primarily consist of aluminium composite panel to external facades.

The front of house for the dealerships and brand experience centres will present large volume showroom spaces with primarily glazed facades facing the internal street edge. The showroom spaces will include high ceilings to address the street with brand entry statements to create the point of address and entry to the showrooms. A consistent and simple palette of materials will be used to convey a strong sense of unity and cohesion throughout the BNE Auto Mall. The architecture will exploit the opportunity for interesting facades presented by the simple, low scale, large volume footprints.

The roof sheeting of the buildings will be Colorbond (or similar).

While the buildings' primary frontage will be on internal precinct roads, some lots will address the performance track and a small number will address the external road network. Due to the high visibility from multiple angles, the buildings will present a high-quality design and finish on all facades. The proposed orientation and positioning of buildings will be aimed to create an active and dynamic streetscape, using building scale and bold landscaping to define distinctive street addresses for businesses.

Front setback areas will incorporate landscaping to establish an attractive and well-defined address to the property and be free of structures such as rainwater tanks and outbuildings. Further, the built form will be responsive to the subtropical climate of the region and seek opportunities to incorporate shading devices and articulation of elevations and entrances.

The design of buildings will ensure that all plant decks, air conditioning systems, booster assemblies, substations, refuse areas and all back of house services are screened from view. In addition, tenancies will be required to adopt strategies to reduce visual impact of any substations and minimise the potential negative impact on amenity and business addresses. Generally, substations will be housed within the buildings. Alternatively, where substations are proposed external to the building, they must be screened or treated. Screening may be achieved through landscape planting or painting of the substation exterior to match with corporate colours and finishes used on the lot.

Further details in relation to the proposed built form is provided in Table 3.

Table 3 Proposed built form

Indicative Lot	Indicative Lot Area (m^2)	Maximum Height (storeys)	Maximum Height (m)	Description
Stage 1A				
1A	24,000	3 storeys	12m	Dealership
2	12,000	3 storeys	12m	Dealership
3	7,000	3 storeys	12m	Dealership
4	6,000	3 storeys	12m	Dealership
5	5,000	3 storeys	12m	Dealership
6	6,000	3 storeys	12m	Dealership
7	6,000	3 storeys	12m	Brand Experience Centre
7A	5,000	3 storeys	12m	Brand Experience Centre
8	5,000	3 storeys	12m	Brand Experience Centre
9	5,000	3 storeys	12m	Brand Experience Centre
10	5,500	3 storeys	12m	Brand Experience Centre
11	5,000	3 storeys	12m	Dealership
12	8,000	3 storeys	12m	Dealership
13	8,000	3 storeys	12m	Dealership
14	7,000	3 storeys	12m	Dealership
15	11,000	3 storeys	12m	Dealership
Stage 3				
16	8,000	3 storeys	12m	Dealership
17	6,000	3 storeys	12m	Dealership
18	6,000	3 storeys	12m	Dealership
19	6,000	3 storeys	12m	Dealership

Indicative Lot	Indicative Lot Area (m^2)	Maximum Height (storeys)	Maximum Height (m)	Description
20	7,000	3 storeys	12m	Dealership

2.5.2 Landscaping

Landscaping within the BNE Auto Mall will meet Brisbane Airport's key priority to protect and manage natural resources. The high quality of the landscaping and public realm environment will add to the visual amenity and ambience of the BNE Auto Mall and be complementary to the creation of a 'Sense of Place' in the Airport Central (Airport Drive West) precinct.

All planting will be in accordance with the BAC's Landscape Setting Strategy (LSS) as the primary reference for all landscape initiatives at Brisbane Airport. Irrigation opportunities will be explored as part of detailed design. Street trees will be located immediately adjacent to concrete footpaths to support Brisbane's subtropical climate with large verges and deep planting areas.

Vegetated Stormwater Management Swales will be required at intervals between developments for site drainage. Swales will be provided at boundaries perpendicular to the internal road network where hydraulic capacity requires.

It is anticipated that the dealerships will establish landscape frontages to define the internal streets. Due to the scale of the proposed architecture, landscape treatments are proposed to be bold to complement the scale of the BNE Auto Mall precinct.

A consistent and simple palette of material will be used to convey a strong sense of unity and cohesion throughout the development for each lot with planting design and species choice to maximise shade and tree cover. High quality materials will be used to ensure minimal and appropriate maintenance requirements and avoid material failures.

2.5.3 Occupational Health and Safety

Occupational health and safety requirements within and adjacent to the Project site will be in accordance with relevant BAC, Commonwealth Federal Government Agency Requirements and all applicable statutory requirements including the *Work Health and Safety Act 2011* (Cth), *Work Health and Safety Act 2011* (Qld), *Work Health and Safety Regulation 2011* (Qld) and the National and State Codes of Practice.

2.5.4 Equity of Access

All proposed buildings will be designed and constructed to meet the requirements of the *Disability Discrimination Act 1992*. Provisions for mobility-impaired people within the building will comply with the applicable codes, including the Disability (Access to Premises – Buildings) Standards of the Building Code of Australia (BCA).

2.5.5 Energy Efficiency Considerations

All buildings will be designed having have regard to the mandatory performance requirements deemed to satisfy provisions of the BCA. During the design process, BAC and future tenants will investigate means of adopting energy efficiency techniques in the building design.

2.5.6 Fire Protection and Safety

The proposal will ensure buildings will be designed to meet minimum fire flow standard and incorporate fire protection systems to be compliant with the latest Australian Standards and regulations, relative to the class of building constructed.

2.5.7 Security

Developments within the BNE Auto Mall will provide a safe and secure environment for visitors, customers and employees. The detailed security measures will be confirmed during the detailed design phase; however, are likely to be consistent with the principles for car parks contained in the *Crime Prevention Through Environmental Design: Guidelines for Queensland* (Queensland Government, 2007).

For security or site delineation, bollards may be used. It is noted bolt down bollards are not permitted unless prior approval has been provided by BAC.

2.6 Civil Infrastructure

The Project will provide appropriate civil infrastructure to support the anticipated number of employees and visitors at the precinct. The following section provides a detailed description of the supported infrastructure that will form part of the Project.

2.6.1 Internal Roads

The internal road network planned for the BNE Auto Mall will connect to the external road network via Nancy Bird Way and Airport Drive. The typical internal road reserve width will be 20 m, with the indicative internal road reserve configuration shown in Figure 3.

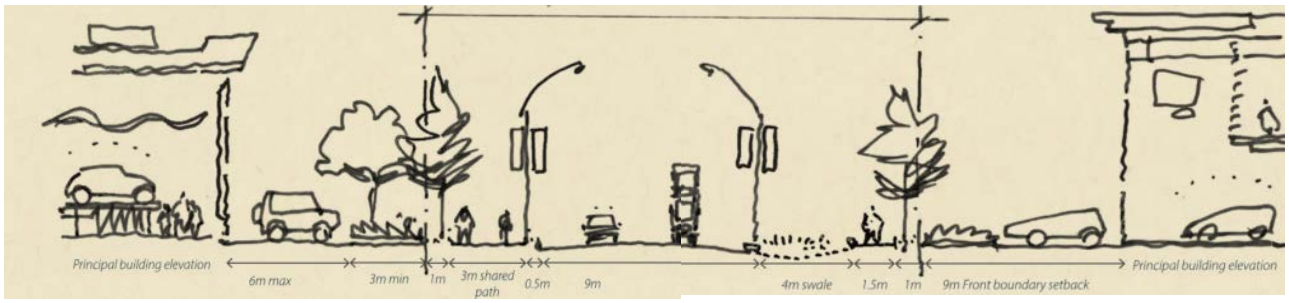


Figure 3 Typical internal road reserve configuration

The internal road network will accommodate two-way traffic, service corridors and landscaping to define a strong street address. Figure 4 illustrates a typical cross-intersection of the internal road network.

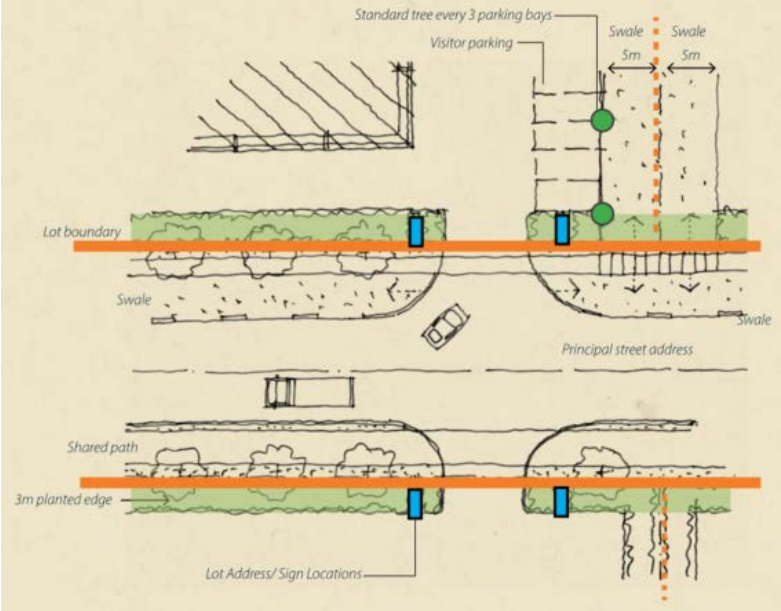


Figure 4 Aerial typical cross-intersection to define a strong street address

2.6.2 Parking

Parking areas are to be provided within the tenancies of the BNE Auto Mall and will be designed to create a comfortable space for staff, visitors and customers. On-street parking will not be accommodated for on the internal road network.

To ensure that the requirement for formal car parking does not drive the design outcome, an approach has been adopted that relates car parking provision to the overall lot area that will accommodate automotive dealerships and the brand experience centres. From observation of auto showrooms within the wider Brisbane are, traditional car showrooms occupy approximately 20% of the overall lot area – the lot area is approximately 5 times the gross floor area (GFA).

Brisbane City Council's (BCC) Planning Scheme 6.31 Part 6 Car parking space standards (2014) has been used as a baseline guide to determine the number of parking spaces required for the Auto Mall development. The Council rates used for reference are 3 spaces per 100 m^2 for GFA. Using the conversion of lot area generally being 5 times the GFA for auto showrooms, the equivalent number of car parking spaces would be 0.6 spaces per 100 m^2 lot area.

However, given there is no on-street parking available at the BNE Auto Mall, a conservative minimum rate of 0.75 car parking spaces per 100 m^2 of lot area is recommended for each lot. The spaces subject to this ratio will accommodate parking for visitors and staff only. Spaces used for operations (i.e. display areas, servicing, repairing, detailing, reconditioning etc.), will be considered separately, but will not encroach on or compromise the spaces that have been dedicated for visitors and staff.

The car parking rates apply to the provision of spaces for visitors and employees only, areas for the storage and showing of vehicles are related to the design and layout of the dealerships and not subject to development requirements.

The level of parking derived from the rates indicates the level of car parking required for the BNE Auto Mall to function. Additionally, the opportunity exists to offset 'within precinct' parking by using space at other tenancies and connecting to the BNE Auto Mall via other modes (pedestrian pathways).

Parking for each tenancy will be positioned at the front of the site, and/or along the side boundary. The parking areas will provide consistent landscaped areas throughout the permeable surface area to convey a strong sense of unity throughout the development. One passively irrigated shade tree will be provided every three parking spaces.

Parking spaces for persons with a disability (PWD) will be provided at a rate of one space per 50 standard parking spaces, with a minimum of one space a requirement. PWD parking spaces will be provided as close as practical to the main entrance of the buildings.

While on-site parking will be provided within the BNE Auto Mall, there are large parking facilities in close proximity to the Project site that will be able to accommodate for overflow parking such as Central Parking Area (CPA), Banksia Place Precinct and the International Terminal Building. Additionally, parking will also be provided at other temporary locations within the Project site (i.e. vacant lots), as illustrated in Figure 12. These temporary locations will be used infrequently to assist with managing parking demand for events. However, should the vacant lots require additional use, mitigation measures such as a chip seal or an equivalent temporary cover to address potential environmental issues (eg air quality and erosion and sediment issues) can be implemented. Further, on-going monitoring of the ground condition for the vacant lots will be undertaken to ensure there are no adverse impacts on the amenity of the BNE Auto Mall.

2.6.3 Pedestrian Network

The BNE Auto Mall will provide a pedestrian network the promotes equitable, efficient and safe movement of persons, including persons with a disability, and contributes to pedestrian friendly streets and accessible places where people can meet. The typical internal road reserve configuration will consist of a 1.5 m pedestrian pathway on one side and a 3 m shared pathway on the opposite side, as illustrated in Figure 3. The pathways that will be clearly separated from parking and vehicle manoeuvring areas to provide safe pedestrian movement through the development that connects with the external pathways.

The pedestrian pathways will provide direct access to buildings and will not be obstructed by solid walls, fencing or landscaping.

2.6.4 Public and Active Transport

While the most prominent mode of transport to access the BNE Auto Mall is predicted to be private vehicles, the Project will incorporate design features to promote public and active transport to and from the site. Figure 12 illustrates the existing and proposed public and active transport network for the BNE Auto Mall. The BNE Auto Mall will improve connectivity to the external public and active transport network via the implementation of high quality non-car based travel infrastructure.

The nearest public transport stop available is the Airtrain Station at the Brisbane International Terminal, located approximately 500 m from the BNE Auto Mall. The service operates every 15 minutes in peak hours and every 30 minutes during the off peak. There is currently a bikeway route and pedestrian pathway that connects the Project site and the Airtrain Station.

Currently, there are no public bus services that serve the Project site, however, the closest bus is route 590, which serves the Skygate precinct. An internal bus service to the BNE Auto Mall can be provided by BAC, which involves re-configuration of existing BAC service routes (or new route/s) between Brisbane Airport Terminals (International and Domestic), surrounding tenancies and the BNE Auto Mall. The nearest bus stops to the Project site are located at the Brisbane International Terminal, 200 m north-east between Banksia Place and Nancy Bird Way and the Central Parking Area. There are bikeway routes and pedestrian pathways that connect the existing bus stops and the Project site.

Active transport provision within Brisbane Airport includes shared bicycle and pedestrian pathways. Currently, a high standard of off-road active transport access is provided to the Skygate precinct from the Kedron Brook Bikeway. In addition, there are cycle lanes and paved shoulders along Qantas Drive and Airport Drive (east of the International Terminal) and across to Nancy Bird Way, which provide for active transport access to the Project site. There is also an opportunity for the BNE Auto Mall to provide a future connection with these existing active transport options, delivering a continuous off-road shared path from the Kedron Brook Bikeway to the Brisbane International Terminal, via both Skygate and the BNE Auto Mall.

It is important to note that given the Project site is located 2 km from the nearest residential areas, pedestrian access will predominantly be to and from the Airtrain Station and surrounding bus stops.

2.6.5 Servicing

The Project will be serviced on-street by an Articulated Vehicle (AV), as per the provisions of the *Transport, Access, Parking and Servicing* (TAPS) *Planning Scheme Policy* (PSP). The internal roads and intersections will be designed to accommodate a heavy rigid vehicle (HRV) and an internal road width to accommodate loading bays on road that still provide adequate room for passing vehicles at designated areas. There will be time of day restrictions in place for service vehicle access to ensure no servicing occurs during weekday peak hours (5am to 10am and 3pm to 6pm) and weekend peak hours (depending on hours of performance track operations).

2.7 Project Development Stages

The Project will be developed in stages to appropriately manage development activity. The indicative timing of the Project may be influenced by commercial demand, which may warrant works to be brought forward or pushed back. However, all works will be managed to minimise construction impacts on the operations of the dealerships that form part of the initial stages.

The BNE Auto Mall is scheduled to officially open late 2021 following the completion of the performance track, and completion of the roads and services and certain buildings that form part of Stage 1 (Stage 1 is divided into 1a – lots, and 1b - performance track). The stages for the Project are illustrated in Figure 5 and a description of the works involved in each stage and the timing is provided in Table 4.

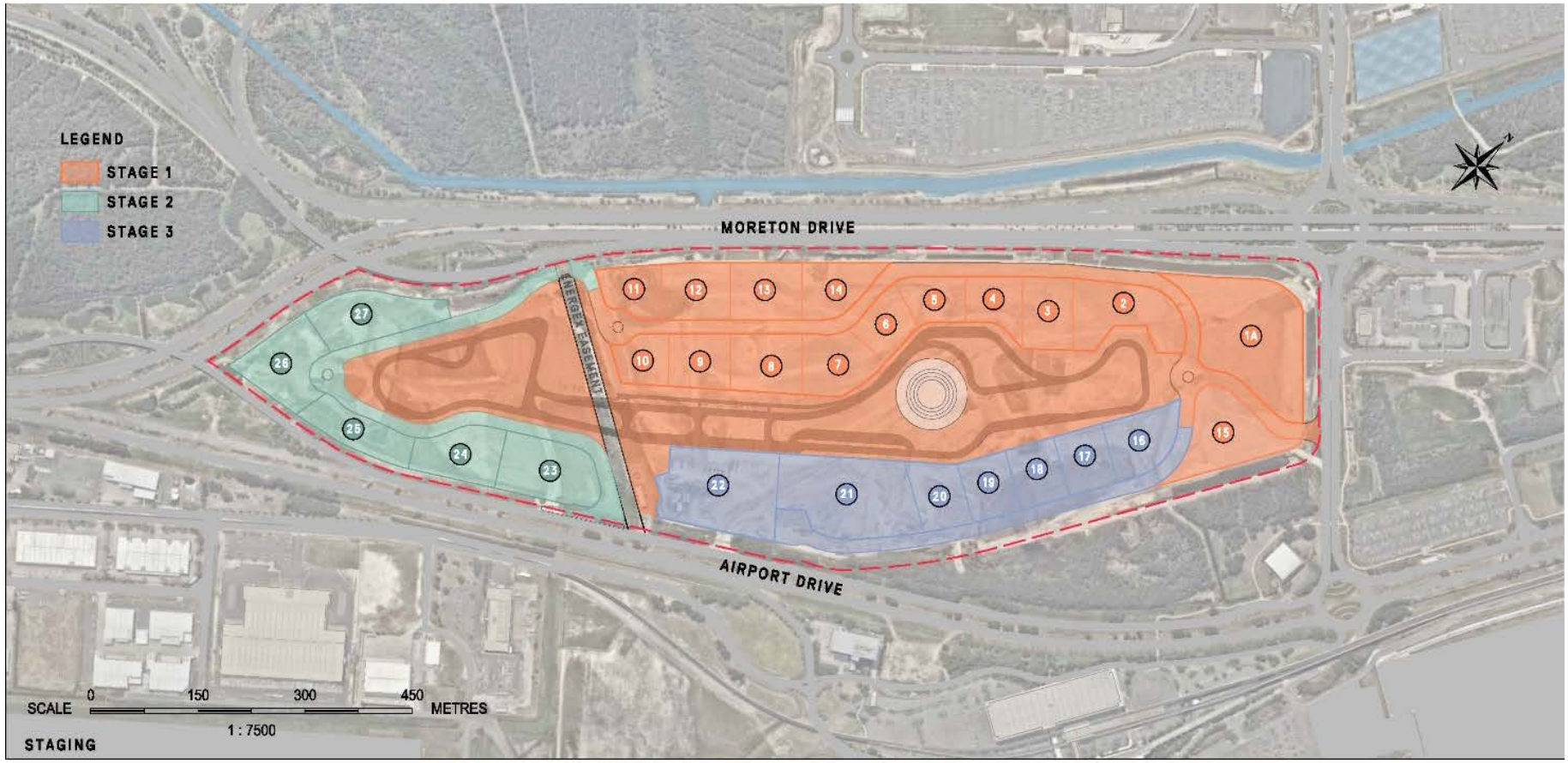


Figure 5 BNE Auto Mall Staging Plan

Table 4 Anticipated Project stages

Stage	Description	Estimated timing
Site preparatory works	Endorsed under the EAR and discussed further in Section 2.8.	Underway Completion: late 2020
Stage 1a	Development of Lots 1 to 15 (initial dealerships and brand experience centres). Stage 1a will also include associated internal roads and services required for the Lots to operate. A permanent connection to the external road network off Nancy Bird Way will also be constructed.	Start: Early 2020 Completion: • Roads & services: late 2020 • Buildings: 2021/ 2022
Stage 1b	Performance track (including skid pan, kick plate, 4WD track etc) and track operation centre, including associated services required for the performance track to operate.	Start: Q2 2020 Completion: Mid-2021
Stage 2	Development of Lots 23 to 27 as grassed or stabilised and fully serviced with appropriate infrastructure (stormwater etc) to allow for potential future development.	Start: Q2 2020 Completion: • Roads & services: Q2 2021
Stage 3	Development of Lots 16 to 20 (additional dealerships), including associated internal roads and services required for the Lots to operate. Roads and services for Stage 2 will connect with Stages 1a and 1b and provide a second permanent connection to the external road network off Airport Drive. Lots 21 and 22 will be developed during Stage 3 as grassed or stabilized and fully serviced with appropriate infrastructure (stormwater etc) to allow for potential future development.	Start: Late 2020 Completion: • Roads & services: Q4 2021 • Dealership buildings: 2023

2.8 Consistency with the Environmental Assessment Report

BAC prepared and submitted an Environmental Assessment Report (EAR), which was endorsed by the Department to identify potential environmental issues and impacts associated with Phase 1 of the BNE Auto Mall (refer Appendix D for a copy of the EAR).

Site preparatory works included in Phase 1 of the Project are detailed below and have already been endorsed under the EAR and are currently underway. Phase 2, which is subject of this Draft MDP, is also outlined below.

Phase 1: Site preparatory works (endorsed under the EAR), including:

- Site clearing and partial grubbing
- Bulk earthworks, including the importation of fill, sorting, crushing and stockpiling
- Surcharging for roads, performance track and building areas

Phase 2: Construction and operation of the BNE Auto Mall (subject of this Draft MDP), including:

- Performance track, skid pan, 4WD testing circuit and associated manoeuvring areas
- Dealerships and brand experience centres

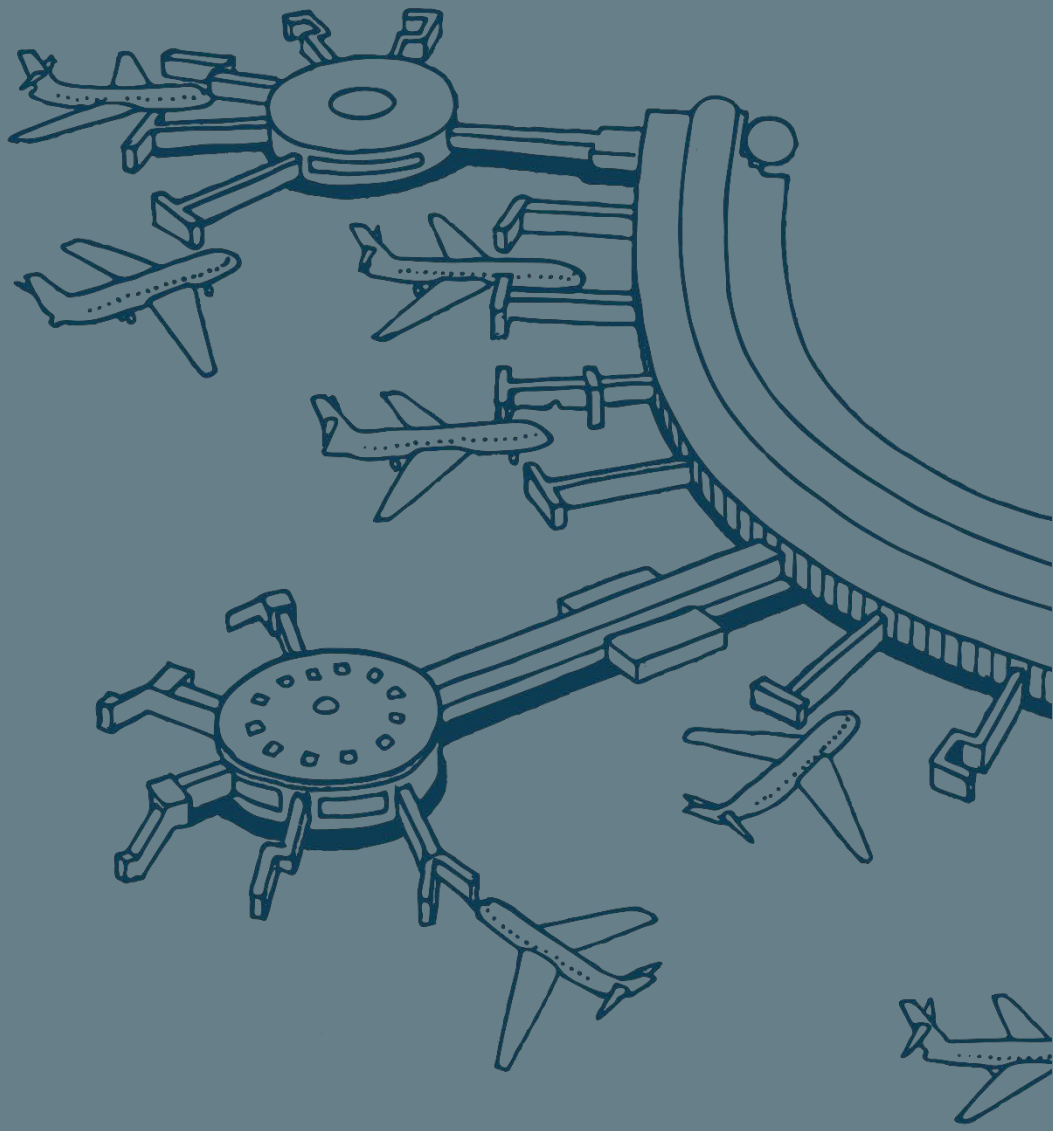
- Drainage works (e.g. development of perimeter drain)
- Acid sulfate soil treatment as per the Acid Sulfate Soil Management Plan; and
- Ongoing monitoring of groundwater and surface waters (including PFAS), and regular dust, noise and vibration monitoring.
- Fully serviced and landscaped roadways providing access and connections to Airport Drive and Nancy Bird Way
- Associated services and infrastructure; and
- Ongoing monitoring during construction and operation, which will include groundwater and surface waters (including PFAS), and acid sulfate soil management.

These preparatory works commenced in September 2017 and involve a rolling program of the three stages. Stages 1 and 2 will be filled and surcharged from imported fill while Stage 3 will re-use the surcharge material from Stage 1. Generally, consolidation times are approximately 12 months, although some areas of Stage 3 will require over 12 months of consolidation.

These preparatory works are being conducted under a CEMP to ensure the implementation of mitigation measures to minimise identified impacts. The current condition of the site (as at 3 November 2018) is illustrated below in Figure 6.

Figure 6 Site condition as of 3 November 2018

The site has been cleared and upon completion of these preparatory works, the improved site will be filled to suitable levels and will coincide with the commencement of construction for the BNE Auto Mall infrastructure outlined in Section 2.6. As such, this Draft MDP considers baseline conditions to be a cleared and filled site that has been raised to 3.4 – 4.2 m Aerodrome Datum (AD), with a drainage channel installed around the perimeter of the site and appropriate erosion and sediment controls in place.



3

LEGISLATIVE CONTEXT

3. Legislative Context

The Project is located on Commonwealth owned land at Brisbane Airport and governed by Commonwealth legislation, primarily the Airports Act and the Airports (Environment Protection) Regulations 1997 (AEPR). Development on airport land is to be assessed in accordance with the relevant Commonwealth legislation. However, if Commonwealth legislation is silent about an aspect of the development, BAC representatives and/or the Airport Environment Officer (AEO) may choose to observe the requirements of relevant State legislation.

The following sections provide an overview of relevant legislation and policy for the BNE Auto Mall. As BAC holds a long-term lease over the Brisbane Airport from the Commonwealth Government all building and development activities are regulated by Commonwealth legislation consisting of, but not limited to:

- *Airports Act 1996 (Cth);*
- *Airports Regulations 1997 (Cth);*
- *Airports (Building Control) Regulations 1996 (Cth);*
- *Airports (Environment Protection) Regulations 1997 (Cth);*
- *Airports (Control of On-Airport Activities) Regulations 1997 (Cth);*
- *Airport (Protection of Airspace) Regulations 1996 (Cth);*
- *Environment Protection and Biodiversity Conservation Act 1999 (Cth);*
- *Workplace Health and Safety Act 2011 (Qld);*
- *Aviation Transport Security Act 2004 and regulations (Cth);* and
- *Civil Aviation Safety Authority Manual of Standards – Part 139 Aerodromes (Cth).*

3.1 Consistency with Commonwealth Legislation

3.1.1 Airports Act 1996

3.1.1.1 Background

The Airports Act regulates all Commonwealth owned airports within Australia. The Act specifies that there must be an Airport Master Plan and an Airport Environmental Strategy for all privately leased Commonwealth owned airports within Australia. The Airports Act and associated regulations set out an Australian Government regime for land use planning and the regulation of building activities at airports. In particular:

- Section 70(2) states that a final master plan for an airport is to:
    a. Establish the strategic direction for efficient and economic development at the airport over the planning period of the plan
    b. Provide for the development of additional uses of the airport site
    c. Indicate to the public the intended uses of the airport site
    d. Reduce potential conflicts between uses of the airport site, and to ensure that uses of the airport site are compatible with the areas surrounding the airport
    e. Ensure that all operations at the airport are undertaken in accordance with relevant environmental legislation and standards
    f. Establish a framework for assessing compliance at the airport with relevant environmental legislation and standards

g. Promote the continual improvement of environmental management at the airport

- The Airports Act requires an MDP for each major development at a regulated airport. Section 89 of the Airports Act prescribes those activities that are included as a 'major airport development';
- Section 91 specifies the contents of a MDP;
- Section 112 specifically excludes State laws from applying in relation to land use planning and the regulation of building activities at airports;
- Section 132 of the Airports Act provides that the regulations (e.g. the AEPR) may make standards and impose requirements that are to be complied with in relation to, or in relation to the prevention or minimisation of:

  a. Environmental pollution (including air, water or soil pollution) generated at airport sites; or

  b. Impacts on biota or habitat; or

  c. Interference with sites of heritage value; or

  d. Interference with sites of significance to Aboriginal or Torres Strait Islander people; or

  e. The emission of noise generated at airport sites (other than noise generated by aircraft in flight); or

  f. The disposal or storage of waste at airport sites.

- The Airports Act also provides for the monitoring, and remedying breaches of, environmental standards at airports; and
- Section 182 provides for the protection of airspace around airports and states that activities that result in intrusions into prescribed airspace are called 'controlled activities', which require approval.

3.1.1.2 Relevance to the Project

3.1.1.2.1 Section 70(2) – Master planning

BAC prepares a Master Plan every five (5) years in accordance with the requirements of the Airports Act. The applicability of the BAC Master Plan to the Project is discussed in Section 3.4 below, while the Project's compliance with the Airport Environment Strategy is discussed in Section 3.4.2.

3.1.1.2.2 Section 89 – Need for an MDP

Section 89 of the Act prescribes those activities that are included as a major airport development. The Project outlined in this MDP is defined as a 'major development' by virtue of Section 89(1):

> *"e) constructing a new building, where:*
>
> *(i) the building is not wholly or principally for use as a passenger terminal; and*
>
> *(ii) the cost of construction exceeds $20 million or such higher amount as is prescribed;"*

The Project triggers the requirement for a MDP as construction costs exceed $20 million. For this project, the construction costs are anticipated to be in the order of $85 million.

3.1.1.2.3 Section 90 – Approvals

Major airport developments must not be carried out except in accordance with an approved MDP. This draft MDP has been prepared to meet the requirements of the Airports Act as outlined above, in particular the requirements as listed in Section 91.

The key steps in the approval process for an MDP are presented in Figure 7. An important implication of this process is the requirement that the MDP be made available for public comment for 60 business days.

3.1.1.2.4 Section 91 – Contents of major development plan

An MDP checklist is provided in Appendix A to demonstrate the Project's compliance with Section 91 of the Airports Act.

It is noted item 1(b) in Section 91 requires *"assessment of the extent to which the future needs of civil aviation users of the airport, and other users of the airport, will be met by the development."* The Project site is not suitable for civil aviation purposes as it is bounded by two major roads, Moreton Drive and Airport Drive and is not connected to any airside operations, such as runways, taxiways, hangars or terminal buildings. Under the Master Plan, the Project site is not intended for civil aviation purposes (refer Section 3.4) and therefore further assessment of the extent to which the Project addresses the future needs of civil aviation users is not required.

The key steps in the approved process for an MDP is presented in Figure 7. An MDP checklist is provided in Appendix A to demonstrate the compliance this proposed development with Section 91 of the *Airports Act 1996*.

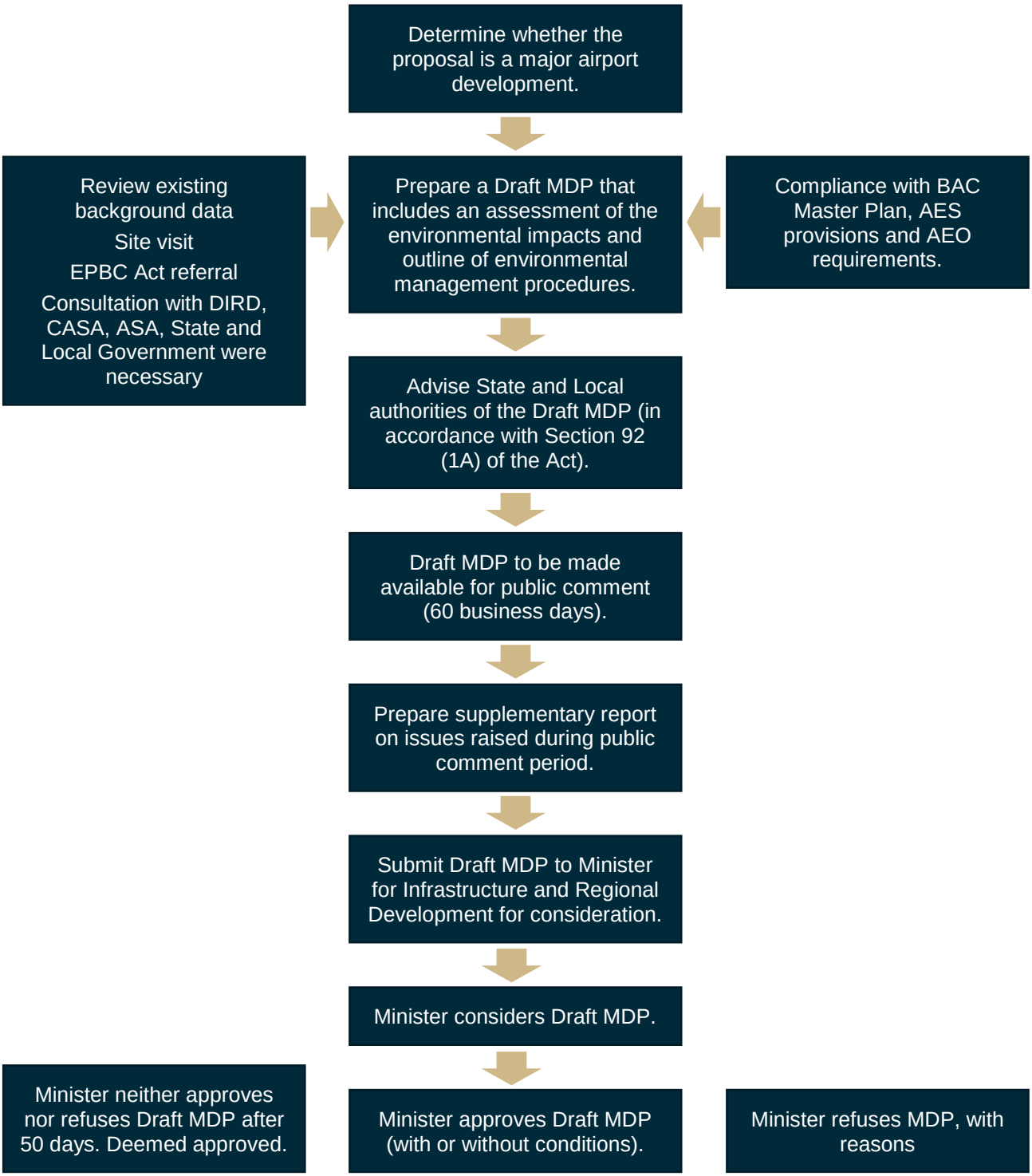


Figure 7 MDP Approval Process

Note: The MDP approval protocols subject to provisions contained under the Commonwealth *Airports Act 1996*. The Minister is responsible for deciding whether to grant approval or refuse the MDP.

3.1.2 Environmental Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) is the Australian Government's central piece of environmental legislation. It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places – defined in the Act as matters of national environmental significance (MNES). There are nine MNES currently protected under the EPBC Act, these are:

- World Heritage properties;
- National Heritage properties;
- Wetlands of international importance;
- Nationally threatened species and communities;
- Migratory species;
- Commonwealth marine areas;
- The Great Barrier Reef Marine Park
- Nuclear actions; and
- A water resource, in relation to coal seam gas development and large coal mining development.

The EPBC Act also protects the environment where actions are on or will affect Commonwealth land and regulates those actions of Commonwealth departments and agencies that may have a significant impact on the environment. As Brisbane Airport is located on Commonwealth land it is subject to the provisions of the EPBC Act.

Under the EPBC Act, if an action will have or is likely to have a significant impact on MNES or is deemed to require approval under Section 26 or 28 of the EPBC Act by nature of a potential significant impact on Commonwealth land or by a Commonwealth agency, a referral should be made to the Minister for the Environment and Energy. The Minister would decide if the impacts are significant and whether an approval is required. The Minister's response to the referral would determine the level and nature of environmental assessment required for final approval by the Minister.

Based on the assessment detailed in Section 6.2, the proposed development, including construction and operation, is not likely to result in a significant impact on a MNES or the environment. No referral under the EPBC Act is therefore required.

3.2 Pre-existing Airport Land

When BAC became the airport-lessee company for Brisbane Airport in July 1997, it assumed certain pre-existing lessor obligations under various leases. BAC also became the head-lessee under the airport lease subject to a number of other interests in the airport land (such as easements). Some of those contractual and other rights remain in existence. Others have expired.

BNE Auto Mall is impacted by the Energex Lease EGXA on SP232747 for 110 kV cables and a permit for 33 kV cable installations, which traverse the south-western end of the development area, running between Moreton Drive and Airport Drive. There are no other contractual obligations affecting the site.

3.3 Consistency with Airport Lease

An essential requirement of the lease is that the lessee must comply with all legislation relating to the airport site. In particular, Section 91 (1A) of the *Airport Act 1996* states that all major development is to be consistent with the airport lease.

As such, Table 5 provides an assessment of the BNE Auto Mall against the relevant clauses within the airport lease.

Table 5 Assessment against airport lease

Clause	Description	MDP Alignment
6	BAC is to maintain the environment of the airport site in accordance with legislative requirements and meeting the commitments set out in the Airport Environment Strategy.	The BNE Auto Mall has been designed in accordance with the Airport Environment Strategy, with the overall goals for sustainability, energy management, air quality and emissions, water management and noise managed effectively as part of the detailed design of the project. Further discussion is provided in Section 3.4.2. Additionally, the BNE Auto Mall has been designed in accordance with legislative requirements, including the EPBC Act, as demonstrated in Sections 3.1.2 and 6.
12.1	BAC is to develop the site throughout the term of the lease having regard to: (a) the actual and anticipated growth in, and pattern of, traffic for the airport site; (b) the quality standards reasonably expected of such an airport in Australia; and (c) Good Business Practice	The BNE Auto Mall has been designed to ensure consistency with BAC's Ground Transport Plan and will be integrated within the existing transport network as detailed in Section 3.4.1. Further assessment of the ground transport associated with the BNE Auto Mall is provided in Section 5.1. Additionally, the BNE Auto Mall has been designed according to high quality standards that are expected for airport development in Australia. This has been demonstrated through consistency with the State and Local government planning instruments (Section 3.5), the operational assessment (Section 5) and the environmental assessment (Section 6). Furthermore, the BNE Auto Mall Development Plan (Appendix C) has been established to support and deliver integrated development within the Brisbane Airport. The BNE Auto Mall has also been designed to be a world class place for businesses where all tenants will be required to demonstrate with Good Business Practice.

BAC, as the Airport Lessee Company for Brisbane Airport, also has an obligation to ensure all developments on airport land are consistent with the legislation and development to maintain appropriate urban planning and ensure safe and sustainable outcomes. In particular, BAC must confirm that any proposal on airport land is consistent with:

- The final Master Plan for the airport;
- Any approved Major Development Plan for the airport (*Airports Act 1996*, section 89), if applicable;
- The approved Airport Environment Strategy;
- BAC's planning objectives for the airport; and
- Transport Security Plan and Critical Infrastructure Protection Specifications and Guidelines.

The proposed BNE Auto Mall Project contained in this MDP is deemed consistent with the above documents and in particular the Brisbane Airport Master Plan 2014 and its land use intents. Further discussion is provided in Section 3.4.

With BAC's guidance, the development will be constructed in line with the provisions of the *Airports (Building Control) Regulations 1996* and *Airports (Environment Protection) Regulations 1997* in accordance with lease requirements.

3.4 Consistency with the Brisbane Airport Master Plan

The Brisbane Airport 2014 Master Plan provides the planning framework for the development of the site to 2034 and beyond. Approved by the Federal Minister on 13 January 2015, the Master Plan sets out land use zonings that reflect the intended uses within the leased airport site.

The planning context for the Project is provided by the current *2014 Airport Master Plan* (Master Plan), which was approved by the Federal Minister on 13 January 2015. It is noted BAC has commenced planning for the *2020 Master Plan* which will:

- Establish the strategic direction for the airport;
- Set out the airport's future forecasts for airlines and passenger growth;
- Outline development for additional uses of the airport site;
- Set out plans for significant future investment in operations, aviation infrastructure, roads and terminals;
- Provide an update to the Airport Environment Strategy and Ground Transport Plan;
- Demonstrate our commitment to engaging and supporting the community.

Public consultation for the *2020 Master Plan* is currently underway with the final draft to be submitted to the Federal Government for approval in January 2020. As such, the BNE Auto Mall has been assessed against the provisions of the 2014 Master Plan.

The Master Plan provides a 20-year strategic direction for development of Brisbane Airport and the basis for planning of aviation activity, landside development, environmental management and transport access in an integrated way. It also provides Commonwealth, State and local government agencies, potential investors and the community with a statement of the way in which Brisbane Airport intends to grow and develop.

The vision for Brisbane Airport is *"to be world class – a distinctive place that visitors keep coming back to, and to be the best possible partner for airlines and businesses"* by:

- Promoting and evolving Brisbane Airport's role as a major economic engine for Australia;
- Developing Brisbane Airport as a premier gateway airport and a multi-modal transport hub;
- Creating a prosperous airport business community within a sustainable environment; and
- Achieving growth and development by balancing economic benefits and environmental impacts.

An essential element of the Master Plan is the land use strategy, which outlines the intended land use and zoning for on-airport land holdings. The Master Plan establishes five (5) key precincts and nine (9) sub-precincts (refer to Figure 8). The BAC vision for precinct development is to create integrated development clusters that capitalise on airport assets whilst achieving best practice built form, landscape and open space design and increased access and connectivity. In establishing the precincts, and sub-precincts, a high-level emphasis is placed on creating and maintaining clusters of businesses and land use synergies that generate a strong sense of identity and community.

The BNE Auto Mall is wholly located within the Airport Drive West sub-precinct of the Airport Central precinct, as illustrated in Figure 9.

An essential element of the Master Plan is the land use strategy, which outlines the intended land use and zoning for on-airport land holdings. The Master Plan establishes five (5) key precincts and nine (9) sub-precincts (refer Figure 8). The BAC vision for precinct development is to create integrated development clusters that capitalise on airport assets whilst achieving best practice built form, landscape and open space design and increased access and connectivity. In establishing the precincts, and sub-precincts, a high-level emphasis is placed on creating and maintaining clusters of businesses and land use synergies that generate a strong sense of identity and community.

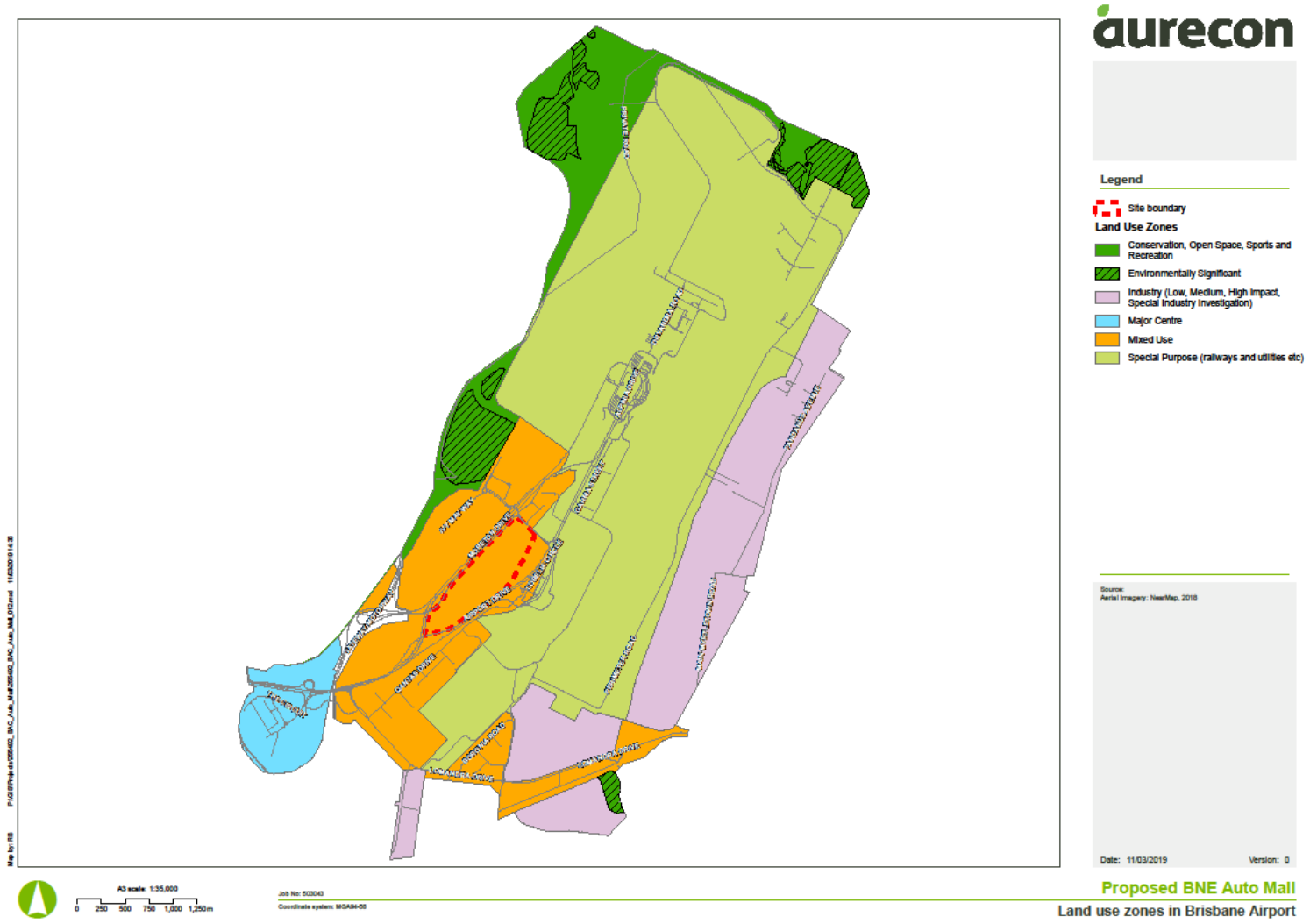


Figure 8 **Land use zones in Brisbane Airport with Project site boundary**

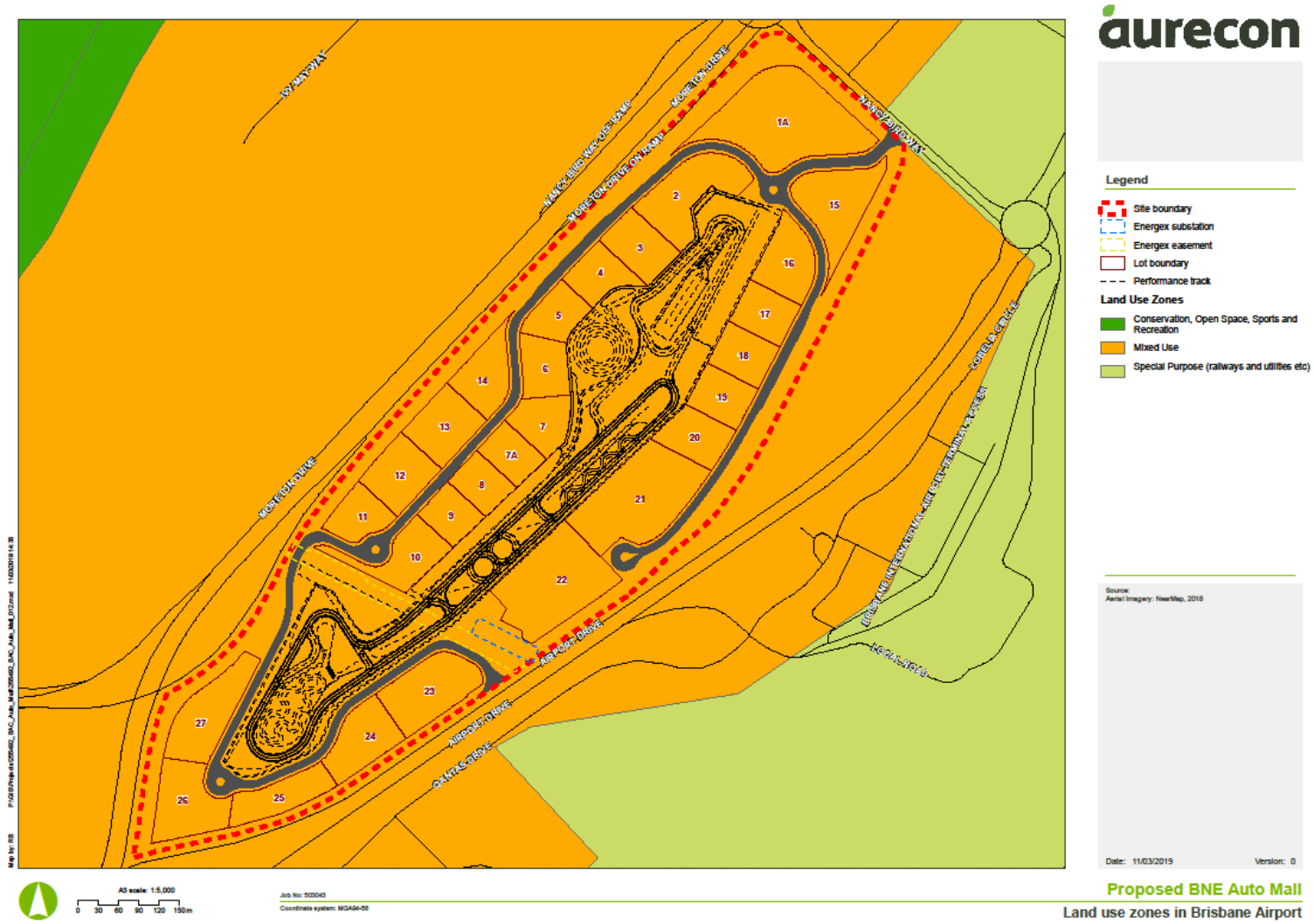


Figure 9 **BNE Auto Mall overlay on land use zones in Brisbane Airport**

The intent for Airport Central precinct is:

- Concentrated activity with high quality urban public realm;
- Energetic precinct for events and 24-hour gateway; and
- Created as the airport spine, it attracts naturally ventilated and quality sub-tropical realm.

BAC outlines a five (5) year property development strategy (refer Figure 10) in the Master Plan for each precinct. The property development strategy for Airport Drive West precinct between 2014 and 2019 focuses on uses such as shops and showrooms which reinforce the land use zoning of Airport Drive West as Mixed Use.

Under the Master Plan, the Mixed-Use zone "*is dedicated to mixed use development clustered into commercial nodes to provide employment opportunities in highly accessible locations*." Within this zoning, on-airport ancillary land uses include retail, commercial, leisure, entertainment, recreation and service industry activities to support the local workforce and contribute to the mixed-use activities.

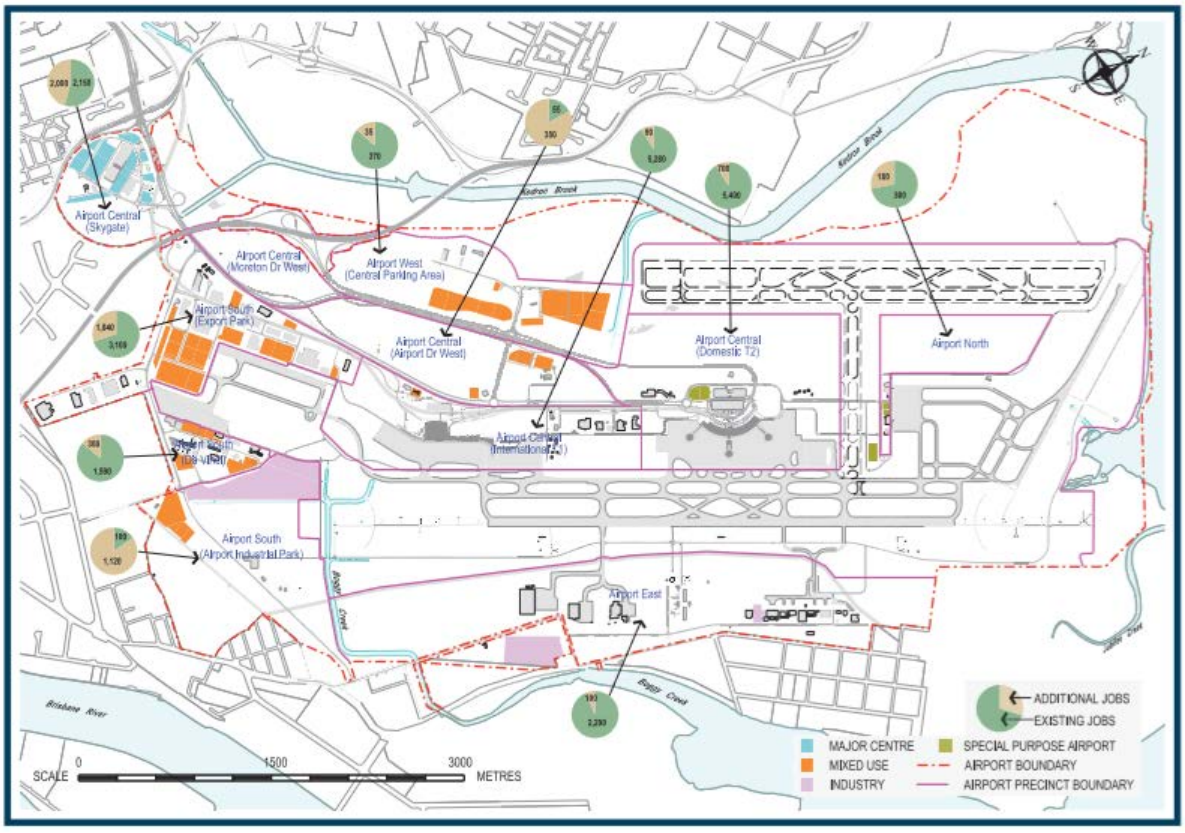


Figure 10 Five-Year Property Development Plan

Table 6.9 in the Master Plan outlines the purpose, outcomes and intended uses for the Mixed Use zone. The following uses are listed as intended uses to be located within the Mixed Use zone:

- Showroom;
- Major sport, recreation and entertainment facility;
- Outdoor sales;
- Shop; and
- Recreation and sport facility.

Table 6 below demonstrates how the Project aligns with the outcomes sought for land within the Mixed Use zone.

Table 6 MDP alignment with outcomes for Mixed Use zone

	Outcome	MDP Alignment
1	Provide for a diverse mix of uses tailored to the role and function of Brisbane Airport and its surrounding area and to enable a level of economic and social activity to serve the intended mix of visitors, workers and residents.	The Project is anticipated to provide for a diverse mix of uses including showrooms, event entertainment facilities, sport, recreation and entertainment facilities, outdoor sales and retail spaces. The Project will bring into productive use land that is currently undeveloped and earmarked for future mixed-use development. The proposed land uses are expected to contribute significantly to the economic development and employment opportunities for the Brisbane Airport. The Project will be tailored to stimulate development activity at the Brisbane Airport and social activity by operating seven days a week. Further, the range of land uses will offer a variety of experiences and opportunities for local, national and international visitors and media.
2	Provide premises to accommodate firms seeking to combine their corporate office and manufacturing and distribution industry functions.	The Project will be designed to function as a premium destination for automotive manufacturers, potential buyers of new and used cars, as well as the public interested in automotive experiences. It is anticipated that corporate offices for the automotive manufacturers will be provided within the dealerships as part of the development, allowing businesses to combine their industry functions.
3	Provide for a mix of industrial activities, commercial enterprises and workshops, facilitated and supported by office activities set in a business park environment.	The Project is anticipated to provide for a mix of land uses with a performance track, dealerships and brand experience centres supported by office activities within the buildings to promote an automotive themed business park environment.
4	Development provides for a wide range of industry and business uses, including clean low impact industry, research and technology facilities, knowledge creation and entrepreneurial activities and service industries that are more compatible with urban areas.	The Project is envisaged to provide a world-class destination for automotive manufacturers and dealers, buyers of new and used cars, as well as the public and motoring enthusiasts interested in a diverse range of exciting automotive experiences. A key component of the development will be multi-purpose performance tracks offering an exciting experience combined with high quality support amenities for manufacturers that will together provide an unrivalled platform to support the promotion of vehicles and their respective brands and deliver exceptional customer experiences.

	Outcome	MDP Alignment
5	Development results in a use that activates the Mixed Use zone at different times of the day and week to create a vital and vibrant environment.	The diverse mix of land uses are to contribute and reinforce the Project site being earmarked as a mixed-use area. Further, the performance track is intended to be fully lit to accommodate night time events with the world class driving academy open to the public all year round except on exclusive corporate event days. With appropriate lighting for night time activities and operating seven days a week, the BNE Auto Mall is expected to activate the currently unused land at different times of the day and week to create a vital and vibrant environment.
6	Ensure a high quality commercial environment with an intensity and form of development that is tailored to the location.	The BNE Auto Mall precinct will be tailored to support the operation of Brisbane Airport by offering a world-class high quality tourist destination.
7	Provide for development that capitalises on proximity to Australia TradeCoast and Brisbane Airport commercial environment.	It is considered that the proposed BNE Auto Mall will offer a high quality commercial environment that supports the intent for the area and reinforces the role of the Brisbane Airport as an activity centre.
8	Development of buildings is of a height, bulk, scale and form tailored to its specific location and to the characteristics of the site.	The buildings will be designed to appropriately integrate with the existing built form of the Brisbane Airport and respond to the sub-tropical climate to promote a high-quality design and finish.
9	Development provides a built form that creates a consistent and cohesive streetscape and aligns with pedestrian connections and shelter.	The BNE Auto Mall is anticipated to provide a built form that creates a consistent and cohesive streetscape that responds to the local context. Pedestrian movement will be supported by a network of pedestrian pathways, to be aligned to the internal road network. Pedestrian pathways will be proposed throughout the BNE Auto Mall to provide for safe pedestrian movement and support pedestrian connections to the existing external network. The pedestrian pathways will be lined with landscaping treatments to enhance the streetscape and walkways, be well lit, clearly defined and visible, be separated from car parking and vehicle manoeuvring areas and provide clear sight lines and surveillance of surroundings.

	Outcome	MDP Alignment
10	Development provides consistent and cohesive landscape and streetscape treatments.	The BNE Auto Mall will include landscaping around the perimeter of the site to provide for consistent and cohesive landscape and streetscape treatments. Developments showcasing vehicles will establish generous landscapes frontages to define the street. A consistent landscape palette will be adopted across the BNE Auto Mall with planting design and species will be selected to maximise shade and tree cover.
11	Development is sensitively designed and operated to avoid or mitigate any potential adverse impact on an adjoining use.	The Project will develop appropriate mitigation measures to ensure that any potential adverse impacts on adjoining or nearby land uses is avoided, mitigated and/or managed. Further discussion is provided in Section 6.6.
12	Enables interim uses within the zone prior to land being needed for development activities.	The Project involves the development of an existing undeveloped parcel of land that is currently earmarked to accommodate future mixed-use development.

The Project is considered to achieve the intent of the Master Plan by:

- Aligning with the purpose of the Mixed Use zone;
- Providing a distinctive place for business and visitors through well planned high quality development;
- Contributing to the diverse mix of uses across the entire Airport Central and supporting the ongoing viability and attractiveness of investment in Brisbane Airport's commercial precincts;
- Providing development to enable a level of economic and social activity in the area surrounding the Brisbane Airport to serve the intended mix of visitors, workers and residents;
- Contributing to the long-term growth of the Queensland and Australian economies;
- Providing additional direct employment opportunities in a highly accessible location;
- Achieving a balance between on-airport built environment and biodiversity values; and
- Achieving an integrated and complementary urban design and built form within this part of the Airport Drive West precinct.

Based on the above assessment, the Project demonstrates compliance with the Master Plan and will advance the land use intent and outcomes for the Mixed Use zone.

3.4.1 Consistency with the Ground Transport Plan

3.4.1.1 Background

The Ground Transport Plan (GTP) forms part of the Master Plan and has been developed to report on the existing and future transport trends at Brisbane Airport. The GTP, identifies transport initiatives and actions to support the economic growth and target opportunities to improve capacity, provide transport choice and encourage sustainable transport modes (public transport and cycling). The GTP specifically focuses on the five-year period between 2014 and 2019, with an updated GTP to be provided as part of the *2020 Master Plan.*

The objectives of the current GTP include:

- Maximise connectivity and accessibility;
- Facilitate safe and secure movement of people and freight;
- Deliver innovative, efficient and continuous airport services;
- Continue agency partnering which builds on an integrated transport connection plan;
- Timely delivery of seamless transport system that provides new and improved capacity;
- Minimise adverse environmental impacts;
- Deliver proactive response to climate change;
- Contribute to regional economic wealth and employment generation;
- Ensure selective, profitable and timely commercial development at Brisbane Airport; and
- Delivers on BAC's vision of world best and preferred choice for passengers, airlines, business and the community.

The GTP recommends ten initiatives to support these objectives and an assessment of the BNE Auto Mall against these initiatives is provided in Section 3.4.1.2.

3.4.1.2 Relevance to the Project

The BNE Auto Mall will be integrated within the existing transport network of the Brisbane Airport. Table 7 demonstrates how the Project aligns with the initiatives of the GTP.

Table 7 MDP alignment with the initiatives of the GTP

	Initiative	MDP Alignment
1	Improve the on-airport road network	A permanent connection to the Project site will be made from Nancy Bird Way in late 2020, with a second permanent connection to the external road network provided off Airport Drive. The existing intersection for the International P2 Multi-Level Car Park (MLCP) on Airport Drive will upgraded as part of the Project (e.g. signalised or roundabout) and is planned to be commissioned in mid to late 2020. The detailed layouts of the access arrangements for Nancy Bird Way and Airport Drive are provided in Figure 13 and Figure 14. These upgrades are considered to align with the GTP initiative to improve the on-airport road network.
2	Improve the off-airport road network	The Project will not include specific improvements to the off-airport road network, however, the impact of the construction and operational Project traffic is anticipated to be within the acceptable range. Further discussion is provided in Section 5.1.

	Initiative	MDP Alignment
3	Improve parking	Car parking areas will be designed to create a welcoming and comfortable space for employees and visitors. The BNE Auto Mall will provide on site car parking which supports the GTP initiative to accommodate visitors and/or employees on the Project site. The adopted car park rates for the BNE Auto Mall are discussed in Section 5.1.2 and in Appendix F. Event parking for special and major events can be accommodated offsite at the Central Parking Area and Banksia Place. Additionally, temporary on site parking is also provided on the vacant lots and is illustrated in Figure 12.
4	Improve the rail network and services	The Airtrain Station service runs every 15 minutes during peak hour and every 30 minutes on weekends, public holidays and during the off peak period of weekdays. BAC anticipates that the level of service will be increased for special and major events that are proposed on weekends and/or public holidays. However, this will be addressed as part of the Event Management Plan and subject to discussions with the regulator (refer Appendix B).
5	Improve taxi, bus, coach and shuttle services	While there are no TransLink bus services near the BNE Auto Mall, there are a number of buses managed by BAC, including the T-Bus, T-Bus Express, AirPark Bus and the S-Bus, service the International Terminal. The T-Bus and T-Bus Express connect the Domestic Terminal, International Terminal and Skygate. The S-Bus is a staff bus that services both international and domestic terminals and connects them to the staff car parking areas. With the development of the BNE Auto Mall, BAC will be responsible for managing the demand of the Brisbane Airport bus service and will increase the frequency, where necessary.
6	Support freight movements through the airport	The impact of the construction and operational traffic of the BNE Auto Mall on the external road network is predicted to be low (refer Section 5.1). As such, the Project will not impact on the efficient and safe freight movements on the external road network through the Brisbane Airport.
7	Improve active transport facilities at the airport and link to the external network	The Project site will include internal pedestrian pathways that provide for the equitable, efficient and safe movement of persons, including persons with a disability. Pedestrian and cyclist access will connect to the external network and public pedestrian areas within the Brisbane Airport. The existing and future bikeway and pedestrian pathways are illustrated in Figure 12. Improvements to active transport facilities will maximise connectivity and accessibility through the Project site, contribute to an integrated transport connection plan for the Brisbane Airport and deliver a proactive response to climate change by encouraging active transport.

	Initiative	MDP Alignment
8	Improve information and signage for travel to, from, and within the airport	The Project site will be integrated within the existing Brisbane Airport network and include information, signage and wayfinding for the BNE Auto Mall as well as individual tenancies. All lots will have an internal road frontage with at least one other frontage to an external road. The frontages to external roads may accommodate building identification signage as well as brand flags to provide way-finding to key destinations within BNE Auto Mall. As such, the Project will improve information and signage for travel to, from and within the Brisbane Airport.
9	Encourage passengers to use alternative modes	Pedestrian access will predominantly be to and from the Airtrain Station and surrounding bus stops given the Project site's distance from residential areas. There are a number of buses managed by BAC that service the International Terminal and connect the Domestic Terminal, International Terminal and Skygate. The BNE Auto Mall will be integrated within the existing transport network of the Brisbane Airport which encourages passengers to use alternative modes of transport as oppose to private vehicle use. The BNE Auto Mall will connect to the Airtrain Station at the Brisbane International Terminal, with services departing the Airtrain Station every 15 minutes during peak hour and every 30 minutes on weekends, public holidays and during the off peak period of weekdays.
10	Encourage employees to use alternative modes	Pedestrian access will predominantly be to and from the Airtrain Station and surrounding bus stops given the Project site's distance from residential areas. The nearest public transport stop available is the Airtrain Station at the Brisbane International Terminal, located approximately 500 m from the BNE Auto Mall. There is currently a bikeway route and pedestrian pathway that connects the Project site and the Airtrain Station. There is also a high standard of off-road active transport access to the Skygate precinct (west of the Project site) from the Kedron Brook Bikeway and cycle lanes and paved shoulders along Qantas Drive, Airport Drive (east of the International Terminal) and across to Nancy Bird Way to provide access to the Project site. Where applicable, BAC will require tenants to provide end-of-trip facilities in accordance with *Queensland Development Code (QDC) Mandatory Part 4.1 - Sustainable Buildings.* By ensuring connectivity to the external active transport network and the provision of end-of-trip facilities, the BNE Auto Mall will encourage employees to use alternative modes of transport as opposite to personal vehicles.

3.4.2 Consistency with Brisbane Airport Environmental Strategy

3.4.2.1 Background

BAC accepts responsibility for ensuring the implementation of environmental management measures proposed to mitigate environmental impacts identified in this MDP during construction and operation. This is to be achieved through the submission of this MDP and requiring a construction environmental management plan (CEMP) to be prepared and implemented by the construction contractor. The CEMP will be endorsed by BAC prior to issue to the AEO.

The AES is the formal blueprint of BAC's commitment to world best practice environmental sustainability. The AES outlines a framework for environmental management at Brisbane Airport and responds to the requirements of the Airports Act and AEPR. The AES now forms part of the Master Plan.

The 2014 AES was prepared in accordance with the Airports Act and AEPR. It covers a wide range of issues including environmentally significant areas (ESAs), sources of environmental impact and environmental management. The environment and sustainability policy is seen as the foundation of the Environmental Management System (EMS) and AES and guides the implementation of both. The policy represents a formal undertaking by BAC to give due consideration to the potential environmental impacts of all aspects of BAC's activities and operations.

The AES covers all environmental matters arising from the operation and expansion at the Brisbane Airport site in accordance with the Airport Legislation. Each of the sections detailed in the AES are in direct response to the specific requirements listed in the Airport Legislation. The AES does not cover noise and air pollution from aircraft movements, which is regulated under separate legislation, the Commonwealth *Air Navigation (Aircraft Engine Emissions) Regulations* and *Air Navigation (Aircraft Noise) Regulations*.

The AES adopts relevant legislation that is applicable to environmental regulation or activities on airport (whether Commonwealth or State) where reasonable and practicable. The AES also identifies areas as ESAs.

3.4.2.2 Relevance to the Project

A contaminated land assessment was conducted for the site prior to the commencement of the land development works (Phase 1). During this assessment, a known contaminated site was detected at the southern end of the development area. Minor concentrations of metals/metalloids were also found above the AEPR. However, it was determined the contamination presented no risk to human health and/or the environment. Should any unexpected contamination be encountered during excavation works, mitigation measures have been identified in Section 6.1 of this MDP. Mitigation measures include engaging a suitably qualified consultant to provide additional management strategies, management of waste spills, appropriate storage and ongoing monitoring.

While the site is identified as having little to no heritage value, it has the potential to contain items or sites that may be unearthed during construction. Section 6.9.3 details mitigation measures to avoid/minimise disturbance of cultural heritage.

The Kingsford Smith Memorial, which contains the Southern Cross aircraft adjoins the development area. The Memorial is significant at a State or Commonwealth level for its historic significance, rarity, aesthetics, technical achievements and associative values. However, it is not currently listed on any statutory heritage register. Consideration has been given to the potential impacts (e.g. dust, vibration) from the Project on the Kingsford Smith Memorial. It is noted, however that building sealing, filter maintenance and other building improvement were undertaken on the Kingsford Smith Memorial prior to the land development works (Phase 1). Dust and vibration monitoring are currently ongoing since the commencement of the land development works (Phase 1) in September 2017.

Furthermore, the Squadron 460 Memorial, located 100m from the site to the east, has some local heritage value, although it is not listed on any statutory heritage register. Mitigation measures have been identified including continuation of dust and vibration mitigation measures during construction and to ensure all staff have completed a site induction. Further discussion relating to the heritage considerations is provided in Section 6.9.

The development area is not identified as being impacted by a vegetation community as the site has previously been cleared. The first phase of preparatory works (including earthworks and clearing) has been conducted in accordance with a construction environmental management plan (CEMP).

The overall goals for sustainability, energy management, air quality and emissions, water management and noise can be managed effectively as part of the detailed design of the project.

In view of the above, the Project is consistent with the 2014 AES and does not affect any areas identified as 'environmentally significant sites.'

BAC accepts responsibility for ensuring the implementation of environmental management measures proposed to mitigate environmental impacts identified in this draft MDP during construction and operation. This is to be achieved through the submission of this draft MDP and requiring a CEMP to be prepared and implemented by the construction contractors. The CEMP will be approved by BAC prior to issue to the AEO.

3.5 Consistency with State and Local Government Planning

Being Commonwealth land, planning requirements for the airport land are administrated under the *Airports Act 1996* and other relevant legislation such as the EPBC Act. As a result, state and local planning development provisions are not applicable to development occurring at the airport.

The Act, does however, require that a MDP must address where possible, the extent (if any) of any inconsistencies with planning schemes in force under a law of a State or Territory in which the airport is located. This requirement is addressed below.

3.5.1 State Planning Policy

In preparing this draft MDP, consideration has been given to the State Planning Policy (SPP) operating in Queensland and effective at the time of publishing this draft MDP. The SPP is a statutory instrument under the *Planning Act 2016* and has the force of law in Queensland (Department of Infrastructure, Local Government and Planning 2017). Adopted in 2017, the SPP provides a consolidated and comprehensive statement on the state government's interest in planning and development.

The SPP has five (5) overall themes and 17 'state interests'. The following state interests from the SPP are considered to have direct relevance to Brisbane Airport and are recognised in the Master Plan:

- Biodiversity;
- Coastal environment;
- Emissions and hazardous activities;
- Natural hazards, risk and resilience; and
- Strategic airport and aviation facilities.

It is also considered that the state interest for development and construction is relevant to this MDP and is consequently addressed below with the other relevant state interests.

3.5.1.1 Biodiversity

The SPP mapping identifies "*regulated vegetation (intersecting a watercourse)*", *"regulated vegetation",* "*Matter of State Environmental Significance (MSES) - High Ecological Significance wetlands*" and *"MSES – Wildlife habitat"* within the MDP development area. However, the area in which the Project is to be located is highly modified with existing and future development proposed as part of the Master Plan.

3.5.1.2 Coastal Environment

Brisbane Airport land is located on the coastline of Moreton Bay and is affected by the coastal environment. The state interest statement for coastal environment is *"is protected and enhanced, while supporting opportunities for coastal-dependent development, compatible urban form, and maintaining appropriate public use of and access to, and along, state coastal land."*

The Master Plan recognises the importance of managing the coastal environment within BAC land holdings and is committed to effective protection of the coastal environment through the 2014 AES. The 2014 AES recognises much of this land as both 'biodiversity zone' and 'environmentally significant area'. Both of these environmental areas are protected accordingly under the 2014 AES. Airport Drive West is well removed from the environmental areas within the coastal environment.

3.5.1.3 Development and Construction

The State interest statement for development and construction is "*planning supports employment needs and economic growth by facilitating a range of residential, commercial, retail and industrial development opportunities, and by supporting a strong development and construction sector*."

This State interest encourages responsible development that supports growth in the construction industry. The proposed BNE Auto Mall is to be located on a site that is earmarked for mixed use development clustered into commercial nodes. The Project is considered to address this state interests as the construction of this project will contribute positively to the construction industry and is in accordance with the land use planning program adopted by BAC.

3.5.1.4 Emissions and Hazardous activities

The State interest statement for emissions and hazardous activities is *"Community health and safety, sensitive land uses and the natural environment are protected from potential adverse impacts of emissions and hazardous activities, while ensuring the long-term viability of industrial development and sport and recreation activities".*

The land use strategy adopted in the Master Plan has been prepared with consideration for location of sensitive land uses in relation to industrial development that may cause emissions. The Airport Drive West precinct is not in proximity to any land earmarked for industrial use. Additionally, BAC adopted management practices and regular monitoring of air and noise quality to manage the effect of noise and air quality impacts on sensitive uses. BAC has a noise impact assessment policy which is used to inform future development of noise impacts associated with road and rail traffic.

3.5.1.5 Natural Hazards, Risk and Resilience

The State interest statement for natural hazards, risk and resilience is *"the risks associated with natural hazards are avoided or mitigated to protect people and property and enhance the community's resilience to natural hazards."*

The intent of this State interest is to minimise impacts of flooding, bushfires, storm tide inundation and coastal erosion. The MDP development area is located within a mapped bushfire hazard area – "High Potential Bushfire Intensity". However, area has previously been cleared of vegetation, thereby removing the risk from bushfires.

The Project site is also located in a high and medium storm tide coastal hazard area, and an erosion prone area. Appropriate mitigation measures will need to be adopted to address erosion and sediment control as described in Section 6.1.3.

The Auto Mall precinct will be protected from major flood events such as storm surge and remote catchment events which occur across the Kedron Brook Flood Plain. Resilience is proposed to be achieved by raising the perimeter Drain bund along the Airport Drive side of the precinct to a level which will achieve immunity from a 1%AEP Storm Surge plus a 10 % Local rain event which can occur external to the precinct.

In addition, the existing major culvert crossings will be installed with permanent tidal gates to prevent backwater from regional flood events and storm surge/tidal events entering the Precinct once developed. The drain and storage basins around the perimeter of the site will capture all flows from the development, once stormwater has passed through various sediment control devices (e.g. vegetated swales, bio pods etc.). As such, through the stormwater management and flood immunity controls, the BNE Auto Mall development will not adversely impact surrounding properties or waterways.

3.5.1.6 Strategic Airport and Aviation Facilities

The State interest statement for strategic airport and aviation facilities is *"planning protects the operation of strategic airports and aviation facilities, and enables the growth and development of Queensland's aviation industry."*

The proposed BNE Auto Mall reinforces Brisbane Airport as an essential element of the state and national transport system and a key contributor to economic development. The Project is located in an area identified by the Master Plan as acceptable for mixed use purposes. Furthermore, the BNE Auto Mall will not adversely impact on the safety, efficiency and operational integrity of the airport and aviation facilities, as described below:

- As 24 hour operations may be required, lighting may be used during construction and operation of the BNE Auto Mall will be designed in accordance with *Civil Aviation Safety Authority's (CASA) Manual of Standards Part 139 – Aerodromes (Lighting in the Vicinity of Aerodromes);*
- During construction, appropriate mitigation measures will be put in place to ensure emissions do not impact on air turbulence, visibility or compromise the operation of aircraft engines (refer Section 6.4.3);
- Project activities will not interfere with the function of aviation facilities;
- The Project site is not located within Brisbane Airport's public safety area; and
- Project activities will include sensitive land use/s (e.g. office space within the dealerships and brand experience centres) and as such, appropriate mitigation measures will be implemented to minimise impacts to surrounding land uses (refer Section 6.5.3).

3.5.2 Brisbane City Plan 2014

Brisbane Airport is located within the "Special Purpose (Airport) Zone" under Brisbane City Plan 2014 (City Plan). Council's Strategic Plan within the City Plan acknowledges the airport as being a major industrial location (as part of the broader Australia TradeCoast) which is a key centre in the city and provides major air access from the city for passengers and freight.

The purpose of the Special Purpose Zone in City Plan is to:

(a) provide for public facilities and infrastructure that are publicly or privately owned or operated; and

(b) ensure that incompatible uses do not encroach on the public facilities and infrastructure.

Overall outcomes of the Airport Zone Precinct of the Special Purpose Zone are:

(a) Development provides areas for:

(i) housing, servicing, maintenance and repair of aircraft;

(ii) landing and departure of aircraft;

(iii) assembly and dispersal of passengers and goods on or from aircraft;

(iv) ancillary activities serving the needs of workers, passengers and visitors to an airport, such as shopping, food and drink outlets and tourism services;

(b) associated training, education and aviation facilities.

3.5.2.1 Background

The *Brisbane City Plan 2014* (City Plan) is the local planning scheme that guides how land is used and developed in Brisbane. It also assists in planning for infrastructure growth and sets out provisions for development assessment. In accordance with Section 91 of the Airports Act, a MDP must address:

(a) the extent (if any) of consistency with planning schemes in force under a law of the State in which the airport is located; and

(b) if the major development plan is not consistent with those planning schemes—the justification for the inconsistencies.

The City Plan is made up of a Strategic Framework, zones, neighbourhood plans, overlays and development codes. Under the City Plan, the Project site is located within the Special Purpose (Airport) Zone and the Airport precinct of the Australia TradeCoast Neighbourhood Plan.

3.5.2.2 Relevance to the Project

The Strategic Framework for the City Plan identifies Brisbane Airport as being a key location for economic activity and provides key access points supporting the city's economy (*Theme 1 – Brisbane's globally competitive economy*) as well as a major industrial location (as part of the broader Australia TradeCoast) which is a key centre in the city and provides major air access from the city for passengers and freight (*Theme 5 – Brisbane's CityShape*).

The Project provides for a diverse mix of uses tailored to the role and function of Brisbane Airport and its surrounding area and will enable a level of economic and social activity to serve the intended mix of visitors, workers and residents. The mix of commercial uses proposed for the BNE Auto Mall reinforces Brisbane Airport's role as a key centre.

In addition, the Project will not detract or interfere with the Airport's key function as a gateway for people and freight to and from Queensland.

Therefore, the BNE Auto Mall aligns with the specific outcomes for the Brisbane Airport that form part of the Strategic Framework.

Further, Table 8 provides an assessment of the BNE Auto Mall against the overall outcomes of the Special Purpose (Airport) Zone Code.

Table 8 MDP alignment with outcomes for Mixed Use zone

Overall outcome	Compliance
Development location and uses overall outcomes are:	
Development provides for the continued use of land for a special purpose identified in the relevant zone precinct, together with anticipated, compatible and necessary complementary uses.	The BNE Auto Mall provides for land uses in accordance with the Airport Zone Precinct where the Project promotes tourism services in Brisbane and the wider South-East Queensland Region. The BNE Auto Mall is proposed to co-exist with the Brisbane Airport and provide activities for the visiting public as well as on-site users. The BNE Auto Mall proposes compatible and complementary land uses to the Brisbane Airport, with a number of examples provided in Section 2.2 where airports and motorsport complexes are successfully co-located. As such, the BNE Auto Mall complies with the overall outcome.
Development provides for special uses and works that are owned or operated by federal, State, local government or public-sector entity and may include defence establishments, airports, seaports, rail lines, rail stations, intermodal stations, major road infrastructure, major public transport infrastructure or the provision of water supply, sewerage, electricity, gas, telecommunications, transport, drainage or other like services.	This overall outcome conflicts with the intended use for the Project site under the Master Plan. While the BNE Auto Mall does not provide for special uses and/or works, the Project consists of proposed uses that are consistent with the intended outcomes of the Airport Drive West Sub-Precinct under the Master Plan.
Development contributes to the specific mix or type of uses envisaged in the zone precinct in an integrated and co-located manner to maximise site multifunctionality, efficient use of land and physical and social infrastructure, particularly where the proposed special purpose is not intended or cannot be easily accommodated in other centre zones at the scale or concentration required for optimal functioning.	The Project site is an optimal location for the BNE Auto Mall as the Project requires a substantial amount of vacant land in commercial and/or industrial areas, away from residential suburbs. As such, there is limited land suitable to accommodate the BNE Auto Mall in Brisbane which is easily accessible from the CBD. The Project includes the construction of appropriate infrastructure and services to support the BNE Auto Mall and that will connect to the existing external network. Further, the Project site has been earmarked for future mixed-use development. Currently, the site is unused and therefore the BNE Auto Mall will provide for the efficient use of the land in accordance with the Master Plan. As such, the Project complies with the overall outcome.

Overall outcome	Compliance
Development enables the re-use of land in the Special purpose zone to occur in an integrated manner should a special purpose cease.	The Project site is currently undeveloped and unused and has been earmarked for future mixed-use development. The Project will provide for infrastructure and services that connect to the existing external network and land uses complimentary to the existing businesses in the area. As such, the Project complies with the overall outcome.
Development that may limit the ongoing operation and expansion of existing uses or prejudice establishment of new uses appropriate to the specific nature of the relevant zone precinct is not accommodated.	The BNE Auto Mall will promote development activity and will not limit the ongoing operation and expansion of existing uses. In addition, the Project encourages the establishment of new uses appropriate to the Project site's close proximity to Brisbane Airport. Therefore, the Project complies with the overall outcome.
Development for a use not anticipated in the relevant zone precinct may be accommodated where it is demonstrated that the proposal is safe, well designed, integrated with the surrounding area and offers compensatory community benefits.	The Project may be accommodated on the Project site as tourism services are anticipated for the Airport Zone Precinct. Further, the BNE Auto Mall has been designed to a high-quality and will integrate with the surrounding area. The unique nature of the Project will offer community benefits by providing a world-class destination or automotive manufacturers and dealers, buyers of new cars as well as the general public and motoring enthusiasts interested in a diverse range of exciting automotive experiences. As such, the BNE Auto Mall complies with this overall outcome.
Development form overall outcomes are:	
Development is appropriately located according to the proposed use, and building and landscape design are of a scale, height and bulk that is generally compatible with the surrounding area and transitions sensitively to surrounding uses.	The BNE Auto Mall is appropriately located where the Project requires a substantial amount of vacant land in commercial and/or industrial areas, removed from residential suburbs. The proposed built form (height and bulk) will not exceed existing buildings on Airport land. The maximum height of the proposed buildings is 3 storeys and 12 m (as per Table 3). Further, the scale of the Project aligns with the busy nature of the Brisbane Airport which consists of 480 businesses and 23.2 million passengers in 2017 (BAC, 2017). The *BNE Auto Mall Development Plan* (Appendix C) has been developed to set in place clear overarching development objectives, parameters and defines the guiding ambition for the BNE Auto Mall.

Overall outcome	Compliance
Development creates a variety of building forms, materials and facade treatments.	The built form of the BNE Auto Mall will be defined by the dealerships and brand experience centres located around the perimeter of the performance track. The dealerships and brand experience centres will be constructed in accordance with the provisions of the BNE Auto Mall Development Plan, while catering to the specific needs of the tenant. The document promotes building forms, materials and façade treatments at a bold scale, advancing Brisbane Airport's reputation for excellence in planning and the built environment.
Development is provided with servicing and utilities infrastructure that are commensurate with the level of service demands of the use.	The BNE Auto Mall includes appropriate servicing and utilities infrastructure to support the development such as stormwater management, landscaped drainage swales and culvert drainage connections.
Development is supported by complementary uses of an appropriate scale and purpose to directly serve the employees and activities of the zone precinct, which do not compromise the commercial, retail or community service role and function of nearby centre activities.	The BNE Auto Mall will include a variety of experiences and opportunities for on-site occupiers and employees of surrounding businesses. Given the unique nature of the Project, BNE Auto Mall will not compromise the commercial, retail or community service role and function of nearby centre activities.
Development minimises adverse impacts (including glare, odour, light, noise, traffic, parking, servicing and hours of operation) on the health, safety and amenity of adjoining sensitive land uses, predominantly through maintaining adequate buffering between these land uses.	The Project site is located approximately 2 km from the closest residential area. Appropriate mitigation measures and management plans will be implemented to avoid any adverse impacts such as glare, odour, light, noise, traffic, parking, servicing and hours of operation. Further discussion on these mitigation measures are provided in the relevant sections of the operational and environmental assessment.
Development achieves a satisfactory standard of environmental performance by principles of innovative, sustainable and efficient design, construction and operation, to encourage water conservation and responsiveness to climate.	The BNE Auto Mall Development Plan promotes sustainable development and environmental practices to be incorporated into the design of the precinct and overall built form. The Project will aim to achieve a balance between on-airport build environment and biodiversity. Further, the BNE Auto Mall will incorporate consistent landscaping throughout the Project and promote sub-tropical design elements such as awnings, shade devices and mature trees.

Overall outcome	Compliance
Development maximises road, rail, public transport and transport connections and accessibility between the Special purpose zone and key destinations to ensure efficient and safe movement of people, goods and freight and accessibility for visitors, patrons and employees.	The BNE Auto Mall will provide connections to the existing public and active transport network through the construction of new pedestrian footpaths and bus stops. The Project site is accessible from the CBD from the Airtrain, with the International Airport Station opposite the Project. Further, visitors, patrons and employees are anticipated to drive to the BNE Auto Mall and therefore appropriate parking will be available on the site (refer Section 5.1) and in the surrounding area including Central Parking Area and Banksia Place for special and major events.
Development for a special purpose that is a major economic driver, such as a port or airport consolidates its role in facilitating trade growth via bringing allied industries, freight and tourism to the region and functioning as a major employment generator.	The BNE Auto Mall will bring tourism to the Brisbane and wider South-East Queensland region and complements the Airport's role as a major economic driver. Further assessment in relation to the economic impact is provided in Section 6.8.
Development is designed, constructed and operated to maintain the safety and security of people and property.	The BNE Auto Mall will be designed, constructed and operated to maintain safety and security of people and property. Security measures will be incorporated into the design of the precinct such as bollards and appropriate lighting in accordance with air traffic control requirements. Perimeter dealership lighting will be encouraged to remain on after hours for security purposes.
Development responds to land constraints, mitigates any adverse impacts on environmental values and natural features, and addresses other specific characteristics, as identified by overlays affecting the site or in codes applicable to the development.	While the Project is not required to specifically address the provisions of overlays under the local planning scheme, an environmental assessment for the BNE Auto Mall is provided in Section 6 of this MDP. The assessment provides mitigation measures to avoid, minimise and mitigate impacts on environmental values and natural features.
Airport zone precinct form overall outcomes are:	
Development provides areas for: • housing, servicing, maintenance and repair of aircraft; • landing and departure of aircraft; • assembly and dispersal of passengers and goods on or from aircraft; • ancillary activities serving the needs of workers, passengers and visitors to an airport, such as shopping, food and drink outlets and tourism services; • associated training, education and aviation facilities.	The BNE Auto Mall provides for activities which will cater for workers, passengers and visitors to the Brisbane Airport. Further, the Project will be designed as a world-class destination and promote tourism in Brisbane and the wider South-East Queensland region. Therefore, the BNE Auto Mall is considered to comply with the overall outcomes for development within the Airport Zone Precinct.

As noted above, the Project site is also identified within the Airport precinct under the Australia TradeCoast Neighbourhood Plan. Land use activities within the Airport precinct under the Australia TradeCoast Neighbourhood Plan are regulated by the BAC Master Plan. As such, refer to Section 3.4 which demonstrates how the Project is consistent with the intended land uses outlined in the Master Plan.

3.6 Airport Development and Building Approvals

3.6.1 Background

In addition to the preparation and approval of a draft MDP, new development is subject to Airport Lessee Consent from Airport Lessee Company and a Building Approval from the appointed Airport Building Controller (ABC).

The Building Approval cannot be issued by the ABC without written consent from BAC, confirming that the new development is consistent with:

- Brisbane Airport Master Plan;
- Brisbane Airport Environment Strategy;
- Planning objectives for the Airport; and
- An approved MDP.

The EAR and Construction Environmental Management Plan (CEMP) for the site preparatory works was endorsed by the AEO and ABC with Building Approval received in August 2017. A comprehensive assessment of environmental and operational impacts associated with the preparatory works was conducted and mitigation measures were developed and implemented to ensure identified impacts were avoided, minimised and managed. A portion of the preparatory works will continue to be undertaken in parallel with the construction of Stages 1a and 1b (subject of this draft MDP). As the EAR and CEMP are endorsed documents, they will continue to serve the Project through the preparatory works (currently in progress) with the EAR findings informing the background of this MDP.

3.6.2 Relevance to the Project

3.6.2.1 Brisbane Airport Master Plan and Airport Environment Strategy

Sections 3.4 and 3.4.2 summarise the consistency of the Project with the Master Plan and AES respectively.

3.6.2.2 Brisbane Airport Landscape Setting Strategy

The Landscape Setting Strategy is the primary reference document for all landscape initiatives within Brisbane Airport, including the BNE Auto Mall. The Strategy sets a clear overarching ‘Statement of Intent’, defines the guiding ambition for the landscape of Brisbane Airport and delivers the key objectives defined in the Brisbane Airport Master Plan.

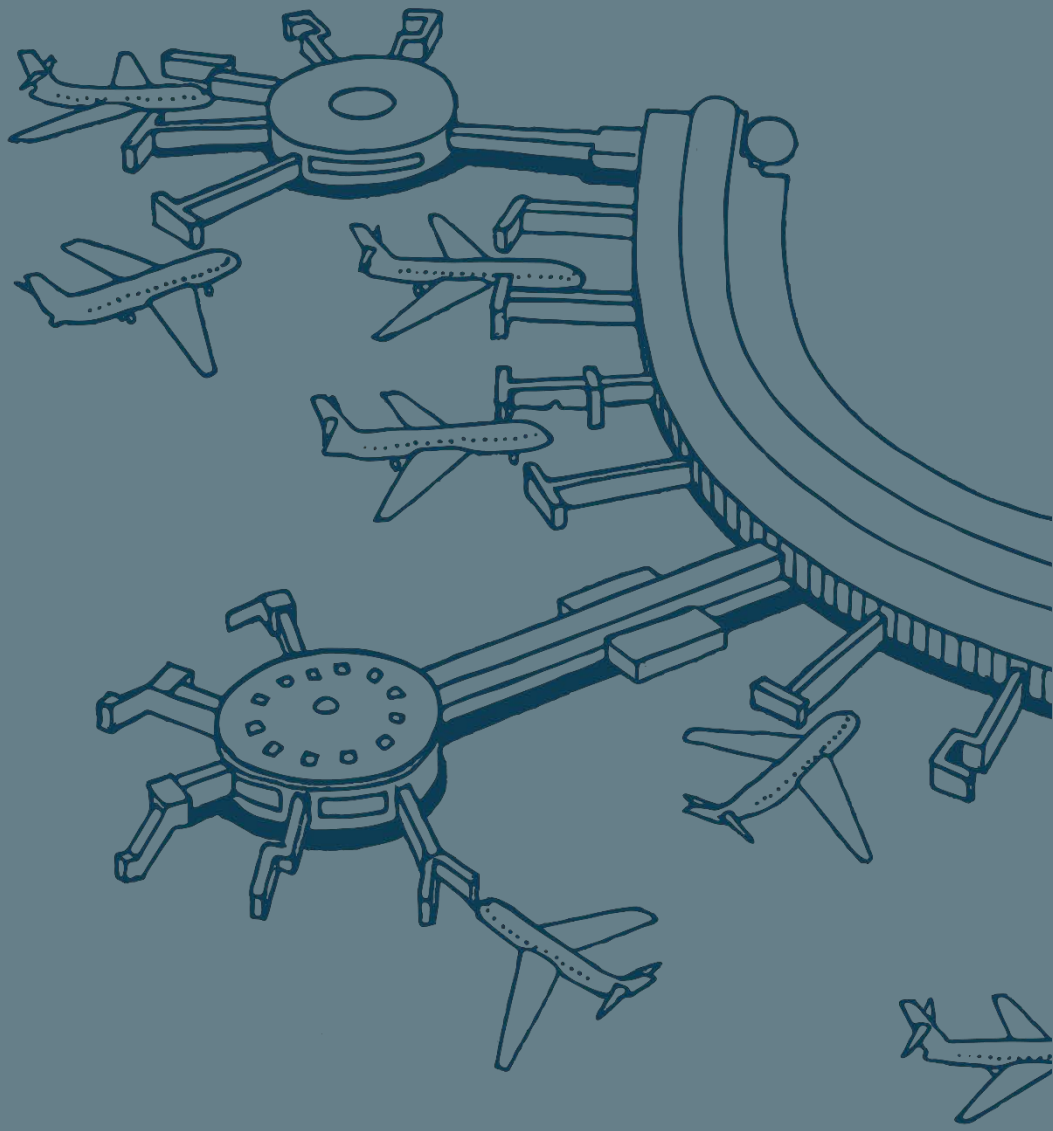
The three goals within the Landscape Setting Strategy, aimed at informing development activity at Brisbane Airport include:

- Provide a functioning ecological system that supports the operational needs of Brisbane Airport;
- Establish a natural green frame for development; and
- Creates memorable landscape experiences that are distinctive of South East Queensland.

3.6.2.3 Airport Technical Guidelines

The Airport Technical Guidelines were prepared by BAC to assist designers, contractors and other specialists involved in preparing design and contract documentation for works on Brisbane Airport. The Airport Technical Guidelines present a number of planning phase requirements to be considered.

During the next phase of the Project, the Designer and Contractor will need to review their works to ensure compliance with the Airport Technical Guidelines.



4

OPERATIONAL AND ENVIRONMENTAL ASSESSMENT METHODOLOGY

4. Operational and Environmental Assessment Methodology

4.1 Assessment Scope

The scope of the assessment includes consideration of the following:

- **Operational factors:**
  - Ground transport.
  - Aviation operations and safety.
  - Other infrastructure and services
- **Environmental and social factors:**
  - Geology, soils and topography.
  - Ecology.
  - Hydrology and water quality.
  - Air quality and odour.
  - Noise.
  - Land use.
  - Landscape.
  - Social and economic issues.
  - Cultural heritage.
  - Waste.
  - Hazardous goods.

Information has also been provided regarding the sustainability considerations for the BNE Auto Mall Project including water, energy and materials.

4.2 Assessment Method

Reference has been made to previous studies at the airport site to inform the description of the baseline environment at the proposed development site. This includes analysis of information from previous MDPs and the literature listed in the following section.

4.2.1 Literature

In addition to other BAC studies referenced in this report, this MDP has been prepared using the following information:

- EPBC Act Protected Matters Search Tool (PMST).
- Queensland Globe for matters related to the *Nature Conservation Act 1992* (Qld) (NC Act), *Water Act 2000* (Qld) (Water Act) and *Fisheries Act 1994* (Qld) (Fisheries Act).
- Queensland Heritage Register.
- Australian Soil Resource Information System (ASRIS).

- Department of Infrastructure, Local Government and Planning (DILGP) DA mapping system.
- State Assessment and Referral Agency (SARA) mapping.
- Department of Agriculture and Fisheries (DAF) fire ant biosecurity zone map dated 1 July 2016.
- Department of Environment and Heritage Protection (DEHP) wildlife online database.
- Department of Aboriginal, Torres Strait Islander and Multicultural Affairs (DATSIMA) cultural heritage database.
- Proposed Brisbane Airport Auto Mall – Environmental Assessment Report (Aurecon 2017);
- Brisbane Auto Mall – Visitation Estimates (Urbis 2016);
- Airport Drive West Precinct Traffic and Transport Study (WSP 2018);
- Airport Design Guidelines and Technical Specifications (BAC 2017);
- BNE Auto Mall Infrastructure Integration Plan (BAC 2018);
- Brisbane Airport Landside Noise Model (SLR 2011);
- Brisbane Airport Development Control Document (BAC 2011);
- Brisbane City Council, Noise Impact Assessment Planning Scheme Policy SC6.21;

A full list of references is provided following Section 8.

4.2.2 Standards and Guidelines

The assessment of impacts and development of mitigation measures in this Draft MDP have been conducted in accordance with the following standards and guidelines:

- Significant Impact Guidelines 1.1 - Matters of National Environmental Significance;
- Significant Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land and Actions by Commonwealth Agencies;
- ISO 31000:2018, Risk management – Guidelines;
- AS/NZS ISO 14001:2016, Environmental management systems;
- AUSTROAD standards and guides;
- Department of Transport and Main Road Specifications;
- Standards Australia 1997, AS 1055.1:1997 – Acoustics – Description and measurement of environmental noise;
- Standards Australia 2010, AS 2436:2010 Guide to noise and vibration control on construction, demolition and maintenance sites;
- Australian Standard 2107:2016 – Acoustics – Recommended design sound levels and reverberation times for building interiors;
- Standards Australia 2015, AS2021:2015 Acoustics – Aircraft Noise – Building Siting and Construction;
- National Airports Safeguarding Framework (NASF) Principles and Guidelines;
- *Guideline: Noise and vibration from blasting* (Department of Environment and Heritage Protection 2016);
- Standards Australia 2004, AS 1940:2004 The storage and handling of flammable and combustible liquids;

- National Environment Protection (Assessment of Site Contamination) Measure 1999 (Amendment 1, 2013) (NEPM 2013);
- National Environment Protection (Ambient Air Quality) Measure 2015;
- Environmental Protection (Water) Policy 2009;
- Environment Protection (Noise) Policy 2007; and
- Environmental Protection (Air) Policy 2008.

4.2.3 Assessment Technique

To assist in the assessment of potential impacts identified in this MDP and to ensure consistency between topics, significance criteria have been defined which follow the generic framework shown in Table 9. The use of significance criteria to assess impacts is a standard technique applied in impact assessments of this nature and is an approach that has been consistently used by BAC in MDP's at Brisbane Airport. BAC has developed the environmental and social-economic significance criteria based on the Australian Standard for risk management (AS/NZS ISO31000-2009) and BAC's experience in managing the Brisbane Airport. This approach enables different topics (i.e. noise and ecology) to be assessed in a consistent manner against the same criteria which are set in an ascending scale of potential impact and ability to mitigate those impacts.

While indicative timing of staging has been provided in Section 2.7, actual development of the BNE Auto Mall will be on an as-needed basis and scheduling of development of individual tenancies will drive the need for upgrades, such as new intersections. This staggered approach has been considered during the impact assessment and mitigation measures prescribe considerations required for detailed design.

Table 9 Environmental and social-economic significance criteria

Significance	Impact classification	Criteria
High	Impact a major problem	Environmental effects are likely to be important considerations at a local scale. If the environmental effects are adverse, they represent potential concerns to the project, depending upon the relative importance attached to the issue during the decision making process. Considerable adverse change to current amenity, lifestyle and everyday community activities. Mitigation measures and detailed design work are unlikely to remove all the effects upon the affected communities or interests. Residual effects would predominate.
Moderate	Impact moderate but liveable for most people	These effects, if adverse, while important at a local scale, are not likely to be key decision making issues. Nevertheless, the cumulative effects of such issues may lead to an increase in the overall effects upon a particular area or on a particular resource. Noticeable adverse change to current amenity, lifestyle and everyday community activities but with scope for mitigation. They represent issues where effects would be experienced but mitigation measures and detailed design work may ameliorate/enhance some of the consequences upon affected communities or interests. Some residual but not significant effects would still arise.
Low	Impact recognisable but acceptable	These effects may be raised as local issues, but are unlikely to be of importance in the decision making process. Nevertheless, they are of relevance in evaluating the subsequent design of the project and consideration of mitigation measures. There may be localised or limited noticeable change to current amenity, lifestyle or everyday community activities.

Negligible	Minimal Change	No effects or those which are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

Note: Potential impact categories above can also be categorised as beneficial.

4.3 Assessment Results and Commitments

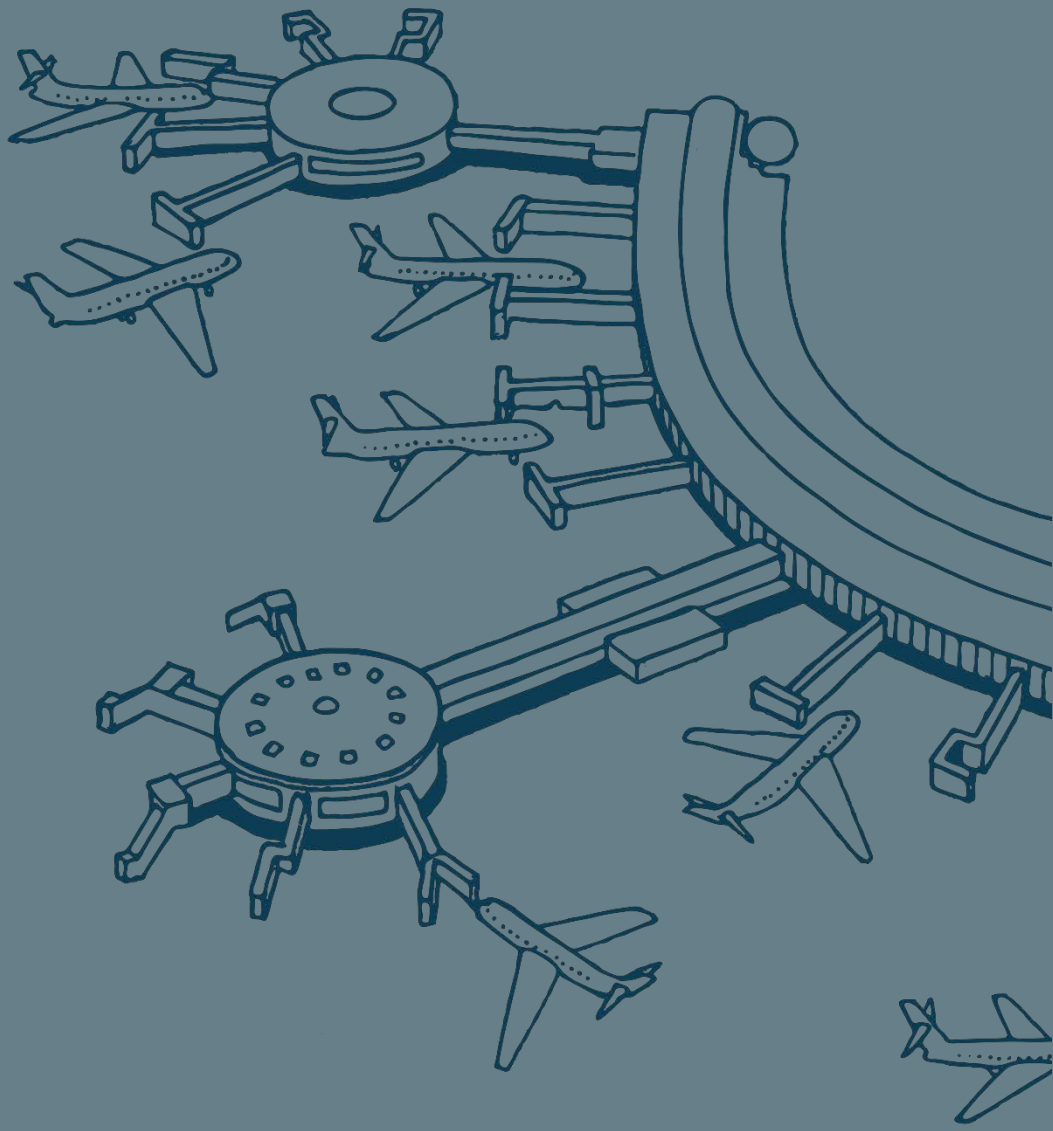
The EAR and CEMP for the site preparatory works (Phase 1) was endorsed by the AEO and ABC with building approval received in August 2017. The existing CEMP included roles and responsibilities and mitigation measures to ensure identified impacts were minimised and managed. Due to the earthworks surcharging program, a portion of the land development works (Phase 1) will continue to be undertaken in parallel with the proposed civil works (subject of this draft MDP).

Mitigation and management measures identified in this MDP for construction works will be included in an overall CEMP, which will be reviewed and approved by BAC, prior to submission to the AEO. Construction of individual tenancies and precincts of the BNE Auto Mall will be subject to site-specific CEMPs, that comply with this overall CEMP. Preparation and implementation of these site-specific CEMPs will be the responsibility for individual developers and construction contractors but will be BAC's management responsibility.

Each site-specific CEMP will be in place prior to the commencement of construction and all site personnel made aware of its requirements. The site-specific CEMP will detail the following:

- Responsibility for implementing the requirements of the CEMP and for regular site checks to confirm effectiveness;
- Training and inductions for site personnel;
- Mitigation measures including but not limited to those outlined in this draft MDP;
- Monitoring, if required, during the construction phase. This may include air quality, surface water and groundwater monitoring during the construction period;
- Emergency management procedures;
- Corrective actions in the event that a non-conformance is identified; and
- Reporting requirements, including monitoring results and any non-conformances.

During the operation of the BNE Auto Mall, individual tenants will be responsible for environmental management, monitoring and reporting, which will be conducted in consultation and under supervision by BAC.



5

OPERATIONAL ASSESSMENT

5. Operational assessment

5.1 Ground Transport

5.1.1 Baseline Conditions

The construction and operational phases of the BNE Auto Mall have the potential to generate traffic and transport impacts within and external to the Brisbane Airport. As part of the MDP process, detailed traffic studies have been completed to assess the impact of the BNE Auto Mall and ensure that the Project will meet the requirements of Section 91 of the Airports Act.

An analysis of construction traffic impacts has been derived from the proposed construction program, an estimate of the amounts and types of construction materials to be hauled, vehicles proposed for haulage, the haulage route options and the estimated size of the construction team. A number of these parameters were based on similar developments in Australia, given detailed design of the BNE Auto Mall has not been conducted.

Operational traffic impacts of the BNE Auto Mall have been assessed and a technical memorandum has been provided in Appendix F. This assessment provides:

- A description of the operation of BAC Auto Mall's configuration with the current and future Brisbane Airport transport network;
- Examines the suitability of local access arrangements based upon local traffic modelling; and
- Provides recommendations in respect of parking provision.

Road conditions

The BNE Auto Mall site is bound by Moreton Drive, Airport Drive and Nancy Bird Way and is subject to a high degree of passing traffic on these major roads.

Airport Drive is approximately 5.2 km in length and connects to the Airport Link toll road to the west. The road provides an access route to the Brisbane Domestic and International Terminals. Airport Drive is a four-lane, two-way median divided road and controlled by BAC. Airport Drive is classified as a B-double route road to Southern Cross Way, however the section of road near the Project site is not classified for heavy vehicles.

Moreton Drive travels west to east and is located to the north of the Project site and is the main access route to the Domestic Terminal. The road links to Airport Drive, west of the site. This is a BAC-controlled, four-lane, two-way median divided road. This road provides access to the Domestic Terminal and an alternative route to the International Terminal from the Gateway Motorway via Nancy Bird Way. This road is not classified as a multi-combination route.

Nancy Bird Way is an approximately 500 m long road that travels north to south linking Moreton Drive and Airport Drive. The road is located to the east of the project location and is a four-lane, two-way road controlled by BAC. This road provides access to the Brisbane Airport Service centre as well as to the Airpark precinct.

Existing traffic movements

Table 10 and Figure 11 detail the existing traffic volumes on Moreton Drive, Airport Drive and Nancy Bird Way, based on data collected by BAC during their annual traffic survey in 2017.

Table 10 Existing traffic volume summary

Location	AADT (vehicles per day)	Maximum hourly volume (peak hour)	Peak periods
Moreton Drive	60,000	Northbound: 3,200	5am Monday
		Southbound: 2,000	7pm Thursday/Friday
Airport Drive	15,000	Northbound: 500	7am all days
		Southbound: 1,000	7.30am all days, particularly Saturday
Nancy Bird Way	15,000	Eastbound: 850	7am all days
		Westbound: 300	7.30am all days, particularly Saturday

Development of the BNE Auto Mall has been occurring since September 2017 and to date has involved clearing, bulk earthworks and ground improvements. Current site access arrangements from Airport Drive and Nancy Bird Way will remain the likely access points to the Project site during construction of Stages 1 and 2. The EAR endorsed for the site preparatory works phase (refer Appendix D) estimated approximately 97 return trips for construction traffic, across a 12 hour working day for Stages 1 and 2 combined (roughly eight additional vehicles in peak hour), which will be completed prior to the commencement of this work. For Stage 3 of the site preparatory works, there will be approximately 74 return trips for construction traffic, across a 12 hour working day (roughly six additional vehicles in peak hour). The current project schedule has the potential for construction of the BNE Auto Mall (subject of this MDP) to overlap with Stage 3 of the site preparatory works for approximately a six month period.

The closest public transport stop available for the Project is the Airtrain Station at the International Terminal, approximately 500 m from the BNE Auto Mall. Services depart the Airtrain Station every 15 minutes during peak hour and every 30 minutes on weekends, public holidays and during the off peak period of weekdays.

There are no TransLink bus services near the BNE Auto Mall, however a number of buses managed by BAC, including the T-Bus, T-Bus Express, AirPark Bus and the S-Bus, service the International Terminal. The T-Bus and T-Bus Express connect the Domestic Terminal, International Terminal and Skygate. The S-Bus is a staff bus that services both international and domestic terminals and connects them to the staff car parking areas.

There is a designated bicycle route from the Kedron Brook Bikeway to the International Terminal Building via Charlie Earp Bridge, Lakeside Drive and Qantas Drive. An existing footpath connects the International Terminal to the Australian Federal Police Building, as well as between the International Terminal and the Kingsford Smith Memorial and Brisbane Airport Services Centre for both pedestrians and cyclists.

Figure 12 details the location of the public and active transport surrounding the BNE Auto Mall.

Other modes of transport that service the Brisbane Airport include taxis, ride sharing services (e.g. Uber), coaches and limousines. The nearest taxi rank is located at the northern end of Arrivals (Level 2) at the International Terminal. There is also a designated ride-sharing service pick up zone in this area.

In accordance with the Brisbane Airport 2014 Master Plan, BAC will maintain the flexibility to develop a mass transit system and connections within the Auto Mall precinct.

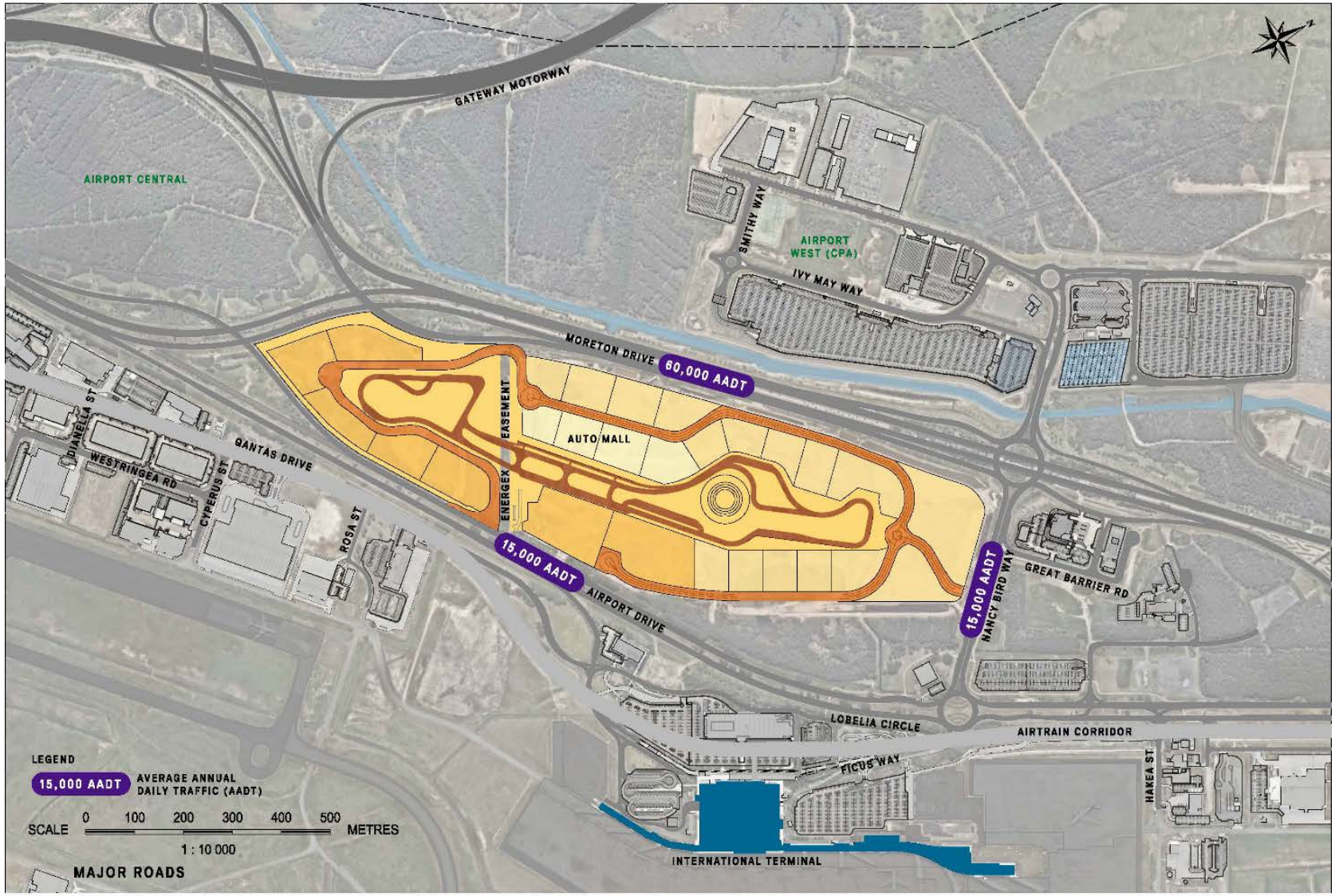


Figure 11 Major roads surrounding the Project site

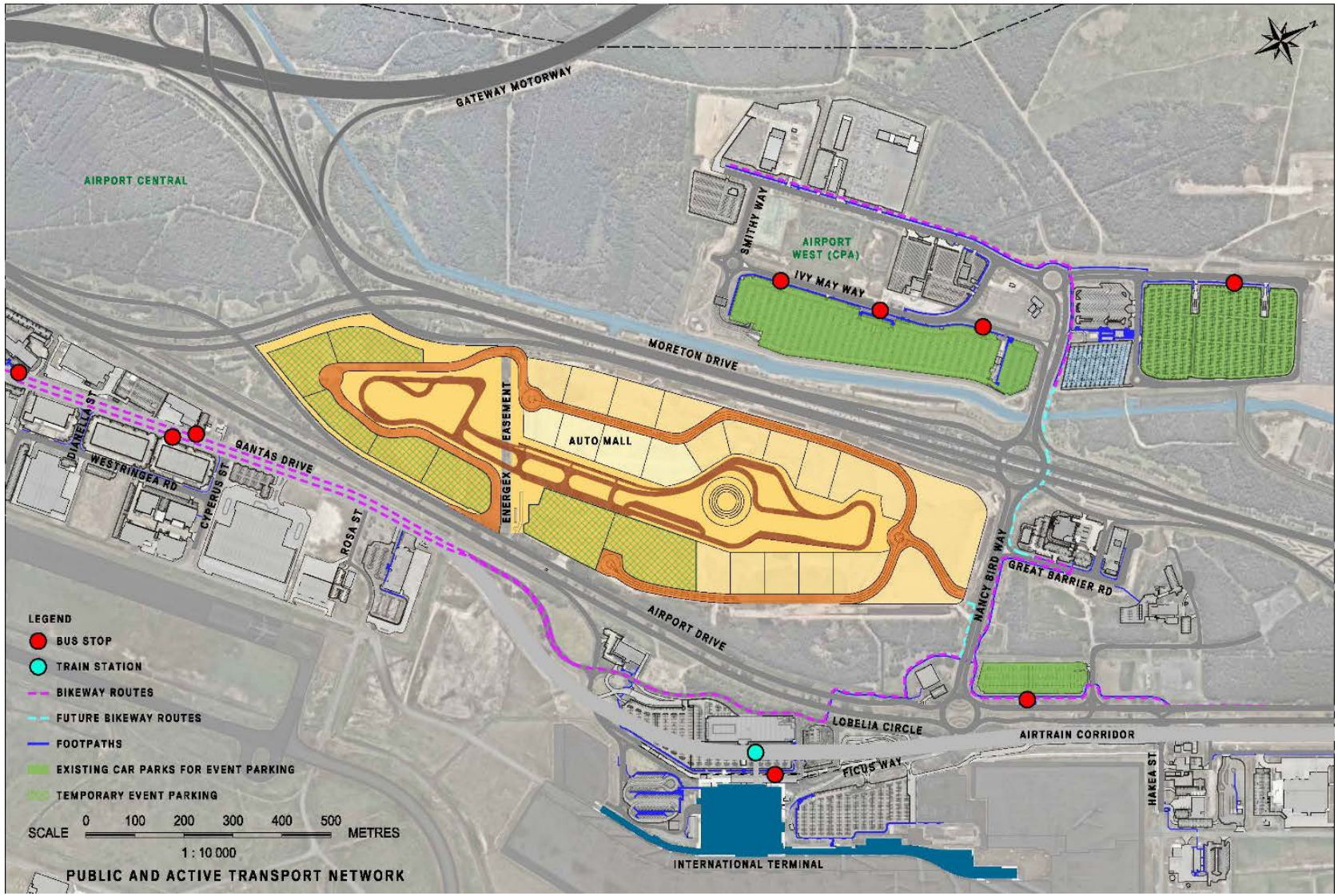


Figure 12 Public and active transport network at Brisbane Airport

5.1.2 Assessment of Impacts

5.1.2.1 Construction

A Construction Traffic Assessment is provided in Appendix E and is summarised below.

5.1.2.1.1 Proposed Vehicular Access Arrangements

The access points during construction to the Project site are likely to be obtained from both Airport Drive and Nancy Bird Way.

During construction of Stages 1a and 1b, access to the Project site will continue to be obtained from Airport Drive (left-in, left-out) and Nancy Bird Way (left-in). A permanent connection to the site will also be made from Nancy Bird Way in late 2020, which will be a left-in, left-out and right turn in. The optimal truck entry point on Nancy Bird Way is located at the road's midpoint, which would provide approximately 200 m upstream and 200 m downstream length.

Construction traffic access during Stage 2 will predominately be through Airport Drive (left-in, left-out), south of the Energex Easement while during Stage 3, access will be through both the new intersections on Airport Drive and Nancy Bird Way and the construction access on Airport Drive, north of the Energex Easement. It should be noted that the intersection for the International P2 Multi-Level Car Park (MLCP) on Airport Drive will be signalised and is planned to be commissioned in mid to late 2020.

The detailed permanent concept layouts of the access arrangements for Airport Drive and Nancy Bird Way are provided in Figure 13 and Figure 14 respectively.

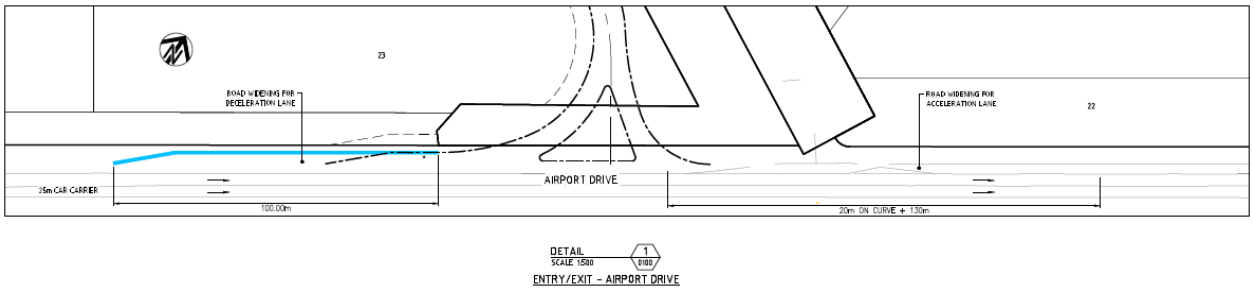


Figure 13 Access arrangements from Airport drive

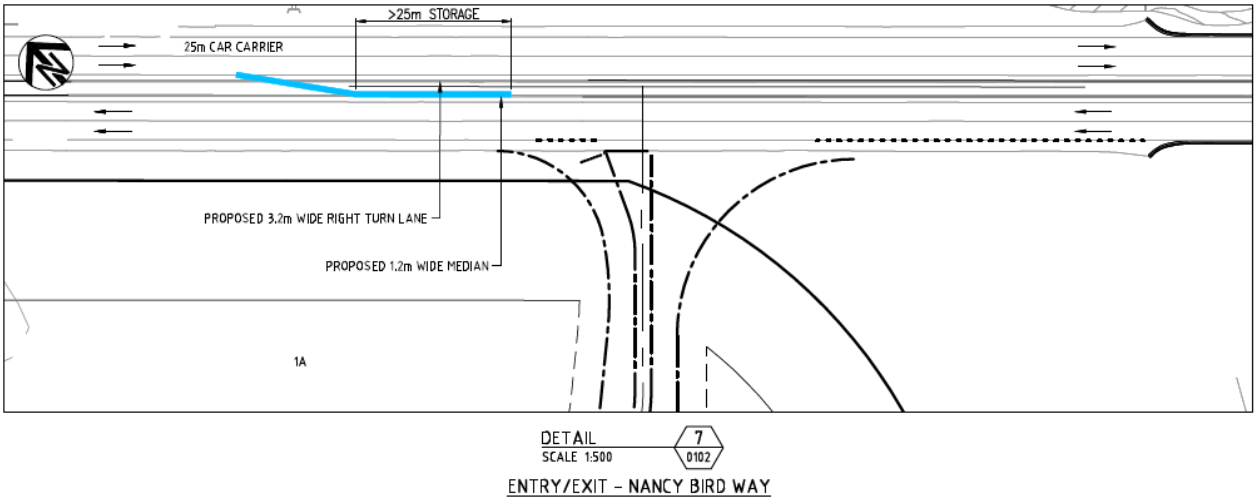


Figure 14 Access arrangements from Nancy Bird Way

5.1.2.1.2 Trip Generation

Construction activities will generate traffic relating to construction worker movements for the performance track and the individual tenancies as well as transport of concrete and building materials and equipment.

For construction concrete and other building material transportation, a conservative estimate of eight trips per day per hour (laden and unladen trips to and from the BNE Auto Mall) has been calculated as well as 150 construction worker trips each working day.

It is anticipated that construction compounds associated with the development will be located within the BNE Auto Mall site. The Project will potentially involve approximately 270 workers for construction of the performance track and control centre as well as potentially 150 construction workers for each stage of construction (based on knowledge of similar developments). Construction workers are expected to commute to and from the site during morning and evening peak periods from Monday to Saturday and are likely to be travelling to the site by private vehicles across all stages of the development. Construction worker traffic movements may also occur outside of the commuter peak periods due to possible flexible working arrangements.

The expected traffic generation during construction is not anticipated to substantially increase peak hour (AM/PM) traffic on Moreton Drive and Nancy Bird Way. There may be a minor increase in peak hour (AM/PM) traffic on Airport Drive, with an increase of 7.8% for northbound traffic. It is noted that current traffic volumes northbound on Airport Drive are much lower than Moreton Drive and similar to Nancy Bird Way.

5.1.2.1.3 Trip Distribution

All of the construction-related trip generation is assumed to be from the north, west and south directions as the main airport operations are situated to the east of the BNE Auto Mall site. It is also assumed that construction traffic from the north and south will most likely be using the Gateway Motorway or Southern Cross Way as primary options.

The current construction access arrangement from Airport Drive is illustrated in Figure 15 below.

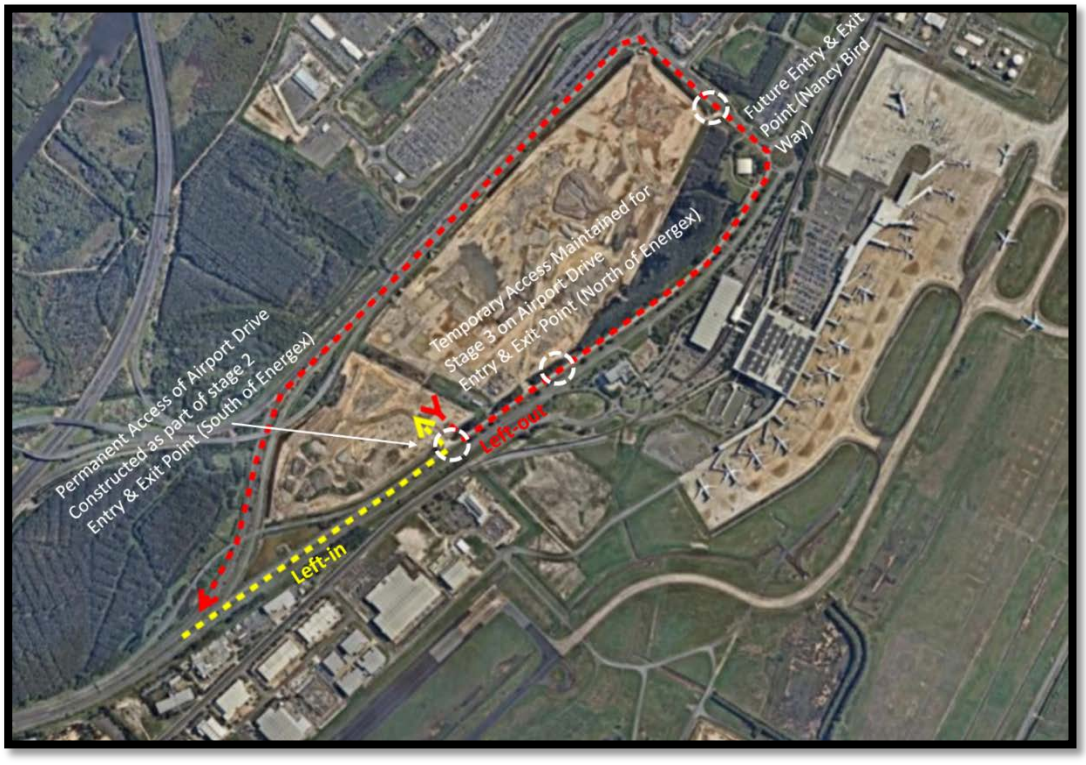


Figure 15 Current construction access arrangement from Airport Drive

Possible construction routes via Nancy Bird Way are illustrated in Figure 16 and Figure 17 below.

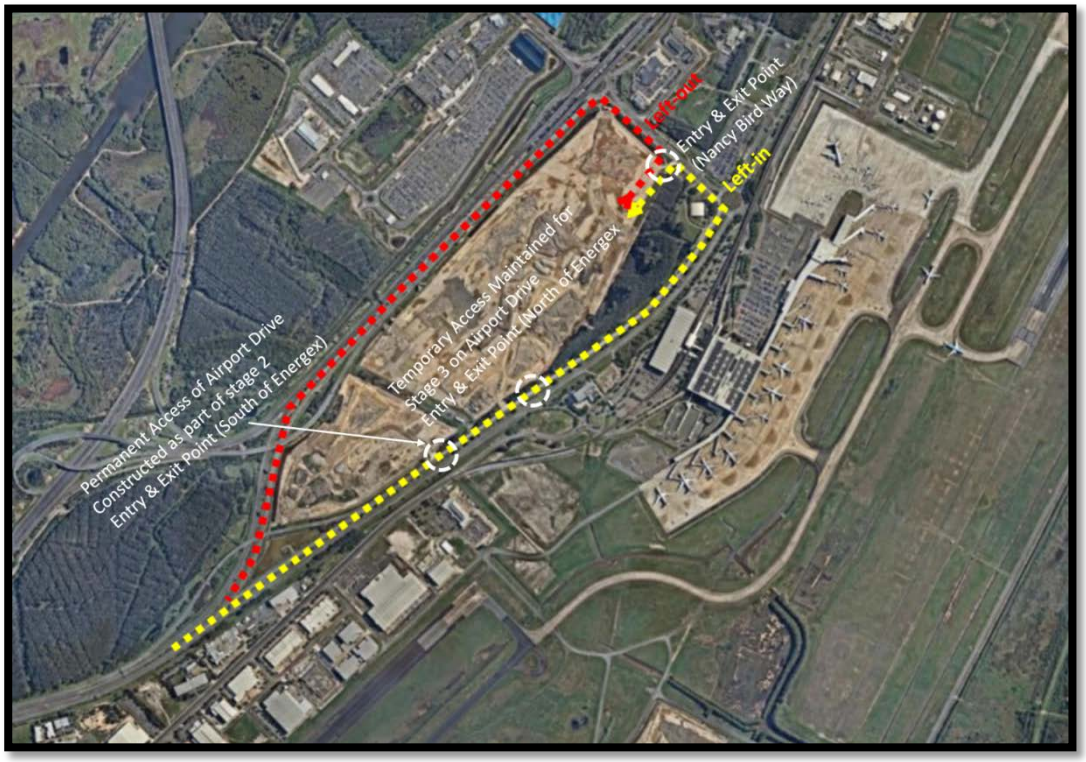


Figure 16 Construction routes from north and south accessing the site from Nancy Bird Way (left-in, left-out)

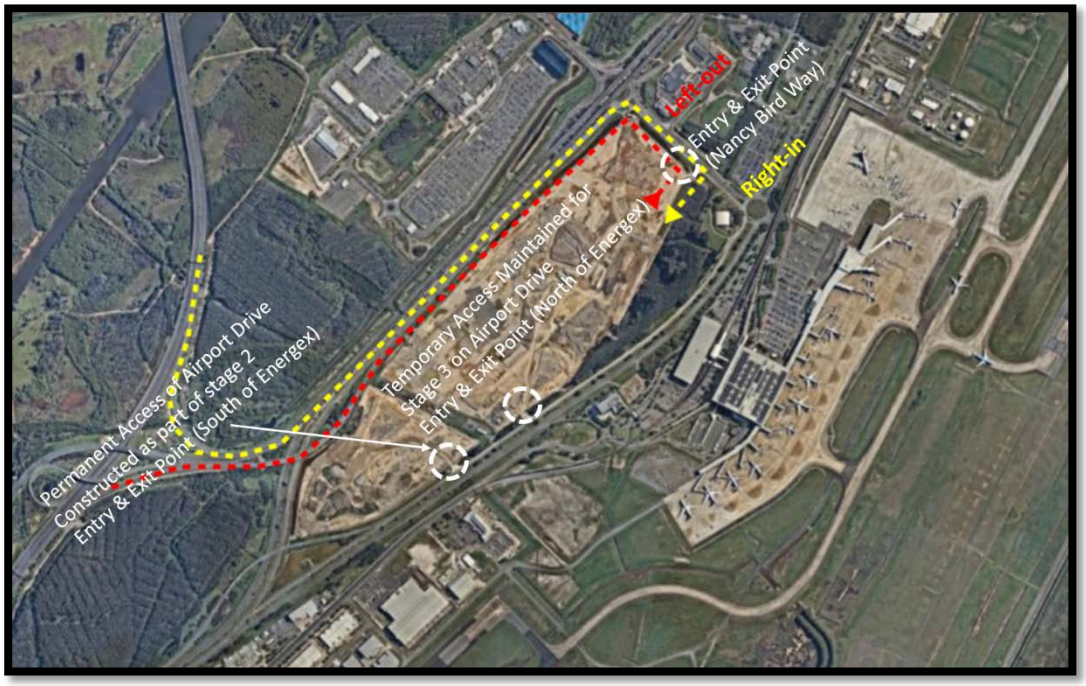


Figure 17 Construction routes from west accessing the site from Nancy Bird Way

The route assessment determined potential points of conflict at the site access point on Nancy Bird Way, with respect to increased delays due to turning vehicles.

5.1.2.1.4 Impacts on the Surrounding Road Network

A crash analysis review of the previous ten years for the surrounding road network of the Project site has been completed to determine if the Project would affect the existing crash risk. There were no fatal crashes recorded on the surrounding road network and given the relatively small number of construction vehicles, traffic generated from the BNE Auto Mall development will have a negligible impact on the existing crash risk.

In addition, the Airport Drive/Nancy Bird Way roundabout may have some minor impacts during peak hours due to the introduction of heavy vehicles during construction works.

5.1.2.2 Operation

5.1.2.2.1 Access and Internal Road Layout

The initial public access point to the BNE Auto Mall will be via Nancy Bird Way and will be commissioned in late 2020. The access arrangement for Nancy Bird Way will be left in, left out with a short right turn in access from Nancy Bird Way (refer Figure 14).

The second public access point to the BNE Auto Mall will be via Airport Drive and will be left in, left out as per Figure 13 and will be used for operational traffic from Stage 2.

It is expected that traffic generated from the operation of the BNE Auto Mall will be distributed evenly between Moreton Drive and Airport Drive. Access to the BNE Auto Mall via either the Nancy Bird entrance or the Airport Drive entrance will depend on the origin of the trip (e.g. north, south, west or the Brisbane Airport). Traffic originating from Skygate or the Brisbane Airport will likely access the BNE Auto Mall from Airport Drive, while traffic originating from northern suburbs will likely access the BNE Auto Mall from Moreton Drive. Traffic originating in Brisbane City will be split between Moreton Drive and Airport Drive and will be dependent on signage.

The Project will include an internal road that provides access to future tenancies within the BNE Auto Mall. The design of the internal layout is to be in accordance with BAC's Engineering Technical Guidelines and relevant standards including AUSTROAD Standards and the Department of Transport and Main Road Standards.

5.1.2.2.2 Service facilities and public transport

The Project will be serviced on-street by an Articulated Vehicle (AV), as per the provisions of the *Transport, Access, Parking and Servicing* (TAPS) *Planning Scheme Policy* (PSP). The internal roads will be designed to accommodate a heavy rigid vehicle (HRV) and an internal road width to accommodate loading bays on road that still provide adequate room for passing vehicles. There will be time of day restrictions in place for service vehicle access to ensure no servicing occurs during weekday peak hours (5am to 10am and 3pm to 6pm) and weekend peak hours (depending on hours of performance track operations).

For on-site servicing, future tenants will be required to provide a swept path assessment for the truck access route, loading area movements, and driveway use. Where on-site servicing is to occur, sufficient space will be provided for safe manoeuvring of other vehicles on the road corridor. Service vehicle movements will be dependent on the individual tenancy and frequency of deliveries to that tenancy.

A swept path analysis was conducted for a range of vehicles that may frequent the BNE Auto Mall (i.e. car carriers, buses, service vehicles). The internal road network will include indented bays to facilitate public transport. The indented bays may also be used for loading and unloading of car carriers at a time that does not impact public transport operations or other movements within BNE Auto Mall.

5.1.2.2.3 Proposed Parking Arrangements

Due to the car-based nature of the BNE Auto Mall, cars are anticipated to be the primary mode of travel for staff and visitors to the BNE Auto Mall. It is assumed that mode of travel will be broken down as:

- Private vehicle (73%)
- Commercial vehicle (18%)
- Public transport (9%)
- Active transport (<1%)

All tenants will be required to supply sufficient parking on their site. The adopted car park rates for the Auto Mall are **0.75 car parking spaces per 100 m^2 of lot area**. The spaces subject to this ratio will accommodate parking for visitors and staff only. Spaces used for operations (i.e. display areas, servicing, repairing, detailing, reconditioning etc.), will be considered separately, but will not encroach on or compromise the spaces that have been dedicated for visitors and staff.

Further details on proposed car parking are provided in Appendix F. Event parking for special events can be accommodated offsite at the Central Parking Area and Banksia Place and temporary locations as illustrated in Figure 12. It should be noted that the scheduling of special and major events will consider existing car parking requirements to ensure airport operations are not adversely impacted.

5.1.2.2.4 Active Transport

The Project will support cyclists and pedestrians travelling to and from the BNE Auto Mall.

Given the distance from nearby residential areas, pedestrian access to the BNE Auto Mall is most likely to be to and from public transport stations and stops. Pedestrian movement will be supported within the BNE Auto Mall by a network of pedestrian pathways, that will be aligned to the internal road network and provide access between adjacent businesses within the precinct as illustrated in Figure 12.

While the BNE Auto Mall will be a car-focused development, traffic growth will be minimised, where possible, by creating an environment where pedestrians and cyclists are prioritised using measures such as constructing safe pedestrian crossing areas at key locations within the Project site. Priority pedestrian crossings may be used as a measure to restrict traffic speeds and improve the level of service for active travel within the BNE Auto Mall.

5.1.2.2.5 Trip Generation

Table 11 summarises the estimated traffic generation for each of the likely land uses (‘car dealerships’ and ‘business parks’) within the BNE Auto Mall, including peak hour trip generation. The figures are based on the Department of Transport and Main Roads, NSW Transport Roads and Maritime Services and Institute of Transportation Engineers (refer Appendix F).

Table 11 Trip generation (total vehicles)

STAGE	AM Peak (8AM-9PM)	PM Peak (4PM-5PM)	Daily	Daily Trips/100m2 GFA	Weekend (11AM-12PM)
Stage 1	308	323	3,027	5.83	210
Stage 2	404	424	3,963	5.83	270
Stage 3	82	86	809	5.83	50
Total	**794**	**833**	**7,799**	**N/A**	**530**

Based on the above trip generation analysis, the total number of car trips expected to be generated by the proposed site is approximately 7,799, including sales staff, servicing staff, sales visitors, car servicing visitors and other operational activities. It is worth noting that staff members are also likely to arrive before visitors start coming and leave after visitors have departed. Thus, these trips are unlikely to add to the peak hour trips.

A SIDRA analysis was conducted on the two access points to the BNE Auto Mall (Airport Drive and Nancy Bird Way) and concluded there would be no discernible impact on these access points from operational traffic based on degree of saturation, average delay and queuing distance.

5.1.2.2.6 Special and major events

The BNE Auto Mall will hold special and major events at the performance track at a frequency of approximately two events per year. Transport for events generally have larger peak movements and specific requirements for bus layover and staging, mass pedestrian ingress/egress, storage areas, security facility provisions and temporary traffic management. Prior to an event, an event-specific Traffic Management Plan will be prepared to ensure that any impacts on the internal or external road networks are manageable, as per the Event Management Plan provided in Appendix B.

Event parking can be accommodated offsite at the Central Parking Area and Banksia Place and temporary locations as illustrated Figure 12.

5.1.3 Mitigation Measures

5.1.3.1 Construction

To minimise possible impacts on existing surrounding businesses during construction, temporary construction, pedestrian, vehicle access and parking arrangements will be planned and signed accordingly.

Affected intersections, including those providing site access, will be developed and upgraded to accommodate traffic demands and background influences. The permanent connection to the external road network via Nancy Bird Way will be constructed in late 2020 to allow for uninterrupted operation of the BNE Auto Mall to commence while construction of Stages 2 and 3 continue.

Other measures to reduce impacts from traffic generation include:

- Each tenancy will be required to develop a Traffic Management Plan for construction works, which will be approved by BAC prior to development of that tenancy commencing. Construction haulage routes and traffic management requirements will be included in the Traffic Management Plan;
- It is expected that construction staff will arrive on site in their own private vehicles. All construction vehicles will park within designated temporary parking areas the Project site, which will be outlined in the Traffic Management Plan for each tenancy;
- Staggering start and finish times for construction workers to avoid peak hour traffic; and
- Planning of preferred construction haulage routes and traffic management requirements in consultation with the tenant and construction contractor.

With the implementation of management and mitigation measures, potential traffic impacts associated with construction activities will be **negligible**.

5.1.3.2 Operation

Further discussions with prospective tenants will be undertaken to establish a suitable mix of staff and visitor parking on site or a different precinct within Brisbane Airport. Specific lot layouts detailing car parking spaces, aisle and circulation road dimensions will be developed at the detailed design stages of the BNE Auto Mall and will be in accordance with the adopted car park rates.

To allow the safe movement of service vehicles within the BNE Auto Mall, time restrictions are proposed to ensure peak hours of operation are avoided. In addition, for any on-site servicing, future tenants will be required to provide a swept path assessment for the truck access route, loading area movements, and driveway use.

In relation to bus movements, indented bus stops are proposed for use by service vehicles to allow the safe manoeuvring of other vehicles within the road corridor. These indented bus stops can be used as bus stops within operational hours of the BNE Auto Mall

Active transport infrastructure will connect cyclists and pedestrians travelling to and from the BNE Auto Mall, connecting existing cycle routes, car parking (e.g. the Central Parking Area) and the International and Domestic Terminals. Priority pedestrian crossings may be considered to reduce traffic speeds and allow safe pedestrian crossing proximal to bus stops on internal access roads.

For special and major event days, an event-specific Traffic Management Plan will be prepared to ensure that any impacts on the internal or external road networks are manageable, as per the Event Management Plan provided in Appendix B.

With the implementation of management and mitigation measures, potential traffic impacts associated with operation of the Auto Mall will be **low**.

5.2 Aviation Operations and Safety

In accordance with the requirements of Section 91 of the Airports Act, an assessment of the Project's potential to affect flight paths and aviation operations and safety has been conducted.

Prescribed Airspace, Airservices Communications, Navigation, Surveillance and Air Traffic Control operations, vertical plume rises, lighting, reflections and wind shear have been assessed across the Project site and no adverse impacts to aviation operations and safety have been identified.

The Project has been assessed against the National Airports Safeguarding Framework (NASF) with the outcomes described in Table 12.

Table 12 Assessment against NASF Guidelines

NASF Guideline	Comment
Guideline A: Measures for Managing Impacts of Aircraft Noise	Applicable Aircraft noise is discussed in Section 5.2.7 and in Section 6.5
Guideline B: Managing the Risk of Building Generated Windshear and Turbulence at Airports	Applicable Windshear and turbulence are discussed in Section 5.2.3
Guideline C: Managing the Risk of Wildlife Strikes in the Vicinity of Airports	Applicable Wildlife strikes are discussed in Section 6.7
Guideline D: Managing the Risk of Wind Turbine Farms as Physical Obstacles to Air Navigation	Not applicable The Project is not a wind turbine farm
Guideline E: Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports	Applicable Distraction from lighting and/or reflection are discussed in Section 5.2.6
Guideline F: Managing the Risk of Intrusions into the Protected Airspace of Airports	Applicable Protected Airspace for operation and construction are discussed in Sections 5.2.1 and 5.2.2 respectively

NASF Guideline	Comment
Guideline G: Protecting Aviation Facilities — Communications, Navigation and Surveillance (CNS)	Applicable CNS and Air Traffic Control are discussed in Section 5.2.4
Guideline H: Protecting Strategically Important Helicopter Landing Sites	Not applicable The Project is not located within a helicopter landing site
Guideline I: Managing the Risk in Public Safety Areas at the Ends of Runways	Not applicable The Project is not located within the public safety areas at Brisbane Airport

5.2.1 Prescribed Airspace – Operation of the BNE Auto Mall

A review of potential impacts to the prescribed airspace has been undertaken utilising the Brisbane Airport Prescribed Airspace for Brisbane's New Runway operations reviewed against development heights to confirm acceptability.

Prescribed airspace is the airspace above any part of any prescribed surface such as:

- Obstacle Limitation Surface (OLS) (refer Figure 19);
- Procedures for Air Navigation Services – Aircraft Operations (PANS-OPS) (refer Figure 20); and
- Navigational aid (NAVAID) protection surface (refer Figure 21).

The three prescribed airspace elements above are published by BAC individually and combine multiple surfaces to illustrate the critical surface for each element.

The OLS is designed to provide protection for aircraft operating under visual flight rules (VFR) when the pilot is flying by sight and is usually the most critical of all surfaces. The OLS surface elevation varies across the BNE Auto Mall site with three different surfaces, of which the lowest elevation at 35 m AHD and highest elevation 47.5 m AHD, as illustrated in Figure 19. Buildings within the BNE Auto Mall site are unlikely to exceed these heights and as such, will not impact the critical protection surfaces. However, any buildings designed above the OLS surface elevation will be subject to BAC review and approval with reference to prescribed airspace.

The assessment of the critical surfaces for PANS-OPS and NAVAID indicate elevations of between 42 m AHD and 66.7 m AHD, well above those of the OLS surfaces. Diagrammatic assessments of the PANS-OPS and NAVAID surfaces are detailed in Figure 20 and Figure 21 respectively.

5.2.2 Prescribed Airspace - Construction of the BNE Auto Mall

The construction of the BNE Auto Mall site is not anticipated to cause aviation operational and safety impacts due to both the location and the type of construction activities planned. BAC will continually monitor construction activities to ensure there is negligible impacts across airport operations.

Should cranes be required during construction which penetrate any of the above prescribed airspace elements, approvals and clearances will be sought prior to construction commencing as required by BAC with close engagement with the Department, CASA and Airservices regarding cranes operating on Brisbane Airport land.

5.2.3 Wind shear

The potential impact of wind shear from the BNE Auto Mall site upon aircraft operations was assessed utilising Guideline B of the National Airports Safeguarding Framework (NASF) (Department of Infrastructure, Regional Development and Cities 2018a). Figure 22 illustrates that a small portion of development site is located within the wind shear assessment zone for the existing runway. Based on the 1:35 rule in NASF Guideline B, the assessment zone has a surface elevation rising from 34.7 m AHD to 39.0 m AHD as it reaches the BNE Auto Mall development area. That is, any development within this assessment zone that extends above 34.7 m AHD will be subject to a wind shear assessment. However, as described in Section 2.4, no buildings are proposed over 12 m in height and as such, are well below the height requiring a wind shear assessment.

The proposed land use within the BNE Auto Mall site is sport and recreation and mixed use commercial and the proposed buildings are unlikely to intersect this wind shear assessment surface. As such, no further investigation is required on the potential effects of building induced wind shear impacts to aircraft operations.

5.2.4 Communication, Navigation and Surveillance and Air Traffic Control

The impact to navigation aid protection surface within the prescribed airspace at Brisbane Airport has been assessed against NASF Guideline G. These existing and future surfaces ensure appropriate protections are in place for ground based CNS equipment operated by Airservices Australia and BAC.

Figure 18 provides a line of sight profile from the air traffic control (ATC) tower to the ground at the end of the taxiway (refer Figure 23 for the direction of the line of sight). As illustrated in Figure 23, the line of sight from the ATC tower falls across the Stage 2 area (eastern side) of the development site. Proposed buildings to be developed within this line of sight are up to 12 m in height and as such, will not exceed the 30.38 m AHD height limitation derived in Figure 18.

The review of the prescribed airspace for navigation aids determined the BNE Auto Mall would have no impacts to the protected surfaces for existing or future operations. As part of the close cooperation between BAC and Airservices Australia, BAC will continue to liaise with Airservices on operational issues and ensure there will be no disruption to existing or future CNS equipment, NAVAID protection surfaces and the continuous line of sight for air traffic controllers to arrival or departing aircraft.

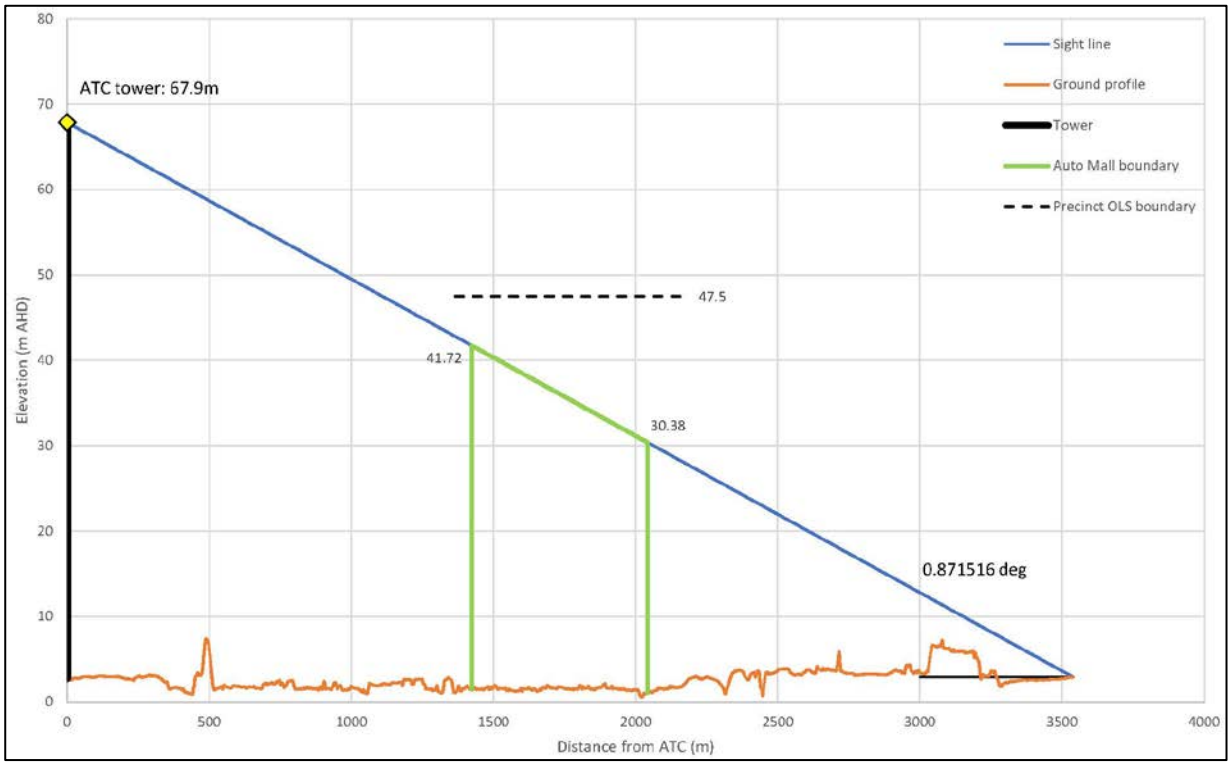


Figure 18 Line of sight profile

5.2.5 Vertical Gas Plume Rise and Dust

Vertical gas plumes can originate from any number of sources where facilities produce emissions and exhaust gases through stacks or vents creating plumes of gases at varying velocities which can affect aircraft operations in flight.

The land use and concept of the BNE Auto Mall site does not propose any facilities which would produce such vertical exhaust gases. However, if advised by CASA, BAC can undertake a vertical plume assessment for any specific building on the BNE Auto Mall site in close consultation with CASA.

Dust suppression activities will be undertaken throughout construction to maintain line of sight and visibility for aircraft and air traffic controllers.

5.2.6 Distraction from Lighting or Reflection

Light emissions in close proximity to runway approaches are a potential cause for concern to the safe operation of landing aircraft with regard to:

- Pilots being dazzled by bright lights momentarily;
- Similar light patterns which may be confused with approach and runway lighting particularly for pilots unfamiliar with the airport; and
- Lighting that may reduce the night vision of air traffic controllers.

Lighting and reflection at the BNE Auto Mall development was assessed by utilising the NASF Guideline E '*Managing the risk of distraction to pilots from lighting in the vicinity of airports'*, which lists stadium floodlighting and motorway/freeway lighting as examples of significant lighting (Department of Infrastructure, Regional Development and Cities 2018b).

The BNE Auto Mall development sits within three of the four lighting control zones (Zone B, C, D) outlined within the NASF guideline associated with the location of Brisbane's New Runway. These lighting control zones indicate the maximum allowable candela (measure of light intensity) at 3° above the horizontal plane. The majority of the BNE Auto Mall site sits within Zone C (maximum of 150 cd light intensity) and Zone D (maximum of 450 cd light intensity), as illustrated in Figure 24.

The floodlighting for the performance tracks will likely be in accordance with *Federation Internationale de L'Automobile (FIA) Performance Specification 2010* in relation to uniformity and even spread of light. All other external lighting within the BNE Auto Mall site will be installed in accordance with Australian Standards. All lighting within the BNE Auto Mall will be subject to the CASA Aerodrome Regulation 94 of the *Civil Aviation Safety Regulations 1998*, which overrides all other standards. Lighting options and arrangements will be further explored during detailed design by an experienced lighting designer. Detailed design will also consider any large digital advertising that may be used during special events.

The proposed lighting designs identified within the lighting control zones across the site will be discussed with Airservices Australia to satisfy safe operations for both aircraft and air traffic control. Consultation with CASA will also be undertaken to ensure lighting does not infringe upon the provisions within the *Civil Aviation Safety Regulations 1998*.

The external surface finishings of buildings and structures within the site will also be subject to consultation with Airservices Australia and CASA to ensure there is no reflected sun-glare affecting the operations for aircraft or air traffic controllers.

5.2.7 Aircraft Noise – Australian Noise Exposure Forecast

The BNE Auto Mall site can be described as a commercial and light industrial land use when relating the site to the Australian Standard *AS2021-2015 – Aircraft Noise Intrusion*. The proposed BNE Auto Mall site, which sits within both the ANEF 20-25 and ANEF 25-30 noise contours produced by BAC (refer Figure 25), is therefore considered an acceptable use in line with other commercial developments on Brisbane Airport land with respect to the effects of aircraft noise, in accordance with NASF Guideline A.

5.2.8 Mitigation measures

Building height restrictions vary across the development and are driven by Brisbane's New Runway OLS and potential windshear from existing runway operations, as discussed in the sections above. While buildings within the BNE Auto Mall site are unlikely to exceed these heights, any buildings designed above these critical protection surfaces will be subject to BAC review and approval with reference to prescribed airspace.

The BNE Auto Mall development sits within three of the four lighting control zones (Zone B, C, D) outlined within the NASF guideline associated with the location of Brisbane's New Runway. The floodlighting for the performance tracks will likely be in accordance with *Federation Internationale de L'Automobile (FIA) Performance Specification 2010* and all other external lighting within the BNE Auto Mall site will be installed in accordance with Australian Standards. However, these standards are superseded by the CASA Aerodrome Regulation 94 of the *Civil Aviation Safety Regulations 1998*, against which all lighting within the BNE Auto Mall will comply. Lighting options and arrangements, as well as any large digital advertising, will be investigated during detailed design by an experienced lighting designer.

Other mitigation measures related to aviation operations and safety:

- BAC will continue to liaise with Airservices to ensure there will be no disruption to existing or future CNS equipment, NAVAID protection surfaces and the continuous line of sight for air traffic controllers to arrival or departing aircraft.
- If advised by CASA, BAC can undertake a vertical plume assessment for any specific building on the BNE Auto Mall site in close consultation with CASA.
- Dust suppression activities will be undertaken throughout construction to maintain line of sight and visibility for aircraft and air traffic controllers.

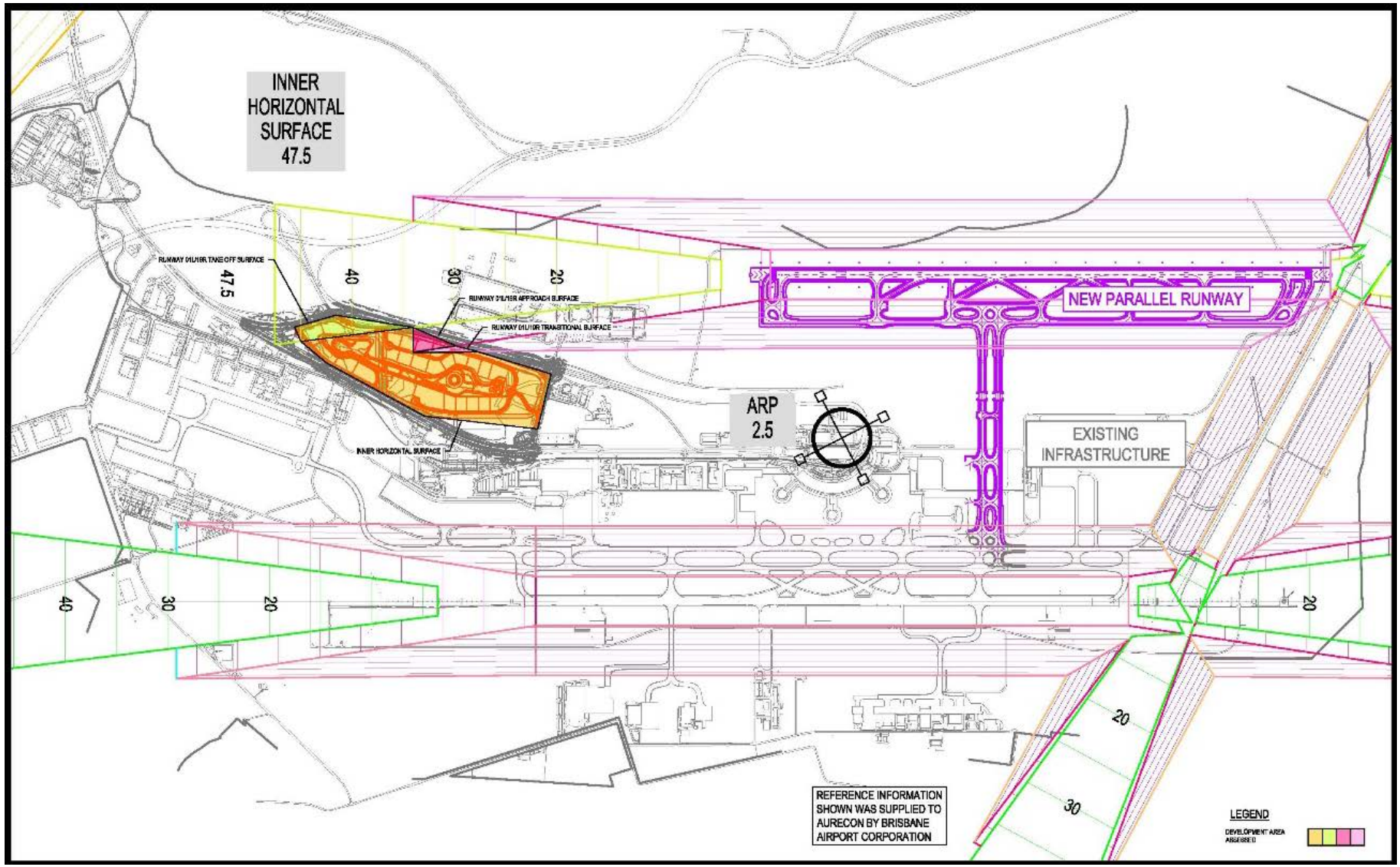


Figure 19 Obstacle Limitation Surfaces

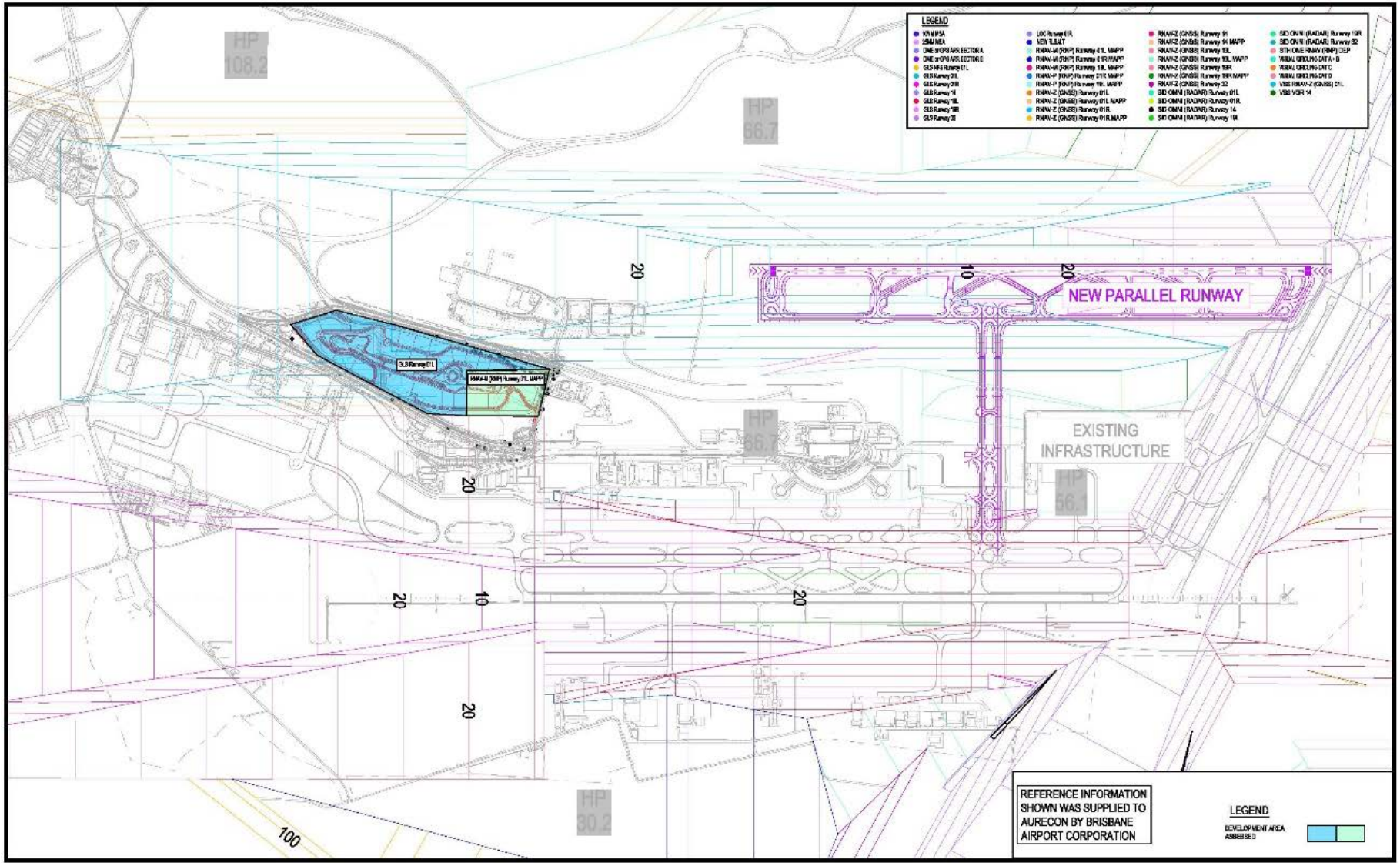


Figure 20 PANS-OPS

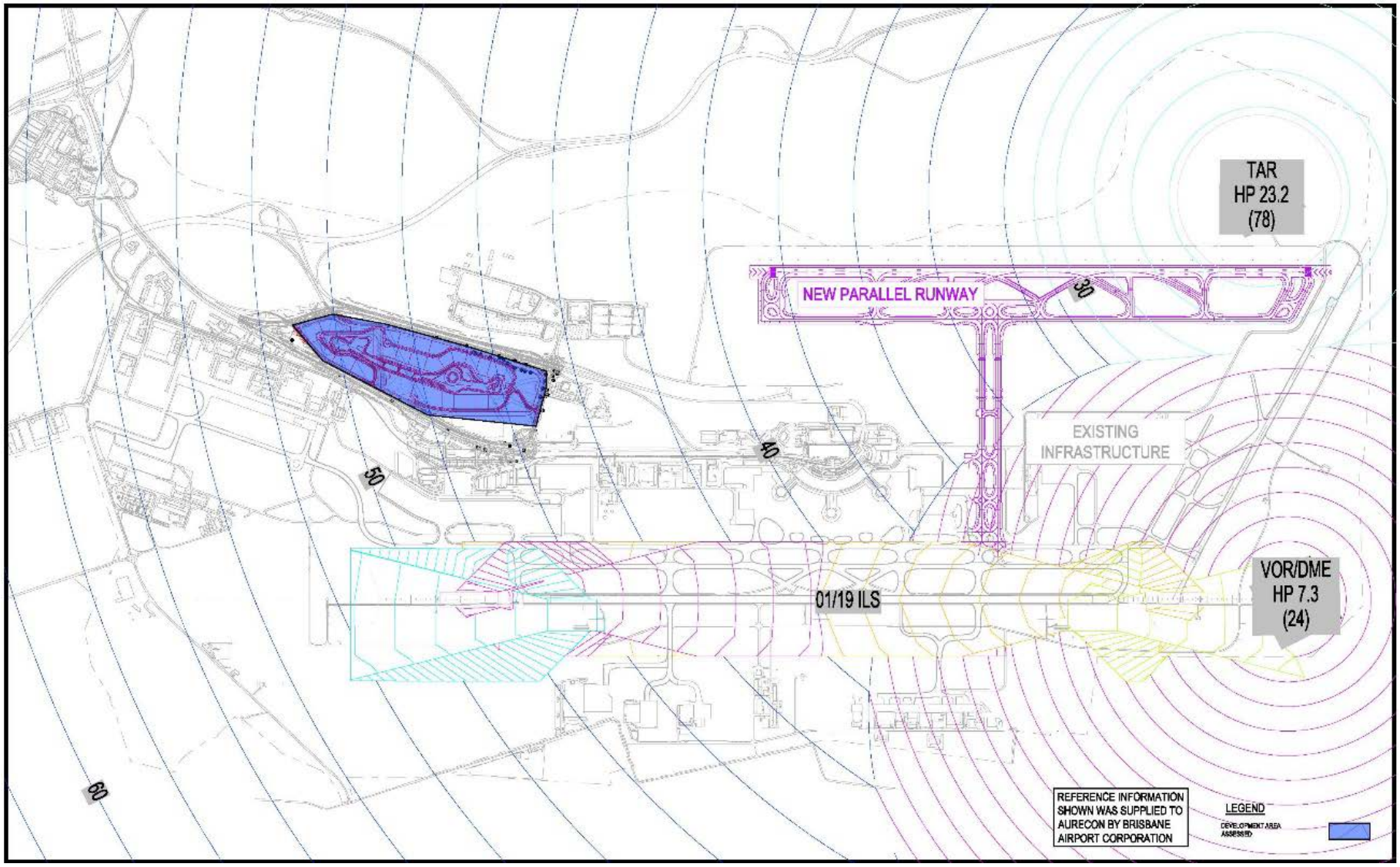


Figure 21 NAVAID Surfaces

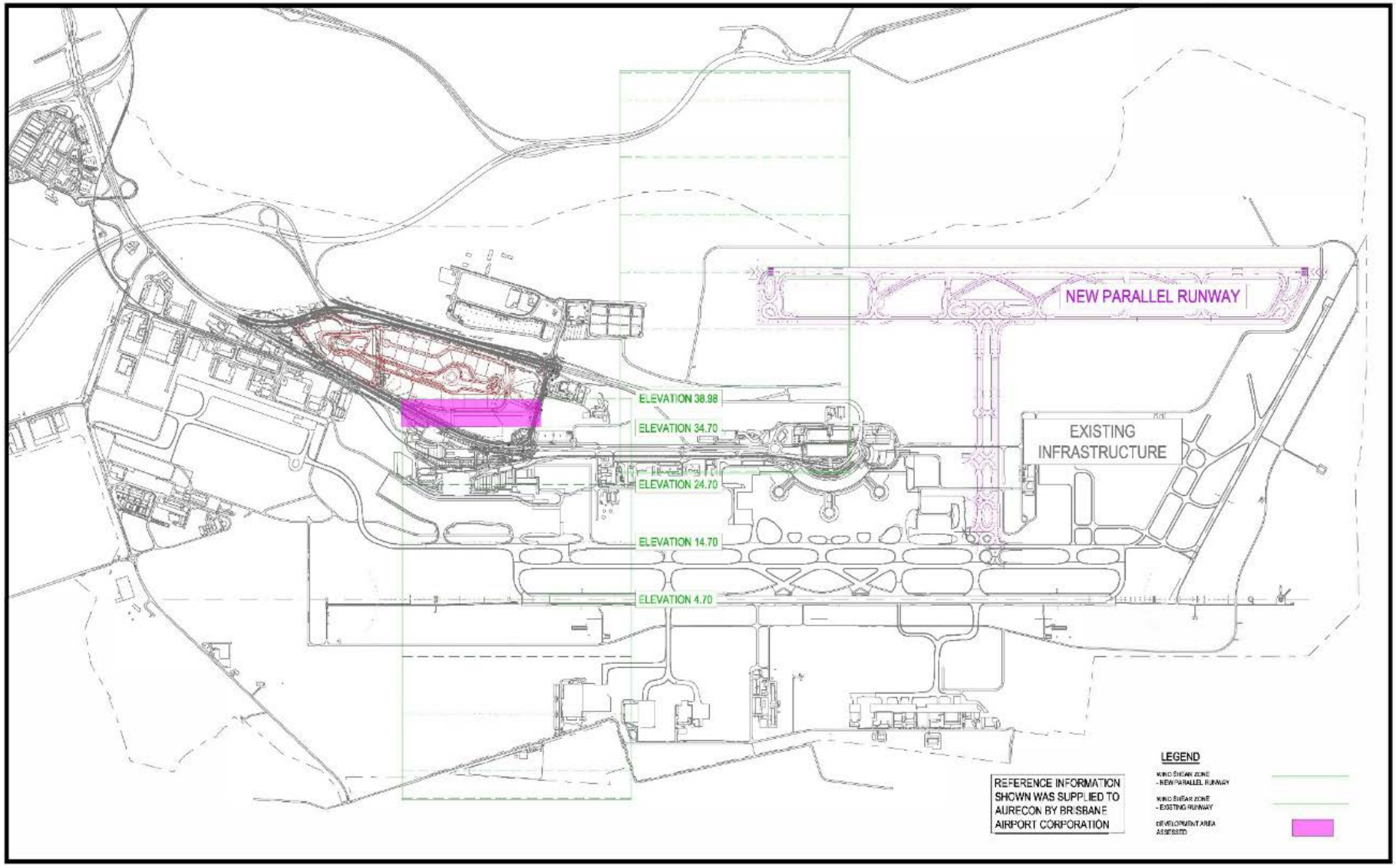


Figure 22 Wind shear assessment zone

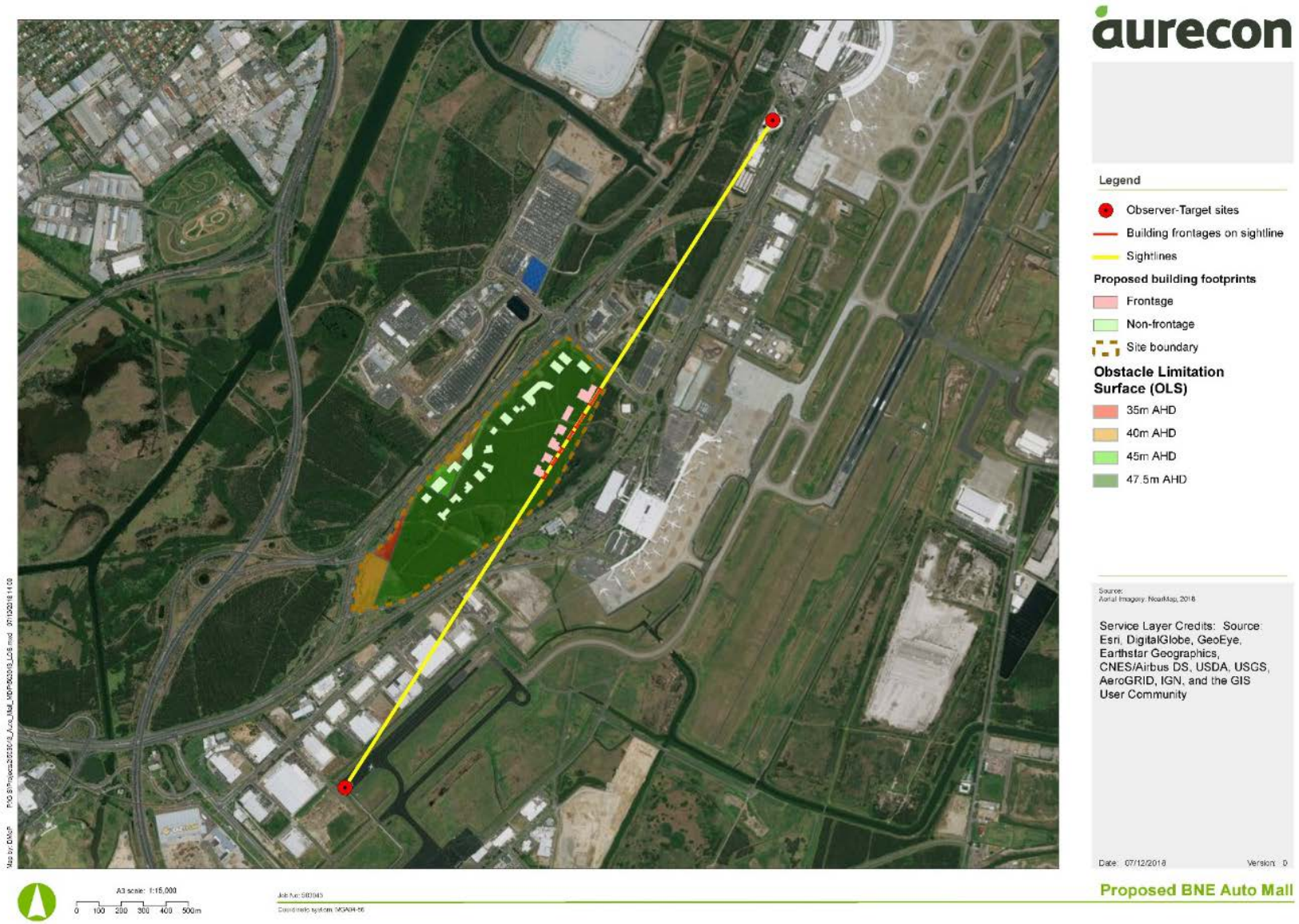


Figure 23 Line of sight assessment

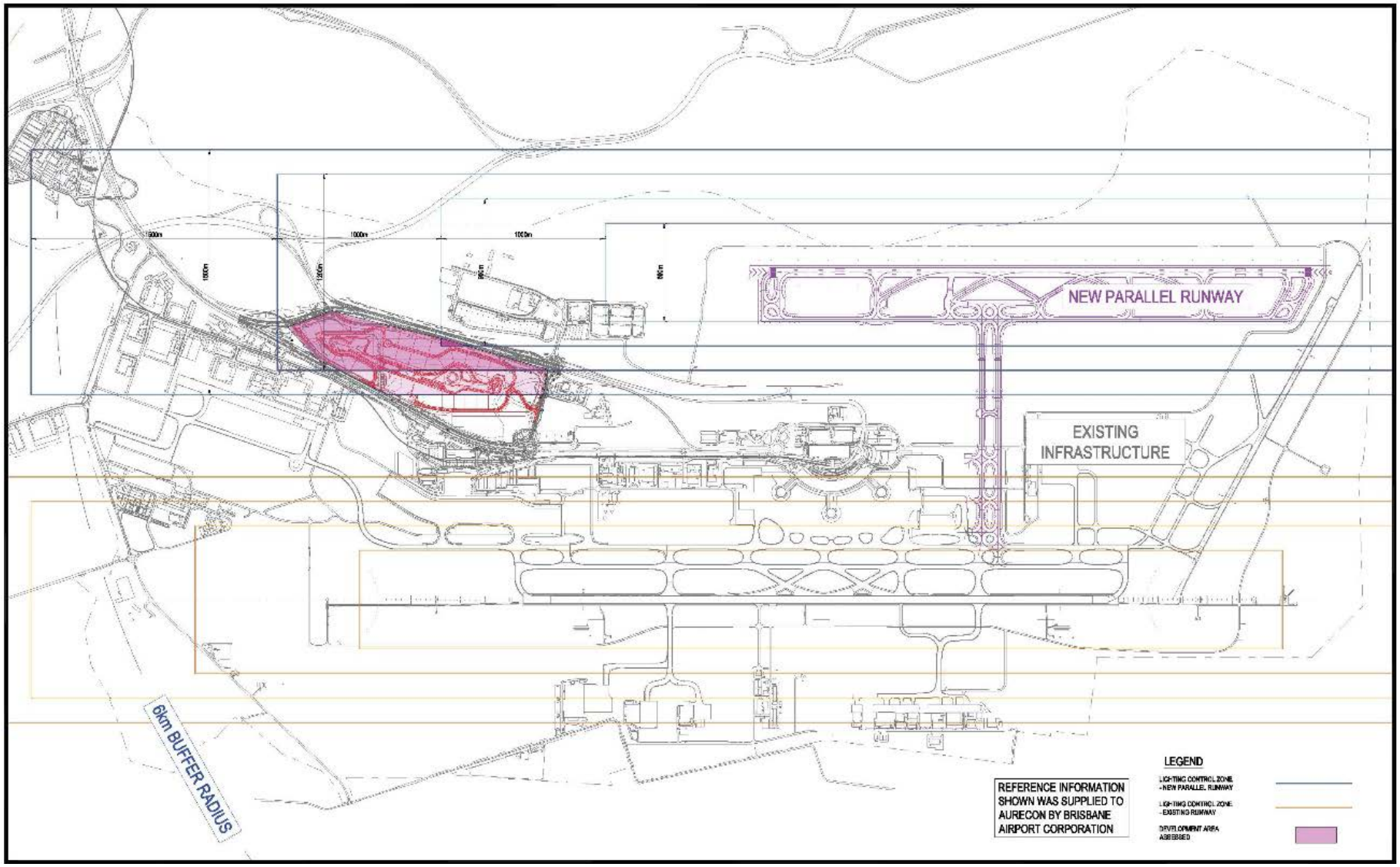


Figure 24 Lighting control zones

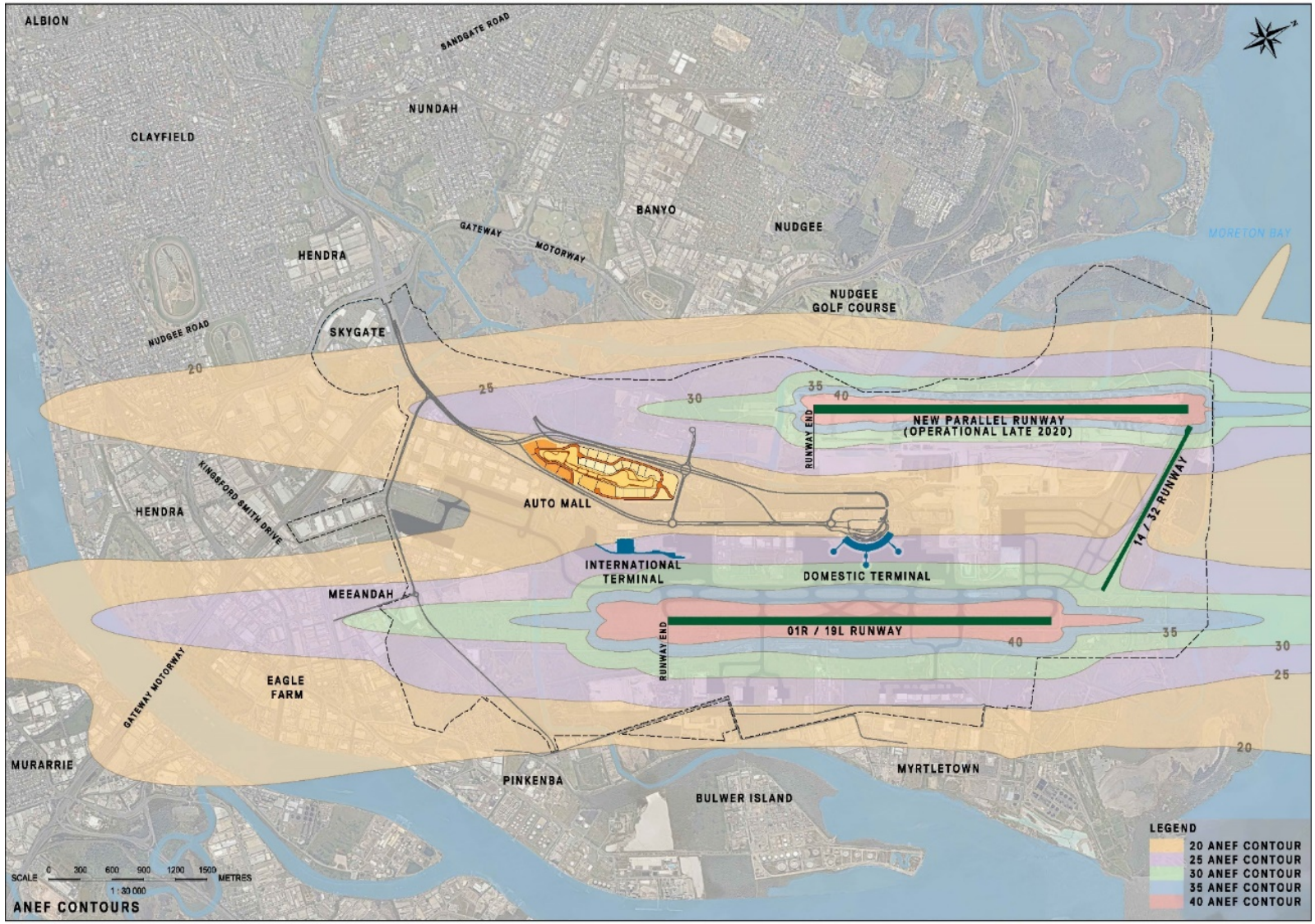


Figure 25 ANEF contours

5.3 Other infrastructure and services

5.3.1 Sewerage

Initially, sewage flows from the BNE Auto Mall will be injected to a 75 mm diameter rising main on Nancy Bird Way, which will ultimately discharge flows to Luggage Point. However, the ultimate discharge location for the development area will be south along Airport Drive to an existing sewage pumping station on Qantas Drive. This existing sewage pumping station is considered to be able to accommodate the ultimate flows from the development area.

5.3.2 Stormwater

Development of the BNE Auto Mall will improve the stormwater run-off quality with the establishment of water sensitive urban design (e.g. swales, landscaping etc). Further details on the design of these stormwater features are discussed in Section 6.3.3. Stormwater run-off will likely be managed and treated by:

- Rainwater tanks:
  - Rainwater to be captured from roof areas and used for onsite non-potable uses (e.g. car washing, irrigation, toilets etc); and
  - Will reduce the volume of untreated run-off entering the perimeter drain.
- Stormwater swales:
  - Incorporated, where practical, to facilitate a functioning landscape; and
  - Encouraged to have a generous depth of sandy loam to provide a good growing media for landscapes, including large canopy trees, while still providing additional filtration of run-off.
- Streetscape design:
  - Vegetated with biopods to capture and treat surface runoff from all road reserves; and
  - Located directly upstream of roadside pits.
- Perimeter drain:
  - A key visual landscape feature for the BNE Auto Mall for external traffic;
  - Bunding and flood control through permanent tidal gates to provide protection from external flood events;
  - Flood mitigation of internal run-off for the duration of storm events;
  - Treatment of ASS via lime trenches located within the batters; and

The perimeter drain has been designed to contain a flood immunity of 1% Annual Exceedance Probability (AEP). Permanent tidal gates will be installed to prevent backwater from regional flood events and storm surge/tidal events entering the development area. Flood immunity of the BNE Auto Mall will also be achieved through the higher levels of the enclosing road embankments of Moreton Drive, Nancy Bird Way and Airport Drive. The Airport Drive median would need to be raised by up to 200 mm in some areas through landscaping to achieve 1:100 year flood immunity.

5.3.3 Electricity

The Energex easement traverses the southern half of the development area and contains HV feeder cables that supply the Airport Intake Substation (AIS), and other HV feeders. The AIS is located on the Airport Drive side of the development area and is one of three intake substations for BAC. 11 kV HV feeders extend from AIS along the Airport Drive side of the Auto Mall site, to supply the International Terminal Building (ITB), and other loads along Airport Drive. Another HV feeder extends back across the Auto Mall site, along the Energex easement, and then the western side of Moreton Drive, to supply the Central Parking Area, the New Parallel Runway, the airport control tower and the Australian Advanced Air Traffic System (TAAATS) building. BAC has and will continue to liaise closely with Energex to ensure the protection of this easement.

It should also be noted that several pad-mounted substations are located within the development area, including:

- On the corner of Moreton Drive and Nancy Bird Way;
- Adjacent to the Kingsford Smith Memorial; and
- On the south east corner of the site, adjacent to Airport Drive.

The AIS currently has spare capacity that could accommodate the load from the BNE Auto Mall. However, the BNE Auto Mall combined with other future developments within the Airport are likely to generate substantial demand and will most likely exceed the current spare capacity at the AIS in the future. As such, the development of the HV infrastructure around the BNE Auto Mall should incorporate provision for possible supply from intake substations other than AIS, most likely the Lomandra Intake Substation (LIS).

Lighting as well other track and infrastructure loads (e.g. signalling, advertising, CCTV, PA system, sirens etc) will be supplied via LV ring feeders installed around the service road and performance track. The flood mitigation pumps at each of the flood control gates will also require a 50 kW supply as well as portable emergency generators.

5.3.4 Potable water

The entire BNE Auto Mall will be supplied by a combined potable and firefighting ring main. The potable water system will likely be initially supplied by a connection to the existing water main on Nancy Bird Way with a second connection to be later developed across Airport Drive, connecting to the Nudgee water main.

Two short spur mains from the ring main to trackside will be made at either end of the performance track to provide firefighting capacity, track washing water and/ or tanker filling trackside. These two spur mains will also provide an interim supply to the 4WD testing circuit and skid pan until a future connection to the recycled water system is made. Water used for these purposes will be captured by the stormwater drainage system.

5.3.5 Recycled water

There are currently two sources of recycled water supply to the BAC recycled Class A water network located at Lakeside Drive supply and the QUU supply from Sugarmill Road. Currently the majority of recycled water consumed by BAC is supplied by the Class A water network and used to supply the cooling towers at the International and Domestic terminals, construction use (e.g. dust suppression) and irrigation at the International Terminal Building, the Skygate precinct and the golf course. In 2013, there was 200 kL/day of surplus recycled water supply available.

Recycled water demand from the BNE Auto Mall will be low and able to be supplied by the existed recycled water main capacity. Recycled water demand includes irrigation of landscaped areas and use on the track, manoeuvring areas, skid pan and 4WD testing circuit.

5.3.6 Telecommunications

The BNE Auto Mall will require telecommunication connectivity for:

- BAC facilities and systems (e.g. irrigation, substation and sewage monitoring, wireless networks, security etc);
- Retail tenants, who will require telecommunication carrier services and flight information display systems;
- Performance track operations, such as the trackside control room, lighting, advertising, intelligent transportation systems, warning systems, noise monitoring etc.

Telecommunications infrastructure exists in the areas surrounding the Auto Mall development site, however the site itself contains minimal existing infrastructure. Existing telecommunications cabling along the Energex Easement is to remain.

A track-side operations and control room will be required to house electronics and systems necessary for performance track applications. It is recommended that this room meet the minimum infrastructure requirements of a Class 3 distributor as defined in the BAC Communications Distributor Guidelines.

Two precinct distributors are required with pit and pipe reticulation throughout the precinct and connected back to the existing BAC telecommunications infrastructure via new underground conduits. One precinct distributor is currently situated within the AIS building and will be repositioned to nearby the AIS building, while the other will be located within the track-side operations and control room.

Field cabinets for end devices (e.g. CCTV, building management system panels etc) will be located throughout the precinct with connectivity served from the two precinct distributors. These field cabinets will also serve trackside areas, although would be located outside of the safety barriers.

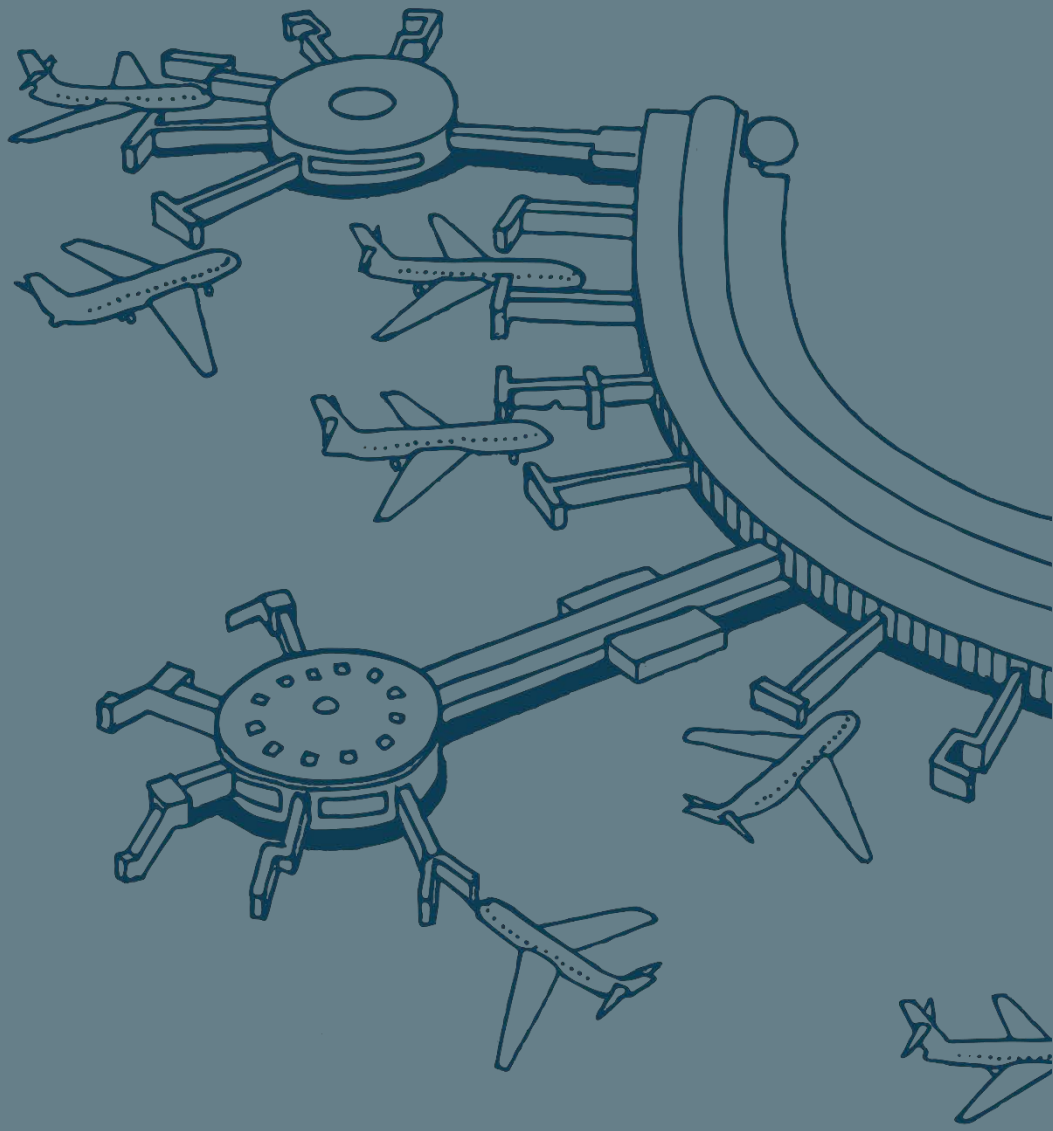
A dedicated mobile carrier equipment room is proposed to enable mobile coverage across the development area.

5.3.7 Mitigation measures

Finalisation of positioning of civil services will occur during detailed designed. Shared trenching is proposed for services, where practicable, such as telecommunications and LV power, which share similar easement requirements.

It is likely that a number of the buildings to be developed in the development area will include rooftop photovoltaics (PV) generation. Consideration needs to be given to transformer size and manufacturer of the inverter to which the PV generation will be connected.

The current recycled water peak demand surplus available for the BNE Auto Mall and the anticipated recycled water demands from track operations will need to be determined. In addition, the timing and capacity of a potential connection from the development area to the Seqwater Class A recycled water network will need to be confirmed. During detailed design, and once the above is confirmed, the recycled water servicing plan for the development area can be confirmed.



6

ENVIRONMENTAL ASSESSMENT

6. Environmental assessment

This section discusses the potential environmental and socio-economic impacts of the Project during the construction and operation of the BNE Auto Mall precinct. Mitigation measures for minimising and/or managing these impacts are also included. Environmental assessment and mitigation measures are MDP requirements under Section 91 of the Airports Act.

Impacts related to the site preparatory works (e.g. clearing, filling, surcharging etc), which are currently being conducted on site, are not subject to this assessment. These were assessed and endorsed through the EAR and EMP by the former DIRD and the AEO.

Works included in this environmental and social assessment are:

- Construction and operation of the proposed BNE Auto Mall precinct at Brisbane Airport.

6.1 Geology, Soils and Topography

6.1.1 Baseline Conditions

6.1.1.1 Topography

The BNE Auto Mall site has been under development since September 2017. Land clearing has occurred and ground improvement and bulk earthworks are currently in progress, as per Section 2.8. The site is flat and low-lying with a surface elevation raised up to 3.4 – 4.2 m AD during the land development phase with clean imported fill material. A man-made drainage channel has been installed around the perimeter of the site to capture any stormwater runoff from the site. Potential sediment and erosion control issues during bulk earthworks and filling have been addressed from the construction of this perimeter drain, with rainfall events captured, and release permitted once water quality parameters are compliant. The perimeter drain outlets are located at two culverts in the north (Moreton Drive north culvert and Nancy Bird Way culvert) and one culvert in the south (Moreton Drive south culvert).

6.1.1.2 Geology and Soils

Soil profiles encountered during the geotechnical investigation determine a topsoil overlying Holocene aged younger alluvium extending to depths of up to 30 m bgl. Pleistocene aged older alluvium is present underlying the younger alluvium and the bedrock is either basalt or sandstone. Clean fill material from various locations across the greater Brisbane area has been imported to the site during bulk earthworks for filling and surcharging.

6.1.1.3 Acid Sulfate Soils

The airport is situated on a coastal plain that is predominately less than 5 m AHD and as such, potential acid sulfate soils (PASS) conditions commonly exist across the airport site. During acid sulfate soil (ASS) investigations for the land development of the site, ASS materials were determined to be present across the site, with actual ASS (AASS) in the surface soils to below the water table. Across the site, PASS material underlies the actual ASS. All ASS material encountered was managed during the land development of the site under an approved ASS Management Plan.

The new material for fill placement was transferred to site from various locations across the greater Brisbane area and was deemed to be free from acid sulfate soil through Fill Source Assessments undertaken by the haulage contractor for each source of fill. This was undertaken during site preparatory works, as per Section 2.8.

6.1.1.4 Contamination

A contaminated land assessment was conducted for the site prior to the commencement of the land development works. During this assessment, Golders (2016a; b) identified a known contaminated site (Site 28 – black sands) which is '*located at the southern end of the Auto Mall Precinct within the Stage 2 investigation area, on the boundary with the Stage 1 investigation area*'. During site preparatory works, suspected black sand/mineral sands were identified and three shallow soil samples were collected and analysed for titanium and zirconium. Results indicated that titanium concentrations were generally elevated in shallow soils along the eastern portion of the site. Further analysis of surface samples in 2017 and 2018 confirmed that the material suspected to be minerals sands is ilmenite. The mineral sand content and radiation emission dosage are significantly below published guidelines and will not cause harm to human health and/or the environment. Refer Appendix G for further information.

Minor metal/metalloid and per- and poly-fluoroalkyl substances (PFAS) concentrations were detected in shallow soils and groundwater across the site, however, it was considered that there was no risk to human health and/or the environment (Golders 2016 a; b).

PFAS was detected at concentrations above the laboratory limit of reporting in four soil samples out of the 52 soil samples collected across the site. PFAS concentrations in the soil ranged between not detected (<0.0002 mg/kg) to 0.0025 mg/kg, and comprised PFOS, PFHxS and PFTeDA at low concentrations. All PFAS concentrations were below screening criteria for the protection of human health and the environment for commercial/industrial site settings, as outlined in the PFAS National Environmental Management Plan (Heads of EPA 2018). There were no exceedances of the AEPR guidelines for metals in soil. However, minor exceedances of the NEPM 2013 Environmental Investigation Levels were noted for nickel in two samples and zinc in two samples. Further details are provided in the Contaminated Summary Report in Appendix G.

BAC maintains compliance with the NEMP through its project CEMP and management plans, which will continue through the construction phase of this project.

Under the endorsed EAR (refer Appendix D), the CEMP for the site preparatory works and the current Building Approval, fill material has been imported on to the Auto Mall project site as part of the bulk earthworks and surcharging phase. Fill material imported onto Brisbane Airport is required to comply with the National Environmental Protection Measure and the BAC Importation of Structural Earth Fill Procedure. The intent of this procedure is to outline the process of importing fill material to ensure reasonable and practicable measures are implemented to prevent or minimise the generation of pollution, as required under 4.01 of the AEPR. The procedure and reporting for each fill source is to be undertaken by a suitably qualified person which includes an on-site visit and an assessment of:

- The current use and history of the fill source;
- The Queensland Government Contaminated Site Registers - Environmental Management Register and Contaminated Land Register;
- Red Imported Fire Ants;
- Weeds; and
- Acid Sulfate Soils.

Compliance with the Importation of Structural Earth Fill Procedure is demonstrated with the submission of a report to BAC, who review, and if acceptable, provide approval prior to the import of any fill material from the source.

6.1.2 Assessment of Impacts

6.1.2.1 Topography, Geology and Soils

The land development works currently in progress (e.g. earthworks, surcharging etc) are intended to prepare the site for construction of the BNE Auto Mall. Geotechnical investigations were undertaken by Golders (2016c) to assist with concept surcharge design separately for the track layout and the roads/buildings. Based on these works, it is considered that the site is suitable for the construction and operation of the performance track to iEDM (the track designer) requirements and the construction and operation of the roads and buildings.

The BNE Auto Mall will replace the existing site with a combination of hardstand, landscaped areas and the performance track. Excavation will be required for installation of services and building foundations, which may potentially cause erosion and/or sedimentation if managed incorrectly.

6.1.2.2 Acid Sulfate Soils

While the imported fill material does not contain ASS material, some activities (e.g. installation of services, building foundations) may require excavation through the fill material and into the natural soil. As such, ASS material in the natural soils may be disturbed and undergo oxidation. These soils will need to be managed through the implementation of a site-specific ASS Management Plan, which will comply with the ASS Management Plan contained within the EAR and EMP as endorsed by former DIRD for the site preparatory works.

6.1.2.3 Contamination

While the imported fill material does not contain contaminated soils, some activities (e.g. installation of services, building foundations) may require excavation through the fill material and into the natural soil. The contaminated land investigation determined that there was no risk to human health and/or the environment, and as such, the risk of encountering elevated contaminants in the natural soil is considered low.

It is anticipated that operation of the BNE Auto Mall may involve storage and use of fuels, oils, solvents and other potentially hazardous chemicals as a result of testing and maintaining vehicles. The storage and use of these potential contaminants may result in soil and/or groundwater contamination. These activities will need to be appropriately managed as detailed below.

6.1.3 Mitigation Measures

6.1.3.1 Topography, Geology and Soils

Erosion and sedimentation impacts during this excavation works will be managed through a site-specific Erosion and Sediment Control Plan, which will be prepared as part of a CEMP for each stage of works. Further management of stormwater quality and sediment and erosion control during construction and operation of the BNE Auto Mall is discussed in Section 6.3.3.

Following the implementation of the above mitigation measures, the impact of the Project on topography, geology and soils is assessed as:

Topography, geology and soils	
Construction phase	Low risk
Operational phase	Negligible risk

6.1.3.2 Acid Sulfate Soils

Where disturbance of ASS material is expected, an ASS Management Plan will need to be developed and implemented to ensure adverse impacts to stormwater run-off and groundwater from increased acidity are avoided. The ASS Management Plan will be required to comply with the Queensland Acid Sulfate Soil Technical Manual – Soil Management Guidelines (v4.0) (Dear et al. 2014).

Where excavations occur within the natural material underlying the fill material imported during the site preparatory works, soil material is to be assumed to be ASS until proven otherwise and are to be managed by stockpiling within a nominated location (as agreed by the BAC Environmental Advisor) and neutralised by lime treatment.

Groundwater management and monitoring in relation to ASS is provided in Section 6.3.3.

Following the implementation of the above mitigation measures, the impact of the Project on acid sulfate soils is assessed as:

Acid sulfate soils	
Construction phase	Negligible risk
Operational phase	Negligible risk

6.1.3.3 Contamination

During excavation works into the natural soil, if any unexpected contamination is encountered (e.g. odours, staining or other signs of contamination), a suitably qualified consultant should be commissioned to assess the potential impact and recommend additional management strategies if required.

Groundwater monitoring for PFAS and dissolved metals/metalloids will continue during construction of the BNE Auto Mall once every six months (refer Section 6.3.3). Groundwater monitoring will cease upon completion of construction.

A Construction Environment Management Plan (CEMP) will be developed and implemented for construction of the BNE Auto Mall. The CEMP will contain procedures for assessing and managing PFAS impacted soil, groundwater and surface water. The CEMP will be developed and implemented prior to the commencement of any horizontal or vertical construction or other works that have the potential to disturb areas of known or potential PFAS contamination.

The CEMP will be consistent with the National Water Quality Management Strategy, including the Australian and New Zealand Guidelines for Fresh and Marine Water Quality, as well as the PFAS National Environmental Management Plan (HEPA 2018), including its guideline values, as amended from time to time.

The CEMP will set out:

- Project scope and boundaries;
- Roles and responsibilities;
- Conceptual site model - including maps and any monitoring data - identifying the extent concentrations of possible contamination within the project footprint and nearby;
- Possible exposure pathways and ecological receptors - both directly within the Project site and also from the Project site to any nearby receptors;
- The site-specific risk assessment that identifies possible risks tailored to the reported or expected PFAS concentrations, exposure pathways, and potential receptors on and off the Project site;
- Procedures for the management or remediation of PFAS contamination within the Project site;
- Strategies to reduce runoff and migration of contamination within and off the proposed Project site;

- Operational procedures for managing earthworks and the stockpiling or storage of contaminated water / soil / rock / concrete / tarmac / etc, including in relation to encapsulation, bunding, leachate control and disposal;
- If necessary, a contingency action plan for unexpected PFAS contaminant discoveries; and
- Any one-off or ongoing soil and water monitoring requirements and testing procedures, and their relevant quality assurance and quality control procedures.

The CEMP will also impose the following requirements:

- Any PFAS contaminated material (including but not limited to excavated soil or sediment, leachate from soil or sediment, water arising from de-watering of soil or sediment, concrete, tarmac, appliances, pumps, pipes, hoses, fittings) must be handled appropriately and disposed of in an environmentally sound manner such that potential for the PFAS content to enter the environment is minimised;
- Any PFAS contaminated material with a PFOS, PFHxS or PFOA content above 50 mg/kg or 50 mg/L (as appropriate), must be stored or disposed of in an environmentally sound manner that will achieve nil environmental release of their PFAS content; and
- Detail how materials at or over the concentrations listed above, if encountered, would be handled to achieve zero environmental release.

Any storage of fuels and hazardous substances will need to be conducted in accordance with AS1940:2017, *The storage and handling of flammable and combustible liquids*. All hazardous materials will need to be stored with an up to date material safety data sheet (MSDS). An MSDS register will be maintained adjacent to the hazardous material storage area with the location clearly signed.

Hydrocarbon products stored in volumes greater than 200 L must have a form of secondary containment. The secondary containment volume must be 110% of the volume of material stored within the bund. Waste spills on site will be managed on site to prevent soil contamination with the use of spill kits and user training.

Following the implementation of the above mitigation measures, the impact of the Project on contamination is assessed as:

Contamination	
Construction phase	Negligible risk
Operational phase	Low risk

6.2 Ecology

6.2.1 Baseline Conditions

Clearing of vegetation within the site commenced in September 2017 under the land development phase of the Project. Upon commencement of construction works, the site will not support any flora or fauna species, as is evident in Section 2.8. The existing CEMP required all plant and materials (including the fill material) brought to the site to be certified free of declared pests and weeds and included a pest and weed management plan to ensure that proliferation of pest and weed species within the site does not occur.

6.2.2 Assessment of Impacts

The BNE Auto Mall will comprise a combination of hardstand, landscaped areas and the performance track. An EPBC Act self-assessment was undertaken in accordance with the Significant Impact Guidelines 1.1 (2013) for matters of national environmental significance (MNES) and Significant Impact Guidelines 1.2 (2013) for actions on, or impacting upon, Commonwealth land and Actions by Commonwealth Agencies. The self-assessment is provided in Appendix H. Results from the self-assessment indicate that the BNE Auto

Mall is not likely to result in a significant residual adverse impact upon the identified MNES and/or the actions on, or impacting upon, Commonwealth land.. However, there is potential for pest and weed species to be introduced to the site through construction equipment and landscaping materials.

New landscaped areas will be provided as part of the development, which will be designed to satisfy the intent of the Brisbane Airport Landscape Setting Strategy 2018. Landscape design will incorporate resilient, native species found within the airport's coastal setting that will not attract birds or flying foxes and, when fully mature, will not compromise operational airspace. Further details on landscaping are provided in Section 6.7.

6.2.3 Mitigation Measures

The following mitigation measures will be implemented to manage any impacts on ecological values during construction and operation of the BNE Auto Mall:

- No dogs or other animals will be permitted on the site (with the exception of registered assistant animals);
- Contact the BAC Environmental Advisor in the event that an animal is injured during construction, followed by 1300 Animal (1300 264 625);
- Any landscaping on site will be designed in accordance with the Brisbane Airport Landscape Setting Strategy 2018;
- Report suspected outbreaks of declared weed species to the BAC Environmental Advisor;
- Report sightings of declared pest animals (as listed under the provisions of the EPBC Act and NC Act) to the BAC Environmental Advisor;
- Do not deliberately introduce declared weed and/or pest species as listed under the provisions of the EPBC Act and/or Biosecurity Act. Implement measures to ensure that all plant and materials brought into the BNE Auto Mall are certified free of declared pests; and
- Implement waste management measures to avoid increased abundance of pests and opportunistic native fauna.

Following the implementation of the above mitigation measures, the impact of the Project on ecology is assessed as:

Ecology	
Construction phase	Negligible risk
Operational phase	Negligible risk

6.3 Hydrology and Water Quality

6.3.1 Baseline Controls

6.3.1.1 Surface Water

A goal of water management under the AES 2014 is to mitigate potential impacts on water quality of surrounding ecosystems through the application of sustainable water management practices. Urban wastewater discharge, construction activities, landscaping and the storage of fuel and hazardous material have the potential to influence water quality of waterways surrounding the site.

The site is currently undeveloped and undergoing earthworks and surcharging with run-off from the site being captured by the perimeter drain. The overland path currently consists of uncovered soils. The perimeter drain has two discharge culverts in the north (Moreton Drive north culvert and Nancy Bird Way culvert) and one discharge culvert in the south (Moreton Drive south culvert). Site drainage is through the culverts into Landers Pocket Drain located approximately 100 m west of the Project site, with run-off eventually discharging into the Kedron Brook Floodway Drain, located approximately 900 m north of the Project site. All discharge culverts are currently bunded off from tidal influx during the earthworks and proposed infrastructure works. Surface water monitoring is undertaken by BAC across the airport on a regular basis, including in Landers Pocket drain and Kedron Brook Floodway Drain.

Surface water sampling was undertaken by PSK in January/February 2019 in the receiving water disconnected from the Auto Mall site. This surface water is subject to tidal influences and is considered to be representative of surface water which will reach Kedron Brook. The surface water generally has a pH above 6.0, although two locations in the perimeter drain had very acidic conditions with pH of 2.6 and 2.7. Electrical conductivity ranged from 3.1 mS/cm (brackish) to 89.4 mS/cm (saline) while the turbidity of the surface water was generally below 20 NTU. Dissolved oxygen varied significantly from 25% saturation to 175%, although it is noted that all dissolved oxygen readings above 100% saturation were taken during a period of low rainfall. Further details are provided in Appendix G.

A number of PFAS chemicals, including PFOS, PFHxS and PFOA, were detected at concentrations above the laboratory limit of reporting. Concentrations of sum of PFOS and PFHxS ranged between 0.007 µg/L and 0.017 µg/L, which are below the screening criteria for drinking water and recreational water. Elevated metal concentrations in these receiving waters were also detected, including:

- Aluminium (up to 16.2 mg/L)
- Copper (0.011 mg/L)
- Lead (0.008 mg/L)
- Nickel (0.505 mg/L)
- Zinc (0.681 mg/L)
- Iron (433 mg/L)

These samples were taken from the perimeter drain in January 2019 and are likely to be related to the very acidic conditions (pH 2.6). Refer Appendix G for further details.

6.3.1.2 Groundwater

While there are no discrete aquifers present at Brisbane Airport, the geology can be divided into two distinct layers; Upper Holocene alluvia and Lower Holocene alluvia. The shallow aquifer is present in the Upper Holocene, which comprises interlayered clays, silts and sands with low permeability (BAC 2006). The shallow aquifer fluctuates significantly with tidal and rainfall events and discharges to creeks and drains within Brisbane Airport. The Lower Holocene alluvia comprises homogenous clays and silts and contains a deeper groundwater aquifer (BAC 2006). Permeability of the deeper aquifer is very low and groundwater movement is negligible.

A groundwater investigation was conducted on the site and included the gauging and sampling of ten boreholes across two monitoring events (Golders 2016a; b). Groundwater was shallow, with depths ranging between 0.71 to 2.57 m bgl (0.87 to 2.13 m AD) (Golders 2016a; b). The flow direction was assessed to be generally towards the west to north west towards Landers Pocket Drain (Golders 2016a; b). Groundwater was determined to be brackish to saline with acidic to neutral conditions (pH 3.65 to 6.99). Groundwater within some portions of the site was determined to be vulnerable to acidification given a low buffering capacity.

PFAS was detected in three of the ten groundwater monitoring wells sampled in January 2016 and in eight of the ten monitoring wells when resampled in October 2016. Concentrations of sum of PFOS and PFHxS ranged between <0.002 µg/Land 0.405 µg/L. Concentrations were above the screening criteria for drinking

water in two groundwater wells (AM-MW14 and AM-MW16), sampled in October 2016. There were no concentrations above the screening criteria for recreational water. Further details are provided in the Contaminated Summary Report in Appendix G.

For metals in groundwater, exceedances of the AEPR Marine Water guideline and NEPM 2013 Groundwater Investigation Levels (GILs) for Marine Waters were identified for nickel and zinc in five groundwater wells. Nickel concentrations also exceeded the NEPM 2013 GILs for drinking water in three groundwater wells. Further details are provided in the Contaminated Summary Report in Appendix G.

Groundwater monitoring has continued through site preparatory activities, with consistent findings to the above (refer Appendix G).

6.3.2 Assessment of Impacts

6.3.2.1 Surface Water

Development of the BNE Auto Mall will improve the hydrology and water quality of the stormwater run-off with the establishment of water sensitive urban design (e.g. swales, landscaping etc). Stormwater run-off from the site will likely flow either through vegetated swales or be captured by streetscape biopods for treatment prior to discharge into the perimeter drain.

The perimeter drain has been designed to contain a flood immunity of 1% Annual Exceedance Probability (AEP). Permanent tidal gates will be installed to prevent backwater from regional flood events and storm surge/tidal events entering the Project site once developed. During the construction phase, the discharge culverts will be bunded off to prevent uncontrolled sediment or runoff release.

Surface water quality impacts that have potential to occur during construction and operation of the BNE Auto Mall, include:

- Construction impacts:
    - Sedimentation of the perimeter drain and downstream watercourses from construction activities due to inadequate erosion and sediment control measures and high rainfall incidence;
    - Potential disturbance of AASS and PASS, resulting in a decline in water quality;
    - Hydrocarbon and chemical spills from construction plant and vehicles;
    - Release of weed seeds and pathogens into drainage lines from vehicles and machinery traversing the Project site;
    - Litter and rubbish from occupation by construction workers;
- Operational impacts:
    - Track washing of the performance track, manoeuvring courses, skid plan and 4WD track may be undertaken to remove any build up of dust, gravel and/or oil that may have occurred. The resultant water will be captured by the stormwater drainage system and may contain contaminants and/or a high sediment load;
    - Spills or leaks from storage and use of fuels and other hazardous chemicals, resulting in a decline in water quality; and
    - Litter and rubbish from tenants and visitors to the BNE Auto Mall.
- Two short spur mains from the ring main to trackside will be made at either end of the performance track to provide firefighting capacity, track washing water and/ or tanker filling trackside. These two spur mains will also provide an interim supply to the 4WD testing circuit and skid pan until a future connection to the recycled water system is made. Water used for these purposes will be captured by the stormwater drainage system and discharged to the perimeter drain.

6.3.2.2 Groundwater

Given the shallow nature of the groundwater at the site, there is potential for the groundwater table to intersect with any excavations on site. As a result, groundwater may be impacted by any acid drainage from ASS disturbance. Cuttings and excavations may require dewatering due to groundwater ingress, which may lead to passive dewatering of the surrounding groundwater.

Future tenancies within the BNE Auto Mall may involve storage and use of fuels, oils, solvents and other potentially hazardous chemicals as a result of testing and maintaining vehicles. Any spills or leaks of these potential contaminants may leach through the soil and impact groundwater quality.

6.3.3 Mitigation Measures

6.3.3.1 Surface Water

Erosion and sedimentation impacts during construction of the BNE Auto Mall will be managed through a site-specific Erosion and Sediment Control Plan, which will be prepared as part of a CEMP for these construction works. Mitigation measures relating to erosion and sediment control will include, but not be limited to:

- Minimise exposure of disturbed soils at any time;
- Divert water run-off from undisturbed areas around disturbed areas;
- All erosion and sediment control measures shall be constructed and maintained as per International Erosion Control Association (IECA) (2008) standard drawings;
- All erosion and sediment control devices shall remain in place until site stabilisation has been achieved, as directed by the BAC Environmental Advisor;
- Any potentially sediment-laden stormwater runoff shall pass through a sediment control device prior to entering the perimeter drain;
- Uncontaminated sediment removed from erosion and sediment control devices may be stockpiled and reused in landscaping or other fill projects, otherwise must be disposed of in an approved environmentally safe manner; and
- Maintenance of erosion and sediment control measures should continue until the Project site has been suitably stabilised and further disturbance of soil by erosion is prevented.

For any completed earthworks or disturbed areas where construction is likely to be suspended, cover requirements are to be determined in consultation with the BAC Environmental Advisor and be in accordance with the IECA Guidelines (2008). The types of cover considered should include hydromulch, soil stabilising polymers, grasses, erosion control blankets etc.

Prior to release of any water from the perimeter drain during construction activities, surface water monitoring is required within the perimeter drain and the receiving waters. Analysis for PFAS and dissolved metals/metalloids will be conducted to ensure concentrations in the perimeter drain are equal to or below existing concentrations of receiving waters and/or are reflective of the risk profile of the catchment. Given the Project site is not a known source of PFAS, it is unlikely that PFAS concentrations will be greater than the receiving surface water. However, should elevated PFAS concentrations be detected within the perimeter drain, appropriate measures, such as treatment and/or disposal of impacted water will be undertaken in accordance with the CEMP (refer Section 6.1.3).

During excavations of the perimeter drain, groundwater and tidal influences have resulted in the perimeter drain holding water in various sections. In addition to the lime cut off trench installed during the bulk earthworks phase, these standing water levels within the drain have assisted with the management of potential ASS by not allowing the oxidation of soils. Although the perimeter drain is to be vegetated, the primary stormwater treatment measures are to be implemented as per the BNE Auto Mall Development Plan (refer Appendix C). These stormwater treatment measures, which include vegetated swales and rainwater tanks, will capture and treat stormwater prior to release into the perimeter drain. Vegetation within the

perimeter drain will provide further water quality polishing with waters required to comply with water quality parameters prior to release into receiving environments.

If pH is measured as less than 6.0, the water is to be treated prior to release and additional lime added to the base and walls of the perimeter drain, as per the endorsed ASS Management Plan.

The Construction Contractor is required to notify the site Superintendent immediately of any incidents with the potential to impact on water quality. An incident/accident report form is to be filled out if any non-conformances are found.

During operation of the BNE Auto Mall, a stormwater management strategy will be implemented. Each tenancy will participate in the precinct stormwater management strategy, which will achieve a reduction in total pollutant load (compared with untreated stormwater run-off):

- Total suspended solids (TSS): 80% reduction;
- Total phosphorus: 60% reduction;
- Total nitrogen: 45% reduction; and
- Gross pollutants (>5 mm): 90% reduction.

Stormwater runoff from each Lot and the performance track and ancillary tracks will be managed during operation of the BNE Auto Mall to meet the above objectives, as detailed in Table 13. In addition, each tenancy and the Track Operator will be responsible for developing an Operational Environmental Management Plan (OEMP) in accordance with BAC guidelines, to ensure environmental aspects are managed accordingly during the operational phase. BAC will provide a risk rating to all tenants within the BNE Auto Mall. Tenants with a certain risk rating will be required to provide a copy of the OEMP and audit reports to BAC.

Table 13 Stormwater management strategies

Stormwater management strategy	Details
Rainwater tanks	Allocation of one 100kL rainwater tank per lot. Rainwater to be captured from roof areas is considered generally clean and will be used for on site non-potable uses (e.g. car washing, irrigation, toilets etc). This will reduce the volume of untreated run-off entering the perimeter drain.
Stormwater swales	Stormwater swales will be incorporated, where practical, to facilitate a functioning landscape. A generous depth of sandy loam topsoil will be provided for a good growing media for landscapes, including large canopy trees, while providing additional filtration of run-off. Stormwater runoff from all hardstanding areas will likely be directed to stormwater swales, which will be 5 m wide, situated in each lot, adjacent to neighbouring allotments, to create one swale with a total width of 10 m, underlain by 800 mm of sandy loam topsoil. These swales will generally be located at approximately 200 m intervals across the site to form part of the precinct wide stormwater management strategy to passively treat stormwater prior to entering the perimeter drain.
Streetscape design	Vegetated with biopods to capture and treat surface runoff from all road reserves, including a portion of the performance track. The biopod systems will be located directly upstream of roadside pits, which will accept overflows, and also provide a discharge point for systems underdrains. The biopods will be vegetated in accordance with the BAC Landscape Setting Strategy.
Perimeter drain	The perimeter drain will serve as a key visual landscape element when viewing the site from the surrounding road network, while providing essential flood

	mitigation for the site. Stormwater runoff from the performance track will be predominately captured through underground pipes, which discharge to the perimeter drain. The perimeter drain will likely be vegetated for stormwater treatment in accordance with the BAC Landscape Setting Strategy. Bunding and flood control will occur through permanent tidal gates, which will provide protection from external flood events.

Flood immunity of the Project site will be achieved through protection by the higher levels of the enclosing road embankments of Moreton Drive, Nancy Bird Way and Airport Drive. To achieve 1:100 year flood immunity, the Airport Drive median would need to be raised by up to 200 mm in some areas through landscaping. These road systems, combined with potential flap gates installed on a number of major culvert crossings, will prevent backwater from regional flood events and storm surge/tidal events entering the Project site. All discharge culverts will continue to be bunded off from tidal influx during the earthworks and proposed infrastructure works.

Following the implementation of the above mitigation measures, the impact of the Project on surface water is assessed as:

Surface water	
Construction phase	Low risk
Operational phase	Negligible risk

6.3.3.2 Groundwater

Mitigation measures related to the potential contamination of groundwater during operation of the BNE Auto Mall are detailed in Section 6.1.3.

During construction, some excavation may be required for installation of services and construction of building foundations. Given the site has been built up with clean fill during site preparatory works (refer Section 2.8), it is considered that the majority of excavations will not intersect with the groundwater table. However, if dewatering of any excavations is required, the water is to be tested for pH, acidity and metals/metalloids and may require treatment prior to disposal/discharge in accordance with an ASS Management Plan. Reinjection of extracted groundwater will occur should the groundwater meet the performance indicators outlined in the ASS Management Plan. Dewatering of groundwater that has seeped into excavations will be undertaken within minimal timeframes to allow recharge as soon as practicable. Dewatering will be undertaken in accordance with the *Queensland ASS Technical Manual: Soil Management Guidelines v4.0* (Dear et al. 2014).

Direct discharge of groundwater into the perimeter drain will not be permitted and instead, active discharge of groundwater onto soils or into temporary seepage ponds will be undertaken. The perimeter drain will be maintained at a level consistent with seasonal groundwater levels, to reduce groundwater influx into the drain or excessive water leaving the site.

The mobilisation of PFAS and metals/metalloids from soil to surface water and groundwater will be managed throughout the life of the Auto Mall, through the implementation of the site-wide CEMP. The CEMP is discussed in detail in Section 6.1.3 and will include, but not be limited to:

- Mitigation measures for the storage and disposal of groundwater
- All groundwater extracted will be analysed for PFAS prior to release and/or disposal; and
- Mitigation measures to prevent mobilisation of PFAS from impacted soils from entering stormwater or groundwater, through soil storage and disposal measures where relevant.

In addition, groundwater monitoring for PFAS and dissolved metals/metalloids will continue as per the endorsed ASS Management Plan (refer Appendix D) during construction of the BNE Auto Mall once every six months. Regular groundwater monitoring will cease upon completion of construction.

Following the implementation of the above mitigation measures, the impact of the Project on groundwater is assessed as:

Groundwater	
Construction phase	Negligible risk
Operational phase	Negligible risk

6.4 Air Quality and Odour

6.4.1 Baseline Conditions

The BNE Auto Mall is located in close proximity to major road corridors such as the Gateway Motorway, Airportlink M7 tunnel, and Moreton Drive as well as some of Brisbane's major industrial precincts which include oil refineries, chemical manufacturers and the Port of Brisbane.

Baseline air quality monitoring was conducted for the BNE Auto Mall prior by PSK Environmental (2017) across three rounds, representing dust deposition over 30 days (± 2 days). Baseline monitoring was conducted at five potentially sensitive receptors within the vicinity of the site. During this monitoring, total insoluble matter exceeded the adopted performance limit of 3.6 g/m^2 per month on two monitoring events at the Kingsford Smith Memorial, although it was noted that vegetation clearing was occurring during this monitoring resulting in high concentrations of combustible matter (PSK Environmental 2017). All other monitoring locations (e.g. Central Parking Area, BAC Services Centre, International Terminal car park, north of Qantas Engineering on Qantas Drive) were below this performance limit.

Caltex Refineries (Qld) Ltd operate three air quality monitoring sites in Wynnum to assess the impact of refinery emissions on nearby sensitive receptors. The oldest of the air quality sites commenced operation in 2004 and the two additional sites were added to the network in March 2014. This air quality monitoring network is located approximately 5 km south east of the Project site. A summary of the monitored pollutant concentrations from Wynnum between March 2017 and February 2018 is presented in Table 14, together with the AEPR, Air NEPM and EPP (Air) guidelines and indicators.

Table 14 Air quality data from Wynnum air quality network (March 2017 to February 2018)

Parameter	AEPR	Air NEPM	EPP (Air)	Averaging period	Maximum pollutant concentration at Wynnum network	Exceedances at Wynnum network
Nitrogen dioxide	0.12 ppm	0.12 ppm	250 µg/m^3 0.12 ppm	1 hour	0.046 ppm (July 2017)	0
Sulfur dioxide	0.20 ppm	0.20 ppm	570 µg/m^3 0.2 ppm	1 hour	0.129 ppm (August 2017)	0
	0.08 ppm	0.08 ppm	230 µg/m^3 0.08 ppm	1 day	0.025 ppm (August 2017)	0
PM_{10}	50 µg/m^3	50 µg/m^3	50 µg/m^3	1 day	57.6 µg/m^3 (September 2017)	2 exceedances: 18 August 2017 14 September 2017

$PM_{2.5}$	-	25 µg/m^3	25 µg/m^3	1 day	20.5 µg/m^3 (September 2017)	0

Source: Department of Environment and Science 2018

According to the results in Table 14, the existing air quality adjacent to the Brisbane Airport at Wynnum is generally considered acceptable and within nominated standards, with the exception of two occasions where the recorded pollutant concentration for PM_{10} exceeded the PM_{10} standard of 50 µg/m^3. It is noted that these exceedances occurred on days with fresh gusty southwest to westerly winds.

6.4.2 Assessment of Impacts

It is anticipated that construction and operation of the BNE Auto Mall will generate minimal air quality impacts. Construction works have the potential to cause dust generation, particularly during any excavation works. Additional traffic generation during operation of the BNE Auto Mall, through increased visitors to the Brisbane Airport, as well as operation of the vehicles within the BNE Auto Mall, also have the potential to cause air quality impacts as well as odour impacts.

6.4.3 Mitigation Measures

The following mitigation measures are proposed to manage potential air quality and odour impacts:

- Dust generated during the construction phase will be controlled through a CEMP to be prepared for these construction works, with measures such as dust suppression techniques and plant maintenance;
- Roads and parking areas will be designed to reduce impermeable surface area where practicable, to reduce heat island impacts and minimise energy use;
- Developers will ensure buildings are responsive to the subtropical climate of the region;
- During use of the performance track (e.g. driver days, events etc), users will be encouraged to adopt the following measures:
  - Avoid vehicles idling when not in use;
  - Stabilisation and regular watering of 4WD circuit to reduce dust generation; and
  - Use new vehicles where practicable, as newer vehicles are generally lower emission than older models.
- Burnouts and similar activities that generate excess smoke will not be permitted.

Following the implementation of the above mitigation measures, the impact of the Project on air quality is assessed as:

Air quality	
Construction phase	Negligible risk
Operational phase	Negligible risk

6.5 Noise and Vibration

Noise sources associated with the Brisbane Airport are regulated principally by the Airports Act and AEPR. The Airports Act permits the making of regulations about certain environmental matters, and also details environmental requirements for both master plans and major development plans. The AEPR defines commercial and sensitive receptors and provides guidelines for excessive noise for a range of noise sources including construction of buildings and road traffic.

Regulation 2.04 of the AEPR defines offensive noise as noise that is:

> *"…generated at a volume, or in a way, or under a circumstance, that in the opinion of an airport environment officer, offensively intrudes on individual, community or commercial amenity."*

To determine whether noise constitutes 'offensive noise', the AEPR (Regulation 2.04) outlines the following considerations:

a) the volume, tonality and impulsive character (if any) of the noise; and

the time of day, and duration, of the noise; and

background noise levels at the time the noise is generated; and

the location, in relation to the source of the noise, of:

sensitive receptors; or

if there is no affected sensitive receptor — commercial receptors; and

the excessive noise guidelines in Schedule 4.

The AEPR further defines a *commercial receptor* and *sensitive receptor* which allows the sensitive and commercial receptors specific to the source of the noise to be identified. Regulation 2.04 states:

> ***commercial receptor*** *means a business operation, whether for profit, or not.*
>
> ***sensitive receptor*** *means:*
>
> *(a) a dwelling; or*
>
> *(b) an impermanent dwelling in a place designed, or reserved, for impermanent dwellings (for example, a caravan park or residential marina); or*
>
> *(c) a hotel, motel or hostel; or*
>
> *(d) a child care institution, kindergarten, school, college, university or other educational institution; or*
>
> *(e) a hospital, medical centre or nursing home; or*
>
> *(f) a building that is a church or similar place of worship.*

In addition to the above, Brisbane City Council's Noise Impact Assessment Planning Scheme Policy (PSP) has published a method for noise impact assessment. Using this method, an Acoustics Assessment Report has been prepared for the construction and operation of the BNE Auto Mall (refer Appendix I). For this assessment, the noise criteria is:

$$dBL_{Aeq,T} = RBL + 3\ dB$$

The PSP also sets out how various noise impacts should be considered when determining the level of noise assessment and any suitable mitigation measures required for new developments.

6.5.1 Baseline Conditions

The Project site is located within an existing high noise environment and is exposed to high levels of daytime, evening and night time ambient noise from a variety of sources, primarily aircraft movements. Ground-based noise sources surrounding the Project site have been identified in the *2014 Airport Environment Strategy* (AES) as the following:

- Road traffic and rail;
- Construction and development sites;
- Operation of plant or machinery; and
- Operation of alarm or warning systems.

Based on the definitions set out in Regulation 2.04 of the AEPR, the nearest sensitive receptors to the Project site include residential areas at Eagle Farm (2 km south-west) and Hendra (2.4 km south-west), with Nundah, Northgate and Banyo located more than 2 km to the west and north (refer Figure 1). Additionally, a

number of receptors have also been identified such as the Kingsford Smith Memorial (95 m north-east) and commercial tenancies located on the surrounding road network.

Baseline noise monitoring has been undertaken at three locations around the Project site between 26 February 2019 and 13 March 2019. The three locations have been selected based on their proximity to the identified sensitive receptors and are to provide a representation of the existing noise levels. The results of the baseline noise monitoring are summarised in Table 15.

Table 15 Summary of measured noise levels by Aurecon

Logger #	Date/ Period	Average Noise Level $dBL_{Aeq,T}$			Rating Background Level dBL_{A90}		
		Daytime 0700 - 1800	Evening 1800 - 2200	Night 2200 - 0700	Day 0700 - 1800	Eve. 1800 - 2200	Night 2200 - 0700
#1 94 Lomandra Drive, Brisbane Airport	26/02/19 – 05/03/19	62	60	57	46	43	43
#2 Airport conservation area	26/02/19 – 05/03/19	51	50	52	45	45	41
#3 Virginia Soccer Club	05/03/19 – 13/03/19	58	52	49	50	45	41

Additionally, ambient noise level measurements from the following reports were also reviewed to quantify the existing noise environment around the Project site:

- Parallel Runway EIS/Major Development Plan (MDP) (2006)
- PSK Environmental Interim Report (2017)

The measured noise levels at the locations within these reports are summarised in Table 16 and Table 17.

Table 16 Summary of measured noise levels (Parallel Runway EIS/MDP 2006)

Site	Min $dBL_{A90,1hr}$			$dBL_{Aeq,Period}$		
	Daytime 0700 - 1800	Evening 1800 - 2200	Night 2200 - 0700	Daytime 0700 - 1800	Evening 1800 - 2200	Night 2200 - 0700
St Paul's Theological College (Educational facility)	36	33	30	56	51	44
33 Franklin Street, Nundah (residential property)	44	42	36	57	50	49
17 McBride Road, Pinkenba (residential property)	42	37	34	57	52	51

Table 17 Summary of measured noise levels (PSK Environmental Interim Report 2017)

Location	Dates	dB L_{Aeq}			dB L_{A10}			dB L_{A90}		
		Day 7am – 6pm	Evening 6pm – 10pm	Night 10pm – 7am	Day 7am – 6pm	Evening 6pm – 10pm	Night 10pm – 7am	Day 7am – 6pm	Evening 6pm – 10pm	Night 10pm – 7am
Kingsford Smith Memorial	5/9/17 – 19/9/17	60	55	58	60	56	59	52	48	50
BAC Service Centre	20/9/17 -5/10/17	61	60	60	63	62	62	56	53	52

The results in Table 17 show higher measured noise levels at the Kingsford Smith Memorial and BAC Service Centre compared to the locations in Table 15 and Table 16. It is noted the noise levels are higher in these locations given their location within the Brisbane Airport. For this assessment, noise-sensitive locations have been selected to include the nearest affected receptors and are shown in Figure 26.

Baseline vibration monitoring was also undertaken at Kingsford Smith Memorial by PSK Environmental over 14 days between 7 September 2017 and 25 September 2017. A summary of the vibration results is included in Table 18 below.

Table 18 Baseline vibration monitoring results (PSK Environmental Interim Report 2017)

Monitoring period	Maximum vibration detected (mm/s)	Second highest reading (mm/s)	Average vibration detected (mm/s)
7– 13 September 2017	1.0	0.97	0.12
14 September 2017	6.44	0.75	0.16
19 – 25 September 2017	3.53	1.58	0.12

The maximum vibration result recorded was 6.44 mm/s, which exceeded the set performance criteria of 5.0 mm/s. This exceedance occurred on 14 September 2017 at approximately 3pm for a one-minute period and was reported to be attributed to tampering of the vibration monitoring equipment (PSK Environmental 2017). The average vibration detected was 0.12 mm/s, well below the performance criteria.

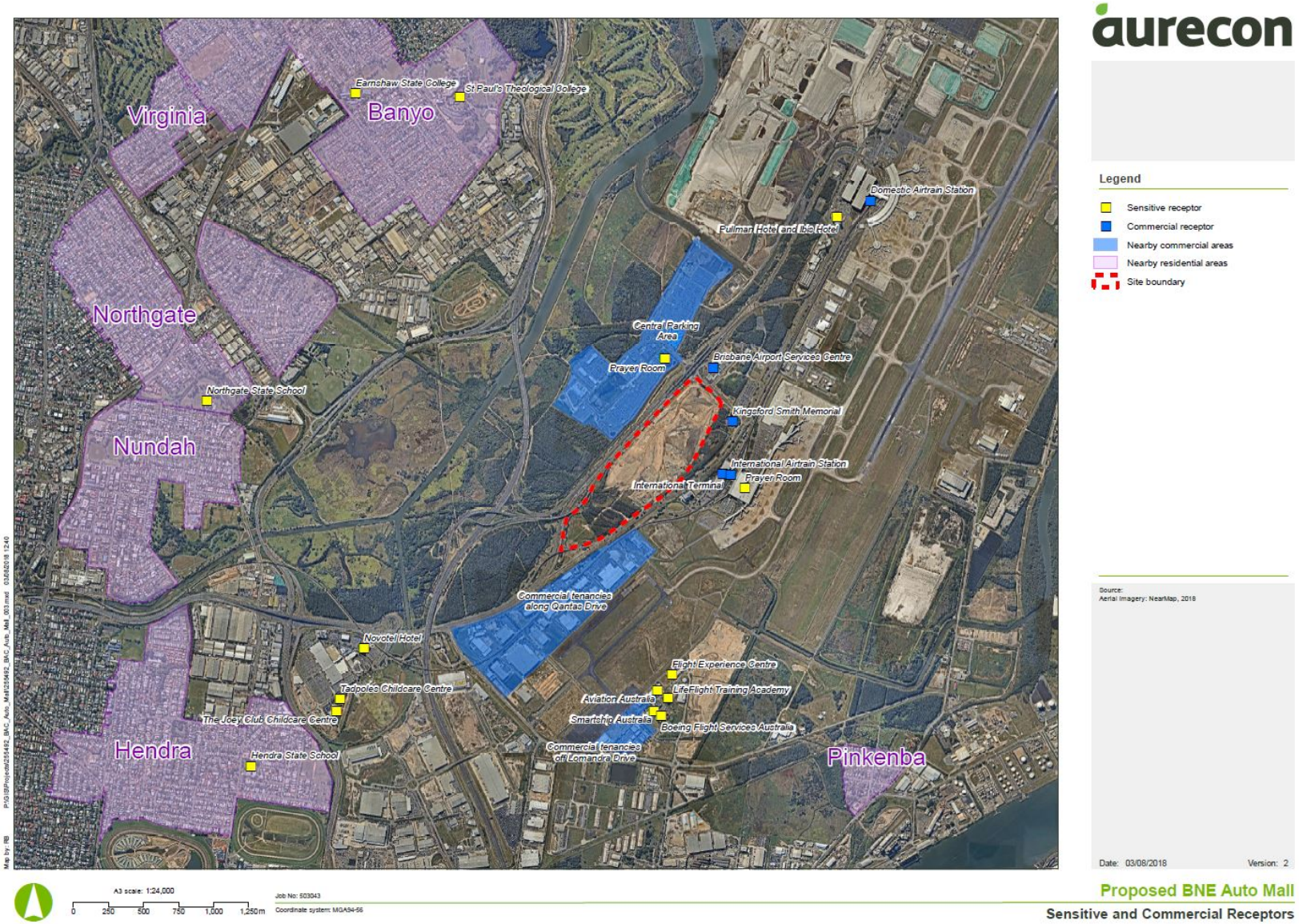


Figure 26 Noise- sensitive locations

6.5.2 Assessment of Impacts

6.5.2.1 Construction

An assessment of construction noise and vibration impacts associated with the initial earthworks phase of the Project (referred to as site preparatory works) was undertaken for the preparation of the EAR (refer Appendix D). The findings of this EAR concluded that nearby residential areas (Eagle Farm, Hendra, Nundah, Northgate and Banyo) are a sufficient distance away from the Project site and will not experience any adverse construction noise and/or vibration impacts. The findings also concluded that potential impacts on the nearest receptors from the site preparatory works would be managed with appropriate mitigation measures.

At the time of writing, the construction methodology for the Project has not been confirmed. The construction phase will involve dealerships, brand experience centres and the performance track. It is assumed that construction will involve excavation, structural works and fit out works, subject to development of a final program.

It is estimated that the total construction duration for the BNE Auto Mall will last a number of weeks/months and any noisy construction activities would be conducted during typical weekday hours between 7 am and 6 pm. With appropriate selection of plant and typical noise mitigation measures, construction noise and vibration from general earth works and typical construction activities are expected to generally comply with the applicable noise and vibration limits at the neighbouring properties.

6.5.2.2 Operation

6.5.2.2.1 Aircraft Noise Exposure Forecast

The BNE Auto Mall is located within the Aircraft Noise Exposure Forecast (ANEF) 20-25 and 25-30 noise contours for aircraft movements from Brisbane Airport. According to AS 2021-2015, the Project site is therefore ‘conditionally acceptable’ for commercial uses (i.e. dealerships and brand experiences centres) and ‘acceptable’ for light industrial uses. As such, aircraft noise from operations at Brisbane Airport is not considered an obstacle to the proposed land uses within the BNE Auto Mall. However, a detailed review of aircraft noise ingress into the proposed buildings will be required to achieve the internal background noise criteria.

6.5.2.2.2 Typical Operational Scenarios

Preliminary noise modelling has been undertaken based on the potential noise sources within the Project site to provide a general understanding of the expected noise impacts, sources and extent of mitigation required. There are nine ‘typical’ scenarios that have been assessed which are associated with day-to-day operations of the BNE Auto Mall as well as potential operational activities for event days. Each of these scenarios are detailed below:

- **Scenario One:** High performance vehicles using the performance track, with six laps within a one hour period (operating hours from 9 am to 10 pm).
- **Scenario Two:** Normal test driving situations (using normal road cars) assuming a maximum of 12 laps within a one hour period. This Scenario aligns with the potential operational activities for driver training days (operating hours from 9 am to 6 pm)
- **Scenario Three:** Scenario One with the addition of six stationary (idling) vehicles at pit-stop locations. This Scenario aligns with the potential operational activities for driver experience days (operating hours from 9 am to 10 pm).
- **Scenario Four:** Scenario One with the addition of two vehicles using the skid pan (operating hours from 9 am to 10 pm).

- **Scenario Five:** Scenario Three with the addition of two vehicles using the skid pan (operating from 9 am to 6 pm).
- **Scenario Six:** High performance vehicles using the performance track, with twelve vehicle laps of the track within a one hour period (operating from 9 am to 10 pm).
- **Scenario Seven:** Scenario Four with the addition of six vehicles per hour using the 4WD test circuit, and six motorbikes per hour using the performance track. This Scenario aligns with the potential operational activities that are anticipated for shared test drive days, 4WD training days and *motorbike test days* (operating from 9 am to 10 pm).
- **Scenario Eight:** Six high performance vehicles on the performance track, completing six laps simultaneously in any one hour period. This Scenarios aligns with the potential operational activities that are anticipated for corporate driving days (operating from 9 am to 6 pm).
- **Scenario Nine:** Six high performance vehicles using the performance track, completing 12 laps in any one hour period. This scenario also includes up to 5,000 spectators, cars idling in the pit stop locations and operation of a PA system (operating from 9 am to 10 pm), as per a major event day and is considered a 'worst-case scenario'.

6.5.2.2.3 Impacts on Sensitive and Commercial Receptors

Based on the 'typical' operational scenarios, a preliminary high-level assessment of potential noise impacts from the BNE Auto Mall was conducted. The assessment involved a comparison between the predicted noise levels of the operational scenarios against the Project specific daytime and evening noise criteria.

For daytime operations (9 am to 6 pm), all 'typical' scenarios are predicted to be in accordance with the daytime local noise criteria with minor exceedances only predicted for the following receptors and scenarios:

- Commercial properties along Qantas Drive (Scenario Nine only)
- Kingsford Smith Memorial (Scenarios Four, Five, Seven and Nine)

For evening operations (6 pm to 10 pm), exceedances are predicted for the following receptors and scenarios:

- Australian Catholic University (Scenario Nine only)
- Commercial properties along Qantas Drive (Scenarios Four, Seven and Nine)
- Hertz Car Rental (Scenarios Four, Seven and Nine)
- Kingsford Smith Memorial (Scenarios Four, Seven and Nine)
- BAC Service Centre (Scenarios Four, Seven and Nine)
- Prayer Room (Service Centre) (Scenarios Four, Seven and Nine)
- Prayer Room (Airport) (Scenario Nine only)

The exceedances for Scenario Nine are related to the operational activities associated with special and/or major event days. As such, these exceedances would occur up to a maximum of two times per year (i.e. bi-annual events). It is also noted the estimated maximum number of people for the special event days is 1,000 spectators, however Scenario Nine has assessed a worst-case scenario with 5,000 spectators, which is considered major events.

The exceedances for Scenario Seven are related to the simultaneous use of the performance track (high performance vehicles and motorbikes), skid pan and 4WD test circuit. It is noted Scenario Seven represents the most intense use of the BNE Auto Mall. It is also important to note these activities may occur in isolation of each other, however, the worst-case scenario has been modelled in this instance.

With respect to the Kingsford Smith Memorial, predicted exceedances, visitors and/or workers on the site are typically not present for extended periods of time (i.e. self-guided tours only) and therefore are unlikely to be exposed to the hour-long predicted noise levels.

It is also noted that exceedances for evening operations for the commercial properties along Qantas Drive, BAC Service Centre and the Prayer Rooms was only 1 dB for a number of the scenarios. Therefore, these exceedances are considered to be negligible and are unlikely to be discernible to visitors and/or workers at the receptor sites.

Based on these results, there are no exceedances beyond the extent of the Brisbane Airport. As such, noisy activities are considered to be heard in the context of what is already a high noise environment and there are no predicted noise level exceedances to surrounding residential areas.

Other noise sources were considered in the assessment including the use of a PA system on the Project site, proposed to be used for emergency use only. The following has been considered in relation to the PA system:

- The design and commissioning should be considered as part of the Operational Noise Management Plan for the facility;
- The detailed design will need to consider the location and directionality / spill of the speakers, and noise limiters, as appropriate; and
- Specification of the PA system is subject to detailed design.
- Further discussion and a detailed assessment of these results is provided in the Acoustic Assessment Report (Appendix I).

6.5.3 Mitigation Measures

6.5.3.1 Construction

It is considered that a Construction Noise and Vibration Management Plan (CNVMP) constitutes the best practicable option to mitigate the construction noise and vibration effects on the adjacent receptors and to minimise disruption to existing airport facilities and operations.

The CNVMP should, as a minimum, identify the following:

- Proposed construction activities and associated noise and vibration levels;
- Days and hours of site operation;
- Identification of affected neighbours;
- Noise mitigation measures;
- Construction noise monitoring requirements;
- Procedures for community liaison (e.g. distribution of site contact information etc.); and
- The CNVMP should adopt mitigation measures outlined in AS2436-2010.

6.5.3.2 Operation

A comprehensive list of proposed noise mitigation measures is included in Appendix E of the Acoustic Assessment Report (refer Appendix I). It is anticipated that a number of best practice mitigation measures are considered appropriate to mitigate potential noise impacts associated with the construction and operation of the BNE Auto Mall including restricting the use of the PA system to emergency situations only, stakeholder engagement with affected receptors (i.e. Australian Catholic University, BAC Service Centre and Qantas Drive businesses) and engineering design strategies such as perimeter bunds and acoustic screening, where necessary.

An Operational Noise Management Plan (refer Appendix I) has been developed for the day-to-day operation and event days associated with the BNE Auto Mall to appropriately manage the potential noise emissions. It is recommended that the Operational Noise Management Plan and 'typical' operational scenarios are reviewed during the commissioning phase and the documents are updated accordingly.

In addition, while racing cars have not been modelled during the scenarios, prior to their use for any special or major events, appropriate noise modelling will be undertaken to ensure sensitive receptors are not adversely impacted. A copy of the noise modelling results will be provided to the Department prior to the special or major events. It should be noted that the CAMS requirements for racing cars require a maximum noise emission limit of 95dB(A) when measured 30m from the track edge.

The acoustic design of the individual buildings within the BNE Auto Mall will consider the high noise environment including the impact of external noise sources and the potential effect of noise generated by the Project (e.g. performance tracks and skid pan) upon surrounding land uses.

Following the implementation of the noise mitigation measures, the impact of the Project on noise and vibration is assessed as:

Noise and vibration	
Construction phase	Negligible risk
Operational phase	Low risk

6.6 Land Use

The planning context for the Project is provided by the Brisbane Airport 2014 Master Plan (Master Plan) which provides a framework for development of the airport site until 2034. It provides the basis for planning of aviation activity, landside development, environmental management and transport access in an integrated way.

6.6.1 Baseline Conditions

BNE Auto Mall is proposed on a 51.3 ha undeveloped parcel of land at Brisbane Airport. Brisbane Airport is the premier gateway to Queensland with two major terminals operating 24 hours a day, seven days a week. The Airport operates 24/7 with no restricted hours under the *Trading (Allowable Hours) Act 1990.* One runway currently services 31 airlines with more than 23.2 million passengers each year. Brisbane's second runway is anticipated to open in 2020 and will see an increase in the number of passengers and people within the area. There are currently 480 businesses located at the Airport employing more than 23,000 people. By 2034, this number is expected to exceed to 50,000 employees.

Being situated in close proximity to an increasingly busy runway (with a second runway under construction), the Gateway Motorway and Brisbane Domestic and International Terminals, the Project site is centred within an area that already encompasses land uses that are a preferred destination for transit and gathering of people, with activity all year round.

The day-to-day operation of BNE Auto Mall will be limited to the dealerships operating at a retail level where their primary purpose is to sell new or used cars and the Performance Track for driver training, vehicle engineering, safety testing and development as well as a unique test-driving environment for the motor retailers and public. The performance track will also be used to host a range of events including regular (drive days, driver experience days and 4WD training days), semi-regular (corporate events, motorbike test days and driver training days) and bi-annual (special events) events.

6.6.2 Assessment of Impacts

The construction and operation of land uses within the BNE Auto Mall have the potential to result in direct and permanent impacts to the Project site and surrounding area. Potential impacts associated with the Performance Track and dealerships are related to:

- Change in land use
  - Development activity
  - Social impact
  - Economic activity
- Accessibility
  - Impacts on road network
  - Impacts on parking
- Impacts on local amenity
- An assessment of these impacts in relation to the land use is provided below.

6.6.2.1 Change in land use

The performance track, dealerships and associated roads and services form part of this MDP. The permanent change in land use from undeveloped land to the proposed performance track and dealerships will generate significant development activity on currently vacant land within the BNE Auto Mall and the wider Airport precinct.

The BNE Auto Mall is anticipated to result in advantageous economic impacts and provide for a facility that is currently not available in South East Queensland. The change in land use is expected to see an increase in visitors to Brisbane and see stakeholder support which may not otherwise be available.

The BNE Auto Mall has also considered potential social impacts of day-to-day operations as well as event days such as traffic movements on the external road network. An assessment of these is provided in Section 5.1.

6.6.2.2 Accessibility

Accessibility is often associated with infrastructure-based measures which describe the level of service of the road network for people accessing an area. Further, the degree to which the network enables one to reach the necessary facilities to carry out the desired activities of the land use should also be considered in terms of accessibility.

The BNE Auto Mall has considered accessibility in terms of the function and operation of the external road network. An assessment is provided in Section 5.1.

6.6.2.3 Impacts on local amenity

The BNE Auto Mall has the potential to enhance local amenity by developing previously unused land to incorporate land uses which are consistent with the Airport Master Plan. The Project site will be transformed into a precinct that aims to be recognised as a leader in management of energy, water, waste, noise and biodiversity. BNE Auto Mall has the potential to enhance the scenic amenity of the Airport using a variety of colours, textures, materials and landscaping.

While the Project is located 2 km from the closest residential area, the potential impacts to local amenity such as air quality, odour and noise have been considered in this MDP. Refer to Section 6.4 (Air Quality and Odour) and Section 6.5 (Noise and Vibration).

6.6.3 Mitigation Measures

In designing the BNE Auto Mall, land use impacts on the immediate and surrounding areas will be avoided or minimised, where possible. Where impacts cannot be avoided, the extent of impacts will be carefully managed and mitigated. The following outlines the mitigation measures proposed to be applied to reduce and manage the land use impacts:

6.6.3.1 Change in land use

The Project site is a 51.3 ha undeveloped parcel of land that has been earmarked for future development in accordance with the Airport Master Plan. BNE Auto Mall has been deliberately staged (as per Section 2.7) to manage development activity at the Airport and ensure development is supported by appropriate infrastructure and maintains amenity for passengers and people accessing the area.

BNE Auto Mall will operate as a precinct that includes the performance track, dealerships and brand experience centres being centrally managed (on-site) by an experienced operator who will provide a consistent support service and manage the varying needs of on-site tenants as well as the public.

An Events Management Plan will be developed for the regular and semi-regular events. A tailored Event Management Plan will also be prepared for each special and major event. While it is anticipated that the special and major events will be held on singular days, there may be occasions where the events are run over the course of up to three days (ie Friday, Saturday and Sunday). In these instances, the Event Management Plan will ensure that any potential impacts on sensitive receptors are appropriately managed. The Events Management Plan will consider matters such as a communication strategy (communications with the local community and promotion plan), venue management plan including parking management, emergency and safety management plan, security, alcohol management, waste and noise. A copy of the Events Management Plan is provided in Appendix B.

6.6.3.2 Accessibility

The land use impacts on accessibility has been considered in Section 5.1 (Ground Transport) of this Major Development Plan from an infrastructure-based perspective as well as a person's ability to access the area and carry out their desired activities. Section 5.1.3 discusses mitigation measures in detail for the construction and operational phases of the BNE Auto Mall.

Further, the Events Management Plan to be developed for each special and major event will consider specific impacts to accessibility and implement management strategies for the impact to the local road network, parking, pedestrian management and safety.

6.6.3.3 Impacts on local amenity

While the BNE Auto Mall will positively contribute to the scenic amenity of Brisbane Airport, an assessment of the potential impacts of the proposed land uses requires mitigation measures to be implemented for namely dust and noise. The BNE Auto Mall will operate under a Noise Management Plan (refer Appendix I) that aims to avoid, manage and mitigate any adverse impacts of the proposed land uses.

Further, special and major events will prepare a comprehensive Event Management Plan that considers the potential amenity impacts of each event independently.

A detailed discussion relating to the mitigation measures to be implemented for potential land use impacts on dust and noise are further discussion in Section 6.4 and Section 6.5.

Following the implementation of the above mitigation measures, the impact of the Project on land use is assessed as:

Land use	
Construction phase	Negligible risk
Operational phase	Low risk

6.7 Landscape

The Landscape Setting Strategy (LSS) is the primary reference for all landscape initiatives at the Brisbane Airport. The LSS sets out the intent and guidance for the landscape, supported by three (3) goals and consisting of four (4) key elements. The goals of the LSS are:

- Provides a functioning ecological system that supports the operational needs of Brisbane Airport;
- Establishes a natural green frame for development; and
- Creates memorable landscape experiences that are distinctive of South East Queensland.

The LSS sets out Thematic Landscape Areas that are spatially defined to ensure landscaping and development across the Airport provides a continuity of design approach and landscape narrative. The Airport Drive West precinct has been identified within the 'BNE Destination's and one of two regional level 'BNE Gateways'. The landscape values and intents are defined under the LSS and will be used to guide the site treatment implemented as part of the proposed BNE Auto Mall development.

6.7.1 Baseline Conditions

The LSS intent of landscaping within the 'BNE Destinations' theme celebrates the distinctive subtropical character of South East Queensland and enriches the visitors experience through a designed sequence of views and vistas. The BNE Auto Mall is to provide a consistent and simple palette of material to be used to convey a strong sense of unity and cohesion throughout the development. Planting design and species choice is to maximise shade and tree cover.

'BNE Gateways' are significant opportunities for gateways at a range of scales which can be developed to reflect BAC values and provide a strong engagement with the wider community. The LSS recognises that a gateway opportunity could be investigated at two sites which would provide a regional address and marker.

Under the LSS, the BNE Auto Mall requires consideration of six (6) elements as part of the destination objective including: vegetation, water, hard surfaces, development interfaces and edges, visual environment and furniture. The BNE Auto Mall has considered each of the six (6) elements through the following responses:

- The streetscapes offer the opportunity to deliver on vegetation. Planting to be in accordance with the LSS and irrigated with passive watering via rain gardens as well as irrigation;
- Footpaths are located immediately adjacent to street trees. Pavement options were not covered in this plan;
- Ensures the integrated infrastructure outcomes can support the development interfaces and edges. This will require attention to detail in future phases of the development;
- Deliver excellence in sustainable water management; and
- Considers potential location for covered walkways and vines to create shade, colour and vertical greenery.

The LSS requires a functional ecological landscape that does not provide habitat for high risk wildlife, such as birds and flying foxes, in accordance with NASF Guideline C. Considerations from the LSS that will be incorporated into design of the Project include:

- Select trees that do not produce the type of flowers, fruits and seeds known to be sought by birds and/or flying foxes and avoid bird roosting potential;
- Maintain grass and groundcover planting at a length which deters birds;
- Minimise available food from outdoor dining and rubbish bins;
- Drains and stormwater treatment devices to be designed with low risk vegetation which provides stormwater treatment but doesn't attract birds; and
- The size and design of open water storages should deter water birds by ensuring they are discouraged from landing.

The BNE Auto Mall Development Plan includes landscape outcomes for the site to deliver a high level of visual amenity for tenants and visitors. Landscape outcomes include vegetated stormwater management swales positioned at regular intervals between lots for site drainage. These swales are to be heavily vegetated with plant and tree species defined in the BAC LSS.

6.7.2 Assessment of Impacts

The proposed BNE Auto Mall development involves the productive use of land that is currently undeveloped. An improved landscape outcome is expected with the construction of the Project as it is proposed to include landscaping of the public and private realm and the public pedestrian pathways, consistent with those initiatives set out within the LSS.

Therefore, the impact of the BNE Auto Mall on Airport Drive West's landscape character is assessed as:

Landscape	
Construction phase	Negligible risk
Operational phase	Negligible risk

6.7.3 Mitigation Measures

The Project will incorporate landscaping treatments that will be designed and planted in accordance with the outcomes and species sought by BAC's LSS. Specific aspects of the landscaping, planting and species composition will be resolved at the detailed design documentation stage.

6.8 Social and Economic Issues

This section outlines the economic and social impacts of the Auto Mall during construction and operation.

6.8.1 Baseline Conditions

Brisbane Airport is the largest capacity city airport in Australia by land, covering an area of 2,700 ha, featuring the Domestic and International Terminals, carparks, freight and logistics offices and warehouses and the Skygate precinct (Urbis 2016). Brisbane Airport economic contribution to the State and the City of Brisbane is $4 billion annually. The site is currently a 51.3 ha parcel of undeveloped land that is currently undergoing land development works. The BNE Auto Mall will deliver a world class all-encompassing auto retail precinct, the first of its kind in Australia.

Under the BAC 2014 Master Plan, the Project site is located within the Airport Central (Airport Drive West) sub-precinct within the 'Mixed use' zone to enable a level of economic and social activity to serve the intended mix of visitors, workers and residents. Intended uses of the precinct include performance track, outdoor sales, showroom, recreation and sports facility.

Future uses of the precinct could include hotel, conference centre and commercial offices. Investment negotiations will be ongoing with long term tenant leases throughout development.

6.8.1.1 Early works

The site is currently undergoing site preparatory works (e.g. earthworks, surcharging) until mid-2021.

6.8.1.2 Construction

Construction of the Auto Mall will be spread across three stages:

- Stage 1 (including performance track) – late 2019 to mid-2021;
- Stage 2 – 2020 to 2023; and
- Stage 3 – 2020 to 2026/29.

6.8.2 Regional Economic Profile

6.8.2.1 Population

The proposed Auto Mall facility manager will conduct driver training at all levels from L-Platers, P-Platers, corporate and fleet as well as race car tuition onsite.

The majority of the regional population will be eligible to use the Auto Mall. Approximately 75% of the Greater Brisbane population and 78% of the Queensland population are over the age of 18 (refer Table 19). There are a further 354,851 people aged between 12 to 17 years, who will be eligible for L-Plates from 17 years old (refer Table 19).

Table 19 Population profile, 2016

Age groups, 2016, total persons (Usual residence)						
	Greater Brisbane		Queensland		Australia	
Age group (years)	**Number**	**%**	**Number**	**%**	**Number**	**%**
Babies and pre-schoolers (0 to 4)	147,903	6.5	296,466	6.3	1,464,776	6.3
Primary schoolers (5 to 11)	212,773	9.4	439,933	9.4	2,074,726	8.9
Secondary schoolers (12 to 17)	168,703	7.4	354,851	7.5	1,668,521	7.1
Tertiary education and independence (18 to 24)	232,345	10.2	434,597	9.2	2,144,976	9.2
Young workforce (25 to 34)	343,233	15.1	646,694	13.8	3,368,455	14.4
Parents and homebuilders (35 to 49)	473,798	20.9	951,099	20.2	4,726,387	20.2
Older workers and pre-retirees (50 to 59)	273,712	12.1	600,919	12.8	2,977,874	12.7
Empty nesters and retirees (60 to 69)	217,389	9.6	502,880	10.7	2,488,393	10.6
Seniors (70 to 84)	162,594	7.2	390,225	8.3	2,000,923	8.6
Elderly aged (85 and over)	38,357	1.7	85,528	1.8	486,847	2.1
Totals	**2,270,807**	**100.0**	**4,703,192**	**100.0**	**23,401,878**	**100.0**

Source: Australian Bureau of Statistics, Census of Population and Housing 2011 and 2016. Compiled and presented by .id, the population experts.

Employment Profile

In 2016, 1,073,781 people living in Greater Brisbane and 2,136,452 people living in Queensland were employed, of which 63% worked full-time and 35% part-time (Greater Brisbane) and 62% worked full-time and 36% part-time (Queensland). Greater Brisbane has a 7.4% unemployment rate with Queensland at 7.6%.

Table 20 highlights the top 10 employment sectors across Greater Brisbane and Queensland. The Auto Mall construction and operation will complement the existing employment workforce across retail trade, construction and professional and technical services.

Table 20 Employment industry sectors in Greater Brisbane and Queensland, 2016

Industry sector of employment, 2016, employed persons (Usual residence)			
Industry sector – Top 10	**Greater Brisbane Number**	**Greater Brisbane %**	**Queensland %**
Health Care and Social Assistance	141,121	13.1	13.0
Retail Trade	102,073	9.5	9.9
Education and Training	98,667	9.2	9.0
Construction	92,559	8.6	9.0
Professional, Scientific and Technical Services	84,646	7.9	6.3
Public Administration and Safety	76,123	7.1	6.6
Manufacturing	70,096	6.5	6.0
Accommodation and Food Services	69,836	6.5	7.3
Transport, Postal and Warehousing	60,714	5.7	5.1
Inadequately described or not stated	46,174	4.3	4.3

Source: Australian Bureau of Statistics, Census of Population and Housing 2016. Compiled and presented by .id, the population experts.

The predominant occupations across Greater Brisbane are Professionals, Clerical and Administrative Workers, Technicians and Trade Workers, and Managers, as illustrated in Figure 27.

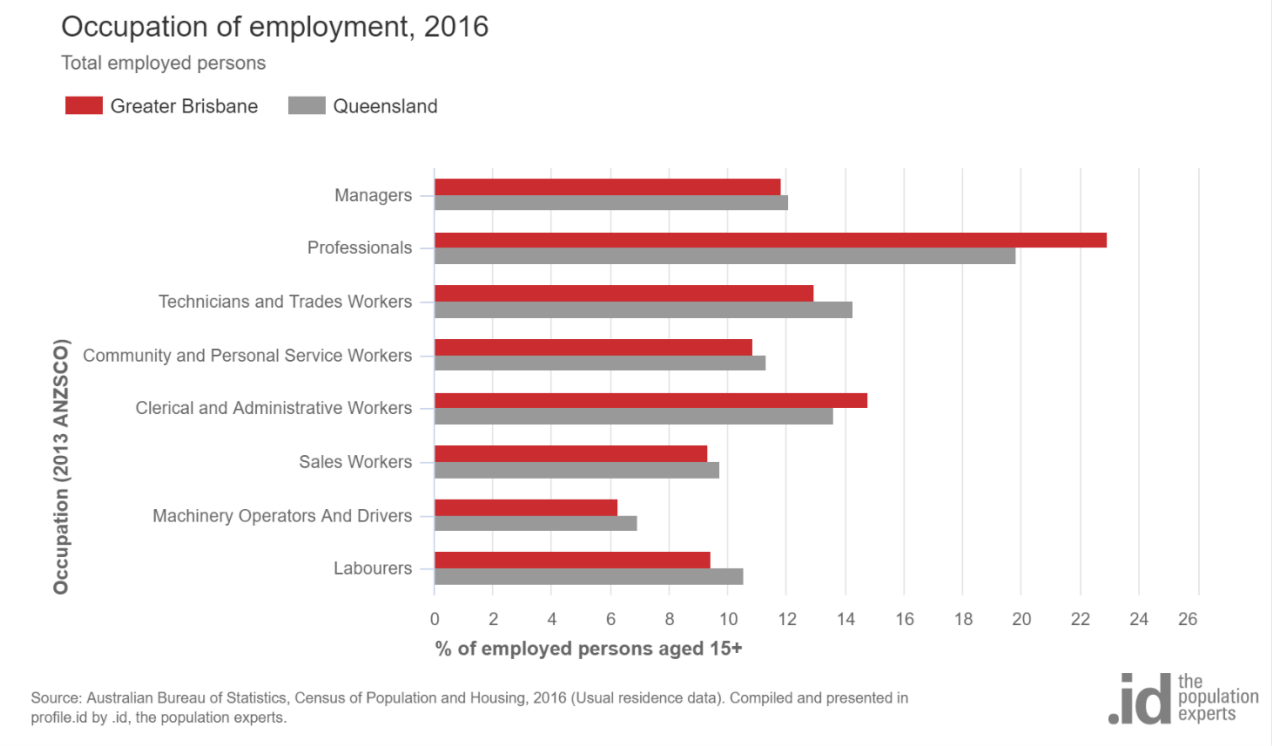


Figure 27 Occupation split in Brisbane and Queensland, 2016

6.8.3 Motoring Profile and Economic Horizon

Since 2013 passenger vehicle ownership has increased by 10% across Australia and Queensland. The graph below in Figure 28 outlines passenger vehicle ownership across Australia. Queensland has 20% (2.5 million) of the total passenger vehicle ownership, followed by Victoria at 27% (over 3.5 million) and New South Wales has the majority 30% (over 4 million).

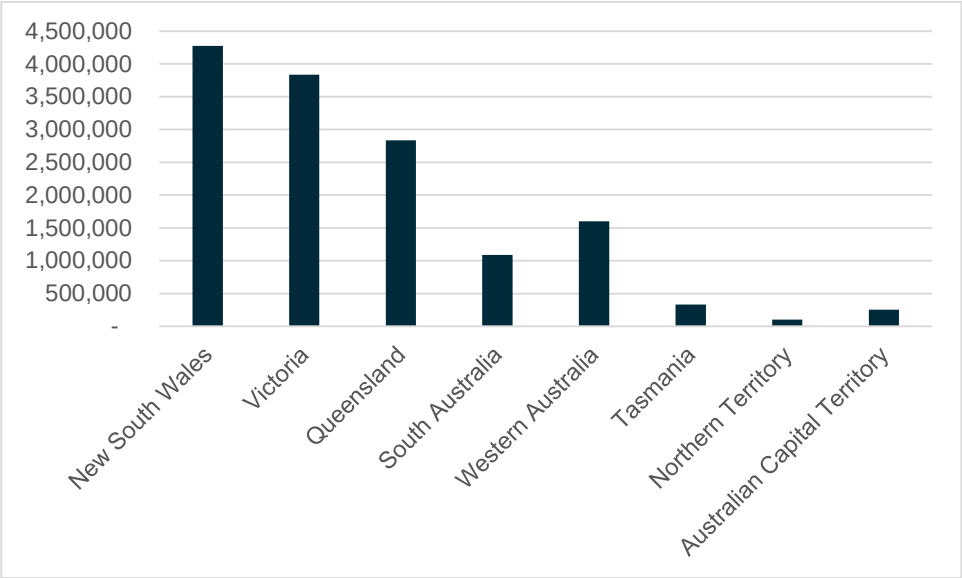


Figure 28 Passenger Vehicles - Motor Vehicles on Register July 2018

Source: ABS 93090DO001_2018 Motor Vehicle Census, Australia, 2018

From 2018, there are over 2.8 million Toyota vehicles registered in Australia. The top 30 car makes are shown in Figure 29 below.

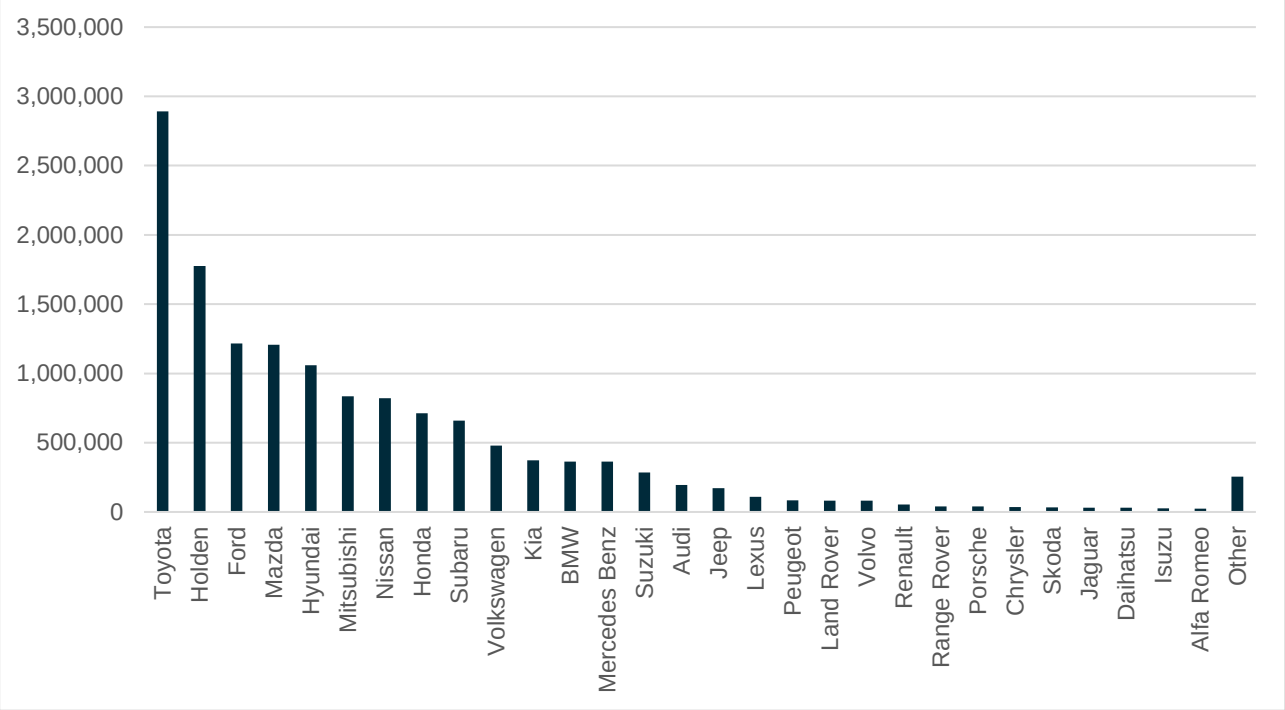


Figure 29 Top 30 passenger vehicles makes, 2018

Source: ABS 93090DO001_2018 Motor Vehicle Census, Australia, 2018

Within the top 30 car makes, there has been significant growth in luxury car ownership in Australia over the last 5 years. Audi has seen an 83% increase in ownership and Porsche a 64% increase from 2013 to 2018, as shown below Table 21.

Table 21 Luxury car ownership growth between 2013 to 2018

Car type	Percentage change between 2013/18 (%)	2018	2013
Audi	83%	195,801	107,176
BMW	31%	364,352	278,139
Jaguar	17%	30,903	26,389
Mercedes Benz	44%	362,796	251,450
Porsche	64%	40,061	24,418
Range Rover	102%	40,820	20,223

However, in economic terms, luxury cars are a luxury good for Australian consumers that is affected by income and external economic factors, such as consumer confidence in spending. Recent analysis by the Commonwealth Bank *CommSec Luxury Vehicle index* collating data from the Federal Chamber of Automotive Industries **suggests luxury car sales have fallen by 8.9% last year** (Business Insider Australia 2019).

The manufacturers included in the Commsec index are broader than the ABS data and include makes such as Aston Martin, Audi, BMW, Bentley, Ferrari, Hummer, Jaguar, Lamborghini, Lexus, Lotus, McLaren, Maserati, Maybach, Mercedes-Benz, Morgan, Porsche and Rolls Royce.

This downturn coincides with a decline in Australian home prices during the same period. Sales of luxury vehicles have tracked movements in home prices over time. The negative wealth effect from falling property prices, along with a weaker Australian dollar and stability in interest rate, are some of the likely factors to explain the fall in luxury car sales in recent years.

6.8.4 Luxury Car Tax

The luxury car tax was introduced by the Federal Government in 2000, in conjunction with the removal of sales tax and the introduction of the Goods and Services Tax. The tax is imposed at a rate of 33% on the purchase price of a car above the threshold of $66,331, or $75,526 (2018/19) (Australian Government 2019) for fuel-efficient vehicles that consume less than 7.0L/100km. The tax applies to new and used cars (less than two years old).

Two examples of the impact of the luxury car tax are (Which Car 2013):

- An additional $2,100 to the price of an $80,000 vehicle, with any optional accessories fitted counting toward the amount of tax levied; and
- $236,000 to the price of a $1.1 million recommended retail price for a Rolls-Royce Phantom.

The tax will be a financial and economic factor for consumers considering purchasing new or used luxury cards from the Auto Mall.

6.8.5 Economic Impacts (employment, output and income)

The Auto Mall will generate jobs during the construction and operation phases, which will require a variety of skills and services.

BAC is investing $85 million for the early works and Stage 1 (including bulk earthworks and precinct civil work for estate roads and services) and development of the performance track.

The total development cost is estimated between $300 to $500 million over 10 years, depending on the type of investment by future tenants. However, most of the additional scope, commitments and remaining investment cost estimates are based on long term ground leases in Stage 2 and Stage 3. Negotiations and planning with tenants will determine the future investment scope.

6.8.5.1 Construction

Auto Mall construction will have positive employment impacts on the local and regional economy and provide economic growth and income generation into the region and State. The employment, output/growth and income estimated to be generated from the initial $85 million investment is outlined below in Table 22:

Table 22 Economic impacts of initial $85 million investment

Early works and Stage 1 development - $85M investment				
	Direct	**Indirect**	**Total**	**Unit**
Employment	261	753	1,014	Number of FTEs
Output / Growth	129	215	344	$M
Income generated	38	57	95	$M

Note – The multipliers are calculated using ABS Input Output table for Queensland 2016/17. Macro-economic impacts are generated based on an appropriate mix of industry clarifications required for Early Works and Stage 1. Industry classifications have been split between; 87.5% Heavy and Civil Engineering Construction, 10% Non-residential property operators and 2.5% Professional Services.

As outlined above, the total development cost for the Auto Mall could range between $300 to $500 million once fully developed. Table 23 below outlines an estimate of the total economic impact from the completion of the development, including industries such as a hotel, conference centre and commercial offices in the precinct.

Table 23 Potential economic impacts from the full development - $300 million investment

Full development up to Stage 3 - $300M investment				
	Direct	Indirect	**Total**	**Unit**
Employment	1,116	2,555	3,671	Number of FTEs
Output / Growth	454	729	1,183	$M
Income generated	120	202	322	$M

Note - The multipliers are calculated using ABS Input Output table for Queensland 2016/17. Macro-economic impacts are generated based on an appropriate mix of industry clarifications required to complete the full development. Industry classifications have been split between; 70% Heavy and Civil Engineering Construction, 30% additional industries from Motor Vehicles and Parts, Retail Trade, Accommodation, Food and Beverage Services, Rental and Hiring Services (except Real Estate) and Professional Services.

The $300 million estimated total investment cost for the Auto Mall redevelopment could add $1.1 billion output/growth (total, direct and indirect) into the Queensland Economy and generate $322 million in income (total, direct and indirect).

The construction employment and skills required for the project align with the current employment profile in Greater Brisbane and Queensland in industries such as construction and professional and technical services.

The Auto Mall could source local and regional construction labour for all parts of the development, as the skills are directly relevant from existing infrastructure projects across the State including residential, transport and commercial developments.

6.8.5.2 Operational

The BNE Auto Mall has the potential to operate seven days a week offering a variety of experiences and opportunities to both the visiting public and tenants, as discussed in Section 2.4.

Following completion of the proposed development, commercial opportunities are expected to create significant numbers of direct employment opportunities. Current estimates indicate that **BNE Auto Mall will accommodate over 3,000 employees when fully developed and operational.**

The employment industries and skills required to support the operation of the Auto Mall align with the current employment profile in Greater Brisbane and Queensland in industries such as retail trade, professional, scientific and technical services, and food services.

The Auto Mall is also forecast to support the local economy through increase in car sales. The potential share of Brisbane sales that could be captured by the Auto Mall has been estimated based on the current number of dealerships in Brisbane. It has been assumed that the Auto Mall would achieve 10% higher than a fair market share of sales due to competitive advantage.

Urbis (2016) estimates the passenger car sales-based assumptions in Table 24, which will ultimately increase economic output and income for the region and state:

Table 24 Passenger car sale visitation assumptions

Variable	Assumption	Basis
Market Share of Relevant Brisbane Car Sales	Fair share + 10% uplift	Current number of relevant dealerships in Brisbane
Ratio of Used Car Sales to New Car Sales	1:1	National Automotive Dealers Association
Start-up Period	50% of achievable sales in Year 1 75% in Year 2 Urbis 100% from Year 3	Urbis estimate

Variable	Assumption	Basis
Growth in Sales Volume 0.9% - 1.2% per annum	Forecast Brisbane Population	Growth – QGSO
Visits per Sale	2.5 visits	Urbis estimate
Persons per Visit	1.5 persons	Urbis estimate

Under these assumptions, it is forecast that the Auto Mall will achieve visitation of approximately 19,750 visits in 2021, comprising 9,050 visits for new passenger car purchases, 9,050 visits for used passenger car purchases, and 1,650 visits for new and used commercial car purchases.

This rate of visitation is projected to increase with the growth in Brisbane's population, and the completion of Stages 2 and 3 of the Auto Mall, to reach a total of 53,000 visits in 2026 and 68,000 visits in 2031. Visitation will generate direct and indirect employment, growth and income for the region.

6.8.5.3 Operational employment competition

Brisbane already has a well-developed new a used car market, for example the Moorooka Magic Mile that has formed a natural agglomeration of car dealerships. There are numerous existing luxury car dealerships within Brisbane and Queensland including Aston Martin Gold Coast, Lamborghini Brisbane Fortitude Valley and Ferrari Brisbane Newstead.

The Auto Mall has secured two tenants, AP Eagers and Sci-Fleet who represent a wide range of car manufacturers, and will seek additional tenants as the precinct develops. The nearest comparable race track is the Queensland Lakeside Park Raceway approximately 33 km from the BNE Auto Mall and the Queensland Raceway, approximately 55 km away. However, both these tracks service traditional motor sport and performance bike racing.

The Auto Mall will provide a unique opportunity for customers and it is expected to revolutionise the way people buy, experience, appreciate and interact with vehicles.

At this stage, **the economic impact on the development has been rated positive at a low-medium impact**, depending on the types of further investment into the precinct. There is already well-developed employment and car industries around Brisbane and Queensland, therefore we estimate the Auto Mall will generate low-medium new economic activity, but it will enhance the existing industry.

The potential future agglomeration effect of the precinct on additional development in and around the Airport could lead to a positive high impact on the local and regional economy. This initial development will be a catalyst for future development around the airport.

6.8.5.4 Other Economic Impacts

6.8.5.4.1 Tourism

Apart from employment, the other main economic benefit from the BNE Auto Mall will be tourism. The precinct is uniquely positioned to provide easy, fast access from the Airport which already serves 83 destinations (51 domestic and 32 international) (BAC 2018) along with easy road access for local and regional tourism.

The Queensland Tourism Transport Strategy 2016-2020 (2018 update) outlines the importance of a well-connected, multi-modal transport network supported by quality information systems is essential to making Queensland's wide variety of experiences accessible to visitors. This in turn enables and encourages greater dispersal of tourism, generating business and employment growth.

Queensland's Tourism industry is worth $25 billion and supports 217,000 jobs or 1 in 10 Queensland jobs (State Tourism Satellite Accounts 2016-17). The Auto Mall has the potential to further contribute to tourism growth and can adapt to the local market and consumer needs, through the staged development.

Urbis (2016) estimates visitor numbers at:

- Total Core Visitation to the Auto Mall is estimated at approximately 617,750 visits in 2021, increasing to 1,418,800 visits in 2026, and reaching 1,621,900 visits by 2031
- Day trip visitors account for the largest share of core visitation across the entire study period (74% in 2021, 56% in 2026, and 54% in 2031), followed by servicing customers (11% in 2021, 14% in 2026, and 19% in 2031).
- While Auto Mall employees (excluding commercial office employees) are estimated to also account for the second-largest share of core visitation in 2021 (11%), events and function centre guests are forecast to overtake this segment in 2026, representing 13% and 12% of core visitation in 2026 and 2031 respectively.

The visitor growth forecasts are shown below in Figure 30. It should be noted these growth projections encompass all potential future development within the BNE Auto Mall such as a hotel and conference centre, which do not form part of this Draft MDP. The staged development approach to the Auto Mall will influence the types of visitor and growth, which will ultimately affect the total economic contribution of tourism.

Potential tourism sectors in Greater Brisbane and Queensland to benefit from the Auto Mall include:

- Accommodation (overnight visitors);
- Food and beverage; and
- Retail trade.

Figure 30 Auto Mall visitation growth projections

Source: Urbis, Sale and Visitation Forecasts, BNE Auto Mall Visitation Estimates, 2016

6.8.5.5 Economic downturns

As outlined above, the Luxury Car tax will impact customers wishing to purchase new or used (up to two years old), which puts an economic barrier for some consumers and impacts the available customer market. The Auto Mall precinct full development will diversify the offerings to consumers for example variety of car makes and models along with the performance track and events.

This will help to protect the Auto Mall from consumer spending downturns on large ticket items such as luxury vehicles.

6.8.6 Social Impacts

During construction and operation, it is noted the BNE Auto Mall will create environmental and social impacts to the community relating to traffic, air quality, noise and vibration. However, the site located within the airport precinct and is not near residential dwelling. As such, these impacts are expected to be negligible to surrounding uses and the proposed mitigation measures are detailed in Sections 5.1, 6.4 and 6.5 respectively.

Post construction, the Auto Mall is expected to create a range of positive social impacts (rated low), outlined below in Table 25.

Table 25 Social impacts[1]

Social impact	Description
Increase quality of living environment	Access to leisure and recreational facilities
Increase in health and social wellbeing	Increase in participation in events including exhibition and conference activities, which could contribute to positive physical and mental health

6.8.7 Stakeholder Consultation

In accordance with Section 92 of the Airports Act, the Draft MDP will be publicly advertised for a period of 60 business days. Comments received during the public comment period will be used to develop the draft MDP prior to submission to the Minister for Infrastructure, Regional Development and Cities for approval.

The following stakeholders will be consulted during the public advertising period:

- Civil Aviation Safety Authority (CASA);
- Airservices Australia;
- Commonwealth Department of Infrastructure, Transport, Cities and Regional Development;
- Brisbane City Council; and
- Queensland Department of Infrastructure, Local Government and Planning.

Additional stakeholders who will be impacted by the Auto Mall are:

- New and used car dealerships in Greater Brisbane;
- Lakeside Park Raceway;
- Queensland Raceway;
- Local residents and business owners within around 2 km of Brisbane Airport; and
- Wider community.

6.8.8 Summary

As discussed, the BNE Auto Mall precinct has been designed as a world-class destination for the automotive industry, buyers of new and used cars as well as the general public and motoring enthusiasts. The development is expected to attract significant visitation and generate substantial vehicle sales.

As such, the impact of the BNE Auto Mall on social and economic issues is assessed as:

Type of Economic impact	
Construction phase	Positive, low impact
Operational phase	Positive, low to medium impact

Type of Social impact	
Construction phase	Negligible, low impact

[1] Based on the Building Queensland, Social Impacts Evaluation

Operational phase	Positive, low impact

6.9 Cultural Heritage

The *Queensland Heritage Act 1992* provides for the conservation of Queensland's cultural heritage for the benefit of the community and future generations. The Queensland Heritage Register provides a list of places of cultural heritage significance to Queensland that are protected and managed in accordance with the *Queensland Heritage Act 1992* for present and future generations.

6.9.1 Baseline Conditions

The 2014 AES identifies known indigenous and non-indigenous heritages sites on Airport land. There are no known heritage sites identified within the Project site.

While the site is identified as having little to no heritage value, it has the potential to contain items or sites that may be unearthed during construction. Section 6.9.3 details mitigation measures to avoid/minimise disturbance of cultural heritage.

Under Table 13.5 of the AES, the Kingsford Smith Memorial is identified as a non-indigenous heritage site. The Kingsford Smith Memorial (the Memorial), which contains the Southern Cross Aircraft, is located 95 m from the site towards the eastern corner. The Memorial is potentially significant at a State or Commonwealth level for its historic significance, rarity, aesthetics, technical achievements and associative values, however, it is not currently listed on any statutory heritage register. It is noted, however that building sealing, filter maintenance and other building improvement were undertaken on the Kingsford Smith Memorial prior to the land development works (Phase 1). Dust and vibration monitoring have been ongoing since the commencement of the land development works (Phase 1) in September 2017.

The site is also located 100 m from the Squadron 460 Memorial, that has some local heritage value, although it is not listed on any statutory heritage register nor is it identified under the AES.

6.9.2 Assessment of Impacts

The first phase of preparatory works involves the clearing, filling and surcharging of the site. The EAR identified potential heritage sites/places within the site may include survey trees, remnant fence lines and historic drains and culverts. However, it was considered there is limited potential for Project works to impact on cultural heritage within the site.

Consideration has been given to the potential for emissions associated with Project works, such as vibration and dust, to impact on the Kingsford Smith Memorial. Previous projects undertaken near the Memorial, including the current earthworks at the BNE Auto Mall and the Northern Access Road Project (which involved pile driving in association with construction of the Nancy Bird Way bridge) have not resulted in any impacts from dust or vibration or complaints relating to the heritage values associated with the Memorial. As such, it is considered that construction and operation of the BNE Auto Mall will not adversely impact the Kingsford Smith Memorial.

6.9.3 Mitigation Measures

The following mitigation measures are proposed to manage the impact of the Project on cultural heritage:

- Ensure all staff have completed a site induction, including:
  - Cultural heritage awareness training;
  - Familiarisation material to identify a cultural heritage find;
  - Stop Work Procedure under the Heritage Management Plan; and
  - Process for collection, transport and storage of any cultural heritage finds; and

- Implement the Stop Work Procedure and ensure no impact is sustained to cultural heritage.

Should any vibration inducing works occur within 200 m of the Kingsford Smith Memorial, and if a validated compliant is received regarding vibration, vibration monitoring shall be undertaken to ensure vibration levels are kept below 5 mm/s in consultation with the BAC Environmental Advisor.

Following the implementation of the above mitigation measures, the impact of the Project on cultural heritage is assessed as:

Cultural heritage	
Construction phase	Negligible risk
Operational phase	Negligible risk

6.10 Waste

6.10.1 Baseline Conditions

Waste is defined in the *Airports (Environment Protection) Regulations 1997* and includes waste oil and oil containers, surplus or spent chemicals, paints and solvents and their containers, sewage, and waste paper, litter and food scraps.

Under the AES (BAC 2014), the action plan for waste management seeks to achieve the sustainable management of waste through initiatives such as waste minimisation and segregation of waste and recycling. The AES gives consideration to the *Waste Reduction and Recycling Act 2011* when managing waste on Airport land.

The BNE Auto Mall has been under development since September 2017. The site has been cleared and is currently undergoing earthworks and surcharging. Waste currently generated at the site includes vegetation, fill material, construction equipment waste, packaging materials, regulated wastes (e.g. hydrocarbon waste) and general wastes.

A waste management plan and waste contract and collection arrangements will be put in place consistent with the proposed tenants needs and employed with commencing operations.

6.10.2 Assessment of Impacts

Construction waste will be generated through site works and the building program. During construction and operation of the BNE Auto Mall site, a number of waste products are likely to be generated, including:

- Packaging materials – any materials used on site that are delivered in packaging material. This includes pallets, crates, cartons, plastics and wrapping materials. All packaging material will need to be disposed of once the product has been used;
- Wastes from construction equipment maintenance – various heavy vehicles and construction equipment will be used during the construction phase. Liquid hazardous wastes from cleaning, repairing and maintenance of equipment may be generated. Leakage or spillage of fuels/oils within the site needs to be managed and wastes disposed of appropriately;
- Regulated wastes – including hydrocarbon waste such as waste oil, oily water, oily sludge, grease, coolant, oily rags, oil filters, drums, detergent, solvents, batteries, tyres, paints and resins; and
- General wastes – this includes retail waste, scrap materials and biodegradable wastes.

Potential impacts associated with the inappropriate management of waste generated from the above may include contamination of soils, surface water and groundwater.

6.10.3 Mitigation Measures

Collection, storage and disposal of waste will be managed under a CEMP to avoid impact or nuisance on and off the identified development site. Appropriate measures are to be employed to satisfy the sustainable management of waste generation and disposal in accordance with the 2014 AES.

Mitigation measures relating to waste management to be included in a site-specific CEMP include:

- Vegetation wastes from site clearing should be mulched and used in on site landscaping and erosion and sediment activities;
- Identify possible secondary uses for construction wastes prior to and during construction;
- Designate location of construction compounds and areas for each waste stream to allow for waste segregation;
- Ensure construction and industrial waste is stored in industrial covered skips/bins;
- Contain and capture runoff from designated waste areas;
- No waste is to be burnt on site;
- Ensure waste bin lids are closed and work sites kept tidy to avoid littering and attraction of birds, vermin and other wildlife;
- Any packaging materials to be collected separately and re-used or recycled including timber, paper, cardboard, pallets and plastics;
- Waste disposal is to occur at approved facilities; and
- Engage the services of a licensed waste contractor and recycler if removing regulated wastes from the Project site.

As such, the impact of the BNE Auto Mall on waste issues is assessed as:

Waste	
Construction phase	Negligible risk
Operational phase	Negligible risk

6.11 Hazardous Materials and Dangerous Goods

6.11.1 Baseline Conditions

The management of hazardous goods must be in accordance with the *Work Health and Safety Act 2011* (WHS Act)*, Work Health and Safety Regulation 2011* (WHS Regulation) and relevant Australian Standards. In addition, storage and use of petroleum products will comply with the Brisbane City Plan SC6.28 *Storage and Dispensing of petroleum products planning policy* and other guidelines and standards/codes as required.

6.11.2 Assessment of Impacts

As discussed in Section 6.1, it is anticipated that operation of the BNE Auto Mall will involve storage and use of fuels, oils, solvents and other potentially hazardous chemicals as a result of testing and maintaining vehicles. The storage and use of these potential contaminants may result in soil and/or groundwater contamination.

Furthermore, operation of the vehicles and potential servicing within the BNE Auto Mall precinct, may also have the potential to cause air quality impacts as well as odour impacts. During operation of the BNE Auto Mall, tenants will be responsible for the appropriate management and disposal of hazardous goods, and compliance with any licences required, under the WHS Act.

6.11.3 Mitigation Measures

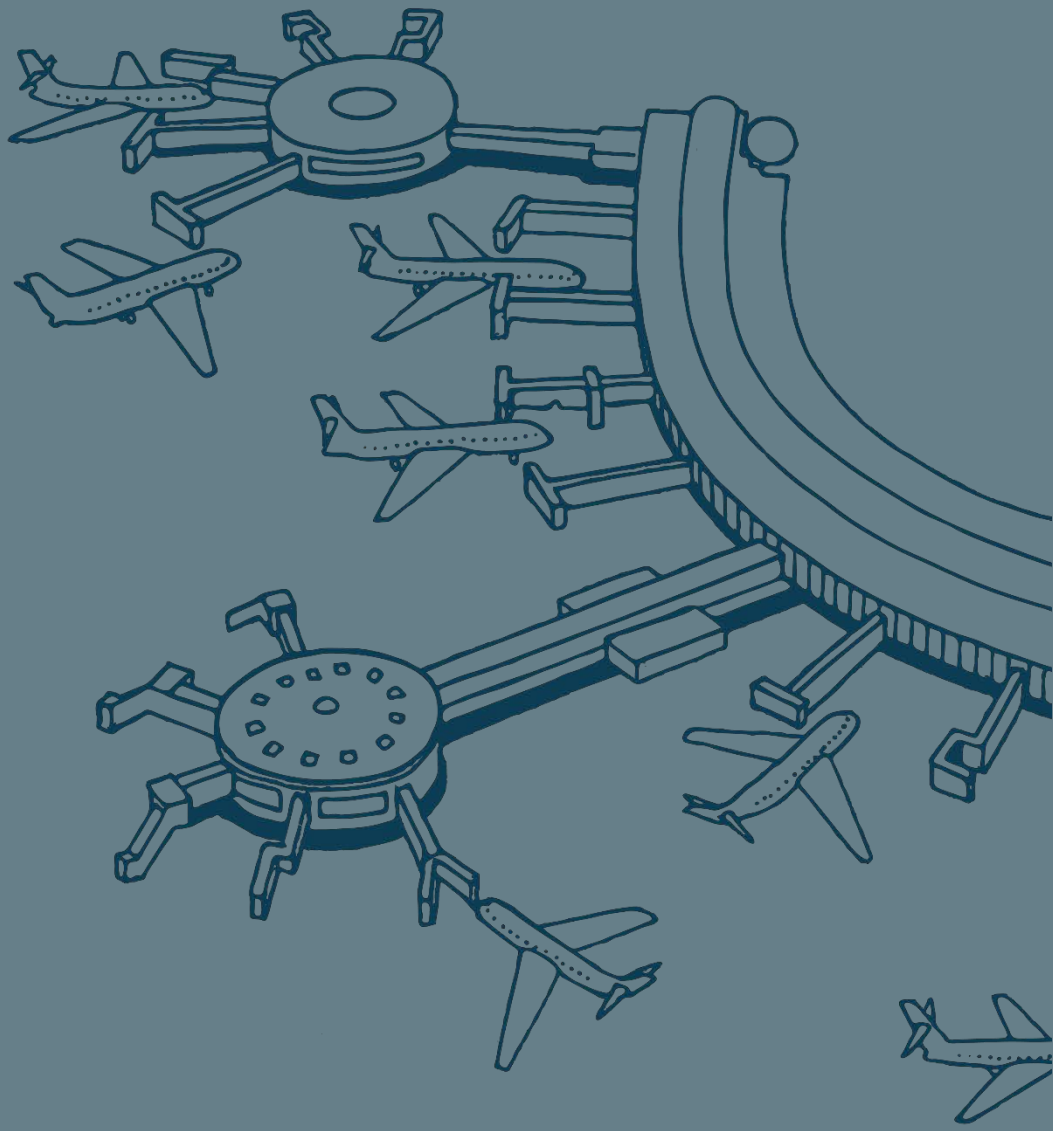
The storage of fuels and hazardous substances will be conducted in accordance with AS1940:2017, *The storage and handling of flammable and combustible liquids*. All hazardous materials will be stored with an up to date material safety data sheet (MSDS). An MSDS register will be maintained adjacent to the hazardous material storage area with the location clearly signed.

Contractors and tenants are responsible for any licences required under the WHS Act. Hazardous material and dangerous goods associated with the BNE Auto Mall site will be handled, stored and disposed of in accordance with the WHS Act, WHS Regulation, relevant Australian Standards and the Brisbane City Plan SC6.28.

A register of hazardous materials stored and used by each tenancy will be kept by BAC, who will undertake an audit and hazard assessment every two years to determine the cumulative impact of hazardous material being distributed across the site.

Following the implementation of the mitigation measures, the impact of the Project on the management of hazardous materials and dangerous goods is assessed as:

Hazardous materials and dangerous goods	
Construction phase	Negligible risk
Operational phase	Negligible risk



7

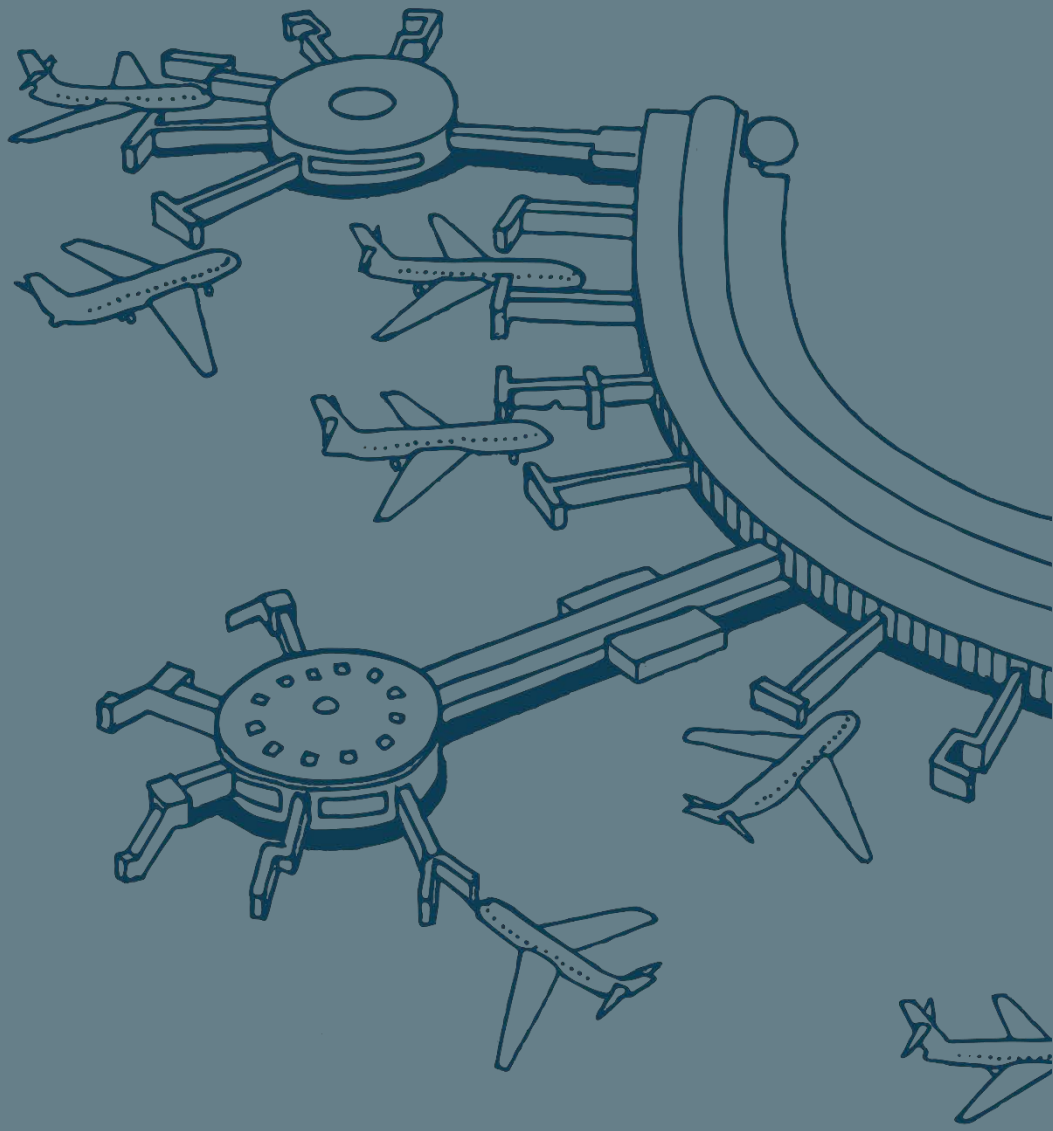
BUILDING SUSTAINABILITY

7. Building sustainability

The key sustainability initiatives that are being investigated as part of the design of the (insert project) include the following:

- The incorporation of renewable energy, such as Solar PV.
- The installation of movement sensor LED lighting.
- Climate change resilience assessment.
- Allowance for electrical vehicle charging.
- Identification of the potential re-use of rainwater.

The detailed design phase will be used to further refine sustainability initiatives through an Ecologically Sustainable Design assessment.



8

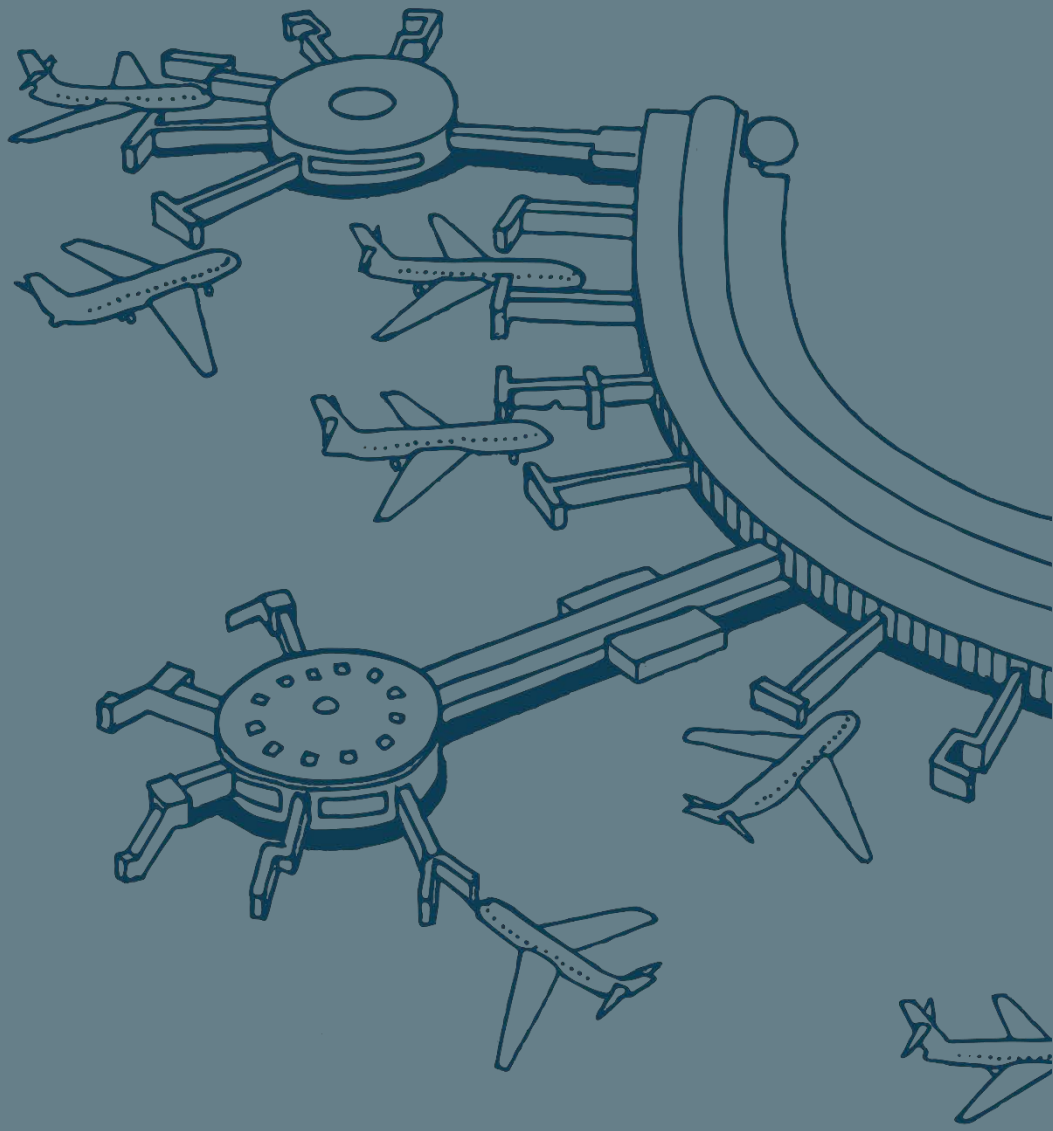
SUMMARY OF IMPACTS

8. Summary of impacts

The assessment component of the draft MDP has been undertaken to meet the requirements of Section 91 (1) (h) of the *Airports Act 1996* (Cth). Table 26 provides a summary of the potential operational, environmental and social impacts considered in the assessment.

Table 26 Sustainable, responsible and impact investing objectives and commitments

Section	Environmental and social factors	Impacts	
5.1	Traffic and Parking	Negligible	Low
5.2	Aviation Operations and Safety	Negligible	Negligible
6.1	Geology, Soils and Topography	Low	Negligible
6.1	Contamination	Negligible	Low
6.2	Ecology	Negligible	Negligible
6.3	Hydrology and Water Quality	Low	Negligible
6.4	Air Quality and Odour	Negligible	Negligible
6.5	Noise and Vibration	Negligible	Low
6.6	Land Use	Negligible	Negligible
6.7	Landscape	Negligible	Negligible
6.8	Social and Economic Issues	Negligible	Negligible
6.9	Cultural Heritage	Negligible	Negligible
6.10	Waste	Negligible	Negligible
6.11	Hazardous Goods	Negligible	Negligible



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