

Fairmont Resort

71 - 85 Port Douglas Road, Port Douglas QLD
Transport Impact Assessment



Prepared by: GTA Consultants (QLD) Pty Ltd for Chiodo Corporation Pty Ltd

on 03/09/2020

Reference: Q189650

Issue #: A

Fairmont Resort

71 - 85 Port Douglas Road, Port Douglas QLD
Transport Impact Assessment


Client: Chiodo Corporation Pty Ltd

on 3 September 2020

Reference: Q189650

Issue #: A

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1. INTRODUCTION

01

1.1. Preamble

It is understood that a Development Application is to be submitted to Douglas Shire Council for the proposed Fairmont Resort (herein referred to as the 'Resort') located at 71 – 85 Port Douglas Road, Port Douglas. This is to be a luxury, 5+ star resort and the first of the Fairmont brand in Australia.

GTA Consultants was commissioned by Pure Projects on behalf of Chiodo Corporation Pty Ltd in July 2020 to undertake a Traffic Impact Assessment (TIA) for the Resort.

1.2. Resort Proposal

The Resort comprises a number of land use which are summarised in Table 1.1.

Table 1.1: Resort Schedule

Land Use	Size / Quantum
Short Term Accommodation (Resort Rooms)	253 rooms
Function Facility (Function Room and Meeting Room)	1,866 sqm GFA
Food & Drink Outlet (Restaurant, Café and Bar)	1,844 sqm GFA

The key traffic and transport elements of the Resort are summarised as follows:

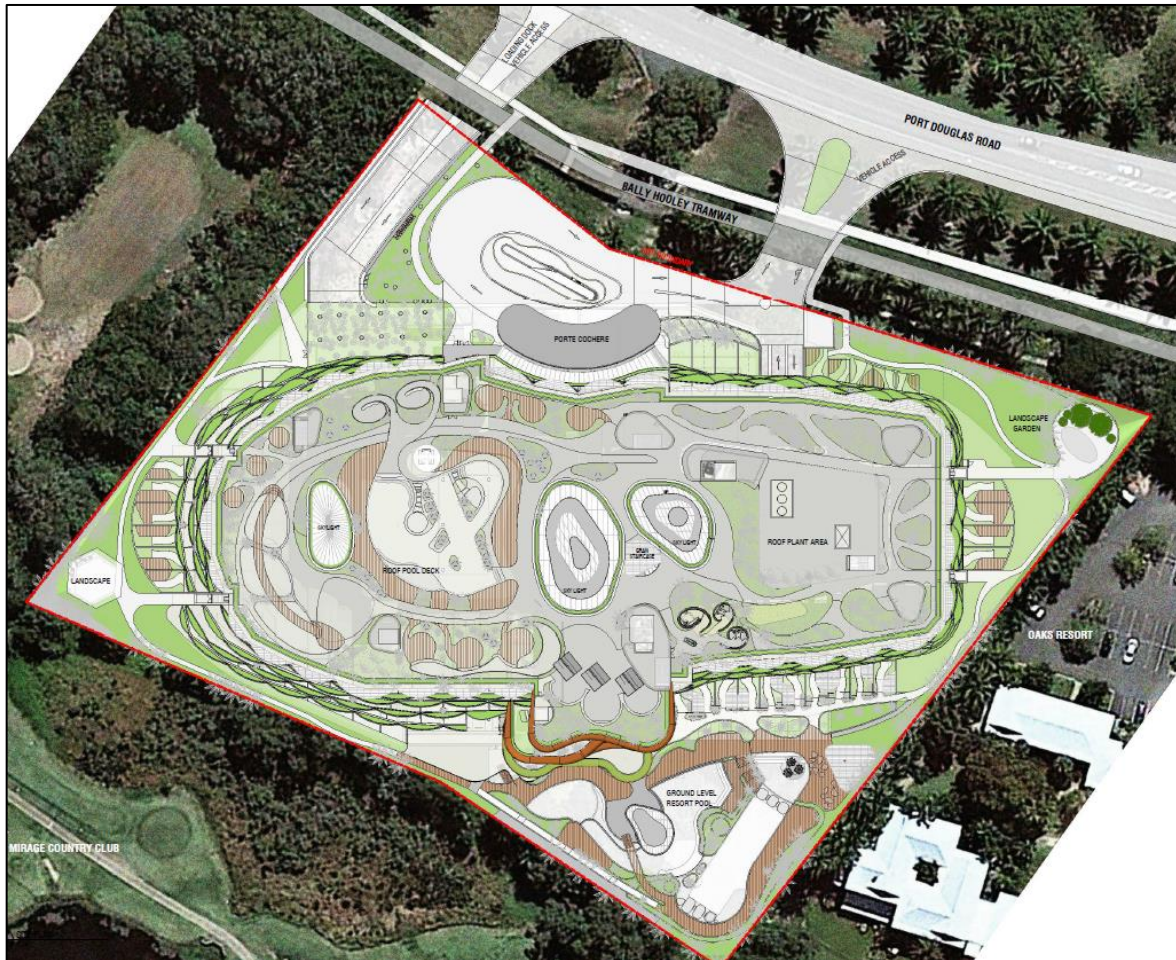
- A provision of 80 bicycle parking spaces and supporting end-of-trip facilities
- A provision of 8 motorcycle parking spaces
- A provision of 222 car parking spaces, including 75 staff spaces, 112 guest spaces (including 6 accessible spaces) and 35 visitor spaces (including 1 accessible space)
- A provision of 5 loading bays, designed to accommodate 1 Heavy Rigid Vehicle (HRV), 1 Refuse Collection Vehicle (RCV), 2 Medium Rigid Vehicles (MRV) and 1 Small Rigid Vehicle (SRV)
- Porte cochere and basement car park (central) vehicle access to Port Douglas Road, including auxiliary left and channelised right turn lanes to support full turning movements
- Loading dock (northern) vehicle access to Port Douglas Road, restricted to left-in and left-out movements only.

These Resort is shown in Figure 1.1 (over the page), including the proposed vehicle access arrangements, porte cochere and internal circulation provisions.

1.3. Current Resort Approval

It is noted that an existing Development Approval (reference MCUC 5148/2013 D#824722) is in place which comprises 79 Multiple Dwellings (Tourist), 127 Accommodation Premises (Motel) and ancillary uses including Gym, Spa, Relaxation Lounge, Retail, Restaurant, Café, Bar, Function Centre, Meeting Rooms and Administration Facilities. The current approval identifies the need to provide a minimum of 159 car parking spaces, 2 motorcycle parking spaces and 26 bicycle parking spaces.

Figure 1.1: Resort Location and Context



1.4. Purpose of this Report

This report sets out an assessment of the anticipated transport implications of the proposed development, including consideration of the following:

1. existing traffic and transport network operations surrounding the site
2. pedestrian and bicycle requirements
3. suitability of the proposed parking in terms of supply (quantum) and layout
4. service vehicle requirements
5. the vehicle trip generating characteristics of the proposed development
6. suitability of the proposed vehicle access arrangements for the site
7. the transport impact of the development proposal on the surrounding road network.

1.5. References

In preparing this report, reference has been made to the following:

- an inspection of the site and its surrounds undertaken by GTA on 21 July 2020

- Douglas Shire Planning Scheme 2018 (dated January 2018)¹
- the Department of Transport and Main Roads (TMR) 'Guide to Traffic Impact Assessment' (GTIA) (dated December 2018)
- Queensland Government's State Development Assessment Provisions (SDAP) Planning Code prescribed in the Planning Regulation 2017 ²
- Australian/New Zealand Standard, Parking Facilities, Part 1: Off-Street Car Parking 2890.1:2004 (AS/NZS 2890.1:2004)
- Australian Standard, Parking Facilities, Part 2: Off-Street Commercial Vehicle Facilities 2890.2-2002 (AS 2890.2-2002)
- Australian/New Zealand Standard, Parking Facilities, Part 6: Off-Street Parking for People with Disabilities 2890.6:2009 (AS/NZS 2890.6:2009)
- Road Asset Data for Port Douglas Road provided by TMR (provided 11 August 2020)
- Traffic and car parking surveys undertaken by Austraffic as referenced in the context of this report
- Plans for the proposed development prepared by Buchan Group (Drawing Number DA-0201 and DA-0203, dated 30 August 2020, Rev. 1)
- other documents and data as referenced in this report.

¹ Response to Council's Access Parking and Servicing Code (2018) is provided at Appendix A

² Response to SDAP Code 1 and Code 6 provided at Appendix B

2. EXISTING CONDITIONS

02

2.1. Subject Site

The subject site is located at 71 – 85 Port Douglas Road, Port Douglas and is described as Lot 1 on SP150468. The site of approximately 21,000sqm has a frontage of approximately 170m to Port Douglas Road. The site currently has a land use classification of 'Tourist Accommodation' and is currently unoccupied.

The surrounding properties include predominantly integrated resort uses. The location of the proposed Fairmont Resort site and its surrounding environs is shown in Figure 2.1.

Figure 2.1: Resort site and its environs



2.2. Active and Public Transport Infrastructure and Services

2.2.1. Active Travel

A shared path is currently provided along the frontage of the Resort site within the road reserve. The shared path measures approximately 2m wide.

This compliments the existing on-road bicycle treatments which are provided on either side of the Port Douglas Road carriageway. It is noted that these treatments vary in width along the length of Port Douglas Road and left-turn lanes in to properties to the north and south of the Resort site are designed to be 'shared' between cyclists and vehicles.

2.2.2. Public Transport

Based on a review of the Translink website, there are no public transport services operating in the vicinity of the Resort site. However, there are a number of privately operated shuttle services which runs along the Port Douglas Road between Cairns (including Cairns Airport) and Port Douglas on a 20 – 30 minutes frequency.

2.2.3. Bally Hooley Train

The Bally Hooley Train is understood to be a privately operated service and runs adjacent to Port Douglas Road in the vicinity of the Resort site. It operates between Marina Station in Port Douglas to St. Crispins Station which is located south of the Resort site. The nearest rail stop is at the Oaks Resort which is located adjacent to the Resort site (south). The only other station which currently operates is the Mirage Country Club Station, located north of the Resort site. The Bally Hooley Train offers 3 services in each direction per day.

2.3. Existing Road Network

The Resort site has a single road frontage to Port Douglas Road. Characteristics of Port Douglas Road are outlined in Table 2.1 and are shown in Figure 2.2 and 2.3.

Table 2.1: Existing Road Network

Characteristics	Port Douglas Road
Jurisdiction	TMR Controlled
Class Type	District Road (Far North District)
Posted Speed	60kph
Lane Formation	2-lane / undivided / two-way
Kerbside Parking	Not Permitted
Daily Volume	11,500 vehicles per day ^[1]

[1] Based on 2019 AADT volumes within Road Asset Data provided by TMR

Figure 2.2: Port Douglas Road (Facing North)



Figure 2.3: Port Douglas Road (Facing South)



There is a four-way roundabout located to the north of the Resort site on Port Douglas Road. This roundabout provides access to the Sheraton Grand Mirage Resort (Avenue of Palms – east approach) and the Mirage Country Club (west approach). This intersection is herein referred to as the Port Douglas Road / Avenue of Palms roundabout.

2.4. Traffic Volumes

2.4.1. Overview

Due to the ongoing impacts of COVID-19 on the tourism industry in Port Douglas, existing traffic volumes travelling along Port Douglas Road and through the Port Douglas Road / Avenue of Palms roundabout are unlikely to represent typical operating conditions. This was particularly evident during the site visit completed by GTA on 21 July 2020, with the demands on the east and west approaches of the roundabout observed to be particularly low.

On this basis, GTA focussed our data collection on the vehicles travelling along Port Douglas Road and compared against available historical Road Asset Data to account for the impacts of COVID-19.

2.4.2. Peak Hour Volumes

GTA commissioned 7-day traffic movement counts on Port Douglas Road along the subject site frontage between Friday 24 July 2020 to Thursday 30 July 2020. These traffic counts are contained at Appendix C.

Analysis of the survey data indicates that the existing weekday peak hours for Port Douglas Road are as follows:

- AM Peak Period: 11AM – 12PM
- PM Peak Period: 3PM – 4PM.

It is also noted that the Sunday AM peak period exhibited the highest peak hour traffic volumes of the week of data collected. This is not unexpected given the resort and tourism uses surrounding the Resort site.

2.4.3. Daily Traffic

GTA obtained Average Annual Daily Traffic (AADT) for 2019 as part of a Road Asset Data Request from TMR for Port Douglas Road in the proximity of the Resort site. A review of the AADT data indicates that the historical daily traffic volumes for Port Douglas Road are as follows:

- Northbound – approximately 5,650 vehicles per day
- Southbound – approximately 5,850 vehicles per day
- Two-way – approximately 11,500 vehicles per day.

These AADT directional traffic counts are provided in Appendix D.

2.5. Future Road Network Planning

A review of TMR's Queensland Transport and Road Investment Program (QTRIP) has been undertaken with regards to future planning for Port Douglas Road and state-controlled assets and infrastructure in the vicinity of the Resort site. This review indicated that no future projects or works are currently planned in this location.

2.6. Road Safety

A review of the reported 'Crash Statistics' for the roads adjoining the subject site has been sourced from the TMR's 'Queensland Road Crash Database'³. This dataset records all accidents on a road related area (as recorded by the Queensland Police) between January 2013 and December 2018 which meets one of the following criteria:

- a person is killed or injured, or
- at least 1 vehicle was towed away, or
- the value of the property damage is of \$2500 or more damage to property other than vehicles.

The dataset categorises the severity of injuries in these accidents in the following order:

1. Fatality
2. Hospitalised
3. Medically Treated
4. Minor Injury.

A review of the crash statistics from 2015 to 2020 indicates that 2 crashes have occurred on Port Douglas Road in the vicinity of the Fairmont Resort frontage. A summary of the crashes is provided in Table 2.2.

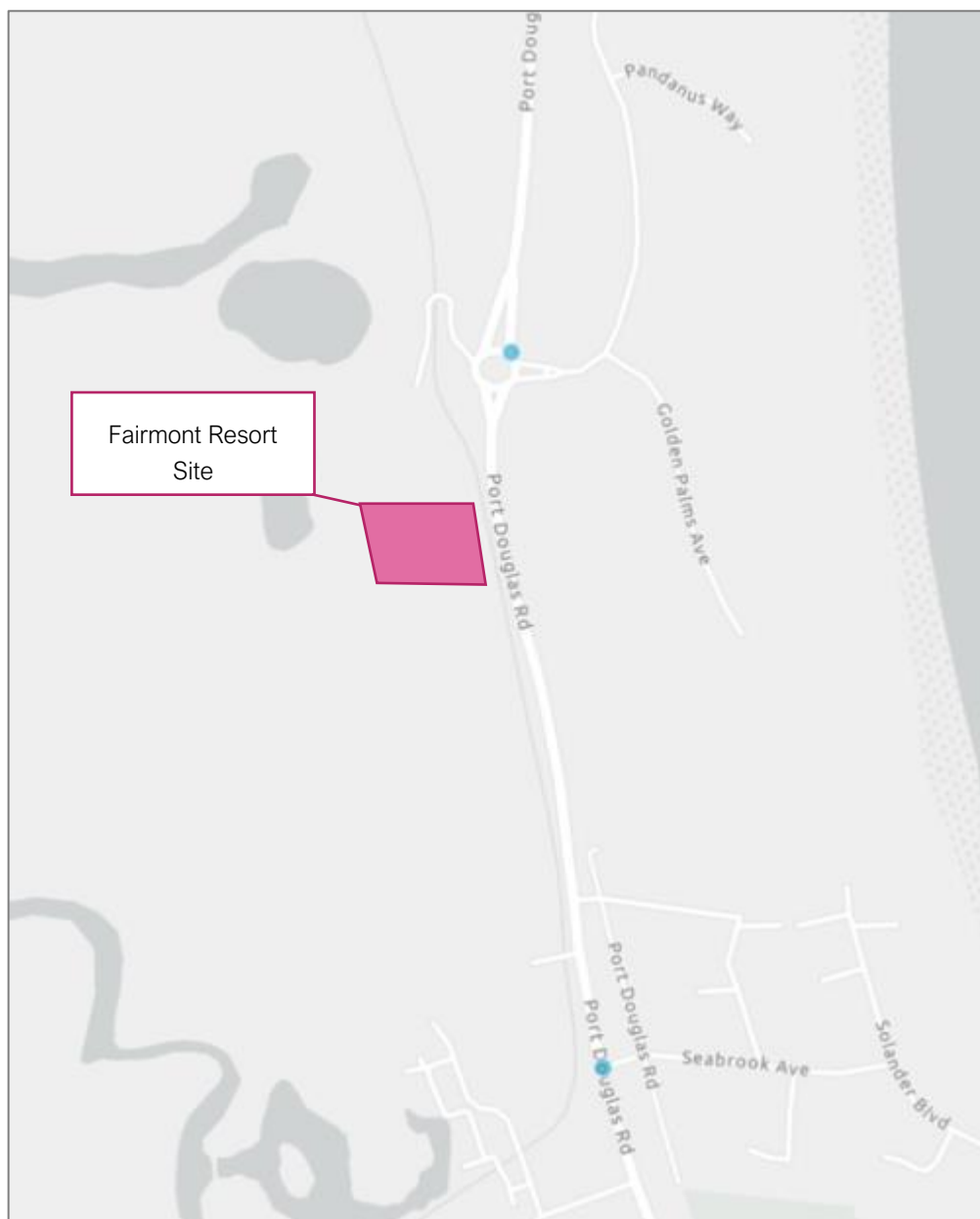
Based on this information, there does not appear to be any significant accident history or accident patterns which could potentially be worsened by the Resort.

³ Crash data for the period following December 2018 has not yet been released by TMR at the time of preparing this report.

Table 2.2: Port Douglas Road Crash History

Year	Crash Type	Count of Injured and Level of Severity				
		Fatality	Hospitalised	Medically Treated	Minor Injury	Total
2015	Veh'S Manoeuvring: Entering From Footway	0	1	0	0	1
2017	Veh'S Same Direction: Rear End	0	1	0	0	1
Total		0	2	0	0	2

Figure 2.4: Port Douglas Road – Crash History Locations



3. ACTIVE AND PUBLIC TRANSPORT CONSIDERATIONS

03

3.1. Pedestrian Access

The Resort includes the provision of pedestrian pathways throughout the site and connecting to the existing shared path which runs along the site frontage within the road reserve of Port Douglas Road. The provision of such pedestrian pathways complies with Council's Planning Scheme (Code 9.4.1 - Access, Parking and Servicing Code) and are expected to provide suitable pedestrian connectivity to the walking route along the full frontage of the site. The proposed pedestrian access is therefore considered to be satisfactory.

3.2. Cycling Provisions

Council's Planning Scheme (Code 9.4.1 - Access, Parking and Servicing Code) details statutory bicycle and end-of-trip provisions based on the proposed land uses. A summary of the provision breakdown by use is provided in Table 3.1

Table 3.1: Statutory Bicycle and End-of-Trip Requirements

Use	Size / Quantum	Statutory Rate	Statutory Requirement
Short Term Accommodation	253 rooms	1 bicycle parking space per 10 rooms	26 spaces
Function Facility	1,866sqm GFA	1 bicycle parking space per 100sqm	19 spaces
Food & Drink Outlet	1,844sqm GFA	1 bicycle parking space per 100sqm	19 spaces
Total			64 spaces

The Resort generates a statutory bicycle parking requirement of 64 spaces, with no requirement for other supporting end-of-trip provisions. The Resort includes the provision of approximately 80 bicycle parking spaces. This provision exceeds Council's statutory bicycle parking requirement and is considered to be satisfactory.

3.3. Public Transport Considerations

The Resort is not located within the vicinity of any public transport infrastructure or services. It therefore does not propose any modifications and is not expected to impact upon the existing public transport network.

The Bally Hooley Train is understood to be privately operated and offers 3 services in each direction per day. The Resort does require the level of the tracks to be increased by in the order of 0.5m to 0.7m in the adjacent to the north of the site to accommodate the loading dock vehicle access. Further guidance in this regard is provided in Section 6 of this report.

4. LOADING AND REFUSE COLLECTION CONSIDERATIONS

04

4.1. Statutory Requirements

The Council's Planning Scheme (Code 9.4.1 - Access, Parking and Servicing Code) identifies statutory requirements for the provision of loading bays and vehicle sizes required based on the proposed land uses. A summary of these statutory requirements is provided in Table 4.1.

Table 4.1: Statutory Service Vehicle and Loading Bay Requirements

Use	Size / Quantum	Statutory Rate	Statutory Requirement
Short Term Accommodation	253 rooms	Nil	Nil
Function Facility	1,866sqm GFA	Nil	Nil
Food & Drink Outlet	1,844sqm GFA	2 x vans, 2 x SRV, 1 x MRV	2 x vans, 2 x SRV, 1 x MRV
Totals			2 x vans, 2 x SRV, 1 x MRV

The Resort generated a loading bay requirement of 5 loading bays, including 2 vans, 2 SRVs and 1 MRV. In addition to these requirements, the Short-Term Accommodation land use requires access by vehicles of a size up to and including an SRV and the Function Facility land use requires access by vehicles of a size up to and including an RCV.

The Resort includes the provision of 5 loading bays, including 1 loading bay designed to accommodate a SRV, 2 loading bays designed to accommodate a MRV's, 1 loading bay designed to accommodate an RCV and 1 loading bay designed to accommodate an HRV. These provisions meet the statutory requirements for the number of loading bays to be provided and exceed the minimum requirements for the size of loading vehicles to be accommodated on-site. The proposed arrangements are considered to be satisfactory.

4.2. Loading Dock Layout Review

The loading dock layout has been reviewed against the requirements of Council's Planning Scheme which defers to the relevant Australian Standards (AS2890.2). This assessment included a review of the following:

- bay and aisle width
- height clearance
- adjacent structures
- accessibility be relevant design vehicles.

Details of this review are provided below in Table 5.3.

Table 4.2: Adequacy of Loading Dock Layout

Design Aspect	Design Element	Statutory Requirement (Australian Standard)	Proposed Design	Compliance
SRV Bay	Bay width	3.5m	3.5m	✓
	Bay length	6.4m	6.4m	✓
MRV Bay	Bay width	3.5m	3.5m	✓

	Bay length	8.8m	8.8m	✓
RCV Bay	Bay width	3.5m	3.5m	✓
	Bay length	10.5m	10.5m	✓
HRV Bay	Bay width	3.5m	3.5m	✓
	Bay length	12.5m	12.5m	✓

It is understood that a height clearance of 4.7m (measured for the floor to the underside of any obstruction) is to be provided throughout the loading dock. This exceeds the requirements of the relevant Australian Standards (AS2890.2) which specify a minimum height clearance of 4.5m for vehicles the size of an MRV and greater and is therefore considered to be acceptable.

A swept path assessment has also been undertaken for the proposed loading dock. The results of this assessment indicate that all design vehicles can enter, manoeuvre within, and exit the site in a forward-facing direction. These swept paths are provided within Appendix E and the arrangements are considered to be acceptable.

Based on the information provided in Table 5.4 and the commentary above, the proposed loading dock complies with the relevant Australian Standard (AS2890.2) dimensional requirements. As such, the loading dock is considered to be suitable for the demand and use proposed as part of the Resort.

4.3. Loading Dock Operations

Based on information provided by Accor from similar sites in Port Douglas⁴, it is expected that the loading dock could be accessed by in the order of 10 – 15 trucks per day. This includes Food & Beverage providers, refuse collection and laundry services.

A management system is proposed to control the operations of the loading dock. Deliveries will be allocated 30-minute windows to complete their unloading activities and depart the site. It will also allow for deliveries to be managed to spread the demands across the day, avoid congestion within the loading dock and minimise any impacts to the state-controlled road network (particularly during the identified peak periods). These arrangements are considered to be appropriate.

⁴ Sheraton Mirage, Pullman Sea Temple Resort and Peppers Beach Club within Port Douglas

5. CAR PARKING CONSIDERATIONS

05

5.1. Statutory Requirements

Council's Planning Scheme (Code 9.4.1 - Access, Parking and Servicing Code) identifies statutory requirements for the provision car parking based on the proposed land uses. A summary of these statutory requirements is provided in Table 5.1

Table 5.1: Statutory Car Parking Requirements

Use	Size / Quantum	Statutory Rate	Statutory Requirement
Short Term Accommodation	253 rooms	a) 0.75 car spaces per dwelling unit, b) plus 3 spaces for visitors and 2 service/staff parking for the first 10 units and; c) 0.5 additional service/staff space per 10 units, there-above.	a) 190 spaces b) 5 spaces c) 13 spaces subtotal: 208 spaces
Function Facility	1,866sqm	1 space per 15sqm	125 spaces
Food & Drink Outlet	1,844sqm	1 space per 25sqm	74 spaces
Total			407 spaces

The Resort generates a statutory car parking requirement of 407 spaces. The Resort includes a provision of 222 car parking spaces, representing a shortfall of 185 spaces when compared to Council's statutory car parking requirements.

However, Council's statutory car parking requirement comprise generic rates to be applied to a varied range and type of projects. In this instance, it is considered more appropriate to complete a Car Parking Demand Assessment to better understand the expected operations of the Resort to determine the supportable car parking supply required to meet the needs of the staff, guests and visitors.

5.2. Car Parking Demand Assessment

In developing a Car Parking Demand Assessment, guidance would usually be derived from collecting car parking demand data at uses of a similar nature and in a similar location. However, this approach is not a viable option in this instance for the following reasons:

- The Resort is to be the first of the Fairmont brand in Australia and the first to offer the Gold level membership
- The tourism industry in Port Douglas is unfortunately well below typical capacity for this time of year due to the impacts of COVID-19
- Car parking demands (and how people travel to and from resorts) is heavily influenced by flight schedules and availability in Port Douglas and these are currently operating at a significantly reduced frequency with no international flights.

The inputs for the Car Parking Demand Assessment have therefore been based on information provided by Accor and have been independently verified and validated where possible using available data and publicly information from Tourism and Events Queensland, GTA's Generation Database and our previous experience working on projects of a similar nature.

This assessment included consideration of the following car parking demands:

1. Staff car parking
2. Short-term accommodation (guest)
3. Visitor car parking (restaurants and bars, function facilities, cafe).

The inputs, assumptions and resultant estimated car parking demands for the Resort are outlined below.

5.2.1. Anticipated Staff Car Parking Demands

Based on the manning guide provided by Accor, the total number of full-time staff anticipated to be on-site at any single time is expected to be between 105 and 114 staff for all land uses combined.

Based on the Australian Bureau of Statistics (ABS) Journey-to-Work data for the 2016 Census, approximately 70% of trips to work (as driver only) within the Port Douglas Statistical Area 2 (Port Douglas SA2) are by private motor vehicle. Application of this rate to the expected full-time staff numbers results in an anticipated staff car parking demand in the order of 75 to 80 staff spaces.

The provision of between 75 to 80 staff car parking spaces is therefore considered to be the appropriate range to accommodate and manage anticipated demands.

5.2.2. Anticipated Short-Term Accommodation (Guests) Car Parking Demands

Percentage of Self-Drive Guests

Information provided by Accor suggests that in the order of 60% of guests currently self-drive to similar resorts in Port Douglas⁵. In addition, GTA has reviewed the available Drive Market Statistics from Tourism Tropical North Queensland (year ending September 2018) which indicate that in the order of 50% of domestic tourists and 20% of international tourists drive to Tropical North Queensland.

This information suggests that guests could be expected to fly in to Port Douglas and not require a car parking space, particularly where the resort offers 'end-to-end' service to transfer guests to and from Cairns Airport using private shuttles and car services. The following rates have therefore been adopted:

- Standard rooms – 60% of guests expected to self-drive
- Gold Club rooms – 30% to 60% of guests expected to self-drive.

The 172 standard rooms are considered to be comparable to the similar resorts in Port Douglas and therefore the adoption of the 60% self-drive rate is considered to be appropriate.

The 81 Gold Club rooms are proposed to be exclusive for members, provide all-inclusive benefits and 'end-to-end' service to transfer guests to and from Cairns Airport. As such, a lower self-drive rate could be expected. However, as this is a new product in Port Douglas and due to the current challenges represented by COVID-19, the Car Parking Demand Assessment has adopted a range for the Gold Club rooms of between 30% to 60% self-drive to be conservative.

⁵ Sheraton Mirage, Pullman Sea Temple Resort and Peppers Beach Club within Port Douglas

Design Occupancy

In addition, guest car parking demands for hotels and resorts can fluctuate significantly throughout the year as they are linked directly to room occupancy levels. Where these levels of fluctuation occur and the peaks are expected to be short in duration, it is considered to be best practise to provide sufficient car parking to accommodate the 85th percentile car parking demand rather than designing for the absolute peak car parking demand.

Based on a review of the Tourism & Events Queensland occupancy data for Luxury & Upscale Classes in Queensland, a peak average three-month occupancy of approximately 77% was recorded for the September quarter of 2018. Based on available Cairns Airport visitor data this quarter (and July in particular) is the peak period for visitors each year. The quarter by quarter breakdown was not available for Far North Queensland, however the annual occupancy for Queensland compared to Far North Queensland was generally consistent.

Having regard for this information, we have adopted a design occupancy of 85% for the Resort rooms. At times where this room occupancy is exceeded, the Resort will be required to manage guest car parking demands to make most efficient use of the available on-site guest car parking supply.

Resultant Guest Car Parking Demands

Application of the above self-drive percentages and the design occupancy results in the following anticipated guest car parking demands:

- Standard rooms – 88 guest spaces
- Gold Club rooms – 21 to 42 guest spaces
- Total – 109 to 130 guest spaces.

The provision of between 109 to 130 guest car parking spaces is considered to be the appropriate range to accommodate and manage anticipated demands.

5.2.3. Anticipated Visitor Car Parking Demands

The following assumptions have been adopted in estimating the visitor car parking demands:

- The Function Facility and Food & Drink Outlet (Restaurant) are the two expected to generate visitor car parking demands
- The Food & Drink Outlet (Café and Bar) are expected to be ancillary and not expected to generate visitor car parking demands
- 20% of visitors currently drive to Functions Facilities at similar resorts in Port Douglas⁶ with a vehicle occupancy of 2 visitors per vehicle, based on information provided by Accor
- Similarly, 10% - 20% of visitors expected to drive to the Restaurant with a vehicle occupancy of 2.5 visitors per vehicle
- Remaining visitors to Function Facility and Restaurant are assumed to either be guests of the Resort or arrive via shuttle, taxi or ride share (or another available, alternative travel mode).

Application of the above rates to the expected capacity of each use is provided in Table 5.2. In addition, the peak visitor car parking demands are not expected to coincide due to the mixed-use nature of the Resort. To

⁶ Sheraton Mirage, Pullman Sea Temple Resort and Peppers Beach Club within Port Douglas

account for the temporal nature of car parking demands, GTA's databases has been employed to identify the peak car parking periods for each land use.

The temporal profiles are presented in Figure 5.1, Figure 5.2, Figure 5.3, and Figure 5.4 for a typical weekday and weekend day, respectively. These profiles assume an event in the Meeting Room during the day and a Gala Dinner (or similar) in the Function Room during the evening.

Table 5.2: Visitor Parking Demand

Land Use	Size (Capacity)	Empirical Rate	Empirical Demand
Function Facility – Function Room	200 persons	20% visitors arrive in private vehicle (2 persons per vehicle)	20 visitor vehicles
Function Facility – Meeting Room	200 persons	20% visitors arrive in private vehicle (2 persons per vehicle)	20 visitor vehicles
Restaurant	400 persons	10% - 20% visitors arrive in private vehicle (2.5 persons per vehicle)	16 - 32 visitor vehicles

Figure 5.1: Visitor Parking Demand Profile – Weekday Lower Demand

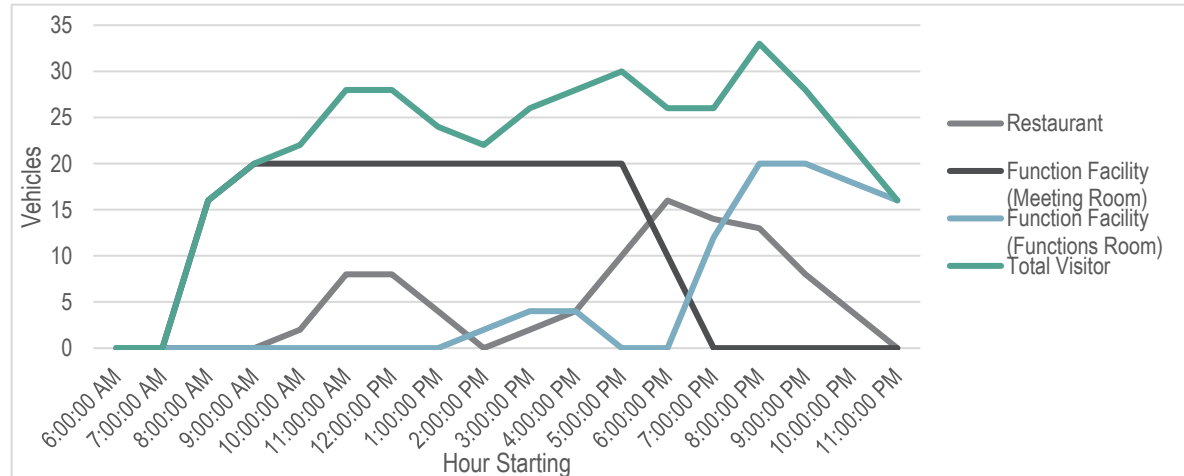


Figure 5.2: Visitor Parking Demand Profile – Weekday Upper Demand

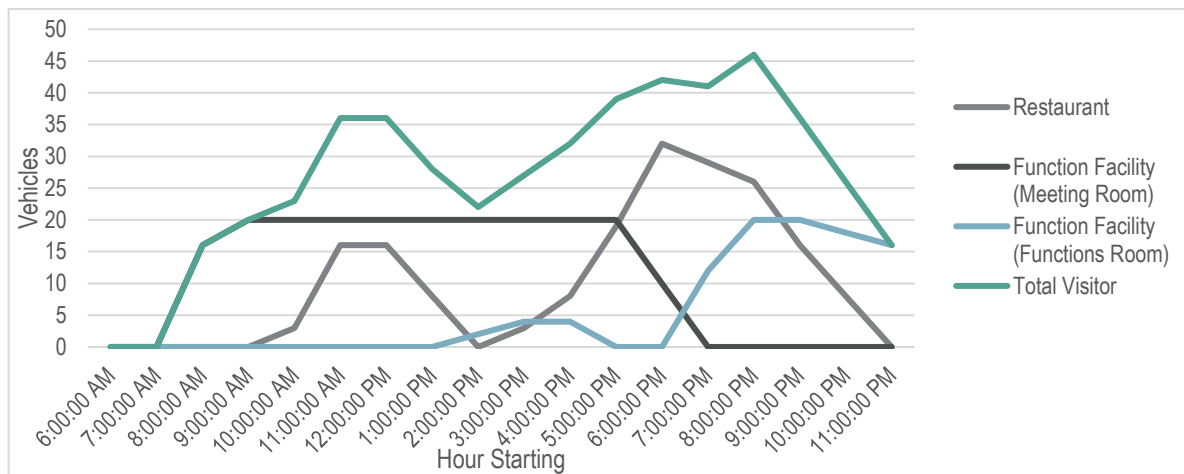


Figure 5.3: Visitor Parking Demand Profile – Weekend Lower Demand

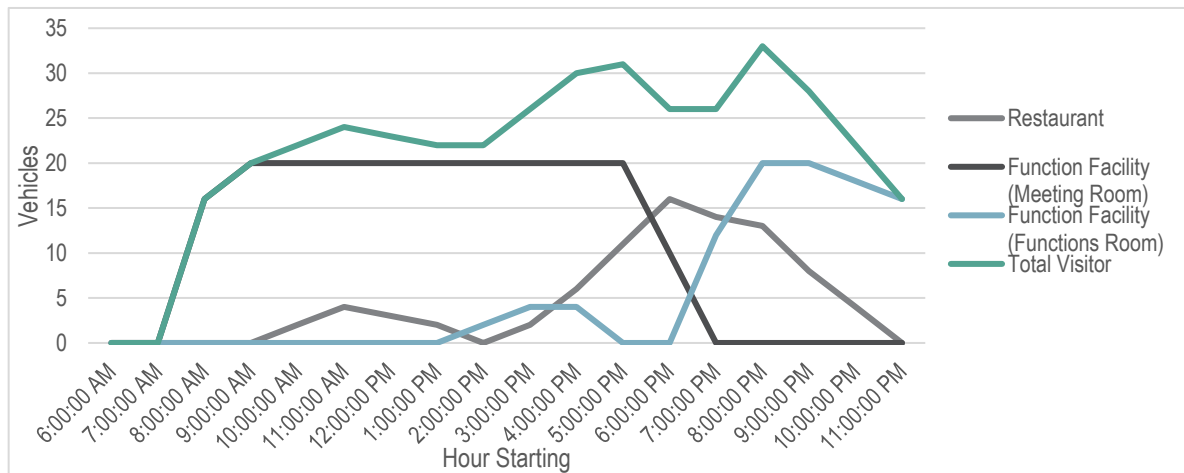
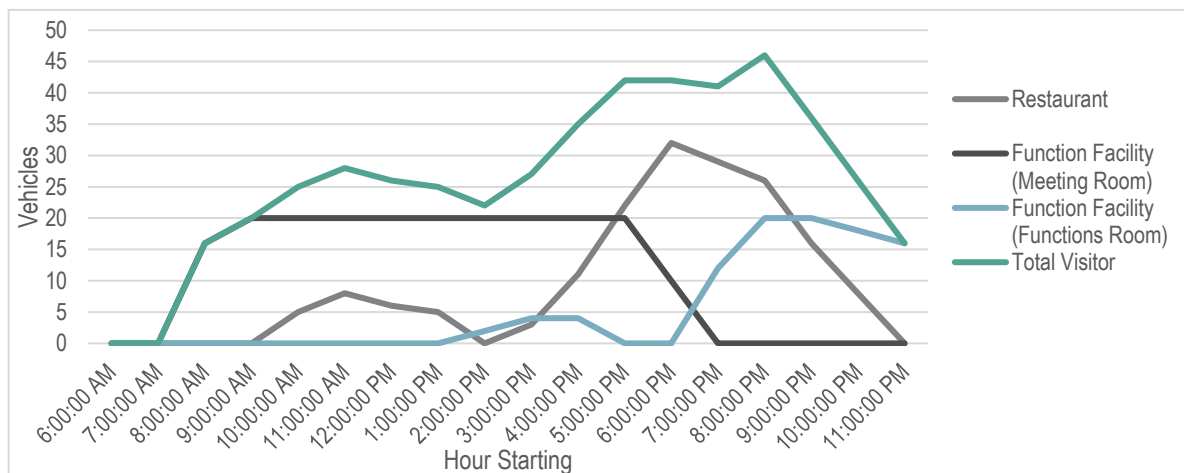


Figure 5.4: Visitor Parking Demand Profile – Weekend Upper Demand



Based on the information and inputs presented above, the Resort could be expected to generate a peak visitor car parking demand in the order of 33 – 46 visitor spaces. The provision of between 33 to 46 visitor spaces is therefore considered to be the appropriate range to accommodate and manage anticipated demands.

5.2.4. Car Parking Demand Assessment Summary

The Car Parking Demands Assessment suggests that the Resort could be expected to generate a peak car parking demand in the order of 217 to 261 spaces, including:

- 75 to 85 staff spaces
- 109 to 130 guest spaces
- 33 to 46 visitor spaces.

An overall provision of between 217 to 261 car parking spaces is considered to be the appropriate range to accommodate and manage anticipated demands for staff, guests and visitors.

5.3. Adequacy of Proposed Provisions

The proposed provision of 222 car parking spaces, including 75 staff spaces, 112 guest spaces and 35 visitor spaces, sits within the anticipated peak car parking demand range overall and for each of the user groups. This provision is considered to be appropriate to allow for the car parking demands of staff, guests and visitors to be accommodated and managed within the on-site provisions.

Given that it is at the lower end of the identified car parking demand range, consideration will need to be given as to the movement of staff and guests to and from the Resort during peak periods of the year (i.e. July – September). Staff and guests are the larger of the car parking demands and the users over which the Resort has the greatest influence. This is to focus on promoting the use of active travel, car-pooling, existing publicly available shuttle services, Resort shuttle services and ride share or taxi transport options. In this regard, it is recommended that a Travel Plan be prepared to manage the movement of staff and guests to and from the Resort.

It is noted that the existing Development Approval (reference MCUC 5148/2013 D#824722) comprised in the order of 206 rooms with remaining land uses (Gym, Spa, Relaxation Lounge, Retail, Restaurant, Café, Bar, Function Centre, Meeting Rooms and Administration Facilities) treated as ancillary uses. This approval required the provision of 159 car parking spaces which is significantly less than what is included in the current proposal.

5.4. Tandem and Valet Car Parking Spaces

Of the car parking spaces provided, 26 of the staff spaces are to be provided within tandem configurations and 42 spaces are to be allocated to valet services and be provided within triple tandem configurations.

Limited guidance is available regarding the acceptable number of staff car parking spaces which can be provided within a tandem configuration, apart from the need for these spaces to be allocated to a single use or tenancy. Notwithstanding, the provision of a third of the staff car parking provisions within a tandem configuration is considered to be on the upper end of what might be considered acceptable. As such, it is recommended that a Car Parking Management Plan be prepared in subsequent phases of the design

development to demonstrate how these spaces will be allocated and managed through out a typical working day.

The use of triple tandems for valet car parking is considered to be a suitable outcome, with such arrangements used at other hotels throughout Australia. The 42 valet spaces are intended to be used to accommodate the following car parking demands:

- 21 – 42 spaces (100%) of the Gold Club member self-drive demands, noting all Gold Club members are to be provided with complimentary valet service
- 0 – 21 spaces (0% - 19%) of the remaining Resort guests.

These valet provisions are considered to be acceptable, providing that the Resort provides a 24/7 valet service (which is proposed), and are generally consistent with our recent experience for a number of other projects of a similar nature within Queensland.

5.5. Accessible Car Parking Provisions

Council's Planning Scheme (Code 9.4.1 - Access, Parking and Servicing Code) identifies statutory requirements for the provision of accessible car parking are to be sought from the relevant Australian Standards (AS2890.6). However, the most appropriate resource is considered to be the National Construction Code (Part D3 – Access for people with disabilities) identifies the following accessible car parking requirements for Resort guests and visitors:

- Resort guest car parking (Class 3) – number of accessible rooms divided by total number of rooms multiplied by the total number of Resort guest car parking spaces.
- Resort visitor (Restaurant & Function Facility) car parking (Class 6) – 1 space for every 5 spaces or part thereof.

It is understood that the Resort is to provide a total of 13 rooms designed to be accessible for persons with a disability. Application of these requirements identifies the need for 6 accessible spaces to be allocated to Resort guests and 1 accessible space to be allocated to Resort visitors.

The proposed provision of 7 accessible car parking spaces meets the NCC requirements for the Resort guests and visitors and is considered to be acceptable.

5.6. Car Parking Layout Review

A car parking layout review has been undertaken for the proposed basement level car park. The results of this review are provided in Table 5.3.

Table 5.3: Adequacy of Car Park Layout

Design Aspect	Design Element	Statutory Requirement (Australian Standard)	Proposed Design	Compliance
Car Parking Bays & Aisles (User Class 2)	Bay width	2.5m	2.9m	✓
	Bay length	5.4m	5.6m	✓
	Aisle width	5.8m	>5.8m	✓
Adjacent Structures	Walls	0.3m clearance	0.3m clearance minimum	✓
	Columns	Outside of parking envelope	Outside of parking envelope	✓

CAR PARKING CONSIDERATIONS

Turnaround Facilities	Terminating aisles	1m aisle extension	2m aisle extension	✓
Height clearance	Typical	2.2m	>2.3m	✓
	On approach to accessible space	2.3m	>2.3m	✓
	Above accessible space	2.5m	>2.6m	✓
Internal Queuing	Internal vehicle queuing provision	6 vehicles	9 vehicles	✓
Parking for Persons with Disabilities	PWD bay / adjacent shared bay width	2.4m	2.9m	✓
	PWD bay / adjacent shared bay length	5.4m	5.6m	✓
Motorcycle / Motor Scooter Parking	Bay width	1.2m	1.2m	✓
	Bay length	2.5m	2.5m	✓

6. VEHICLE ACCESS AND INTERNAL CIRCULATION

06

6.1. Proposed Vehicle Access Arrangements

6.1.1. TMR's Vehicle Access Requirements

The key requirements of TMR for any vehicle access points to state-controlled roads are summarised as follows:

- minimise impacts on the through-carrying function of state-controlled roads
- ensure new accesses to a state-controlled road do not worsen the safety or efficiency of the state-controlled roads
- ensure that state-controlled roads frontage works are constructed to ensure continuity of adjacent or planned infrastructure across the state-controlled road frontage and to ensure existing infrastructure is not adversely impacted.

Given that Port Douglas Road is a state-controlled road and the only road which the Resort has access, GTA has engaged with TMR representatives to address the abovementioned points, adopted feedback where possible and to minimise impacts to the function, operation and safety of the state-controlled road network.

6.1.2. Resort Operational Requirements

As it relates to good transport engineering design outcomes, it is necessary to provide separation between loading operations and the Resort guests and visitors to avoid the potential risk (and consequence) of conflict. GTA has reviewed a number of existing resorts in Port Douglas and across Queensland and the provision of separate vehicle accesses for loading and servicing operations is very common. Most relevant and comparable is the Marriott Gold Coast which operates with two vehicle accesses via the Gold Coast Highway (state-controlled).

Furthermore, the Resort is to be the first of the Fairmont brand in Australia and the first to offer the Gold Club membership. It is essential from a guest and visitor experience perspective that the operations of the loading dock, including the access and egress movements of trucks, be kept separate from the Resort operations.

6.1.3. Proposed Vehicle Access Configuration

The proposed vehicle access configuration has been developed to minimise impacts to the function, operation and safety of the state-controlled road network while still achieving the operational requirements for the Resort. The proposed vehicle access arrangements have been refined through the engagement with TMR and key design elements to achieve their nominated requirements are summarised as follows:

Porte cochere and basement car park (central) vehicle access

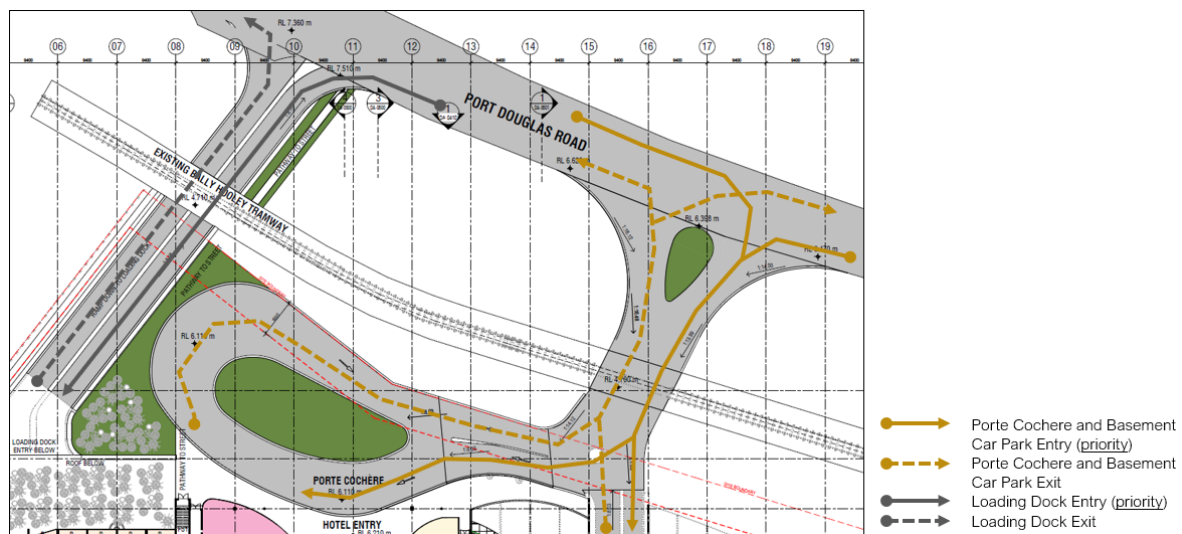
- This vehicle access is expected to accommodate the greater number of vehicle movements
- It has been designed to incorporate auxiliary left and channelised right turn lanes to support full turning movements as to avoid delays or impacts existing through movements on Port Douglas Road
- The location of the vehicle access has been specifically chosen such that the auxiliary left and channelised right turn lanes can be accommodated along the Resort site frontage and not impact upon vehicle access to adjacent properties
- Entering vehicle movements have been prioritised
- The porte cochere and basement car park have been connected so that any recirculation of vehicles between these areas can be contained within the Resort.

Loading dock (northern) vehicle access to Port Douglas Road

- This vehicle access is expected to accommodate a very small number of vehicle movements
- The permitted turning movements have been restricted to left-in and left-out movements only to minimise delays or impacts existing through movements on Port Douglas Road
- Entering vehicle movements have been prioritised
- A management system is proposed to control the operations of the loading dock, spread the demands across the day, avoid congestion and minimise any impacts to the state-controlled road network (particularly during the identified peak periods).

The proposed vehicle access configuration and permitted turning movements are shown in Figure 6.1

Figure 6.1: 6.1.2. Proposed Vehicle Access Configuration



6.2. Vehicle Access Design Review

6.2.1. Turn Warrant Assessment

A turn warrant assessment has been undertaken for the proposed porte cochere and basement car park (central) vehicle access in accordance with the methodology outlined in TMR's Road Planning and Design Manual (RPDM). The assessment has adopted the volumes identified within the turning movement diagrams provided in Appendix F, with the results of the turn warrant assessment provided in Appendix H. The warrants are determined from the design speed and proportion of total traffic volume with respect to corresponding turn volumes.

The assessment indicates the requirement for a short Auxiliary Left-Turn (AUL[s]) treatment and a short Channelised Right-Turn (CHR[s]) treatment for the proposed porte cochere and basement car park (central) vehicle access.

6.2.2. Vehicle Access Concept Design

The proposed vehicle access arrangements (within the Port Douglas Road reserve) have been designed having regard for the requirements of Council's Planning Scheme, Australian Standards (AS2890.1 and AS2890.2), the relevant Austroads Guidelines (AGRD04A and AGRD06A), the RPDM and TMR's Property

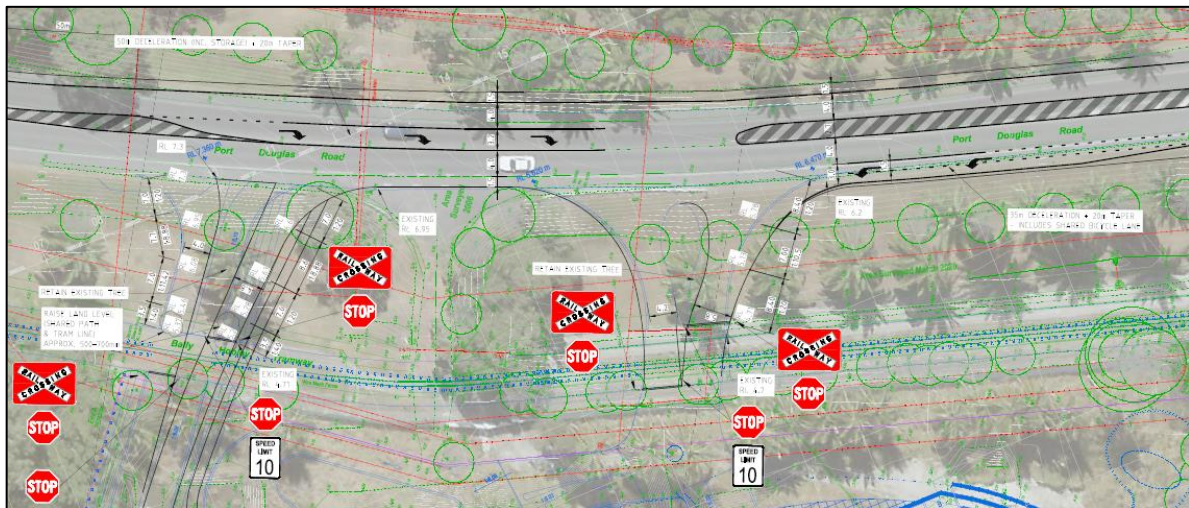
VEHICLE ACCESS AND INTERNAL CIRCULATION

Access Standard Drawings (SD1807). The Vehicle Access Concept Plan is shown in Figure 6.2 and the Vehicle Access Concept Plan is provided in Appendix I.

Turn Lane Lengths

As per the turn warrant assessment, the proposed porte cochere and basement car park (central) vehicle access is required to provide an AUL[s] treatment and a CHR[s] treatment. However, as demonstrated in the Vehicle Access Concept Plan, the proposed auxiliary left and channelised right turn lanes are proposed to exceed the minimum turn lane lengths identified by the Austroads Guidelines (AGRD04A) and the RPDM. These have been proposed to be consistent with the turn lane provisions of the property immediately to the south of the Resort site and this is considered to be appropriate for consistency but also having regard for the uncertainty in the collected traffic

Figure 6.2: Fairmont Resort Vehicle Access Concept



Sight Distance Provisions

Allowance has been made for Safe Intersection Sight Distance to the north and south of the central vehicle access point and to the south of the northern vehicle access point (left-out only), in accordance with the relevant Austroads Guidelines (AGRD04A and AGRD06A) and the RPDM. This is based on the 70km/hr design speed (60km/hr posted speed limit) of Port Douglas Road.

A Minimum Gap Sight Distance (to allow entering and exiting vehicles to see trains) is to be provided to the north and south of each vehicle access point, in accordance with the relevant Austroads Guidelines (AGRD04A) and RPDM. It is noted that the design of landscaping is yet to be completed for the Resort and this sight distance requirement will be confirmed as the design is developed. This provision also exceeds the minimum requirements for pedestrian visibility which means sight distances between entering and exiting vehicles and pedestrians will also be achieved.

Vehicle Access Gradients

The proposed vehicle access gradients (between the Port Douglas Road carriageway and the property boundary) are provided in accordance with the requirements of the relevant Australian Standards (AS2890.1 and AS2890.2), the relevant Austroads Guidelines (AGRD06A), TMR's Property Access Standard Drawings (SD1807), including maximum gradients, gradient transitions, gradients at the property boundary, edge of carriageway, gradients at control points and gradients across the existing shared path.

This does necessitate the level of the tracks to be increased by in the order of 0.5m to 0.7m adjacent to the north of the site to accommodate the loading dock (northern) vehicle access. This is to be further developed at subsequent stages of design.

Swept Path Assessment

The porte cochere and basement car park (central) vehicle access has been designed to accommodate vehicles of a size up to and including a 14.5m long Coach. The loading dock (northern) vehicle access has been designed to accommodate vehicles of a size up to and including a 12.5m long HRV. The porte cochere swept path has been provided in Appendix E.

Bally Hooley Rail Crossing

The Bally Hooley rail crossing control (signage and linemarking) is consistent with nearby crossing points and is expected to safely manage the movement of vehicles across the existing tramway.

Vegetation Impacts

As specifically requested by TMR representatives, the Vehicle Access Concept Plan has sought to retain the existing palm trees along Port Douglas. This is subject to further review by the arborist / Landscape Architect (i.e. root impacts, etc) and will be confirmed through detailed design.

Summary

Based on the design development and investigations completed, the proposed design of the vehicle access arrangements is not expected to impact on the function or safety of the state-controlled road network. Further details of the operational elements of the proposed design are provided in Section 7.7.

6.3. Proposed Internal Circulation

The porte cochere arrangements and access ramps to the basement car park and loading docks have been reviewed against the requirements of Council's Planning Scheme which defers to the relevant Australian Standards (AS2890.1 and AS2890.2). This assessment included a review of the following:

- ramp gradients
- circulating ramp widths
- accessibility by relevant design vehicles.

The porte cochere has been designed to accommodate vehicles of a size up to and including a 14.5m long Coach. The loading dock ramp has been designed to accommodate vehicles of a size up to and including a 12.5m long HRV. These design vehicles have been used to inform the design requirements for the respective Resort areas.

It is noted that the ramp gradients are currently not shown within the architectural plans provided. However, GTA has undertaken a review of the proposed levels and it is expected that ramp gradients for the basement car park and loading dock are to be provided in accordance with the requirements of the relevant Australian Standards (AS2890.1 and AS2890.2), including maximum gradients, gradient transitions, gradients at the property boundary and gradients at control points.

A review has been undertaken for the proposed ramp to the basement level car park with results provided in Table 6.1.

VEHICLE ACCESS AND INTERNAL CIRCULATION

Table 6.1: Adequacy of Internal Circulation – Basement Car Park Ramp

Design Aspect	Design Element	Statutory Requirement (Australian Standard)	Proposed Design	Compliance / Compliance Able to be Achieved
Circulation Roads and Ramps	Circulation aisle width	Min. 5.5m – two way	6.0m minimum	✓
	Ramp aisle width	Min. 3.0m – one way	3.0m minimum	✓
Ramp Gradients	Summit Transition Requirement	1:8 (12.5%) for 2.0m	1:8 (12.5%) for 2.0m	✓
	Circulation ramp	1:5 (20%)	1:6 (16.7%) maximum	✓
	Sag Transition Requirement	1:6.7 (15%)	1:8 (12.5%) maximum	✓

A review has been undertaken for the proposed ramp to the loading dock with the results provided in Table 6.2.

Table 6.2: Adequacy of Internal Circulation – Loading Dock

Design Aspect	Design Element	Statutory Requirement (Australian Standard)	Proposed Design	Compliance / Compliance Able to be Achieved
Circulation Roads and Ramps	Circulation aisle width	Min. 3.5m – one way	4.0m minimum	✓
	Ramp aisle width	Min. 3.5m – one way	4.0m minimum	✓
Ramp Gradients	Gradient at Property Boundary	1:20 (5%) for 7.0m	To be provided	✓
	Transition Requirement	1:16 (6.25%) for 7.0m min.	1:16 (6.25%) for 7.0m	✓
	Circulation ramp	1:6.5 (15.4%)	1:6.5 (15.4%) maximum	✓

It is noted that the proposed gradients for the porte cochere are currently not shown within the architectural plans provided. GTA has undertaken a review of the proposed levels and it is expected that ramp gradients for the porte cochere are also to be provided in accordance with the requirements of the relevant Australian Standards (AS2890.1 and AS2890.2), including maximum gradients (1:10), gradients at the property boundary (1:20) and gradients at control points (1:20). The length of the gradients at the property boundary and the control points for the porte cochere are to be a minimum length of 8.4m based on the wheelbase of a 14.5m long Coach.

GTA has undertaken a swept path assessment which demonstrates that the relevant design vehicles are able to enter and exit the site in a forward direction which is considered to be satisfactory. These swept paths are provided in Appendix E and are considered to be satisfactory.

7. TRAFFIC IMPACT ANALYSIS

07

7.1. Analysis Scenarios

As required by the GTIA, the traffic analysis for the proposed vehicle access arrangements has been completed for the following scenarios:

- Year of opening – 2022
- 10-year design horizon – 2032.

Each of the above scenarios has considered traffic demand resulting from the Resort and from background traffic volumes on Port Douglas Road.

7.2. Existing Traffic Volumes

As outlined in Section 2.3, GTA commissioned 7-day traffic movement counts on Port Douglas Road to determine the existing AM peak hour (Sunday 11AM-12PM) and PM peak Hour (Thursday 3PM – 4PM). These peak periods generally align with typical resort check-in (2PM daily) and check-out (10AM daily) times. These peak hours have therefore been adopted for the purpose of the traffic analysis.

The recorded volumes have also been verified using available TMR's Road Asset Data which is considered to be necessary due to the ongoing impacts COVID-19 potentially resulting in current data being significantly different from typical operating conditions. Based on the comparison between historical 2019 AADT volumes and 2020 traffic movement counts, it was found that the historical data (approximately 11,500 vehicles per day) was approximately 6% greater than traffic movement counts (10,900 vehicles per day) for the surveyed period. Conservatively, an additional 10% has been added to background peak hour traffic volumes.

We note that a request was also made for any historical traffic movement counts at the Port Douglas Road / Avenue of Palms roundabout but this data was unfortunately not available.

7.3. Historical Traffic Growth

A growth rate of 2% per annum has been adopted for the purpose of this analysis. This was determined after analysing the Queensland Government Statisticians Office (QGSO) and Australian Bureau of Statistics (ABS) projected population growth of the Port Douglas statistical area (SA2). Based on the QGSO / ABS data, between 2016, 2021, 2026 and 2031, linear growth of between 1.4% and 1.6% between all years for a 'medium' growth series.

The adopted growth rate is based on the data provided by QGSO / ABS conservatively rounded up to the nearest whole percentage. The 2% per annum linear growth is considered suitable for the purpose of this analysis.

7.4. Traffic Generation

As suggested within TMR's Guide to Traffic Impact Assessment (GTIA), traffic generation estimates for the proposal would typically be derived from collecting data at uses of a similar nature and in a similar location. However, this approach is not a viable option in this instance for the following reasons:

- The Resort is to be the first of the Fairmont brand in Australia and the first to offer Gold Club membership
- The tourism industry in Port Douglas is unfortunately well below typical capacity for this time of year due to the ongoing impacts of COVID-19

- Vehicle trip generation and timing is heavily influenced by flight schedules and availability in Port Douglas and these are currently operating at a significantly reduced frequency with no international flights.

With this in mind, GTA has estimated the vehicle trip generation by way of a first principles assessment. Inputs are based on information provided by Accor and have been independently verified and validated where possible using available data and publicly available information from Tourism and Events Queensland. The inputs, assumptions and resultant vehicle trip generation estimates for the Resort are outlined below.

Overarching Inputs

- Tourists in Port Douglas stay an average of 3 nights.
- Using this as a guide, it has been assumed that a third of Resort guests (or in the order of 145 people) are arriving to or departing from the Resort during these peak hours.
- Information provided by Accor indicates that in the order of 60% of guests staying in standard resort rooms could be expected to self-drive and in the order of 30% - 60% of Gold Club member guests could be expected to self-drive.

AM Peak Hour

- It is assumed that 10 guests arrive from and 10 guests depart to the Airport in a private shuttle bus (2 vehicle trips).
- Up to 75 guests (38 vehicle trips) could be expected to depart from the Resort in private (or hired) motor vehicles, based on the anticipated portion of self-drive guests.
- It is assumed that the remaining 50 guests could be expected to depart from the Resort in booked shuttle services, taxi or ride share (34 vehicle trips).
- Up to 5 visitors (2 vehicle trips) could also be expected to be arriving at the Restaurant during this peak hour, based on the car parking demand assessment.
- This equates to a total of 76 vehicle trips (19 vehicle trips in / 57 vehicle trips out) and is considered to be suitably conservative for the purpose of this assessment.

PM Peak Hour

- It is assumed that 10 guests arrive from and 10 guests depart to the Airport in a private shuttle bus (2 vehicle trips)
- Up to 75 guests (38 vehicle trips) could be expected to arrive at the Resort in private (or hired) motor vehicles, based on the anticipated portion of self-drive guests
- It is assumed that the remaining 50 guests could be expected to arrive at the Resort in booked shuttle services, taxi or ride share (34 vehicle trips)
- Up to 5 visitors (2 vehicle trips) could also be expected to be arriving at the Restaurant during this peak hour, based on the car parking demand assessment.
- This equates to a total of 76 vehicle trips (57 vehicle trips in / 19 vehicle trips out) and is considered to be suitably conservative for the purpose of this assessment.

7.5. Vehicle Trip Distribution

The directional distribution of the proposed development traffic will be influenced by a number of factors, primarily:

- i Location of the Cairns airport, tourism destinations and other attractions
- ii Configuration of vehicle access points to the site and internal connectivity
- iii Form, function and operations of the external road network and intersections.

Having consideration to the above and the existing traffic volumes in the vicinity of the site, the assumed distributions for all scenarios are expected is summarised as follows:

- Northbound – 40% of total Resort traffic
- Southbound – 60% of total Resort traffic.

The resultant turning movement diagrams are provided in Appendix F.

7.6. Modelling Methodology

The operation of the porte cochere and basement car park (central) vehicle access has been assessed using SIDRA Intersection⁷ (SIDRA), a computer-based modelling package which calculates intersection performance.

In accordance with the GTIA, the site access on Port Douglas Road has been analysed for each scenario detailed in Section 7.1 for both the Thursday PM peak hour and the Sunday AM peak hour. Consideration has also been given to the likely traffic impacts at the Port Douglas / Avenue of Palms roundabout using the identified threshold of a 5% increase in delays (or in this instance vehicle movements) as a guide.

7.7. Traffic Analysis – Central Vehicle Access

One of the commonly used measures of intersection performance is referred to as the Degree of Saturation (DOS). The DOS value represents the volume-to-capacity ratio for the most critical movement on each leg of the intersection. For unsignalised intersections, a DOS of around 0.80 is typically adopted as the 'practical' limit⁸.

Other measures of intersection performance include the average delay, 95th percentile queue length (i.e. queue length that is expected to be exceeded only 5% of the time) and the level of service (LOS), a qualitative score from A to F with LOS A representing an excellent level and LOS F a very poor level of performance. It is noted that TMR's GTIA specifically requires intersection delay impacts to be quantified.

The following section set out the findings of the SIDRA assessments undertaken for the Resort vehicle access on Port Douglas Road.

⁷ Program used under license from Akcelik & Associates Pty Ltd.

⁸ SIDRA INTERSECTION adopts the following criteria for Level of Service assessment:

Level of Service		Control delay per vehicle in seconds (X)		
		Signals	Roundabout	Priority Controlled
A	Excellent	$d \leq 10$	$d \leq 10$	$d \leq 10$
B	Very Good	$10 < d \leq 20$	$10 < d \leq 20$	$10 < d \leq 15$
C	Good	$20 < d \leq 35$	$20 < d \leq 35$	$15 < d \leq 25$
D	Acceptable	$35 < d \leq 55$	$35 < d \leq 50$	$25 < d \leq 35$
E	Poor	$55 < d \leq 80$	$50 < d \leq 70$	$35 < d \leq 50$
F	Very Poor	$80 < d$	$70 < d$	$50 < d$

7.7.1. Vehicle Access Performance

The operation of the porte cochere and basement car park (central) vehicle access has been assessed using SIDRA Intersection, with the anticipated operations outlined in Table 7.1. Detailed results of this analysis are provided in Appendix G of this report.

Table 7.1: Anticipated Central Vehicle Access Performance

Assessment Scenario	DOS	LOS	Avg. Delay (sec)	95th % Queue (m)
Thursday PM Peak Hour (2022)	0.31	-	< 1	2
Sunday AM Peak Hour (2022)	0.33	-	1	7
Thursday PM Peak Hour (2032)	0.36	-	< 1	3
Sunday AM Peak Hour (2032)	0.49	-	2	12

From the results of this analysis, the Fairmont Resort vehicle access is expected to operate within acceptable limits under each scenario including up to 2032, the 10-year post development design horizon. With respect to the impacts to the state-controlled road network, the results of the analysis are summarised as follows:

- The proposed vehicle access is not expected to result in any delays or impact to existing operations of the through movements on the state-controlled road network
- The proposed vehicle access could be expected to result in minor queues and delays on the northbound approach for the right-turn in to the site, noting that these are expected to be wholly accommodated within the proposed channelised right-turn lane.

The proposed vehicle access is therefore considered to be acceptable and is not expected to have a material impact upon the operations of the state-controlled road network.

7.8. Traffic Analysis – Northern Vehicle Access

GTA has not undertaken traffic analysis for the proposed loading dock (northern) vehicle access. Notwithstanding, GTA provide the following comments as to the anticipated impacts of the proposed loading dock (northern) vehicle access:

- The proposed loading dock is expected to generate a very low number of vehicle movements across a typical day (i.e. in the order of 10-15 trucks)
- A management system is proposed to control the operations of the loading dock, with deliveries to be managed to spread the demands across the day, avoid congestion within the loading dock and minimise any impacts to the state-controlled road network (particularly during the identified peak periods)
- The vehicle movements are to be restricted to left-in / left-out only.

In this regard, the proposed loading dock (northern) vehicle access is not expected to have a material impact upon the operations of the state-controlled road network.

7.9. Traffic Analysis – Port Douglas Road / Avenue of Palms Roundabout

GTA has undertaken a comparison between the anticipated vehicle trip generation of the Resort and the 'Base Case' traffic volumes (i.e. anticipated 2022 and 2032 traffic volumes on Port Douglas Road without the

Resort). This is to consider the likely traffic impacts at the Port Douglas / Avenue of Palms roundabout using the identified threshold of a 5% increase in delays (or in this instance vehicle movements) as a guide, given that data collection was not a viable option as a result of COVID-19.

The comparison indicates that the vehicle trip generation of the Resort could be expected to increase the traffic volumes on the north and south approaches of the Port Douglas Road / Avenue of Palms roundabout as follows:

- Thursday PM peak hour – approx. +4% on the north approach and approx. +3% on the south approach
- Sunday AM peak hour - approx. +2% on the north approach and approx. +3% on the south approach.

The vehicle trip generation of the Resort is not expected to exceed the nominated threshold of a 5% increase in vehicle movements at the Port Douglas Road / Avenue of Palms roundabout. The Resort is therefore not expected to have a material impact upon the delays or existing operations of the state-controlled road network in this location.

8. CONCLUSION

08

Based on the analysis and discussions presented within this report, the following conclusions are made:

1. The Resort includes Short Term Accommodation, Function Facility, and Food and Drink Outlet land uses.
2. The Resort includes the provision of pedestrian pathways throughout the site and connecting to the existing shared path infrastructure which complies with Council's Planning Scheme requirements.
3. The Resort generates a statutory bicycle parking requirement of 64 spaces.
4. The proposed provision of approximately 80 bicycle parking spaces exceeds Council's requirement and is considered to be satisfactory.
5. The Resort generated a loading bay requirement of 5 loading bays, including 2 vans, 2 SRVs and 1 MRV.
6. The Resort includes the provision of 5 loading bays, including 1 SRV, 2 MRV's, 1 RCV and 1 HRV which meets the quantum and exceeds the size requirements of Council's requirements and is considered to be satisfactory.
7. The Resort generates a statutory car parking requirement of 407 spaces.
8. The Resort includes a provision of 222 car parking spaces, representing a shortfall of 185 spaces when compared to Council's statutory car parking requirements.
9. The Car Parking Demands Assessment suggests that the Resort could be expected to generate a peak car parking demand in the order of 217 to 261 spaces, including 75 to 85 staff spaces, 109 to 130 guest spaces and 33 to 46 visitor spaces.
10. The proposed provision of 222 car parking spaces, including 75 staff spaces, 112 guest spaces and 35 visitor spaces, sits within the anticipated peak car parking demand range overall and for each of the user groups and is considered to be appropriate to allow for the car parking demands of staff, guests and visitors to be accommodated and managed within the on-site provisions.
11. The proposed provision of 7 accessible car parking spaces meets the NCC requirements for the Resort guests and visitors and is considered to be acceptable.
12. The dimensional requirements of the car parking layouts, internal ramps and porte cochere configurations are generally in accordance with the requirements of Council's Planning Scheme and the relevant Australian Standards (AS2890.1, AS2890.2 and SA2890.6).
13. The proposed vehicle access configuration has been developed to minimise impacts to the function, operation and safety of the state-controlled road network while still achieving the operational requirements for the Resort.
14. The turn warrant assessment indicates that an AUL[s] treatment and a CHR[s] treatment are required at the proposed porte cochere and basement car park (central) vehicle access.
15. The proposed turn lane provisions exceed these requirements and are considered to be acceptable.
16. The proposed Vehicle Access Concept Plan and supporting information demonstrate that the design is not expected to impact on the function or safety of the state-controlled road network.
17. Traffic impact analysis has been completed for the vehicle accesses which indicates that they could be expected to operate safely and efficiently into the future (up to a 10-year design horizon).
18. The vehicle trip generation of the Resort is also not expected to exceed the nominated threshold of a 5% increase in vehicle movements at the Port Douglas Road / Avenue of Palms roundabout.
19. The Resort is therefore not expected to have a material impact upon the delays or existing operations of the state-controlled road network in this location.

A.RESPONSE TO COUNCIL CODES

A

APPENDIX: RESPONSE TO COUNCIL CODES

Table A1: Response to Douglas Regional Council's 'Access, parking and servicing code'

Performance Outcomes	Acceptable outcomes	Response to Council Code
<p>PO1 Sufficient on-site car parking is provided to cater for the amount and type of vehicle traffic expected to be generated by the use or uses of the site, having particular regard to:</p> <ul style="list-style-type: none"> a) the desired character of the area; b) the nature of the particular use and its specific characteristics and scale; c) the number of employees and the likely number of visitors to the site; d) the level of local accessibility; e) the nature and frequency of any public transport serving the area; f) whether or not the use involves the retention of an existing building and the previous requirements for car parking for the building; g) whether or not the use involves a heritage building or place of local significance; h) whether or not the proposed use involves the retention of significant vegetation 	<p>AO1.1 The minimum number of on-site vehicle parking spaces is not less than the number prescribed in Table 9.4.1.3.b for that particular use or uses.</p> <p>Note - Where the number of spaces calculated from the table is not a whole number, the number of spaces provided is the next highest whole number.</p> <p>AO1.2 Car parking spaces are freely available for the parking of vehicles at all times and are not used for external storage purposes, the display of products or rented/sub-leased.</p> <p>AO1.3 Parking for motorcycles is substituted for ordinary vehicle parking to a maximum level of 2% of total ordinary vehicle parking.</p> <p>AO1.4 For parking areas exceeding 50 spaces parking, is provided for recreational vehicles as a substitute for ordinary vehicle parking to a maximum of 5% of total ordinary vehicle parking rate.</p>	<p>Refer to Section 5 of this report.</p> <p>The Car Parking Demands Assessment suggests that the Resort could be expected to generate a peak car parking demand in the order of 217 to 261 spaces, including 75 to 85 staff spaces, 109 to 130 guest spaces and 33 to 46 visitor spaces.</p> <p>The proposed provision of 222 car parking spaces, including 75 staff spaces, 112 guest spaces and 35 visitor spaces, sits within the anticipated peak car parking demand range overall and for each of the user groups. This is considered to be appropriate to allow for the car parking demands of staff, guests and visitors to be accommodated and managed within the on-site provisions.</p>
<p>PO2 Vehicle parking areas are designed and constructed in accordance with relevant standards.</p>	<p>AO2 Vehicle parking areas are designed and constructed in accordance with Australian Standard:</p> <ul style="list-style-type: none"> a) AS2890.1 b) AS2890.3 c) AS2890.6 	<p>Refer to Sections 5.6 and 6.3 of this report.</p> <p>The car parking areas have been designed generally in accordance with the relevant Australian Standards (AS2890.1 and AS2890.6).</p>

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<p>PO3 Access points are designed and constructed:</p> <ul style="list-style-type: none"> a) to operate safely and efficiently; b) to accommodate the anticipated type and volume of vehicles c) to provide for shared vehicle (including cyclists) and pedestrian use, where appropriate; d) so that they do not impede traffic or pedestrian movement on the adjacent road area; e) so that they do not adversely impact upon existing intersections or future road or intersection improvements; f) so that they do not adversely impact current and future on-street parking arrangements; g) so that they do not adversely impact on existing services within the road reserve adjacent to the site; h) so that they do not involve ramping, cutting of the adjoining road reserve or any built structures (other than what may be necessary to cross over a stormwater channel) 	<p>AO3.1 Access is limited to one access cross over per site and is an access point located, designed and constructed in accordance with:</p> <ul style="list-style-type: none"> a) Australian Standard AS2890.1; b) Planning scheme policy SC6.5 – FNQROC Regional Development Manual - access crossovers. <p>AO3.2 Access, including driveways or access crossovers:</p> <ul style="list-style-type: none"> a) are not placed over an existing: <ul style="list-style-type: none"> i. telecommunications pit; ii. stormwater kerb inlet; iii. sewer utility hole; iv. water valve or hydrant. b) are designed to accommodate any adjacent footpath; c) adhere to minimum sight distance requirements in accordance with AS2980.1. <p>AO3.3 Driveways are:</p> <ul style="list-style-type: none"> a) designed to follow as closely as possible to the existing contours, but are no steeper than the gradients outlined in Planning scheme policy SC6.5 – FNQROC Regional Development Manual; b) constructed such that where there is a grade shift to 1 in 4 (25%), there is an area with a grade of no more than 1 in 6 (16.6%) prior to this area, for a distance of at least 5 metres; 	<p>Refer to Section 6 of this report.</p> <p>The proposed vehicle access configuration has been developed to minimise impacts to the function, operation and safety of the state-controlled road network while still achieving the operational requirements for the Resort.</p> <p>The proposed vehicle access arrangements (within the Port Douglas Road reserve) have been designed having regard for the requirements of Council's Planning Scheme, Australian Standards (AS2890.1 and AS2890.2), the relevant Austroads Guidelines (AGRD04A), the RPDM and TMR's Property Access Standard Drawings (SD1807). The Vehicle Access Concept Plan is provided in Appendix I.</p> <p>The proposed design of the vehicle access arrangements is considered to be acceptable and not expected to impact on the function or safety of the state-controlled road network.</p>
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	<p>c) on gradients greater than 1 in 6 (16.6%) driveways are constructed to ensure the cross-fall of the driveway is one way and directed into the hill, for vehicle safety and drainage purposes;</p> <p>d) constructed such that the transitional change in grade from the road to the lot is fully contained within the lot and not within the road reserve;</p> <p>e) designed to include all necessary associated drainage that intercepts and directs storm water runoff to the storm water drainage system.</p> <p>AO3.4 Surface construction materials are consistent with the current or intended future streetscape or character of the area and contrast with the surface construction materials of any adjacent footpath.</p>	
PO4 Sufficient on-site wheel chair accessible car parking spaces are provided and are identified and reserved for such purposes.	AO4 The number of on-site wheel chair accessible car parking spaces complies with the rates specified in AS2890 Parking Facilities.	<p>Refer to Section 5.5 of this report.</p> <p>The proposed provision of 7 accessible car parking spaces meets the NCC requirements for the Resort guests and visitors and is considered to be acceptable.</p>
PO5 Access for people with disabilities is provided to the building from the parking area and from the street.	AO5 Access for people with disabilities is provided in accordance with the relevant Australian Standard.	<p>Refer to Section 3.1 of this report.</p> <p>The Resort includes the provision of pedestrian pathways throughout the site and connecting to the existing shared path which runs along the site frontage within the road reserve of Port Douglas Road. These provisions are considered to be acceptable.</p>

APPENDIX: RESPONSE TO COUNCIL CODES

		The design of these pedestrian pathways will be further detailed at subsequent stages of design.
PO6 Sufficient on-site bicycle parking is provided to cater for the anticipated demand generated by the development	AO6 The number of on-site bicycle parking spaces complies with the rates specified in Table 9.4.1.3.b.	Refer to Section 3.2 of this report. The Resort proposes to provide 80 bicycle parking spaces, exceeding Council's statutory requirements. This provision is considered to be acceptable.
PO7 Development provides secure and convenient bicycle parking which: a) for visitors is obvious and located close to the building's main entrance; b) for employees is conveniently located to provide secure and convenient access between the bicycle storage area, end-of-trip facilities and the main area of the building; c) is easily and safely accessible from outside the site.	AO7.1 Development provides bicycle parking spaces for employees which are co-located with end-of-trip facilities (shower cubicles and lockers); AO7.2 Development ensures that the location of visitor bicycle parking is discernible either by direct view or using signs from the street. AO7.3 Development provides visitor bicycle parking which does not impede pedestrian movement.	Refer to Section 3.2 of this report. The Resort proposes to provide 80 bicycle parking spaces, exceeding Council's statutory requirements. This provision is considered to be acceptable. The proposed development does not require bicycle end-of-trip facilities based on Council's Planning Scheme. Further detail as to the wayfinding and signage for these spaces can be developed as subsequent stages of design.
PO8 Development provides walking and cycle routes through the site which: a) link to the external network and pedestrian and cyclist destinations such as schools, shopping centres, open space, public transport stations, shops and local activity centres along the safest, most direct and convenient routes;	AO8 Development provides walking and cycle routes which are constructed on the carriageway or through the site to: a) create a walking or cycle route along the full frontage of the site; b) connect to public transport and existing cycle and walking routes at the frontage or boundary of the site.	Refer to Section 3.1 of this report. The Resort includes the provision of pedestrian pathways throughout the site and connecting to the existing shared path which runs along the site frontage within the road reserve of Port Douglas Road. These provisions are considered to be acceptable. The design of these pedestrian pathways will

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<p>b) encourage walking and cycling; c) ensure pedestrian and cyclist safety.</p>		be further detailed at subsequent stages of design.
<p>PO9 Access, internal circulation and on-site parking for service vehicles are designed and constructed:</p> <p>a) in accordance with relevant standards; b) so that they do not interfere with the amenity of the surrounding area; c) so that they allow for the safe and convenient movement of pedestrians, cyclists and other vehicles.</p>	<p>AO9.1 Access driveways, vehicle manoeuvring and onsite parking for service vehicles are designed and constructed in accordance with AS2890.1 and AS2890.2.</p> <p>AO9.2 Service and loading areas are contained fully within the site.</p> <p>AO9.3 The movement of service vehicles and service operations are designed so they:</p> <p>a. do not impede access to parking spaces; b) do not impede vehicle or pedestrian traffic movement.</p>	<p>Refer to Section 4 of this report.</p> <p>The loading dock has been designed generally in accordance with the relevant Australian Standards (AS2890.2). Swept paths have been completed to demonstrate that relevant design vehicles can access, manoeuvre within and egress the site in a forward direction (Appendix E). These arrangements are considered to be acceptable.</p>
<p>PO10 Sufficient queuing and set down areas are provided to accommodate the demand generated by the development.</p>	<p>AO10.1 Development provides adequate area on-site for vehicle queuing to accommodate the demand generated by the development where drive through facilities or drop-off/pick-up services are proposed as part of the use, including, but not limited to, the following land uses:</p> <p>a) car wash; b) child care centre; c) educational establishment where for a school; d) food and drink outlet, where including a drivethrough facility; e) hardware and trade supplies, where including a drive-through facility; f) hotel, where including a drive-through facility;</p>	<p>Refer to Sections 5.6 and 7 of this report.</p> <p>The Resort has been designed to prioritise entering vehicles and provide adequate queue provisions for the porte cochere (and other on-site areas) as to not impact upon the operations or performance of the external road network. These provisions are considered to be acceptable.</p>

APPENDIX: RESPONSE TO COUNCIL CODES

	<p>g) service station.</p> <p>AO10.2 Queuing and set-down areas are designed and constructed in accordance with AS2890.1.</p>	
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B.RESPONSE TO SDAP CODES

B

Table B2: Response to State Code 1 'Development in a state-controlled road environment'

Performance Outcome	Response
<u>Vehicular access to a state-controlled road</u>	
PO15 Vehicular access to a state-controlled road that is a limited access road is consistent with government policy for the management of limited access roads	Port Douglas Road is not identified as a limited access road, therefore this PO is not applicable.
PO16 The location and design of vehicular access to a state-controlled road (including access to a limited access road) does not create a safety hazard for users of a state-controlled road or result in a worsening of operating conditions on a state-controlled road.	<p>Refer to Sections 2.6 and 6 of this report.</p> <p>Based on a review of recorded Crash Statistics within the past 5-years in the vicinity of the site, there are no historical accident patterns or trends which could be expected to be worsened by the Resort.</p> <p>The proposed vehicle access arrangements have been refined through engagement with TMR and key design elements to achieve these requirements are summarised as follows:</p> <p><u>Porte cochere and basement car park (central) vehicle access</u></p> <ul style="list-style-type: none"> • It has been designed to incorporate auxiliary left and channelised right turn lanes to support full turning movements as to avoid delays or impacts existing through movements on Port Douglas Road • The location of the vehicle access has been specifically chosen such that the auxiliary left and channelised right turn lanes can be accommodated along the Resort site frontage and not impact upon vehicle access to adjacent properties • Entering vehicle movements have been prioritised • Acceptable sight distance provisions (SISD and MGSD) between all users can be achieved. <p><u>Loading dock (northern) vehicle access to Port Douglas Road</u></p> <ul style="list-style-type: none"> • The permitted turning movements have been restricted to left-in and left-out movements only to minimise delays or impacts existing through movements on Port Douglas Road • Entering vehicle movements have been prioritised

APPENDIX: RESPONSE TO SDAP CODES

Performance Outcome	Response
	<ul style="list-style-type: none"> A management system is proposed to control the operations of the loading dock, spread the demands across the day, avoid congestion and minimise any impacts to the state-controlled road network (particularly during the identified peak periods) Acceptable sight distance provisions (SISD and MGSD) between all users can be achieved. <p>The proposed vehicle access arrangements (within the Port Douglas Road reserve) have been designed having regard for the requirements of Council's Planning Scheme, Australian Standards (AS2890.1 and AS2890.2), the relevant Austroads Guidelines (AGRD04A and AGRD06A), the RPDM and TMR's Property Access Standard Drawings (SD1807). The Vehicle Access Concept Plan is provided in Appendix I.</p> <p>Based on the proposed design and the investigations completed, the proposed vehicle access arrangements are not expected to impact on the function or safety of the state-controlled road network.</p>
PO17 Vehicular access to a state-controlled road or local government road (and associated road access works) are located and designed to not damage or interfere with public passenger transport infrastructure, public passenger services or pedestrian or cycle access to public passenger transport infrastructure and public passenger services.	<p>Refer to Sections 2 and 3 of this report.</p> <p>Proposed vehicle access arrangements are not in the vicinity of public transport infrastructure or services, therefore this PO is not applicable.</p>
<u>Planned upgrades</u>	
PO19 Development does not impede delivery of planned upgrades of state-controlled roads.	<p>Refer to Section 2 of this report.</p> <p>It is understood that there are no planned upgrades of state-controlled roads or infrastructure in the vicinity of the site, therefore this PO is not applicable.</p>
<u>Network impacts</u>	
PO20 Development does not result in a worsening of operating conditions on the state-controlled road network.	<p>Refer to Section 7 of this report.</p> <p>Traffic impact analysis has been completed in line with TMR's GTIA, noting limitations on data collection due to the ongoing impacts of COVID-19.</p>

APPENDIX: RESPONSE TO SDAP CODES

Performance Outcome	Response
	<p>The traffic impact analysis indicates that the proposed vehicle accesses could be expected to operate safely and efficiently into the future (up to a 10-year design horizon). The vehicle trip generation of the Resort is also not expected to exceed the nominated threshold of a 5% increase in vehicle movements at the Port Douglas Road / Avenue of Palms roundabout.</p> <p>The Resort is therefore not expected to have a material impact upon the delays or existing operations of the state-controlled road network in this location.</p>
PO21 Development does not impose traffic loadings on a state-controlled road which could be accommodated on the local road network.	<p>Refer to Section 6.1 of this report.</p> <p>Port Douglas Road is the only road frontage of the Resort site. As such, the proposed Resort does not impose traffic loadings on a state-controlled road which could be accommodated on the local road network.</p>
PO22 Upgrade works on, or associated with, a state-controlled road are built in accordance with Queensland road design standards.	<p>Refer to Section 6.2 of this report.</p> <p>The proposed vehicle access arrangements (within the Port Douglas Road reserve) have been designed having regard for the requirements of Council's Planning Scheme, Australian Standards (AS2890.1 and AS2890.2), the relevant Austroads Guidelines (AGRD04A and AGRD06A), the RPDM and TMR's Property Access Standard Drawings (SD1807). The Vehicle Access Concept Plan is provided in Appendix I.</p> <p>Based on the proposed design and the investigations completed, the proposed vehicle access arrangements are not expected to impact on the function or safety of the state-controlled road network.</p>

Table B2: Response to State Code 6 'Protection of state transport networks'

Performance Outcome	Response
<u>Network impacts</u>	
<p>PO1 Development does not result in a worsening of the safety of a state-controlled road.</p> <p>Note: To demonstrate compliance with this performance outcome, it is recommended that a Registered Professional Engineer of</p>	<p>Refer to Sections 2.6 and 6 of this report.</p> <p>Based on a review of recorded Crash Statistics within the past 5-years in the vicinity of the site, there are no historical accident patterns or trends</p>

Performance Outcome	Response
Queensland (RPEQ) certified road safety audit or road safety assessment (as applicable) is provided. Further information on determining whether a road safety audit or road safety assessment is required will be provided in the forthcoming document Guide to Traffic Impact Assessment, Department of Transport and Main Roads, 2017	<p>which could be expected to be worsened by the Resort.</p> <p>The proposed vehicle access arrangements have been refined through engagement with TMR and key design elements to achieve these requirements are summarised as follows:</p> <p><u>Porte cochere and basement car park (central) vehicle access</u></p> <ul style="list-style-type: none"> • It has been designed to incorporate auxiliary left and channelised right turn lanes to support full turning movements as to avoid delays or impacts existing through movements on Port Douglas Road • The location of the vehicle access has been specifically chosen such that the auxiliary left and channelised right turn lanes can be accommodated along the Resort site frontage and not impact upon vehicle access to adjacent properties • Entering vehicle movements have been prioritised • Acceptable sight distance provisions (SISD and MGSD) between all users can be achieved. <p><u>Loading dock (northern) vehicle access to Port Douglas Road</u></p> <ul style="list-style-type: none"> • The permitted turning movements have been restricted to left-in and left-out movements only to minimise delays or impacts existing through movements on Port Douglas Road • Entering vehicle movements have been prioritised • A management system is proposed to control the operations of the loading dock, spread the demands across the day, avoid congestion and minimise any impacts to the state-controlled road network (particularly during the identified peak periods)

APPENDIX: RESPONSE TO SDAP CODES

Performance Outcome	Response
	<ul style="list-style-type: none"> Acceptable sight distance provisions (SISD and MGSD) between all users can be achieved. <p>The proposed vehicle access arrangements (within the Port Douglas Road reserve) have been designed having regard for the requirements of Council's Planning Scheme, Australian Standards (AS2890.1 and AS2890.2), the relevant Austroads Guidelines (AGRD04A and AGRD06A), the RPDM and TMR's Property Access Standard Drawings (SD1807). The Vehicle Access Concept Plan is provided in Appendix I.</p> <p>The tramway crossing control (signage and linemarking) is consistent with nearby crossing points and is expected to safely manage the movement of vehicles across the existing tramway.</p> <p>Based on the proposed design and the investigations completed, the proposed vehicle access arrangements are not expected to impact on the function or safety of the state-controlled road network.</p>
<p>PO2 Development does not result in a worsening of the infrastructure condition of a state-controlled road or road transport infrastructure.</p> <p>Note: To demonstrate compliance with this performance outcome, it is recommended that a RPEQ certified traffic impact assessment and pavement impact assessment are provided. Further information will be provided in the forthcoming document Guide to Traffic Impact Assessment, Department of Transport and Main Roads, 2017</p>	<p>Refer to this report for the Traffic Impact Assessment completed in line with TMR's GTIA guidelines.</p>
<p>PO3 Development does not result in a worsening of operating conditions on a state-controlled road or the surrounding road network.</p> <p>Note: To demonstrate compliance with this performance outcome, it is recommended that an RPEQ certified traffic impact assessment is provided. Further information will be provided in the forthcoming document Guide to Traffic Impact Assessment, Department of Transport and Main Roads, 2017.</p>	<p>Refer to Section 7 of this report.</p> <p>Traffic impact analysis has been completed in line with TMR's GTIA, noting limitations on data collection due to the ongoing impacts of COVID-19.</p> <p>The traffic impact analysis indicates that the proposed vehicle accesses could be expected to operate safely and efficiently into the future (up to a 10-year design horizon). The vehicle trip generation of the Resort is also not expected to exceed the nominated threshold of a 5% increase in vehicle</p>

APPENDIX: RESPONSE TO SDAP CODES

Performance Outcome	Response
	<p>movements at the Port Douglas Road / Avenue of Palms roundabout.</p> <p>The Resort is therefore not expected to have a material impact upon the delays or existing operations of the state-controlled road network in this location.</p>
<p>PO4 Development does not impose traffic loadings on a state-controlled road which could be accommodated on the local road network.</p>	<p>Refer to Section 6.1 of this report.</p> <p>Port Douglas Road is the only road frontage of the Resort site. As such, the proposed Resort does not impose traffic loadings on a state-controlled road which could be accommodated on the local road network.</p>
<p>PO5 Upgrade works on, or associated with, a state controlled road are built in accordance with relevant design standards.</p>	<p>Refer to Section 6.2 of this report.</p> <p>The proposed vehicle access arrangements (within the Port Douglas Road reserve) have been designed having regard for the requirements of Council's Planning Scheme, Australian Standards (AS2890.1 and AS2890.2), the relevant Austroads Guidelines (AGRD04A and AGRD06A), the RPDM and TMR's Property Access Standard Drawings (SD1807). The Vehicle Access Concept Plan is provided in Appendix I.</p> <p>Based on the proposed design and the investigations completed, the proposed vehicle access arrangements are not expected to impact on the function or safety of the state-controlled road network.</p>
<p>PO6 Development involving the haulage of fill, extracted material or excavated spoil material exceeding 10,000 tonnes per year does not damage the pavement of a state controlled road.</p> <p>Note: It is recommended that a transport infrastructure impact assessment and pavement impact assessment are provided. Further information will be provided in the forthcoming document Guide to Traffic Impact Assessment, Department of Transport and Main Roads, 2017</p>	<p>Traffic impacts associated with excavation and haulage will be considered at subsequent phases of design if required.</p>
<p>PO7 Development does not adversely impact on the safety of a railway crossing.</p> <p>Note: It is recommended that a traffic impact assessment be prepared to demonstrate compliance with this performance outcome. An impact on a level crossing may require an Australian</p>	<p>Refer to Sections 3 and 6.2 of this report.</p> <p>The Bally Hooley Train is a privately owned and operated service. The proposed rail crossing control (signage and linemarking) is consistent with</p>

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Performance Outcome	Response
Level Crossing Assessment Model (ALCAM) assessment to be undertaken. Section 2.2 – Railway crossing safety of the Guide to Development in a Transport Environment: Rail, Department of Transport and Main Roads, 2015, provides guidance on how to comply with this performance outcome.	nearby crossing points and is expected to safely manage the movement of vehicles across the existing tramway.
PO8 Development does not result in a worsening of the infrastructure condition of a railway or rail transport infrastructure.	Refer to Section 3 of this report. The Bally Hooley Train is a privately owned and operated service. It is not a state-controlled asset and therefore this PO is not applicable.
PO9 Development does not result in a worsening of operating conditions of a railway	Refer to Section 3 of this report. The Bally Hooley Train is a privately owned and operated service. It is not a state-controlled asset and therefore this PO is not applicable.
PO10 Development does not damage or interfere with public passenger transport infrastructure, public passenger services or pedestrian or cycle access to public passenger transport infrastructure and public passenger services.	Refer to Sections 2 and 3 of this report. Proposed vehicle access arrangements are not in the vicinity of public transport infrastructure or services, therefore this PO is not applicable.
<u>Planned upgrades</u>	
PO14 Development does not impede delivery of planned upgrades of state transport infrastructure.	Refer to Section 2 of this report. It is understood that there are no planned upgrades of state-controlled roads or infrastructure in the vicinity of the site, therefore this PO is not applicable.
<u>Provision of public passenger transport infrastructure</u>	
PO15 Upgraded or new public passenger transport infrastructure is provided to accommodate the demand for public passenger transport generated by the development. <small>Note: To demonstrate compliance with this performance outcome, it is recommended a public transport impact assessment be prepared in accordance with appendix 1 of the State Development Assessment Provisions Supporting Information – Public Passenger Transport, Department of Transport and Main Roads, 2014.</small>	Refer to Sections 2, 3 and 7 of this report. There is no existing or planned public transport infrastructure or services within the vicinity of the Resort site. However, there are a number of privately operated shuttle services which run along the Port Douglas Road between Cairns (including Cairns Airport) and Port Douglas on a 20 – 30 minutes frequency. These are considered appropriate to accommodate

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Performance Outcome	Response
New or upgraded public passenger transport infrastructure provided should be in accordance with the Public Transport Infrastructure Manual, Department of Transport and Main Roads, 2015	person trip demands by modes other than private motor vehicle, ride share or taxi.
<p>PO16 Development is designed to ensure the location of public passenger transport infrastructure prioritises and enables efficient public passenger services.</p> <p>Note: Chapters 2 and 5 of the Public Transport Infrastructure Manual, Department of Transport and Main Roads, 2015 provides guidance on how to comply with this performance outcome</p>	<p>Refer to Sections 2 and 3 of this report.</p> <p>There is no public transport infrastructure or services within the vicinity of the Resort site. Therefore, this PO is not applicable.</p>
<p>PO17 Development enables the provision or extension of public passenger services to the development and avoids creating indirect or inefficient routes for public passenger services.</p>	<p>Refer to Sections 2, 3 and 7 of this report.</p> <p>There is no existing or planned public transport infrastructure or services within the vicinity of the Resort site.</p> <p>The Resort is not expected to create indirect or inefficient routes for public passenger services should they be provided in the future.</p>
<p>PO18 New or modified road networks are designed to enable development to be serviced by public passenger services.</p>	<p>The proposed Resort does not propose any new road networks. Therefore, this PO is not applicable.</p>
<p>PO19 Development provides safe, direct and convenient pedestrian access to existing and future public passenger transport infrastructure.</p> <p>Note: Chapter 3 of the Public Transport Infrastructure Manual, Department of Transport and Main Roads, 2015 provides guidance on how to comply with this performance outcome. In particular, it is recommended that a pedestrian demand analysis be provided to demonstrate compliance with the performance outcome.</p>	<p>Refer to Sections 2 and 3 of this report.</p> <p>There is no public transport infrastructure or services within the vicinity of the Resort site. The proposed pedestrian pathways could be expected to provide safe, direct and convenient pedestrian access to public passenger services should they be provided in the future.</p>
<p>PO20 On-site vehicular circulation ensures the safety of both public passenger transport services and pedestrians.</p>	<p>Refer to Sections 2 and 3 of this report.</p> <p>There is no public transport infrastructure or services within the vicinity of the Resort site. Therefore, this PO is not applicable.</p>
<p>PO21 Taxi facilities are provided to accommodate the demand generated by the development.</p> <p>(Note: Guidance on how to meet the performance outcome are available in chapter 7 of the Public Transport Infrastructure Manual, Department of Transport and Main Roads, 2015)</p>	<p>Refer to Sections 5 and 7 of this report.</p> <p>The Resort includes porte cochere facilities which are considered to be suitable to accommodate the pick-up and drop-off activities of guests and visitors. These set-down facilities will accommodate use of taxi activities as required. These arrangements are considered to be acceptable.</p>

APPENDIX: RESPONSE TO SDAP CODES

Performance Outcome	Response
PO22 Taxi facilities are located and designed to provide convenient, safe and equitable access for passengers	<p>Refer to Sections 3 and 5 of this report.</p> <p>The Resort includes porte cochere facilities which are conveniently located and considered to be suitable to accommodate the pick-up and drop-off activities of guests and visitors. These set-down facilities will accommodate use of taxi activities as required and pedestrian pathways provide convenient, safe and equitable access for all users. These arrangements are considered to be acceptable.</p>
PO23 Educational establishments are designed to ensure the safe and efficient operation of public passenger services and pedestrian access.	<p>The Resort is not an educational establishment. Therefore, this PO is not applicable</p>

C. SURVEYED TRAFFIC VOLUMES

C

Volume Summary

Road	Port Douglas Road		
Location	South of Avenue of Palms (60kmh)	Average Weekday	5573
Suburb	Port Douglas	All Day Average	5472
Site No.	1	Weekday Heavy's	3.7%
Start Date	Friday 24/07/2020	All Day Heavy's	3.4%
Direction	Northbound		

Starting Time	Day of Week							Ave W'day	All Days Ave
	Mon	Tue	Wed	Thu	Fri	Sat	Sun		
	27-Jul	28-Jul	29-Jul	30-Jul	24-Jul	25-Jul	26-Jul		
AM Peak	170	175	152	144	158	145	182		
PM Peak	117	116	133	139	135	140	130		
0:00	4	5	3	1	0	6	5	3	3
0:15	2	1	0	2	0	4	4	1	2
0:30	4	0	2	4	0	2	5	2	2
0:45	0	4	3	1	0	3	2	2	2
1:00	3	2	1	2	0	3	5	2	2
1:15	1	0	0	2	0	2	4	1	1
1:30	0	1	0	1	0	1	2	0	1
1:45	1	0	1	3	0	1	8	1	2
2:00	0	1	1	0	2	1	1	1	1
2:15	0	1	0	1	1	0	2	1	1
2:30	0	0	1	1	4	3	1	1	1
2:45	1	1	1	3	1	2	3	1	2
3:00	2	0	1	0	1	0	2	1	1
3:15	2	2	1	2	2	0	5	2	2
3:30	0	0	3	1	5	2	2	2	2
3:45	3	1	2	2	3	2	4	2	2
4:00	1	0	0	0	2	0	0	1	0
4:15	0	1	0	0	0	0	2	0	0
4:30	8	3	3	0	5	1	9	4	4
4:45	7	10	8	11	5	7	14	8	9
5:00	4	12	3	11	7	5	14	7	8
5:15	12	8	3	6	9	6	19	8	9
5:30	13	16	17	18	18	9	36	16	18
5:45	25	26	25	23	24	18	33	25	25
6:00	34	26	36	27	27	20	37	30	30
6:15	38	47	47	42	31	26	26	41	37
6:30	49	44	57	48	50	32	41	50	46
6:45	95	96	111	91	85	66	53	96	85
7:00	69	69	81	67	72	38	28	72	61
7:15	55	74	59	69	71	44	47	66	60
7:30	79	71	104	89	74	80	56	83	79
7:45	114	120	118	104	110	72	72	113	101
8:00	99	119	101	95	96	65	82	102	94
8:15	108	132	117	133	113	86	106	121	114
8:30	133	142	144	125	142	94	103	137	126
8:45	170	175	152	144	158	117	154	160	153
9:00	124	127	118	129	125	57	132	125	116
9:15	121	113	135	117	123	95	138	122	120
9:30	129	118	111	118	121	102	144	119	120
9:45	122	124	130	138	148	135	176	132	139
10:00	106	118	114	120	121	118	159	116	122

10:15	119	127	98	111	125	120	158	116	123
10:30	123	106	116	127	142	140	179	123	133
10:45	140	134	125	114	116	131	182	126	135
11:00	112	104	128	121	129	145	158	119	128
11:15	118	118	146	111	124	124	132	123	125
11:30	115	124	124	123	132	127	127	124	125
11:45	114	120	133	119	130	143	169	123	133
12:00	117	98	118	139	115	140	122	117	121
12:15	102	106	131	107	135	115	130	116	118
12:30	102	103	105	85	102	101	114	99	102
12:45	112	104	115	122	132	121	90	117	114
13:00	85	92	91	124	95	108	77	97	96
13:15	83	113	99	96	107	108	81	100	98
13:30	86	83	98	121	103	108	84	98	98
13:45	105	103	133	105	122	94	95	114	108
14:00	85	86	93	104	120	88	85	98	94
14:15	102	110	84	84	108	80	78	98	92
14:30	111	80	105	91	93	94	62	96	91
14:45	100	96	111	113	109	76	88	106	99
15:00	90	100	108	90	112	87	99	100	98
15:15	115	112	110	93	109	61	81	108	97
15:30	101	94	86	92	95	64	85	94	88
15:45	97	95	87	116	116	79	81	102	96
16:00	98	96	90	111	94	78	58	98	89
16:15	96	95	90	103	90	97	68	95	91
16:30	94	99	85	94	91	83	69	93	88
16:45	102	101	107	122	101	75	77	107	98
17:00	67	102	90	112	99	74	79	94	89
17:15	90	116	82	107	102	82	96	99	96
17:30	61	82	78	78	80	76	61	76	74
17:45	83	79	69	73	90	88	74	79	79
18:00	52	62	64	68	83	71	61	66	66
18:15	52	59	65	61	93	65	59	66	65
18:30	58	38	59	60	57	71	55	54	57
18:45	39	32	45	52	58	64	38	45	47
19:00	41	49	52	42	42	51	35	45	45
19:15	28	37	38	49	46	35	23	40	37
19:30	31	21	21	42	37	40	26	30	31
19:45	16	21	32	32	36	38	20	27	28
20:00	19	20	25	25	28	24	23	23	23
20:15	15	22	22	19	19	14	15	19	18
20:30	6	19	21	13	14	21	17	15	16
20:45	16	17	11	18	17	17	15	16	16
21:00	12	11	10	12	22	18	8	13	13
21:15	14	10	22	21	13	14	11	16	15
21:30	12	13	10	11	13	18	10	12	12
21:45	10	11	9	14	10	22	12	11	13
22:00	6	6	5	10	14	8	8	8	8
22:15	2	18	9	9	10	12	5	10	9
22:30	7	4	8	10	12	14	9	8	9
22:45	0	2	1	6	13	9	6	4	5
23:00	2	4	6	7	8	12	2	5	6
23:15	5	2	4	13	4	13	3	6	6
23:30	2	1	2	4	5	9	4	3	4
23:45	1	4	0	3	8	4	0	3	3
Total	5309	5471	5590	5660	5836	5096	5340	5573	5472
% Heavies	3.6%	3.9%	3.3%	3.7%	3.8%	2.6%	2.5%	3.7%	3.4%

Volume Summary

Road	Port Douglas Road		
Location	South of Avenue of Palms (60kmh)	Average Weekday	5509
Suburb	Port Douglas	All Day Average	5428
Site No.	1	Weekday Heavy's	7.0%
Start Date	Friday 24/07/2020	All Day Heavy's	6.6%
Direction	Southbound		

Starting Time	Day of Week							Ave W'day	All Days Ave
	Mon	Tue	Wed	Thu	Fri	Sat	Sun		
	27-Jul	28-Jul	29-Jul	30-Jul	24-Jul	25-Jul	26-Jul		
AM Peak	130	130	116	131	141	133	176		
PM Peak	133	133	152	139	152	122	178		
0:00	2	7	2	2	0	11	7	3	4
0:15	4	3	4	2	0	7	7	3	4
0:30	4	4	5	7	0	4	12	4	5
0:45	5	2	5	3	0	3	3	3	3
1:00	4	2	1	2	0	4	5	2	3
1:15	1	2	2	7	0	7	1	2	3
1:30	2	0	1	3	0	2	8	1	2
1:45	0	0	3	2	0	2	4	1	2
2:00	1	3	0	3	4	1	1	2	2
2:15	1	0	2	0	1	2	4	1	1
2:30	1	1	0	1	1	1	5	1	1
2:45	1	1	2	0	1	2	4	1	2
3:00	2	1	1	1	2	1	1	1	1
3:15	1	0	0	0	1	0	5	0	1
3:30	0	1	1	0	2	0	2	1	1
3:45	2	0	0	1	2	1	2	1	1
4:00	2	0	1	2	1	0	0	1	1
4:15	2	1	1	0	0	0	2	1	1
4:30	1	2	1	2	1	0	0	1	1
4:45	0	2	2	1	2	0	0	1	1
5:00	1	0	0	1	0	3	3	0	1
5:15	2	1	0	3	3	0	2	2	2
5:30	10	9	8	7	7	3	3	8	7
5:45	2	4	5	5	5	6	3	4	4
6:00	16	14	7	4	9	6	8	10	9
6:15	20	15	18	10	21	7	11	17	15
6:30	22	23	22	22	14	10	10	21	18
6:45	26	33	26	38	24	22	22	29	27
7:00	37	27	32	35	22	22	27	31	29
7:15	31	31	39	46	47	25	15	39	33
7:30	47	33	42	45	34	33	25	40	37
7:45	57	34	48	44	40	41	32	45	42
8:00	64	62	60	59	63	37	37	62	55
8:15	49	76	65	51	55	58	48	59	57
8:30	66	73	80	72	67	50	55	72	66
8:45	95	95	82	63	87	71	55	84	78
9:00	90	68	85	63	67	71	72	75	74
9:15	100	87	92	85	74	92	70	88	86
9:30	90	89	75	87	91	90	98	86	89
9:45	91	113	91	99	100	88	107	99	98
10:00	122	92	105	104	115	111	97	108	107

10:15	123	108	103	131	101	92	109	113	110
10:30	128	114	116	96	141	107	113	119	116
10:45	108	130	90	108	103	97	115	108	107
11:00	121	112	103	121	125	89	176	116	121
11:15	130	102	102	113	106	109	131	111	113
11:30	121	118	115	118	100	133	138	114	120
11:45	100	105	100	129	126	113	134	112	115
12:00	113	125	122	99	120	110	140	116	118
12:15	110	121	141	128	136	95	143	127	125
12:30	121	106	117	106	113	96	153	113	116
12:45	105	100	120	99	117	103	144	108	113
13:00	102	115	119	120	100	96	134	111	112
13:15	113	126	106	139	125	90	127	122	118
13:30	98	133	117	117	127	110	120	118	117
13:45	112	115	105	105	107	90	144	109	111
14:00	101	113	133	123	133	108	178	121	127
14:15	127	114	136	119	134	98	122	126	121
14:30	115	128	104	115	144	103	136	121	121
14:45	122	113	126	129	103	109	138	119	120
15:00	133	132	138	137	138	112	142	136	133
15:15	133	132	131	129	143	81	119	134	124
15:30	126	131	126	137	107	89	114	125	119
15:45	114	120	105	126	114	81	120	116	111
16:00	127	120	124	122	142	94	110	127	120
16:15	97	126	121	108	122	111	93	115	111
16:30	117	98	130	110	106	122	94	112	111
16:45	130	103	109	107	137	88	90	117	109
17:00	130	123	152	124	152	116	109	136	129
17:15	87	118	121	113	97	84	79	107	100
17:30	84	113	94	128	88	100	79	101	98
17:45	75	81	75	76	92	57	61	80	74
18:00	80	65	85	85	77	77	82	78	79
18:15	70	66	75	72	61	61	70	69	68
18:30	74	68	59	74	73	68	80	70	71
18:45	67	64	68	56	65	69	62	64	64
19:00	53	67	71	64	57	45	46	62	58
19:15	57	59	41	60	52	60	50	54	54
19:30	46	75	50	45	57	50	37	55	51
19:45	32	44	51	60	44	53	38	46	46
20:00	29	38	45	47	47	46	38	41	41
20:15	31	25	33	44	44	41	37	35	36
20:30	33	34	30	33	50	39	35	36	36
20:45	17	30	40	30	31	38	32	30	31
21:00	25	27	32	30	33	37	21	29	29
21:15	21	26	27	37	37	31	28	30	30
21:30	24	21	30	44	18	39	23	27	28
21:45	18	22	35	34	43	30	29	30	30
22:00	19	22	24	45	37	24	30	29	29
22:15	11	8	20	25	18	25	29	16	19
22:30	14	18	18	28	36	31	16	23	23
22:45	7	14	14	22	24	28	8	16	17
23:00	13	17	15	18	29	29	17	18	20
23:15	7	8	15	22	21	21	13	15	15
23:30	8	4	5	10	11	14	2	8	8
23:45	6	6	1	15	12	12	6	8	8
Total	5359	5434	5501	5614	5639	4945	5507	5509	5428
% Heavies	7.1%	7.2%	6.7%	6.9%	7.3%	5.5%	5.5%	7.0%	6.6%

Volume Summary

Road	Port Douglas Road		
Location	South of Avenue of Palms (60kmh)	Average Weekday	11083
Suburb	Port Douglas	All Day Average	10900
Site No.	1	Weekday Heavy's	5.3%
Start Date	Friday 24/07/2020	All Day Heavy's	5.0%
Direction	Two ways		

Starting Time	Day of Week							Ave W'day	All Days Ave
	Mon	Tue	Wed	Thu	Fri	Sat	Sun		
	27-Jul	28-Jul	29-Jul	30-Jul	24-Jul	25-Jul	26-Jul		
AM Peak	265	270	248	248	283	260	334		
PM Peak	248	244	272	244	271	250	273		
0:00	6	12	5	3	0	17	12	5	8
0:15	6	4	4	4	0	11	11	4	6
0:30	8	4	7	11	0	6	17	6	8
0:45	5	6	8	4	0	6	5	5	5
1:00	7	4	2	4	0	7	10	3	5
1:15	2	2	2	9	0	9	5	3	4
1:30	2	1	1	4	0	3	10	2	3
1:45	1	0	4	5	0	3	12	2	4
2:00	1	4	1	3	6	2	2	3	3
2:15	1	1	2	1	2	2	6	1	2
2:30	1	1	1	2	5	4	6	2	3
2:45	2	2	3	3	2	4	7	2	3
3:00	4	1	2	1	3	1	3	2	2
3:15	3	2	1	2	3	0	10	2	3
3:30	0	1	4	1	7	2	4	3	3
3:45	5	1	2	3	5	3	6	3	4
4:00	3	0	1	2	3	0	0	2	1
4:15	2	2	1	0	0	0	4	1	1
4:30	9	5	4	2	6	1	9	5	5
4:45	7	12	10	12	7	7	14	10	10
5:00	5	12	3	12	7	8	17	8	9
5:15	14	9	3	9	12	6	21	9	11
5:30	23	25	25	25	25	12	39	25	25
5:45	27	30	30	28	29	24	36	29	29
6:00	50	40	43	31	36	26	45	40	39
6:15	58	62	65	52	52	33	37	58	51
6:30	71	67	79	70	64	42	51	70	63
6:45	121	129	137	129	109	88	75	125	113
7:00	106	96	113	102	94	60	55	102	89
7:15	86	105	98	115	118	69	62	104	93
7:30	126	104	146	134	108	113	81	124	116
7:45	171	154	166	148	150	113	104	158	144
8:00	163	181	161	154	159	102	119	164	148
8:15	157	208	182	184	168	144	154	180	171
8:30	199	215	224	197	209	144	158	209	192
8:45	265	270	234	207	245	188	209	244	231
9:00	214	195	203	192	192	128	204	199	190
9:15	221	200	227	202	197	187	208	209	206
9:30	219	207	186	205	212	192	242	206	209
9:45	213	237	221	237	248	223	283	231	237
10:00	228	210	219	224	236	229	256	223	229

10:15	242	235	201	242	226	212	267	229	232
10:30	251	220	232	223	283	247	292	242	250
10:45	248	264	215	222	219	228	297	234	242
11:00	233	216	231	242	254	234	334	235	249
11:15	248	220	248	224	230	233	263	234	238
11:30	236	242	239	241	232	260	265	238	245
11:45	214	225	233	248	256	256	303	235	248
12:00	230	223	240	238	235	250	262	233	240
12:15	212	227	272	235	271	210	273	243	243
12:30	223	209	222	191	215	197	267	212	218
12:45	217	204	235	221	249	224	234	225	226
13:00	187	207	210	244	195	204	211	209	208
13:15	196	239	205	235	232	198	208	221	216
13:30	184	216	215	238	230	218	204	217	215
13:45	217	218	238	210	229	184	239	222	219
14:00	186	199	226	227	253	196	263	218	221
14:15	229	224	220	203	242	178	200	224	214
14:30	226	208	209	206	237	197	198	217	212
14:45	222	209	237	242	212	185	226	224	219
15:00	223	232	246	227	250	199	241	236	231
15:15	248	244	241	222	252	142	200	241	221
15:30	227	225	212	229	202	153	199	219	207
15:45	211	215	192	242	230	160	201	218	207
16:00	225	216	214	233	236	172	168	225	209
16:15	193	221	211	211	212	208	161	210	202
16:30	211	197	215	204	197	205	163	205	199
16:45	232	204	216	229	238	163	167	224	207
17:00	197	225	242	236	251	190	188	230	218
17:15	177	234	203	220	199	166	175	207	196
17:30	145	195	172	206	168	176	140	177	172
17:45	158	160	144	149	182	145	135	159	153
18:00	132	127	149	153	160	148	143	144	145
18:15	122	125	140	133	154	126	129	135	133
18:30	132	106	118	134	130	139	135	124	128
18:45	106	96	113	108	123	133	100	109	111
19:00	94	116	123	106	99	96	81	108	102
19:15	85	96	79	109	98	95	73	93	91
19:30	77	96	71	87	94	90	63	85	83
19:45	48	65	83	92	80	91	58	74	74
20:00	48	58	70	72	75	70	61	65	65
20:15	46	47	55	63	63	55	52	55	54
20:30	39	53	51	46	64	60	52	51	52
20:45	33	47	51	48	48	55	47	45	47
21:00	37	38	42	42	55	55	29	43	43
21:15	35	36	49	58	50	45	39	46	45
21:30	36	34	40	55	31	57	33	39	41
21:45	28	33	44	48	53	52	41	41	43
22:00	25	28	29	55	51	32	38	38	37
22:15	13	26	29	34	28	37	34	26	29
22:30	21	22	26	38	48	45	25	31	32
22:45	7	16	15	28	37	37	14	21	22
23:00	15	21	21	25	37	41	19	24	26
23:15	12	10	19	35	25	34	16	20	22
23:30	10	5	7	14	16	23	6	10	12
23:45	7	10	1	18	20	16	6	11	11
Total	10668	10905	11091	11274	11475	10041	10847	11083	10900
% Heavies	5.4%	5.5%	5.0%	5.3%	5.5%	4.0%	4.0%	5.3%	5.0%

D. TMR ROAD ASSET DATA – ‘PORT DOUGLAS ROAD’

D

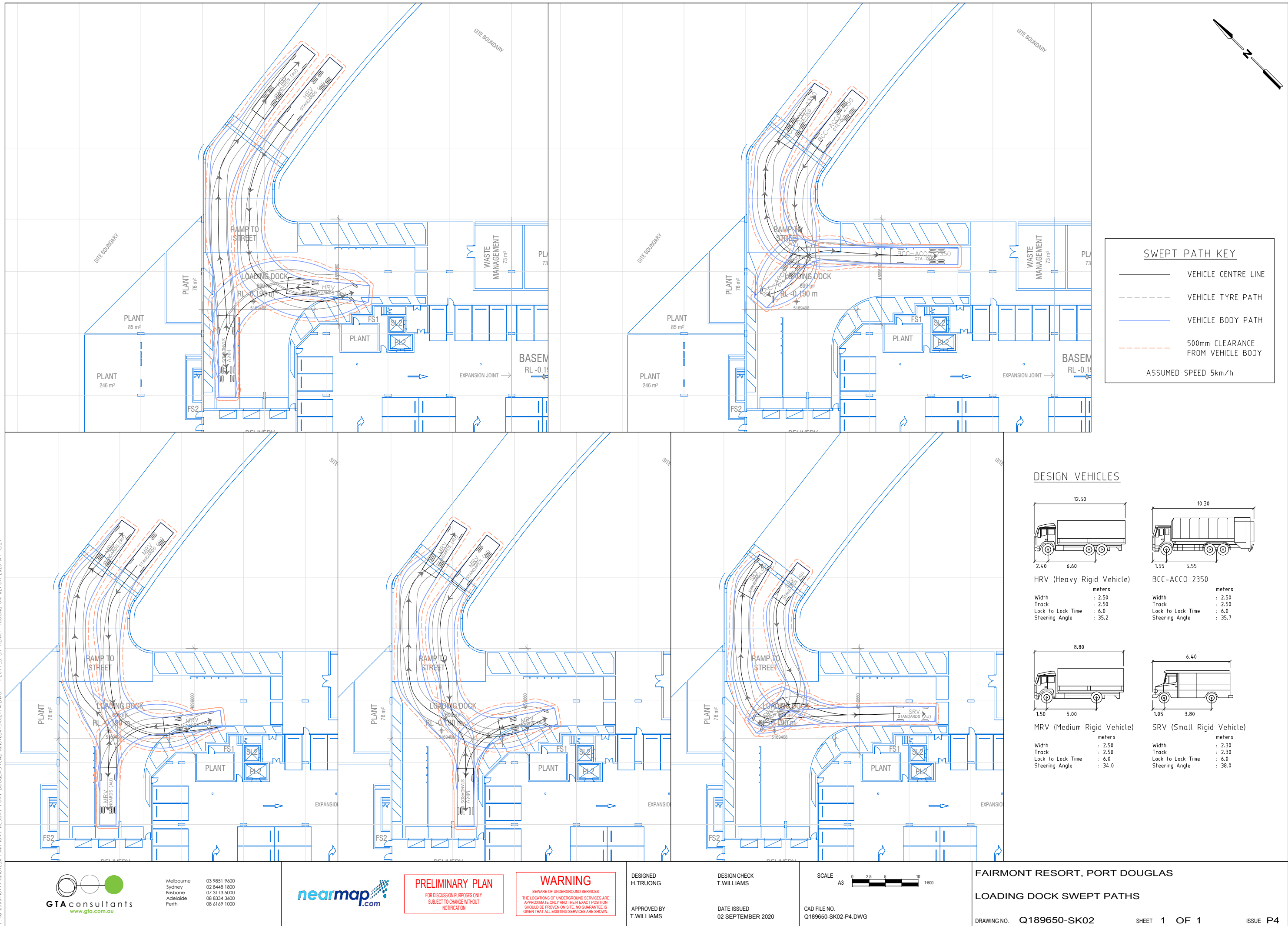
AADT directional

ROADNAME	ROAD_SE	SUPERSE	DIRECTIO	TDISTSTA	TDISTEND	SURFACE	AADT	AADT_YE	GROWTH	AADT_CL	AADT_CL	AADT_CL	AADT_CL	PC_CLAS	PC_CLAS	PC_CLAS	PC_CLASS_1D
PORT DOV	6504	1	A	0	0.16	SEALED	5854	2019	0.07	5559	282	13	0	94.96	4.82	0.22	0
PORT DOV	6504	1	G	0	0.16	SEALED	5657	2019	0.45	5388	262	7	0	95.24	4.64	0.12	0
PORT DOV	6504	1	A	0.16	0.41	SEALED	5854	2019	0.07	5559	282	13	0	94.96	4.82	0.22	0
PORT DOV	6504	1	G	0.16	0.41	SEALED	5657	2019	0.45	5388	262	7	0	95.24	4.64	0.12	0
PORT DOV	6504	1	A	0.41	0.54	SEALED	5854	2019	0.07	5559	282	13	0	94.96	4.82	0.22	0
PORT DOV	6504	1	G	0.41	0.54	SEALED	5657	2019	0.45	5388	262	7	0	95.24	4.64	0.12	0
PORT DOV	6504	1	G	0.54	1.125	SEALED	5657	2019	0.45	5388	262	7	0	95.24	4.64	0.12	0
PORT DOV	6504	1	A	0.54	1.125	SEALED	5854	2019	0.07	5559	282	13	0	94.96	4.82	0.22	0
PORT DOV	6504	1	G	1.125	1.31	SEALED	5657	2019	0.45	5388	262	7	0	95.24	4.64	0.12	0
PORT DOV	6504	1	A	1.125	1.31	SEALED	5854	2019	0.07	5559	282	13	0	94.96	4.82	0.22	0
PORT DOV	6504	1	G	1.31	2.77	SEALED	5657	2019	0.45	5388	262	7	0	95.24	4.64	0.12	0
PORT DOV	6504	1	A	1.31	2.77	SEALED	5854	2019	0.07	5559	282	13	0	94.96	4.82	0.22	0
PORT DOV	6504	1	A	2.77	3.02	SEALED	5854	2019	0.07	5559	282	13	0	94.96	4.82	0.22	0
PORT DOV	6504	1	G	2.77	3.02	SEALED	5657	2019	0.45	5388	262	7	0	95.24	4.64	0.12	0
PORT DOV	6504	1	A	3.02	5.67	SEALED	5854	2019	0.07	5559	282	13	0	94.96	4.82	0.22	0
PORT DOV	6504	1	G	3.02	5.67	SEALED	5657	2019	0.45	5388	262	7	0	95.24	4.64	0.12	0
PORT DOV	6504	1	G	5.67	5.96	SEALED	5657	2019	0.45	5388	262	7	0	95.24	4.64	0.12	0
PORT DOV	6504	1	A	5.67	5.96	SEALED	5854	2019	0.07	5559	282	13	0	94.96	4.82	0.22	0

E. SWEPT PATH ASSESSMENT

E

P:\Q18950-18999\Q189650 FAIRMONT RESORT PORT DOUGLAS\SK02-P4.DWG PLOTTED BY HENRY TRUONG ON 02/09/2020 AT 15:27



F. TURN MOVEMENT DIAGRAMS – VEHICLE ACCESS



Fairmont Resort - Turn Movement Diagrams

Base PM Peak 2022		Port Douglas Road	
10	↗	20	550
15	↘	↖	↓
↖	↑		
30	407		

Base Weekend 2022		Port Douglas Road	
20	↗	10	602
30	↘	↖	↓
↖	↑		
15	609		

Base PM Peak 2032		Port Douglas Road	
10	↗	20	660
15	↘	↖	↓
↖	↑		
30	488		

Base Weekend 2032		Port Douglas Road	
20	↗	10	723
30	↘	↖	↓
↖	↑		
15	731		

G. SIDRA ASSESSMENT RESULTS

G

MOVEMENT SUMMARY

▽ Site: 101 [Fairmont Resort Access - PM 2022]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Port Douglas Road												
1	L2	32	2.0	0.017	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	53.5
2	T1	428	2.0	0.223	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach		460	2.0	0.223	0.4	NA	0.0	0.0	0.00	0.04	0.00	59.5
North: Port Douglas Road												
8	T1	579	2.0	0.303	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	21	2.0	0.024	7.7	LOS A	0.1	0.6	0.47	0.66	0.47	51.4
Approach		600	2.0	0.303	0.3	NA	0.1	0.6	0.02	0.02	0.02	59.6
West: Fairmont Resort Access												
10	L2	11	0.0	0.086	7.6	LOS A	0.3	2.0	0.70	0.83	0.70	46.5
12	R2	16	0.0	0.086	21.6	LOS C	0.3	2.0	0.70	0.83	0.70	46.3
Approach		26	0.0	0.086	16.0	LOS C	0.3	2.0	0.70	0.83	0.70	46.4
All Vehicles		1086	2.0	0.303	0.7	NA	0.3	2.0	0.03	0.05	0.03	59.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

▽ Site: 101 [Fairmont Resort Access - Sun 2022]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Port Douglas Road												
1	L2	16	2.0	0.009	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	53.5
2	T1	641	2.0	0.333	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		657	2.0	0.333	0.2	NA	0.0	0.0	0.00	0.01	0.00	59.7
North: Port Douglas Road												
8	T1	634	2.0	0.329	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	11	2.0	0.016	9.3	LOS A	0.1	0.4	0.56	0.72	0.56	50.2
Approach		644	2.0	0.329	0.2	NA	0.1	0.4	0.01	0.01	0.01	59.7
West: Fairmont Resort Access												
10	L2	21	0.0	0.274	11.6	LOS B	0.9	6.5	0.85	0.97	0.96	41.1
12	R2	32	0.0	0.274	36.2	LOS E	0.9	6.5	0.85	0.97	0.96	40.9
Approach		53	0.0	0.274	26.4	LOS D	0.9	6.5	0.85	0.97	0.96	41.0
All Vehicles		1354	1.9	0.333	1.2	NA	0.9	6.5	0.04	0.05	0.04	58.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

▽ Site: 101 [Fairmont Resort Access - PM 2032]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Port Douglas Road												
1	L2	32	2.0	0.017	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	53.5
2	T1	514	2.0	0.267	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		545	2.0	0.267	0.4	NA	0.0	0.0	0.00	0.03	0.00	59.5
North: Port Douglas Road												
8	T1	695	2.0	0.363	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	21	2.0	0.027	8.3	LOS A	0.1	0.7	0.51	0.70	0.51	50.9
Approach		716	2.0	0.363	0.3	NA	0.1	0.7	0.02	0.02	0.02	59.6
West: Fairmont Resort Access												
10	L2	11	0.0	0.128	8.2	LOS A	0.4	2.8	0.80	0.89	0.80	43.1
12	R2	16	0.0	0.128	31.4	LOS D	0.4	2.8	0.80	0.89	0.80	43.0
Approach		26	0.0	0.128	22.1	LOS C	0.4	2.8	0.80	0.89	0.80	43.0
All Vehicles		1287	2.0	0.363	0.8	NA	0.4	2.8	0.02	0.04	0.02	59.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

▽ Site: 101 [Fairmont Resort Access - Sun 2032]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Port Douglas Road												
1	L2	16	2.0	0.009	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	53.5
2	T1	769	2.0	0.400	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		785	2.0	0.400	0.2	NA	0.0	0.0	0.00	0.01	0.00	59.7
North: Port Douglas Road												
8	T1	761	2.0	0.395	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	11	2.0	0.020	10.9	LOS B	0.1	0.5	0.64	0.78	0.64	49.2
Approach		772	2.0	0.395	0.2	NA	0.1	0.5	0.01	0.01	0.01	59.7
West: Fairmont Resort Access												
10	L2	21	0.0	0.486	24.5	LOS C	1.7	11.7	0.93	1.05	1.23	31.6
12	R2	32	0.0	0.486	71.7	LOS F	1.7	11.7	0.93	1.05	1.23	31.6
Approach		53	0.0	0.486	52.8	LOS F	1.7	11.7	0.93	1.05	1.23	31.6
All Vehicles		1609	1.9	0.486	1.9	NA	1.7	11.7	0.03	0.04	0.04	58.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

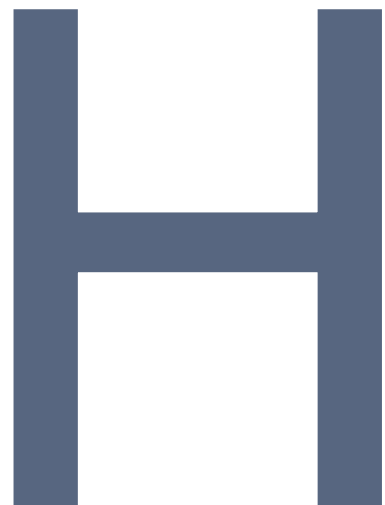
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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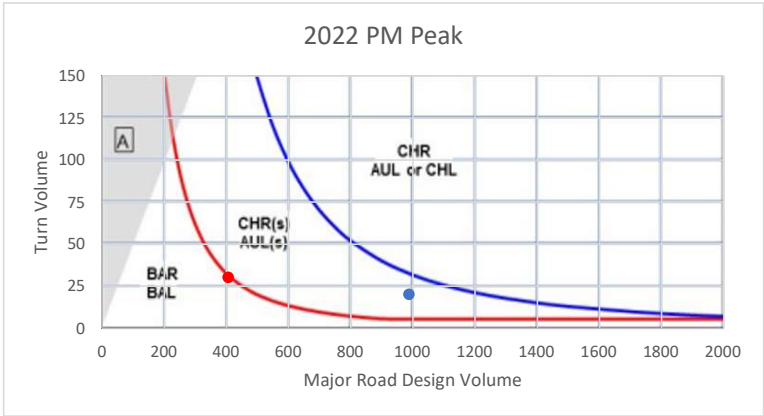
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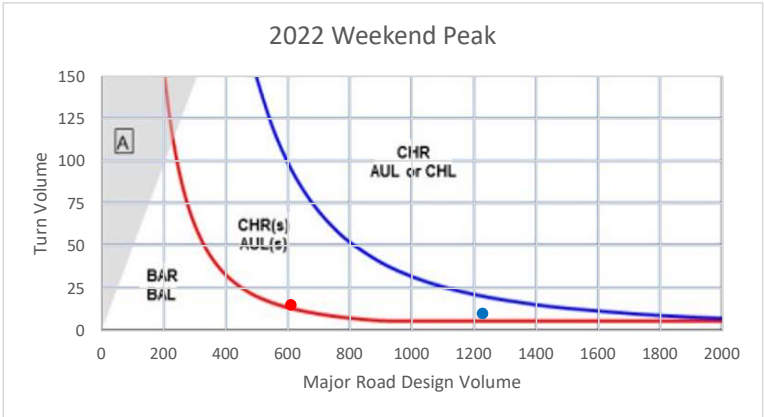
H. TURN WARRANT ASSESSMENT



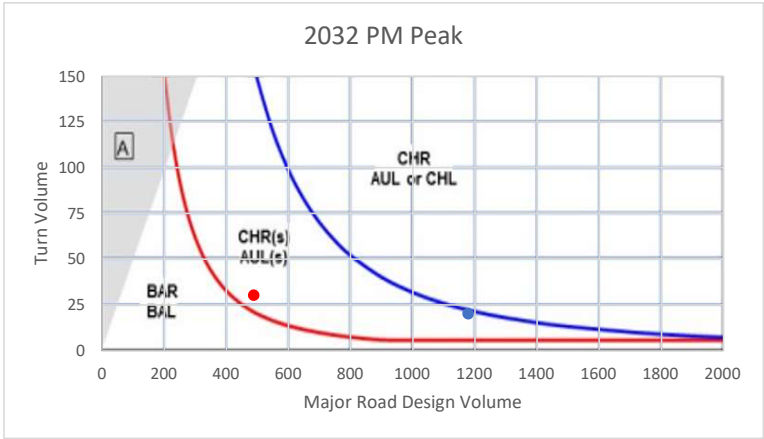
	Left	Right
Ql/r	30	20
Qm	407	987
Turn Treat	BAL	CHR(s)



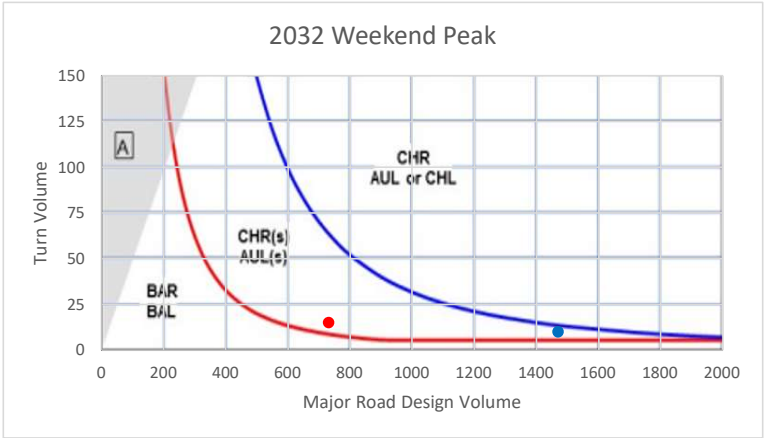
	Left	Right
Ql/r	15	10
Qm	609	1227
Turn Treat	AUL(s)	CHR(s)



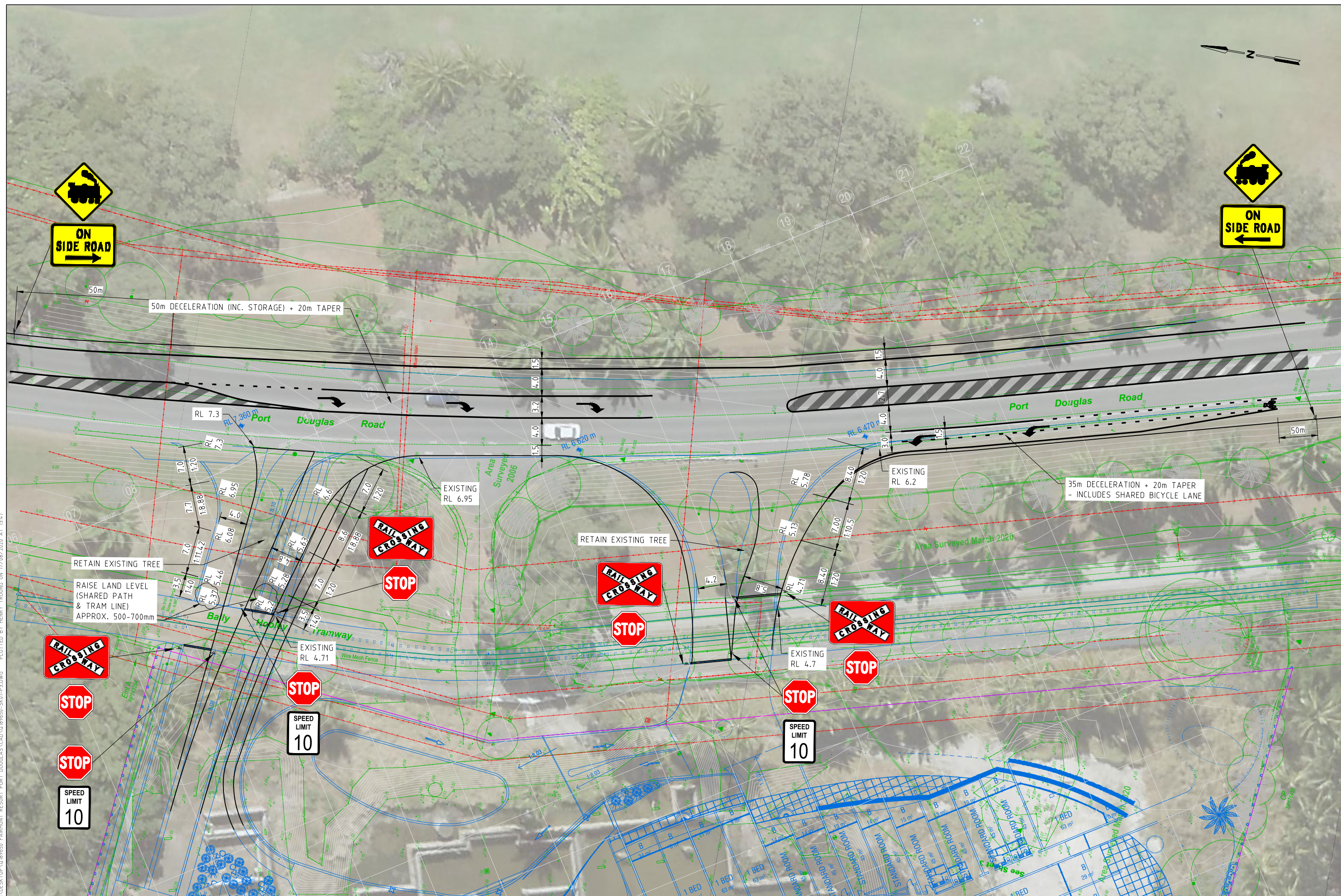
	Left	Right
Ql/r	30	20
Qm	488	1179
Turn Treat	AUL(s)	CHR(s)



	Left	Right
Ql/r	15	10
Qm	731	1469
Turn Treat	AUL(s)	CHR(s)



I. VEHICLE ACCESS CONCEPT PLAN

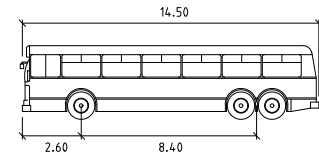


C:\USERS\HENRY.TRUONG\DESKTOP\Q189650 FAIRMONT RESORT PORT DOUGLAS\CAD\Q189650-SK01-P3.DWG PLOTTED BY HENRY TRUONG ON 17/08/2020 AT 13:48

SWEPT PATH KEY

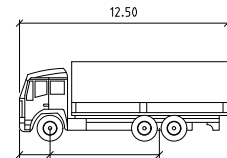
- VEHICLE CENTRE LINE
- - - VEHICLE TYRE PATH
- VEHICLE BODY PATH
- - - 500mm CLEARANCE FROM VEHICLE BODY
- ASSUMED SPEED 10km/h

DESIGN VEHICLES



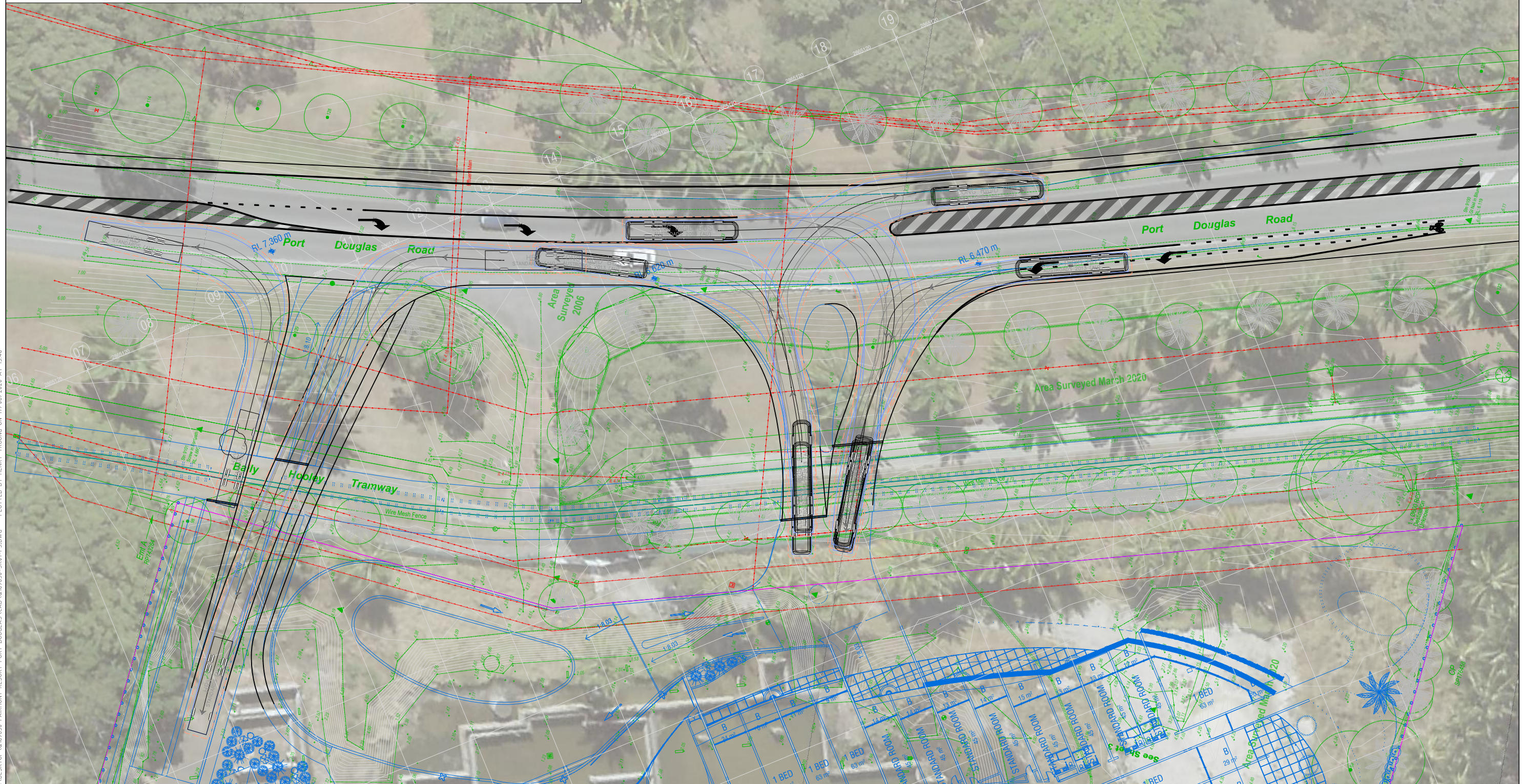
LONG RIGID BUS

Width	2.50
Track	2.50
Lock to Lock Time	6.0
Steering Angle	46.4



HRV (Heavy Rigid Vehicle)

Width	2.50
Track	2.50
Lock to Lock Time	6.0
Steering Angle	35.2



Melbourne 03 9651 9600
Sydney 02 8448 1800
Brisbane 07 3113 5000
Adelaide 08 8334 3600
Perth 08 6169 1000



PRELIMINARY PLAN

FOR DISCUSSION PURPOSES ONLY
SUBJECT TO CHANGE WITHOUT
NOTIFICATION

WARNING

BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE
APPROXIMATE ONLY AND THEIR EXACT POSITION
SHOULD BE PROVEN ON SITE. NO GUARANTEE IS
GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DESIGNED
H.TRUONG

APPROVED BY
T.WILLIAMS

DESIGN CHECK
T.WILLIAMS

DATE ISSUED
17 AUGUST 2020

SCALE
A3 0 2.5 5 10 1:500

CAD FILE NO.
Q189650-SK01-P3.DWG

FAIRMONT RESORT, PORT DOUGLAS
VEHICLE ACCESS CONCEPT PLAN
PORT DOUGLAS ROAD FRONTAGE
SWEPT PATH ASSESSMENT

DRAWING NO. Q189650-SK01-02 SHEET 2 OF 2

ISSUE P3

