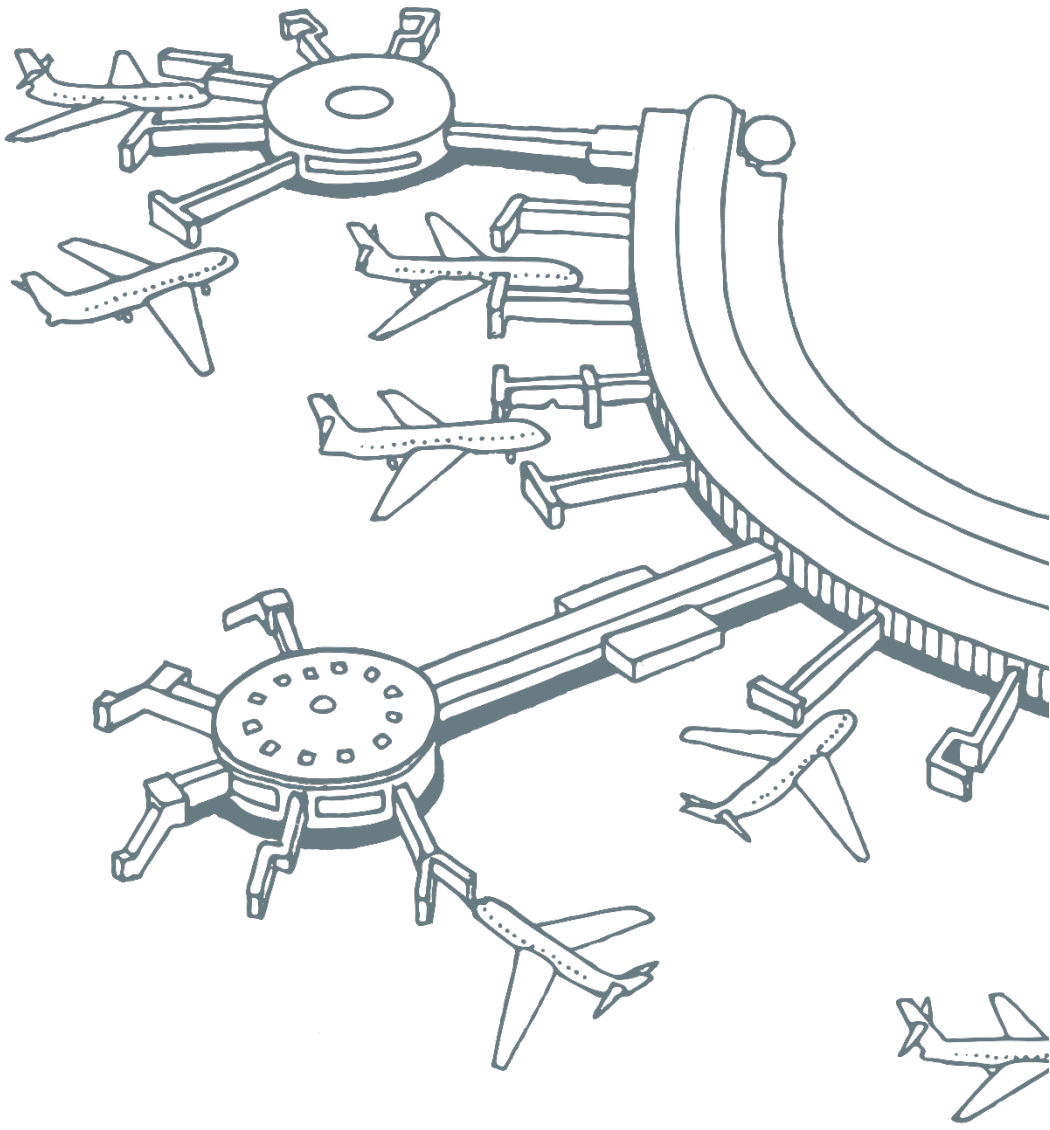
APPENDIX E
CONSTRUCTION TRAFFIC ASSESSMENT



BNE Auto Mall

Construction Traffic Impact Assessment

Brisbane Airport Corporation

Reference: 503043

Revision:1

3 April 2019

aurecon

Bringing ideas to life

Document control record

Document prepared by:

Aurecon Australasia Pty Ltd
ABN 54 005 139 873
Ground Floor, 25 King Street
Bowen Hills QLD 4006
Locked Bag 331
Brisbane QLD 4001
Australia

T +61 7 3173 8000
F +61 7 3173 8001
E brisbane@aurecongroup.com
W aurecongroup.com

A person using Aurecon documents or data accepts the risk of:

a) Using the documents or data in electronic form without requesting and checking them for accuracy against the original hard copy version.

b) Using the documents or data for any purpose not agreed to in writing by Aurecon.

Document control						aurecon
Report title		Construction Traffic Impact Assessment				
Document code			**Project number**		503043	
File path		P:\WP\503043 - Auto Mall MDP\Major Development Plan\Appendices\Appendix E - BNE Auto Mall Construction Traffic Assessment Rev 1.docx				
Client		Brisbane Airport Corporation				
Client contact		David Oatley	**Client reference**			
Rev	**Date**	**Revision details/status**	**Author**	**Reviewer**	**Verifier** (if required)	**Approver**
0	2018-08-31	Draft for BAC Review	T Pathiranage /D Wang	A Simmons	G Kerr	C Roderick
1	2019-04-03	Final	Denise Wang	JDW	G Kerr	C Roderick
Current revision		**1**				

Approval			
Author signature		Approver signature	
Name	Denise Wang	Name	Corey Roderick
Title	Transport Planner	Title	Principal, Environment and Planning

Contents

Figures

Tables

Glossary

Acronym	Meaning
AADT	Average Annual Daily Traffic
BAC	Brisbane Airport Corporation
GFA	Gross Floor Area
HV	Heavy Vehicle
LoS	Level of Service: An index of the operational performance of traffic on a given roadway, traffic lane, approach, intersection, route or network, ‘A’ meaning good performance, ‘F’ meaning poor performance
LV	Light Vehicle
STREAMS	An integrated intelligent transport system used in Queensland
TIA	Traffic Impact Assessment
TMR	Queensland Department of Transport and Main Roads
EAR	Environmental Assessment Report

1 Introduction

1.1 Project background

Aurecon has been commissioned by Brisbane Airport Corporation (BAC) to undertake a Traffic Impact Assessment (TIA) for the construction phase of the BNE Auto Mall (the Project) as part of the BAC's Major Development Plan (MDP) application.

The proposed development 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 BNE Auto Mall is set to be Australia's benchmark automotive precinct designed for new and used car buyers, motoring enthusiasts and the public. The development will include a diverse mix of uses such as:

- A range of commercial uses including, but not limited to, automotive retail dealerships, retail showrooms, and retail tenancies
- Dedicated manufacturers brand experience centres
- An automotive performance track, associated manoeuvring and handling courses, skidpan and 4WD testing circuit
- Track operations and management centre

1.2 Objectives

The objectives of this TIA are to:

- Provide an overview of existing conditions
- Identify likely construction impacts
- Identify potential conflict points of the network that may emerge due to construction traffic
- Investigate potential cumulative network impacts with other Brisbane Airport planned improvements occurring during construction
- Investigate the level and nature of construction traffic impacts on the surrounding road network including Gateway Motorway, Moreton Drive, Airport Drive and Nancy Bird Way

1.3 Context

1.3.1 Staging of development

This TIA details potential construction traffic impacts due to the delivery of the BNE Auto Mall Project. Potential road impacts may result in each stage from transporting building materials, commuting vehicles for construction workers and moving heavy machinery.

The BNE Auto Mall is scheduled to officially open late 2021 following the completion of the roads and services for all stages, the completion of the performance track construction and some buildings that form part of Stages 1a and 1b. The stages for the Project are described in Table 1.

Table 1 Project stages

Stage	Description	Estimated timing
Site preparatory works	Endorsed under the EAR and include site clearing and partial grubbing, bulk earthworks, surcharging for roads, performance track and building areas, drainage works and acid sulfate soil treatment.	Underway Completion: late 2020

Stage	Description	Estimated timing
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 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 2 as grassed 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

1.3.2 Existing road network

The Project site is enclosed by Moreton Drive, Airport Drive and Nancy Bird Way and located close to the International Terminal. The impacts on these roads due to the construction traffic will be discussed further.

Table 1.2 summarises the key characteristics of each of these roads.

Table 1.2 Road characteristics on surrounding roads

Road	Owner	Pavement condition	Approx. length (km)	Cross section	AADT (2017)	Adjacent land use	Posted speed (km/h)
Airport Drive[1]	BAC	Sealed asphalt	5.2	Four-lane, two-way road Divided by a solid median (width of the median is >10 m) With appropriate shoulders	15,000	Commercial and airport	70
Moreton Drive	BAC	Sealed asphalt	4	Varies along the road, however near the project site it is an eight-lane, two-way road Divided by a solid median (width of the median is approximately 10 m) With appropriate shoulders and barriers	60,000	Airport	90
Nancy Bird Way[2]	BAC	Sealed asphalt	0.5	Four-lane, two-way road Divided by a solid median (width of the median is approximately 2.5 m) Consist with appropriate shoulders	15,000	Airport	60

Table notes: [1]One inbound lane has been used since September 2017 for the site preparatory works and was separated from the through lane by concrete barriers and signage to delineate. There is a left-in, left-out entry and exit located on either side of the Energex Easement

[2]A site left turn only entry has been provided for the site preparatory works since September 2017

Airport Drive

Airport Drive is approximately 5.2 km in length and connects to the Airport Link toll road to the west. The road provides the main 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.

Moreton Drive

Moreton Drive travels west to east and is located to the north of the Project site. 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

Nancy Bird Way is an approximately 500 m 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.

1.4 References

The following reference documents informed Aurecon's technical review.

- Airport Drive West Precinct Traffic and Transport Study (WSP 2018)
- Road Design for Heavy Vehicles (Austroads 2015)
- Australian Standards
- Standards and Tolerances Guide (Queensland Building and Construction Commission 2016)
- Guideline to Traffic Impact Assessment (Department of Transport and Main Roads (DTMR) 2017)
- Maps: Multi-combination routes and zones in Queensland (DTMR 2017)

2 Project stages and construction routes

2.1 Site access

Site preparatory works for the BNE Auto Mall have been occurring since September 2017 and involve clearing, bulk earthworks and ground improvements. Current site access arrangements (as identified in Section 1.3.2) from Airport Drive and Nancy Bird Way will remain the likely access points to the Project site during construction of Stages 1 and 2.

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 2.1 and Figure 2.2 respectively.

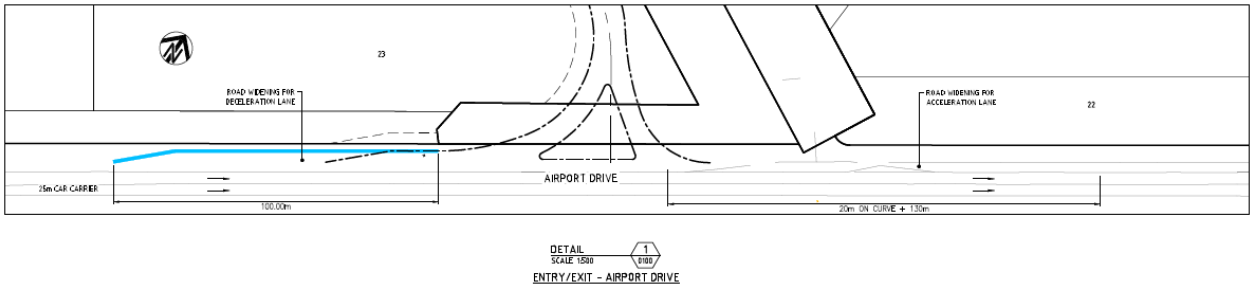


Figure 2.1 Access arrangements from Airport Drive

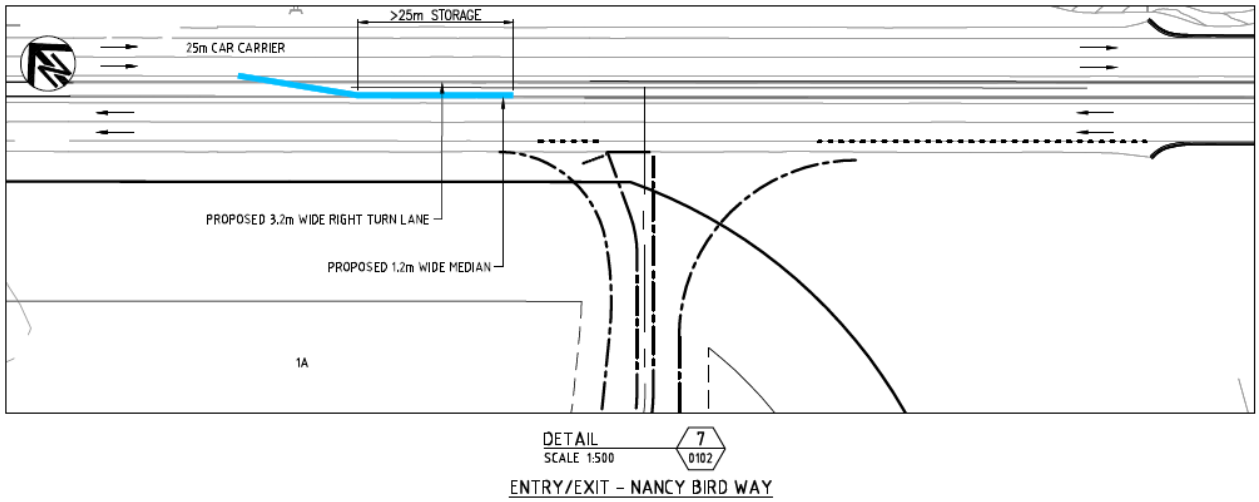


Figure 2.2 Access arrangements from Nancy Bird Way

2.2 Construction routes

Information on the haulage materials and associated storage locations has not been finalised. Therefore, assumptions were made to determine the likely construction routes, including:

- All 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 Project site
- Construction traffic from the north and south would most likely be using the Gateway Motorway or Southern Cross Way as primary options

The assessment has been restricted to construction routes surrounding the Project site. For all proposed access points from Nancy Bird Way and Airport Drive, swept path analysis will be considered to ensure that the construction vehicles can move safely into and out of the site.

2.2.1 Construction routes via Airport Drive

Until a permanent access point on Nancy Bird Way is developed, construction traffic will travel along Airport Drive and will enter the BNE Auto mall via the dual left-in, left-out arrangements, as per the current traffic arrangements on site (See Figure 2.3).

During the construction of Stage 1 and Stage 2, construction vehicles will predominately access the site as per the proposed arrangements in Figure 2.3.

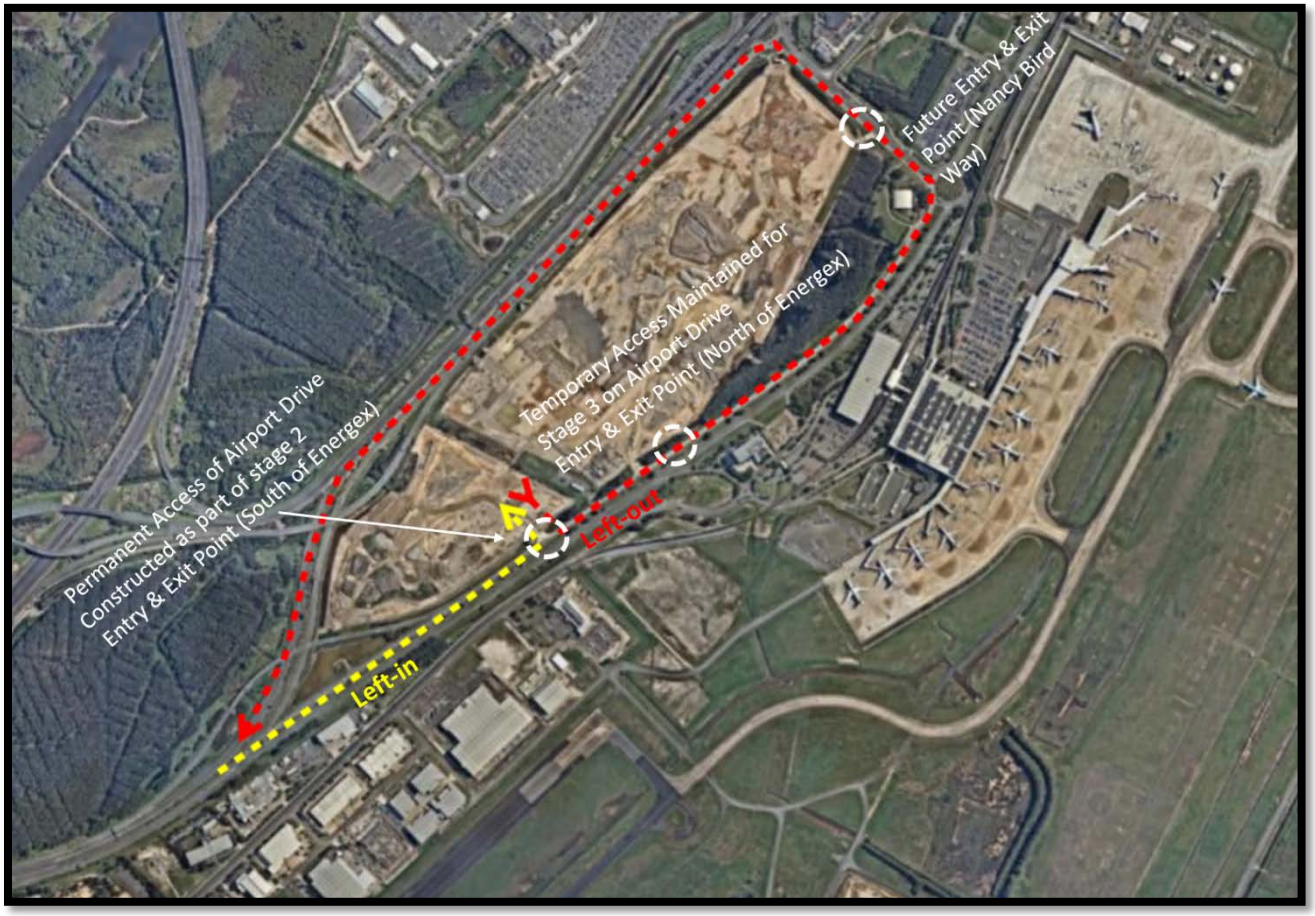


Figure 2.3 Construction routes from west accessing the site via temporary access points maintained from Earthworks

2.2.2 Construction routes via Nancy Bird Way

A new permanent intersection from Nancy Bird Way will be construction as part of the Stage 1A construction of roads and services in late 2020. Once complete, it will be used for access for the construction of buildings and the Stage 3 roads and services construction.

For construction vehicles originating from the north and south of the Brisbane Airport, vehicles would likely take the Gateway Motorway exit ramp onto Moreton Drive, and then continue approximately 1.2 km before approaching the roundabout and turning right onto Nancy Bird Way and then turn right into the Project site

(refer Figure 2.4) .To exit the site, vehicles are likely to turn left onto the Nancy Bird Way, then left onto Moreton Drive and take the entry ramps to enter the Gateway Motorway.

From the west, construction vehicles travelling along Airport Drive turn left at the roundabout onto Nancy Bird Way and continuing for approximately 200 m to turn left onto the Project site. To exit the site, vehicles are likely to turn left onto the Nancy Bird Way, then left onto Moreton Drive, which merges into Airport Drive. Figure 2.5 illustrates the proposed construction routes from the west accessing the site via Nancy Bird Way.

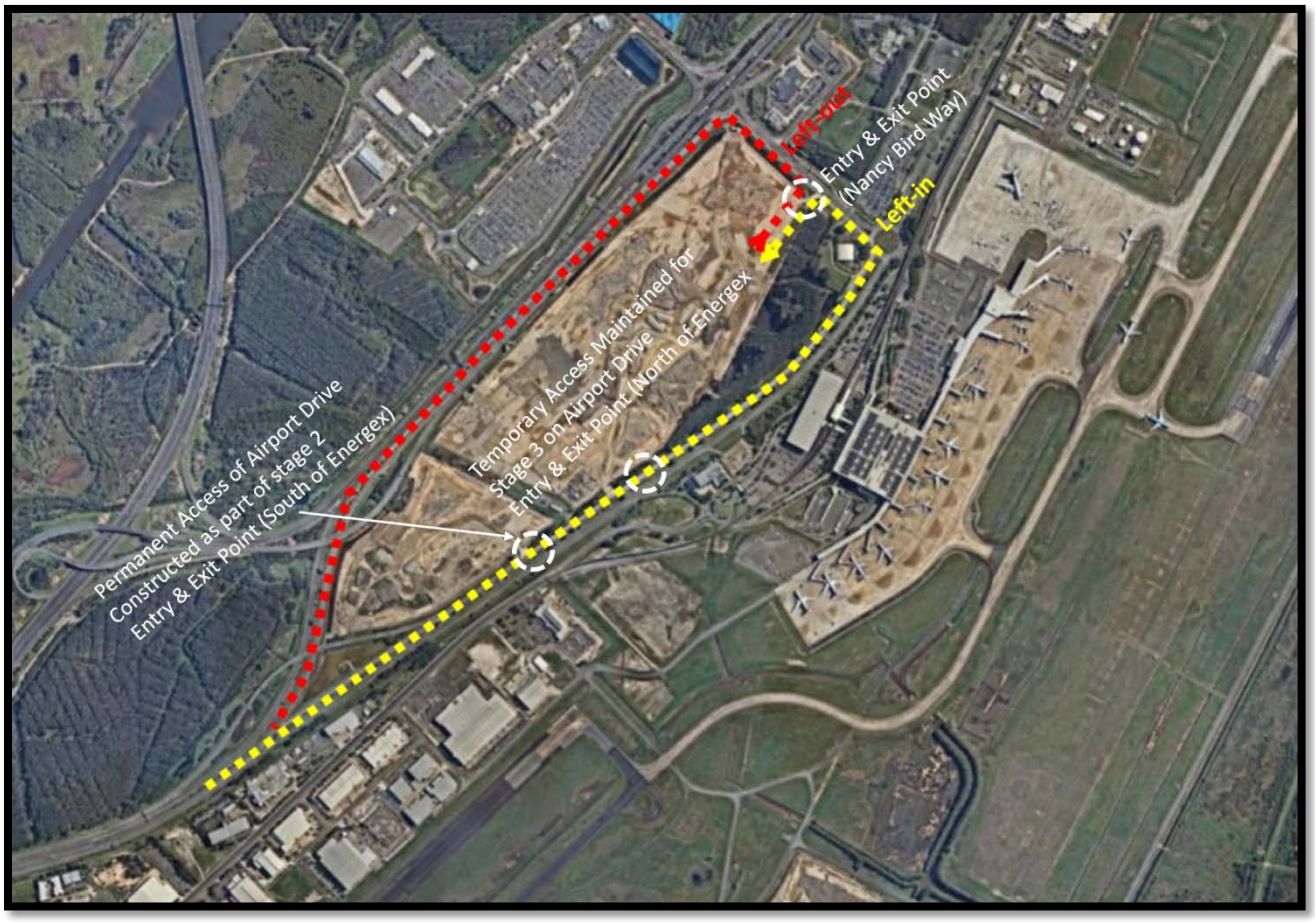


Figure 2.4 Construction routes from north and south accessing the site from Nancy Bird Way (left-in, left-out)

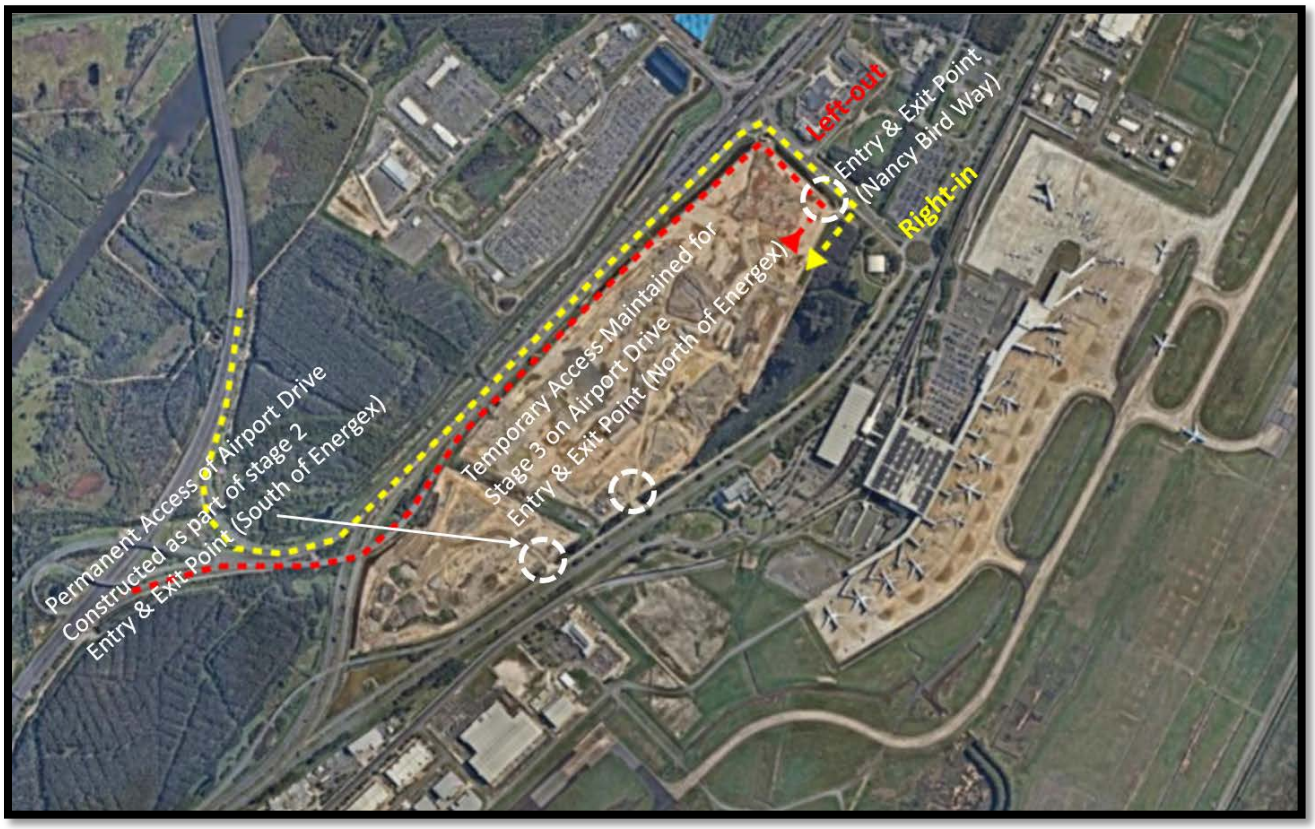


Figure 2.5 **Construction routes from west accessing the site from Nancy Bird Way**

3 Traffic generation

3.1 Methodology

The timeframe of BNE Auto Mall Project provides a preliminary construction programme across approximately four years. There are a variety of construction activities such as past and current fill haulage activities and transporting concrete, quarry materials, asphalt, building materials and machinery, as well as the daily commuting of the construction workforce. The quantity and the type of materials and equipment have not been provided; therefore, assumptions have been made based on similar commercial developments as well as current information on the land use, development staging, lot size, gross floor area (GFA) and forecast building heights. To establish a reference vehicle, concrete was identified as the major transport material. As such, for the purposes of this TIA, concrete materials transport has been assessed as the critical factor.

This methodology uses the approach outlined within DTMR's Guideline to Traffic Impact Assessment (2017), which recommends using similar developments and GFA as input parameters.

Likely haulage routes for construction vehicles include:

- Airport Drive
- Nancy Bird Way
- Moreton Drive

Table 3.1 details the impact rating for additional traffic generation and the associated need for adoption of mitigation measures or an upgrade of road capacity.

Table 3.1 Trip generation impact levels

Additional traffic generation	Impact rating	Determination
<5%	Negligible	Impact is negligible when the development traffic is less than 5% of the background traffic (DTMR 2017). There will not be a need for mitigation or upgrade.
5%-15%	Minor	Development traffic may have impact on roads/ intersection performance. There may be a need for mitigation or upgrade.
15%-40%	Significant	Development traffic will highly likely to increase delays on roads/intersections. Need for mitigation or upgrade will be likely.
40%-100%	Major	Development traffic equal to/exceed existing background traffic, therefore will have major impact on the roads/intersection performance. Need for mitigation or upgrade will be highly likely.

Internal movement of concrete and other building material within the site is assumed to be entirely contained within the Project site. It is assumed that vehicular access to the surrounding properties is not expected to be affected during the construction phase of BNE Auto Mall. There has also been negligible impacts during the site preparatory stage.

It should be noted that these initial inputs are assumptions only and have been provided for indicative impacts. Material sources and quantities are yet to be finalised, and as a consequence, alternative haulage routes may also need to be considered. In addition, the construction time frame, construction schedule and lot sizes may change, which may result in changes to any impacts.

3.2 Impact assessment

The following section provides the assessment of heavy and light vehicles likely to be generated during the construction phase of the Project:

- For concrete transportation:
  - The likely total concrete volume of 52,000 m^3 will be delivered to the Project site, predominately for the building works (calculation of the possible total concrete volume was according to the Queensland Building and Construction Commission Standards and Tolerances Guide (2016))
  - Concrete will likely to be transported using the most common cement mixer truck. The average concrete mixer truck payload is 6.1 m^3; this will be the reference vehicle.
  - Concrete mixer truck will operate 300 working days per year (six day working weeks minus all Queensland public holidays)
  - Daily concrete truck generation to the Project site would therefore equate to 7 (52,000 m^3 of concrete/6.1 m^3 truck payload/ 300 days of the year/ up to 4 years construction programme)
  - Accounting for both laden and unladen trips to and from BNE Auto Mall, the daily concrete truck movements would be double this amount at 14 movements per day (7 x 2 = 14 trips per day)
  - This number has been increased to 15 trips per day in total to be conservative
  - Truck loading operations will only occur during day time (daytime operation 0600 to 1800), six days a week
  - For AM and PM peak construction traffic, as approximately 15 return trips of concrete mixer truck would be evenly spread across a 12-hour working day, there would be an **additional 1 vehicles** due to peak hour concrete truck movements
- For other building material transportation (quarry materials, asphalt etc):
  - Truck and dog haul vehicles with a maximum capacity of 16 m^3 will likely be used to transport other building materials
  - The number of trucks required to transport other material is based on an indicative number of lots within the development area
  - One truck and dog haul vehicle is assumed to be used per lot per day and as such, 20 truck movements are likely to be generated from the Project site on a daily basis
  - Accounting for both laden and unladen trips to and from BNE Auto Mall, the daily truck movements would be double this amount at 40 movements per day (20 x 2 = 40 trips per day)
  - This number has been increased to 45 trips per day in total to be conservative
  - For AM and PM peak construction traffic, as approximately 45 return trips of truck and dog haul vehicles would be evenly spread across a 12-hour working day, there would be an **additional 4 vehicles** due to peak hour truck movements
- Potential overlap between current land development works and BNE Auto Mall construction:
  - Considering the “what-if” and “worst-case” scenarios, there is the chance that there could be a small window of overlap between the stage 1 construction works and Stage 3 of the land development works
  - This overlap will likely only occur for up to seven months for the completion of the site preparatory works
  - The Environmental Assessment Report (EAR) for the BNE Auto Mall estimated that, during the earthwork programme of Stage 3, there will be approximately 74 return trips of construction traffic across a 12-hour working day for removal of excess surcharge
  - For AM and PM peak construction traffic, an approximately 74 return truck trips across a 12-hour working day, there would be an **additional 6 vehicles** due to peak hour truck movements
- Traffic generation from construction workers:
  - The construction compound will likely be located within the Project site. An estimated 150 construction workers are estimated to be engaged in construction activities on any given day and staff members are expected to commute to and from the site during morning and evening peak periods from Monday

to Saturday. Employee traffic movements may occur outside of the commuter peak periods due to flexible working arrangements.

- The daily peak periods on the existing networks including Airport Drive and Nancy Bird Way are identified as follows:
  - AM Peak hour: 7:00 am to 9:00 am
  - PM Peak hour: 3:00 pm to 5:00 pm
  - Weekend Peak hour: 11:00 am to 12:00 pm
- For AM and PM peak construction traffic, there would be up to **an additional 150 light vehicle trips** per day per peak hour.

STREAMS data reports for 2017 for Nancy Bird Way, Airport Drive and Moreton Drive were provided by BAC. This data was analysed as part of the Transport Study, which has summarised the traffic volumes on these roads during AM peak period for an average weekday. The summary of the traffic data on the three roads is shown in Table 3.2. The construction trip distribution among Airport Drive, Moreton Drive and Nancy Bird Way assumed as 45%, 45% and 10% respectively.

Table 3.2 Likely trip generation during construction

Location	Peak hour volume (AM peak)	Trip distribution	AADT	Additional traffic volume on AM/PM peak[1]	Additional traffic generation	Traffic impact level
Moreton Drive (NB)	3,200	45%	60,000	39 (45% of 75 LV and 11 HV)	1.21%	Negligible
Moreton Drive (SB)	2,000				1.95%	Negligible
Airport Drive (NB)	500	45%	15,000	39 (45% of 75 LV and 11 HV)	7.8%	Minor
Airport Drive (SB)	1,000				3.9%	Negligible
Nancy Bird Way (EB)	850	10%	15,000	9 (10% of 75 LV and 11 HV)	1.1%	Negligible
Nancy Bird Way (WB)	300				3.0%	Negligible

Table notes: [1]HV = heavy vehicles; LV = light vehicles

Based on the above assumptions, during the construction phase of BNE Auto Mall, the expected construction traffic is anticipated to increase northbound traffic on Airport Drive (on AM/PM Peak) 7.8% and southbound traffic on Airport Drive (on AM/PM Peak) by 3.9%. The peak hourly volume of traffic on Moreton Drive will be increased by 2.0% or less in both the northbound and southbound direction. Given the 10% construction trip distribution rate on Nancy Bird Way, the peak hourly volume on Nancy Bird Way will be increased by 3.0% or less in both eastbound and westbound directions.

4 Traffic impacts on surrounding road network

4.1 Route analysis

4.1.1 Construction routes via Airport Drive

The existing dual left in / left out access arrangements from Airport Drive will be utilised for construction traffic. The road access (into the Auto Mall) utilises the left inbound lane cordoned off by concrete median barriers with acceleration and deceleration tapers either end. A minimum 1.0 m shoulder has been maintained alongside the barriers for the through lane.

4.1.2 Construction routes via Nancy Bird Way

The route assessment for Nancy Bird Way determined potential existing points of conflict at the site access point on Nancy Bird Way (refer Figure 2.4 and Figure 2.5). It should be noted that the temporary left turn lane entry will only be utilised during construction of roads and services until such time as the permanent intersection is constructed (late 2020).

For the permanent left-in arrangement (to be used by traffic travelling from Airport Drive onto Nancy Bird Way), a deceleration entry lane should be provided northbound on Nancy Bird Way, to separate the left turn traffic from through traffic, to reduce the delays. For right-in arrangements (to be used by traffic travelling from Moreton Drive onto Nancy Bird Way), an additional auxiliary right turn lane may need to be provided on Nancy Bird Way whilst a left turn out onto Nancy Bird Way will require an acceleration lane. The length of the additional lanes depends on the type of vehicle, the number of light and heavy vehicles and the sight distance requirement and will need to be determined.

In addition, during the detailed design process, potential weaving situations after exiting the roundabout at Moreton Drive need to be considered. Proper signage will need to be placed immediately after the Moreton Drive/Nancy Bird Way roundabout clearly indicating the turn right within 200 m. Detailed investigations of site access locations on Nancy Bird Way will be completed to identify the optimal layout arrangement.

4.2 Affected intersections

The potential Project construction routes travel through several intersections. However, this TIA only considers those intersections located close to the project as these intersections could most likely be directly impacted by the construction traffic. These intersections are discussed in detail in the following sections.

4.2.1 Lomandra Dr/Airport Drive intersection

This is a signalised “T” intersection with a short right turn and two left-turn lanes onto Airport Drive and two exit lanes. The length of the short right lane is approximately 26 m. Lomandra Drive is not assumed to be a construction route. However, if it becomes a construction route, certain attention should be given to the right turn lane from Lomandra Drive to Airport Drive as B-doubles could overhang the left turn lane causing a risk to other road users. Three fatal accidents occurred in 2006, 2009 and 2017 on Lomandra Drive.

4.2.2 Airport Drive/Nancy Bird Way roundabout

The existing roundabout has four legs, with two-lane approaches from north, south and west. The eastern leg of the roundabout provides access to the International Terminal carpark via Lobelia Circle and the western leg links with Moreton Drive via Nancy Bird Way. Construction traffic may heavily use this roundabout. The Transport Study (WSP 2018) noted that background traffic at this intersection is projected to reach its full capacity by 2033 and the redistribution of traffic associated with the International Terminal P2 carpark will only have minor implications to queuing and delays. However, it is noted that the intersection has previously been subject to delays and it is considered that the introduction of the additional heavy vehicles

due to the construction of the BNE Auto Mall could also have some minor impacts at certain times of day (eg peak hour) on the operation of the intersection.

Additional truck traffic associated with the site preparatory works has been using the road network since September 2017 with minimal impacts.

4.2.3 Moreton Drive/Nancy Bird Way roundabout

This is a four-leg roundabout with two-lane approaches from all directions. However, the exit lane at the north is restricted for the drivers coming from Moreton Drive and Nancy Bird Way. The Moreton Drive overpass is located over the roundabout providing access to the Airport. The main purpose of this intersection is to provide access to the Brisbane Airport Services Centre to the west and provide access to the carpark to the east. Moreton Drive is identified as a construction route and this roundabout will be impacted during the construction period of the project. However, given that negligible additional trips on Moreton Drive and Nancy Bird Way will be generated from construction works, it is considered unlikely for this roundabout to be significantly affected by construction activities.

4.2.4 Nancy Bird Way/Auto Mall access

The Transport Study (WSP 2018) has assessed the possible future layout of the nearby BNE Auto Mall intersection on Nancy Bird Way which provides an additional short right turn from Nancy Bird Way into the site. This layout was assessed for priority control intersection scenario with full pedestrian crossings on the northern and western legs of the intersection as illustrated in Figure 4.1. According to the SIDRA results, for the potential future signalised “T” intersection option, the critical movement is the northern through movement on Nancy Bird Way with a maximum back queue of 36.3 m in the AM peak in 2022. This queue is forecasted to increase up to 47.2 m and 81.5 m in 2026 and 2030 respectively. With additional construction traffic due to the BNE Auto Mall, the back queue on Nancy Bird Way may extend beyond the egress point by 2030, however this is well beyond the anticipated timeframes for construction of the BNE Auto Mall.

It should be noted that traffic patterns post commencement of the Auto Mall will be monitored by BAC to ensure intersection functionality remains as traffic growth occurs.

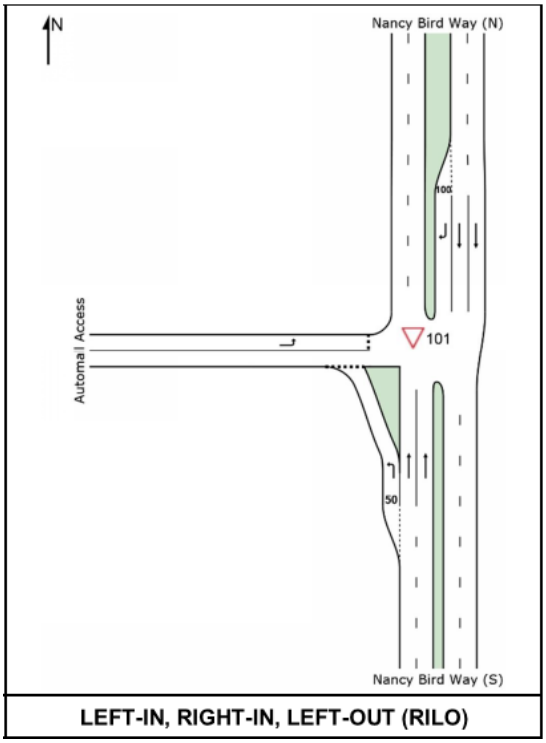


Figure 4.1 Indicative intersection layout at the proposed entrance to the BNE Auto Mall from Nancy Bird Way

4.3 Crash analysis

The previous ten years' crash history of the surrounding road network was reviewed to determine if the Project would affect the existing crash risk. There were no fatal crashes recorded on the surrounding road network; however, several hospitalisations related to crashes were recorded, particularly on the Airport Drive and at the Airport Drive/Nancy Bird Way roundabout. No trend was apparent as the types of crashes varied. A significant reduction in crashes was noted in 2016 and 2017 which may have been due to improved safety conditions delivered by several road upgrades that took place in the area during the last two years. Queensland Globe excerpts of geospatial data for the hospitalisation and medical treatment crashes on surrounding road networks are provided in Figure 4.2.

Figure 4.2 Crash location history (Queensland Globe)

5 Other Brisbane Airport planned improvements

Aurecon has investigated potential cumulative network impacts with other Brisbane Airport planned improvements.

5.1 International Terminal Building – Multi-Level Car Park 2

The Multi-Level Car Park (MLCP) 2 for the International Terminal Building (ITB) is proposed on the opposite side of Airport Drive to the BNE Auto Mall and will provide secure, undercover parking to meet future parking demand associated with increasing ITB passenger movements.

To enable access to the ITB MLCP 2, a three-arm signalised traffic intersection is proposed on Airport Drive to provide access into the MLCP 2 as per Figure 5.1. This intersection provides right and left turn treatments and will incorporated pedestrian crossings into the design.

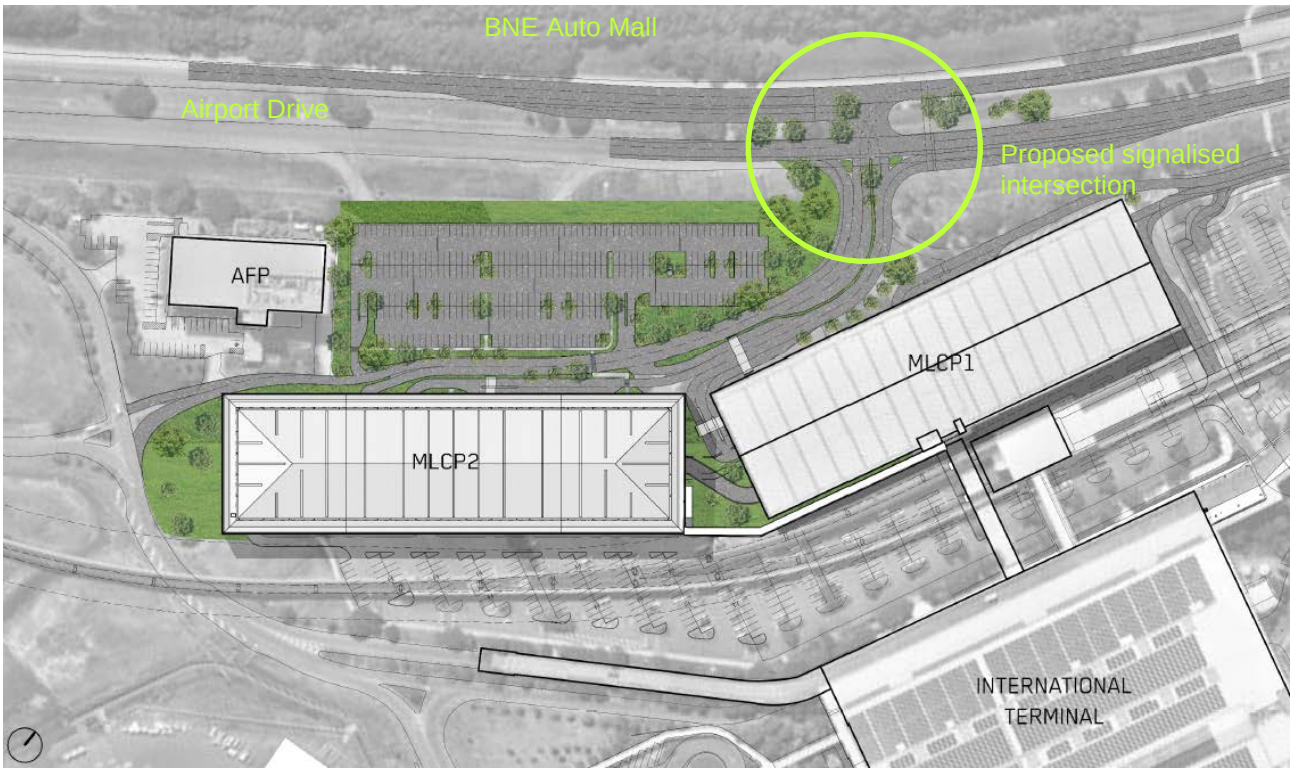


Figure 5.1 Proposed signalised intersection on Airport Drive (source: Laing O'Rourke 2019)

5.2 Proposed Skygate Airtrain Station

A new station is proposed on the Airport Rail Line to serve the Skygate precinct. The station would be most likely to located near the Novotel Hotel, which is approximate 4 km away from the BNE Auto Mall site. No information is available on this project component, including a schedule for delivery. This Project is less likely to generate traffic conflicts with the BNE Auto Mall construction traffic. Figure 5.2 illustrates the proposed location for the future station in relation to the BNE Auto Mall site.

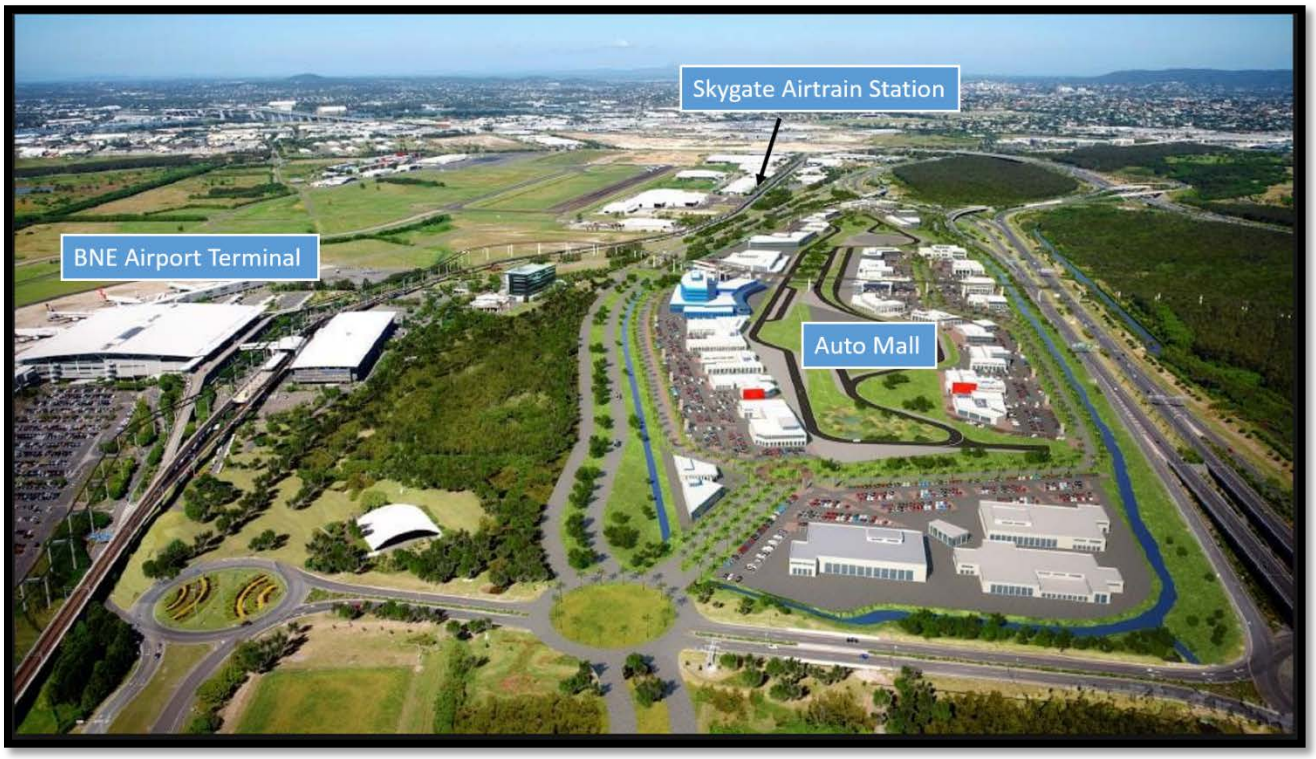


Figure 5.2 Location of proposed new station (excludes ITB MLCP2)

6 Summary and recommendations

A desktop analysis of the construction traffic impacts arising from the BNE Auto Mall Project has been undertaken and the findings and recommendations are summarised below.

- Construction impacts
  - The expected volume of additional construction vehicles could cause minor impact on the surrounding roads and the surrounding intersections. Existing traffic management measures will be continued to the next phase of the Auto Mall construction and implementation enhanced during the future construction phase, which will further assist in managing potential impacts on traffic and transport networks.
- Project route
  - The likely main construction routes will be Airport Drive, until intersection upgrades are complete and then both Moreton Drive and Nancy Bird Way will alleviate some of the pressure from Airport Drive
  - As the required construction materials may be delivered from a variety of places, some drivers may experience an unfamiliar road environment. Enhanced signage may be required immediately after the roundabout from Moreton Drive onto Nancy Bird Way, clearly indicating the Project access points.
- Affected intersections
  - The preliminary intersection analysis noted the Airport Drive/Nancy Bird Way roundabout as potentially the most affected intersection as it is projected to reach full capacity by 2033 and is occasionally subject to queuing and delays
- Access points
  - Existing access and egress points to the Project site on Nancy Bird Way and Airport Drive and will be utilised for the next stage of construction, as detailed in Section 2
  - Further investigations during detailed design should be completed for permanent site access locations on Nancy Bird Way and Airport Drive to identify the optimal layout arrangement, including swept path analysis to ensure that the likely mix of construction and operational vehicles can move safely into and out of the site
- Crash analysis
  - There were no fatal crashes recorded in the last ten years on the surrounding road network

During building construction and through stakeholder consultation, temporary construction, pedestrian, vehicle access and parking arrangements will be planned to minimise possible impacts on existing surrounding businesses. Other measures to reduce impacts from traffic generation during construction 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.
- Potentially staggering start and finish times for construction workers to avoid peak hour traffic
- Planning of preferred construction haulage routes and traffic management requirements in consultation with the future tenant and construction contractor

Document prepared by

Aurecon Australasia Pty Ltd
ABN 54 005 139 873

Ground Floor, 25 King Street
Bowen Hills QLD 4006

Locked Bag 331
Brisbane QLD 4001
Australia

T +61 7 3173 8000
F +61 7 3173 8001
E brisbane@aurecongroup.com
W aurecongroup.com

aurecon

Bringing ideas to life

Aurecon offices are located in:
Angola, Australia, Botswana, China,
Ghana, Hong Kong, Indonesia, Kenya,
Lesotho, Mozambique,
Namibia, New Zealand, Nigeria,
Philippines, Qatar, Rwanda, Singapore, South Africa,
Swaziland, Tanzania, Thailand, Uganda,
United Arab Emirates, Vietnam, Zambia,