

M^CLAREN TRAFFIC ENGINEERING

Address: Shop 7, 720 Old Princes Highway Sutherland NSW 2232

Postal: P.O Box 66 Sutherland NSW 1499

Telephone: +61 2 8355 2440

Fax: +61 2 9521 7199

Web: www.mclarentraffic.com.au

Email: admin@mclarentraffic.com.au

Division of RAMTRANS Australia ABN: 45067491678 RPEQ: 19457

Transport Planning, Traffic Impact Assessments, Road Safety Audits, Expert Witness

18th February 2021

Reference: 200318.01FA

Aliro Group
Level 53
Governor Phillip Tower
1 Farrer Place
Sydney NSW 2000
Attention: David Lousick

SUPPLEMENTARY TRAFFIC INFORMATION REGARDING THE PROPOSED MIXED USE DEVELOPMENT AT 13 ENDEAVOUR ROAD, CARINGBAH

Dear David,

This letter is in response to comments made by Sutherland Shire Council, provided within a letter dated 22nd October 2020 in relation to the proposed Planning Proposal at 13 Endeavour Road, Caringbah. The comments made by Council relevant to traffic and parking are shown below (*italicised*) with M^CLaren Traffic Engineering's (**MTE**) response thereafter.

An estimate of the maximum traffic generation created by the current permissible users on the site compared with the traffic generation created by the permissible uses requested in the Planning Proposal. This should be done in the context of the concept masterplan. The key consideration is whether the additional permitted uses have a greater or lesser traffic impact? What impact does the allocation of permissible floor space to retail, pub function centre and tourist accommodation have on traffic generation and parking demand.

MTE Response: To address the above, the advice will be provided based upon the submitted Masterplan Traffic Report dated 17th of September 2020 prepared M^CLaren Traffic Engineering (Reference: 200318.01FA), referred to as MTE Report hereafter. As such, this letter should be read in conjunction with the MTE Report.

To address the above consideration, redistribution of the proposed masterplan scale to permissible uses will be assessed and compared with the current masterplan scale to determine:

- Whether the additional permitted uses have a greater or lesser traffic impact;
- Traffic generation comparison of permitted uses against the proposed masterplan development;

- Parking demand comparison of permitted uses against the proposed masterplan development.

The permitted land uses on-site are summarised below:

- Warehouse & distribution centres;
- High tech industry;
- Food and beverage (restaurants and cafes);
- Office premises;
- Recreation facility (indoor).

The proposed additional land uses based upon the planning proposal are summarised below:

- Retail, Shops - 4,307m²;
- Tourist and visitor accommodation (Hotel) – 3,624m²;
- Pubs – 2,770m² GFA;
- Function Centre – Part of the Pub with an indicative patron capacity of 100;

To undertake the comparison assessment between permitted uses and non-permitted uses with respect to traffic generation and parking the following will be adopted for simplicity:

- Non-permissible Shops will be assessed under an office rate within the permitted land use scheme;
- Non-permissible Hotel (Tourist and Visitor) will be assessed under an office rate within the permitted land use scheme;
- Non-permissible Pub & Function Centre will be assessed under a restaurant rate within the permitted land use scheme;

The above modifications with consideration to the submitted planning proposal results in the following scale for permissible and non-permissible uses as outlined within **Table 1** and **Table 2** respectively.

TABLE 1: PROPOSED PERMISSIBLE MASTERPLAN SCALE

| Land Use | Masterplan Scale |
|---------------------------------------|---------------------------|
| Industrial | 25,272m ² GFA |
| Ancillary Industrial Office | 7,382m ² GFA |
| Warehouse | 1,824m ² GFA |
| Ancillary Warehouse Office | 3,846m ² GFA |
| Commercial Office & Business Premises | 107,217m ² GFA |
| Food and Beverage ⁽¹⁾ | 3,561m ² GFA |
| Recreation | 860m ² |

Note: 1 – No change to food and beverage scale as the pub was assessed under a food and beverage rate within the planning proposal

TABLE 2: PROPOSED NON-PERMISSIBLE MASTERPLAN SCALE

| Land Use | Masterplan Scale |
|---------------------------------------|---|
| Industrial | 25,272m ² GFA |
| Ancillary Industrial Office | 7,382m ² GFA |
| Warehouse | 1,824m ² GFA |
| Ancillary Warehouse Office | 3,846m ² GFA |
| Commercial Office & Business Premises | 99,286m ² GFA |
| Retail | 4,307m ² GFA |
| Food and Beverage | 791m ² GFA |
| Pub | 2,770m ² GFA |
| Recreation | 860m ² |
| Hotel | 3,624m ² GFA 125 rooms & 20 staff |
| Function Room | 100 patrons included within the Pub footprint |

The comparison assessment between the above permissible and non-permissible uses are outlined in the following sections.

1 Parking Requirements Comparison

1.1 Permissible Masterplan Scale Car Parking Requirements

Reference is made to *Sutherland Shire Council's Development Control Plan 2015 - Chapter 27 – B7 Business Park* which outlines the applicable car parking rates for the proposed permissible scale of the development.

Chapter 27 – Section 9 – Parking

Industrial Premises

1 space per 100m², with a minimum of 2 spaces for each industrial unit.

Any ancillary office component to an industrial development shall provide 1 space per 30m² of gross floor area.

Office and Business Premises

1 space per 45m² GFA

Retail Premises

1 space per 45m² GFA

Warehouse or distributions centres

1 space per 300m²

It should be noted that to provide a conservative assessment, the ancillary office component for warehouse land uses will be assessed as industrial ancillary office space (i.e. 1 space per 30m² GFA). Further, the recreation portion of the site will be considered ancillary to the other uses, such that it does not generate its own parking demand. The parking requirements for the site based upon permissible uses is summarised in **Table 3** below.

It is reiterated that the non-permissible uses within the masterplan have been assessed as office and retail components within the permissible masterplan scheme.

The car parking rates outlined within Council's DCP are deemed appropriate for the subject site, considering the lack of available alternative transport modes, specifically rail facilities. Typically, office car parking rates within close proximity to train facilities attempt to reduce vehicular traffic on the road network and as such allow for a reduced car parking rate between 1 space per 60m² to 1 space per 80m². The subject site does not benefit from close proximity to heavy or light rail high occupancy transport mode facilities and is largely isolated, as such the Council car parking rates are deemed an acceptable representation of actual car parking demand of the site.

TABLE 3: PERMISSIBLE DCP CAR PARKING REQUIREMENTS - MASTERPLAN

| Land Use | Scale | Rate | Parking Required |
|-----------------------------|---------------------------|-----------------------------|------------------|
| Industrial | 25,272m ² GFA | 1 per 100m ² GFA | 252.7 |
| Industrial Ancillary Office | 7,382m ² GFA | 1 per 30m ² GFA | 246 |
| Warehouse | 1,824m ² GFA | 1 per 300m ² GFA | 6 |
| Warehouse Ancillary Office | 3,846m ² GFA | 1 per 30m ² GFA | 128.2 |
| Commercial Office | 107,217m ² GFA | 1 per 45m ² GFA | 2,382.6 |
| Food and Beverage | 3,561m ² GFA | 1 per 45m ² GFA | 79.2 |
| Recreational ⁽¹⁾ | 860m ² | N/A | - |
| Total | - | - | 3095 |

Note: 1 – Recreational uses are assumed to not generate their own car parking demand and are considered ancillary to the other land uses.

As shown above the site is expected to provide **3,095** car parking spaces to comply with Council's car parking requirements for the permissible Masterplan Scale. A reduction in car parking provision may be supported with consideration to shared parking arrangements and an assessment of the temporal variations in peak parking demand of the various uses of the site.

Considering the above land uses, there are no significant land uses with different peak parking demand periods, such that a lower number of car parking spaces could be justified. The only discount that could be supported is the reduction in food and beverage car parking spaces, adopting the assumption that the provision of retail and food and beverage facilities serves the office / industrial components of the site and could be considered ancillary, with the exception to staff car parking demand for the food and beverage land uses.

Adopting a 50% reduction in the car parking requirements for the food and beverage land uses results in a reduction of **40** spaces, reducing to a car parking requirement of **3,055**.

1.2 Non-Permissible Masterplan Scale Car Parking Requirements

Reference is made to *Sutherland Shire Council's Development Control Plan 2015 Chapter 36 – Vehicular Access, Traffic, Parking and Bicycles* which outlines the applicable car parking rates for the additional Non-Permissible car parking requirements for the development.

Chapter 36 – Table 1 – Car Parking Numbers

Hotel or Motel accommodation

1 space per 4 rooms; plus,

1 space per 2 employees

Pubs / Registered Clubs

Refer to the RTA Guidelines for Traffic Generating Developments

Function Centre

Traffic Study

As shown above, there are no parking rates within Council's DCP that relate to Function Centre uses or Pub / Brewery land uses, but Council's DCP refers to the *Guide to Traffic Generating Developments 2002* for pub land uses and requires a traffic study to be undertaken for Function Centres.

The reliance upon the *Guide to Traffic Generating Developments 2002* relates to pubs that were surveyed in 1978, which was before RBT times and as such the data relating to pubs within the *Guide to Traffic Generating Developments 2002* is outdated and not applicable to the subject site, considering its site context. Considering this, MTE has worked on numerous pub developments (seven), which have expanded (not new pubs) there existing premises, with detailed survey data and linear regression analysis undertaken on these pubs to determine car parking provision for the 50th percentile and 85th percentile demand. The 85th percentile parking demand is an appropriate design demand for pubs, due to seasonal fluctuations. Typical demand above the 85th percentile demand for pubs relates to Christmas periods and rare sporting events, such that the 85th percentile will be used as the baseline to determine typical parking provision for pub developments. Based upon MTE's assessment the 85th percentile parking demand for pubs is 6.5 spaces per 100m² GFA.

Note the above rate adopted for pubs does not include car parking demand associated with function centres, but the floor space associated with the function centre will be assessed under the pub rate as the floor area associated with the Function Centre is unknown. Typically Functions Centres demand between 1 space per 3 patrons and 1 space per 4 patrons in attendance (plus parking demand for any additional staff).

The parking requirements for the site based upon the non-permissible uses are summarised in **Table 4**.

TABLE 4: NON-PERMISSIBLE DCP CAR PARKING REQUIREMENTS - MASTERPLAN

| Land Use | Scale | Rate | Parking Required |
|-----------------------------|--------------------------|-------------------------------|--------------------|
| Industrial | 25,272m ² GFA | 1 per 100m ² GFA | 252.7 |
| Industrial Ancillary Office | 7,382m ² GFA | 1 per 30m ² GFA | 246 |
| Warehouse | 1,824m ² GFA | 1 per 300m ² GFA | 6 |
| Warehouse Ancillary Office | 3,846m ² GFA | 1 per 30m ² GFA | 128.2 |
| Commercial Office | 99,286m ² GFA | 1 per 45m ² GFA | 2206.4 |
| Retail | 4,307m ² GFA | 1 per 45m ² GFA | 95.7 |
| Food and Beverage | 791m ² GFA | 1 per 45m ² GFA | 17.5 |
| Pub | 2,770m ² GFA | 6.5 per 100m ² GFA | 180 ⁽³⁾ |
| Hotel | 125 rooms | 1 per 4 rooms | 31.3 |
| | 20 staff ⁽¹⁾ | 1 per 2 staff | 10 |
| Recreational ⁽⁴⁾ | 860m ² | N/A | - |
| Total | - | - | 3174 |

Note: 1 – Staff numbers are estimated / assumed and will be required to be determined in detail during the DA stage.

2 – Adopted patron capacity within the Hotel portion of the site.

3 – Includes parking demand associated with function centre.

4 – Recreational uses are assumed to not generate their own car parking demand and are considered ancillary to the other land uses.

As shown above the site is expected to provide **3,174** car parking spaces to comply with Council's car parking requirements for the permissible Masterplan Scale. A reduction in car parking provision may be supported with consideration to shared parking arrangements and an assessment of the temporal variations in peak parking demand of the various uses of the site.

Considering the above land uses, the only reduction in parking that could be supported is the reduction in retail, pub, and food and beverage car parking spaces, consistently adopting the assumption that the provision of retail, pub and food and beverage facilities serves the office / industrial components of the site and could be considered ancillary, with the exception to staff car parking demand for the retail, pub and food and beverage land uses.

Adopting a 50% reduction in the car parking requirements for the retail, pub and food and beverage land uses results in a reduction of **147** spaces, reducing to a car parking requirement of **3,027**. This peak parking demand would be required during weekday periods and Friday afternoon when considering peak demand periods. During weekend periods the site as a whole would require significantly less parking due to the office and industrial component of the site unlikely to be operating at full capacity. On the weekend the demand for the pub would be the full 180 car parking spaces, but would be capable of relying upon parking spaces associated with other land uses of the site that do not operate on weekends, such as the office and industrial premises.

Based upon the above and **Section 1.1, Table 5** below summarises the car parking requirements of the permissible and non-permissible users under a standalone assessment and with consideration to ancillary and shared car parking arrangements for the site.

TABLE 5: SUMMARY COMPARISON OF PARKING DEMAND FOR PERMISSIBLE USES VS NON-PERMISSIBLE USES

| Land Use | DCP Car parking Demand / MTE Pub Rate | DCP Car parking Demand / MTE Pub Rate When Considering Ancillary Uses and Shared Parking Demand |
|----------------------|---------------------------------------|---|
| Permissible Uses | 3,095 | 3,055 |
| Non-Permissible Uses | 3,174 | 3,027 |

As shown above, when assessing each development as a standalone development the Permissible scale requires the provision of **3,095** car parking spaces, whilst the non-permissible uses require the provision of **3,174** car parking spaces. When considering the ancillary and shared car parking demand of the site the peak parking demand of the permissible users is **3,055** car parking spaces, whilst the non-permissible uses are **3,027**.

Based upon the above, the non-permissible uses would result in a lesser car parking requirement for the subject site when considering shared parking demand arrangements and ancillary uses.

2 Traffic Generation Comparison

2.1 Permissible Masterplan Scale Traffic Generation

Traffic generation rates for the relevant land uses are provided in the *Roads and Maritime Services (RMS) Guide to Traffic Generating Developments (2002)* and recent supplements and are as follows:

RMS Guide

3.4.3 Hotels - tourist.

NSW based data is not available.

3.4.1 Motels.

Evening peak hour vehicle trips = 0.4 per unit.

3.5 Office and commercial.

Evening peak hour vehicle trips = 2 per 100m² gross floor area

3.6.1 Shopping centres.

$V(P) = 56 A(SS)$ vehicle trips per 1000m² GLFA

Where: A(SS): Specialty shops, secondary retail GLFA

3.7.2 Restaurants.

Evening peak hour vehicle trips = 5 per 100m² gross floor area.

3.10.1 Factories

Evening peak hour vehicle trips = 1 per 100m² gross floor area

3.10.2 Warehouses

Morning peak hour vehicle trips = 0.5 per 100m² gross floor area

TDT 2013/04a

Office blocks

Morning peak hour vehicle trips = 1.6 per 100m² gross floor area.

Evening peak hour vehicle trips = 1.2 per 100m² gross floor area.

As noted in **Section 1.2** the *RMS Guide to Traffic Generating Developments* is outdated with respect to pub parking and traffic generation data. As such, the adopted traffic generation rates for pubs will be based upon a comparison of the 85th percentile parking demand (6.5 spaces per 100m²) to the RMS parking of 26.4 spaces per 100m² and the RMS traffic generation rate of 10 vehicles/hr/ 100m² reduced accordingly. It should be noted that the RMS traffic generation rate indicates 10 vehicles, and does not state trips, hence MTE adopts the RMS pub rate as 20 vehicle **trips** / hr / 100m². Relying upon the above results in a peak hour traffic generation of 5 vehicle trips per 100m² for standalone pubs, which will be reduced by a further 50% to account for ancillary considerations during the PM peak hour period.

The assumptions within the MTE Report will be retained in regards to traffic generation rates for the subject site which are reproduced below, with additional assumptions provided for consideration to the pub operation:

- As no tourist hotel rate is provided in the RMS Guide, the motel rate has been applied as a worst case. A tourist hotel is likely to generate less traffic and is to be designed for tourist coaches and taxi areas within any Porte Cochere.
- The AM and PM rate for hotel uses is assumed to be equivalent;
- The RMS office rate has been applied as the proposed site has limited access to public transport services;
- The RMS office rate has been applied to the factory and warehouse ancillary office areas;
- Half of the office rate has been adopted for the retail portion of the site to consider a lower density of staff and ancillary use of the development;
- The AM and PM rate for factory uses is assumed to be equivalent;
- The AM and PM rate for warehouse uses is assumed to be equivalent;
- The pub does not operate during the AM peak commuter period;
- The function centre traffic generation is contained within the pub traffic generation rate;
- The recreational use is considered ancillary to the development and does not generate additional vehicle traffic.

It is further noted that the research and surveys behind the RMS traffic generation rates for business parks are predominantly warehouse and factory use with ancillary office areas and not primarily office space as per the proposed masterplan scale. As such, the business park rates have not been applied to the proposed development, as they are deemed to not be applicable.

The above assumptions in addition to the applicable RMS Guide traffic generation rates have been applied to the permissible and non-permissible Masterplan scale with expected traffic generation shown in **Table 6** and **7** below respectively and a summary comparison in **Table 8**.

TABLE 6: ESTIMATED PERMISSIBLE TRAFFIC GENERATION – MASTERPLAN

| Use | Scale | Peak Period | Generation Rate | Trips | Split |
|-----------------------------|------------------------------|-------------|---------------------------|---------------------|--------------------------|
| Industrial | 25,272m ² GFA | AM | 1 per 100m ² | 253 ⁽¹⁾ | 202 in, 51 out |
| | | PM | | | 51 in, 202 out |
| Industrial Ancillary Office | 7,382m ² GFA | AM | 2 per 100m ² | 148 ⁽¹⁾ | 118 in, 30 out |
| | | PM | | | 30 in, 118 out |
| Warehouse | 1,824m ² GFA | AM | 0.5 per 100m ² | 9 ⁽¹⁾ | 7 in, 2 out |
| | | PM | | | 2 in, 7 out |
| Warehouse Ancillary Office | 3,846m ² GFA | AM | 2 per 100m ² | 77 ⁽¹⁾ | 62 in, 15 out |
| | | PM | | | 15 in, 62 out |
| Commercial Office | 107,217m ² GFA | AM | 2 per 100m ² | 2144 ⁽¹⁾ | 1,715 in, 429 out |
| | | PM | | | 429 in, 1,715 out |
| Food and Beverage | 3,561m ² GFA | AM | 1 per 100m ² | 36 ⁽¹⁾ | 29 in, 7 out |
| | | PM | 1 per 100m ² | | 7 in, 29 out |
| Recreational | 860m ² | N/A | N/A | - | - |
| TOTAL | - | AM | - | 2,667 | 2,133 in, 534 out |
| | | PM | | 2,667 | 534 in, 2,133 out |

Note: (1) Assumes 80% inbound, 20% outbound during AM peak: Vice versa for PM peak.

(2) Assumes 50% inbound, 50% outbound during AM peak and PM peak hour period

TABLE 7: ESTIMATED NON-PERMISSIBLE TRAFFIC GENERATION – MASTERPLAN

| Use | Scale | Peak Period | Generation Rate | Trips | Split |
|-----------------------------|--------------------------|-------------|---------------------------|---------------------|--------------------------|
| Industrial | 25,272m ² GFA | AM | 1 per 100m ² | 253 ⁽¹⁾ | 202 in, 51 out |
| | | PM | | | 51 in, 202 out |
| Industrial Ancillary Office | 7,382m ² GFA | AM | 2 per 100m ² | 148 ⁽¹⁾ | 118 in, 30 out |
| | | PM | | | 30 in, 118 out |
| Warehouse | 1,824m ² GFA | AM | 0.5 per 100m ² | 9 ⁽¹⁾ | 7 in, 2 out |
| | | PM | | | 2 in, 7 out |
| Warehouse Ancillary Office | 3,846m ² GFA | AM | 2 per 100m ² | 77 ⁽¹⁾ | 62 in, 15 out |
| | | PM | | | 15 in, 62 out |
| Commercial Office | 99,286m ² GFA | AM | 2 per 100m ² | 1986 ⁽¹⁾ | 1589 in, 397 out |
| | | PM | | | 397 in, 1589 out |
| Retail | 4,307m ² GFA | AM | 1 per 100m ² | 43 ⁽¹⁾ | 35 in, 8 out |
| | | PM | 1 per 100m ² | | 8 in, 35 out |
| Pub | 2,770m ² GFA | AM | N/A | N/A | N/A |
| | | PM | 2.5 per 100m ² | 69 ⁽²⁾ | 35 in, 34 out |
| Food and Beverage | 791m ² GFA | AM | 1 per 100m ² | 8 ⁽¹⁾ | 6 in, 2 out |
| | | PM | 1 per 100m ² | | 2 in, 6 out |
| Hotel | 125 rooms | AM | 0.4 per room | 50 ⁽²⁾ | 25 in, 25 out |
| | | PM | | | 25 in, 25 out |
| Recreational | 860m ² | N/A | N/A | - | - |
| TOTAL | - | AM | - | 2,574 | 2,044 in, 530 out |
| | | PM | | 2,643 | 565 in, 2,078 out |

Note: (1) Assumes 80% inbound, 20% outbound during AM peak: Vice versa for PM peak.

(2) Assumes 50% inbound, 50% outbound during AM peak and PM peak hour period

TABLE 8: SUMMARY COMPARISON OF PEAK HOUR TRAFFIC GENERATION FOR PERMISSIBLE USES VS NON-PERMISSIBLE USES

| Land Use | Peak Period | Peak Hour Traffic Generation Rates | Directional Split |
|----------------------|-------------|------------------------------------|-------------------|
| Permissible Uses | AM | 2,667 | 2,133 in, 534 out |
| | PM | | 534 in, 2,133 out |
| Non-Permissible Uses | AM | 2,574 | 2,044 in, 530 out |
| | PM | 2,643 | 565 in, 2,078 out |

As shown above, the permissible scale of the masterplan development is expected to generate a peak hour traffic generation of 2,667 vehicle trips during the AM (2,133 in, 534 out) and PM (534 in, 2,133 out) peak hour periods. The non-permissible scale of the masterplan is expected to generate 2,574 vehicle trips during the AM (2,044 in, 530) out peak hour period and 2,643 vehicle trips during the PM (565 in, 2,078 out) peak hour periods.

Based upon the above, the non-permissible uses would result in a lesser traffic impact compared to the permissible uses due to the lower peak hour traffic generation during both the AM and PM peak hour periods.

3 Timing of Infrastructure Works

Council comments in relation to the timing of road infrastructure works is shown below, with a response provided thereafter.

The concept masterplan indicates that signalisation of 3 intersections is ultimately required (Scenario 4). As the development will be staged, what is the tipping points(s) for signalisation of these intersections? Does the reuse of the existing buildings require signalisation of one or more intersections? What assurance can be given to Council that signalisation will be carried out as development occurs?

MTE Response: An assessment has been undertaken based upon the staging of the proposed development. The detailed assessment relating to timing of the development is provided in the following subsection, with a summary provided below:

- Prior to Any Stage:
 - The intersection of Endeavour Road / Captain Cook Drive is required to be temporarily upgraded prior to any occupation due to the existing failing intersection under the existing traffic conditions plus the Sharks Stage 3 & 4 development.
- Prior to Stage 3:
 - The intersection of Captain Cook Drive / Gannons Road is to be upgraded to the masterplan geometry prior to occupation of Stage 3.
- Prior to Stage 5:
 - The intersection of Endeavour Road / Captain Cook Drive, plus the newly proposed intersection at Endeavour Road / Captain Cook Drive are to be constructed prior to occupation of Stage 5.

As part of any future development on the site, the traffic impacts as part of the proposed development will have to be acceptable and as such consultation with both Council and TfNSW would have to be completed either during the Planning Proposal process or during the development application stage to ensure that signalisation of intersections will occur. It should be noted that for the development traffic impacts to be acceptable, road infrastructure works are required and without these infrastructure works the impact of the proposed development would be unacceptable and as such the development would not be capable of being approved.

The existing site has an estimated traffic generation of 558 vehicle trips based upon the Masterplan Traffic Report dated 17th of September 2020 prepared *McLaren Traffic Engineering*. The redevelopment of the site should not be fully responsible for all road infrastructure upgrades. The subject site should be responsible for any road infrastructure works, above the existing occupied scale traffic generation. As such, the recommended interim upgrade to the intersection of Endeavour Road / Captain Cook Drive should not be the responsibility of the site considering it is failing in existing conditions.

Further, as part of the Sharks redevelopment the intersection of Endeavour Road / Captain Cook Drive was never assessed, with the Sharks development pushing the operation of Endeavour Road

/ Captain Cook Drive well above its operating capacity when considering the existing approved operation of the subject site.

3.1 Assessment of Infrastructure Works

Based upon the modelling undertaken to date the following are relevant to note:

- The intersection of Endeavour Road / Captain Cook Drive is nearing its operating capacity during existing conditions, specifically the following:
 - Right turn movements from Captain Cook Drive into Endeavour Road during the AM peak hour period, with the observed existing operation already overflowing outside the length of the right turn lane (95th percentile queue of 88m based upon modelling results);
 - Right turn movements from Endeavour Road onto Captain Cook Drive during the PM peak hour period is operating at Level of Service “F”, with a degree of saturation of 0.85 indicating this movement is approaching its operating capacity.
- The intersection of Endeavour Road / Captain Cook Drive when modelled under the existing traffic conditions plus the approved Sharks Stage 3 & 4 development is at capacity or exceeding its operating capacity with the following relevant to note:
 - Right turn movements from Captain Cook Drive into Endeavour Road during the AM peak hour period is at capacity, with a Level of Service D for the right turn movement. The operation of this right turn movement will significantly impact through vehicle traffic along Captain Cook Drive due to the resultant 95th percentile queue of 154m;
 - Right turn movements from Endeavour Road onto Captain Cook Drive during the PM peak hour period is exceeding its operating capacity with an degree of saturation exceeding 1 and also an average delay of 180 seconds for vehicles to turn out of Endeavour Road.

Based upon the above results, regardless of future development on the subject site it is clear the intersection of Endeavour Road / Captain Cook Drive will be exceeding its operating capacity when considering the full Sharks development. If no infrastructure upgrade is completed (or turning movements banned) at the intersection of Endeavour Road / Captain Cook Drive the following is likely to occur:

- During the AM peak hour period, the right turn lane into Endeavour Road from Captain Cook Drive will overflow, resulting upon impacts to through traffic and affect the traffic flow efficiency of Captain Cook Drive;
- During the PM peak hour period, right turns onto Captain Cook Drive from Endeavour Road will be difficult, resulting in the likelihood of displaced vehicle trips to other intersection to turn right onto Captain Cook Drive, such as Cawarra Road or vehicles will accept a reduced gap acceptance, thereby increasing road safety concerns for right turning traffic out of Endeavour Road. Alternatively, some vehicles may choose to turn left onto Captain Cook Drive from Endeavour Road and use the roundabout to undertake a U-turn to head westbound along Captain Cook Drive.

Based upon the above, assuming that the intersection of Endeavour Road / Captain Cook Drive will not be allowed to further deteriorate as a result of the subject development, the intersection of Endeavour Road / Captain Cook Drive would have to be upgraded prior to occupation of any

buildings. It should be noted that any occupation of buildings will increase the following movements at the intersection of Endeavour Road / Captain Cook Drive:

- Increases to the right turn movement out of Endeavour Road during the PM peak hour period.
- Increases to through traffic (westbound and eastbound) during both the AM and PM peak hour period, reducing the number of gaps within the traffic stream.

The intersection of Endeavour Road / Captain Cook Drive would have to be upgraded to a signalised intersection, with a interim design, that is the intersection would still have to maintain right turns into and out of Endeavour Road under a signalised intersection arrangement. The likely interim design for a signalised intersection is shown below in **Figure 1**:

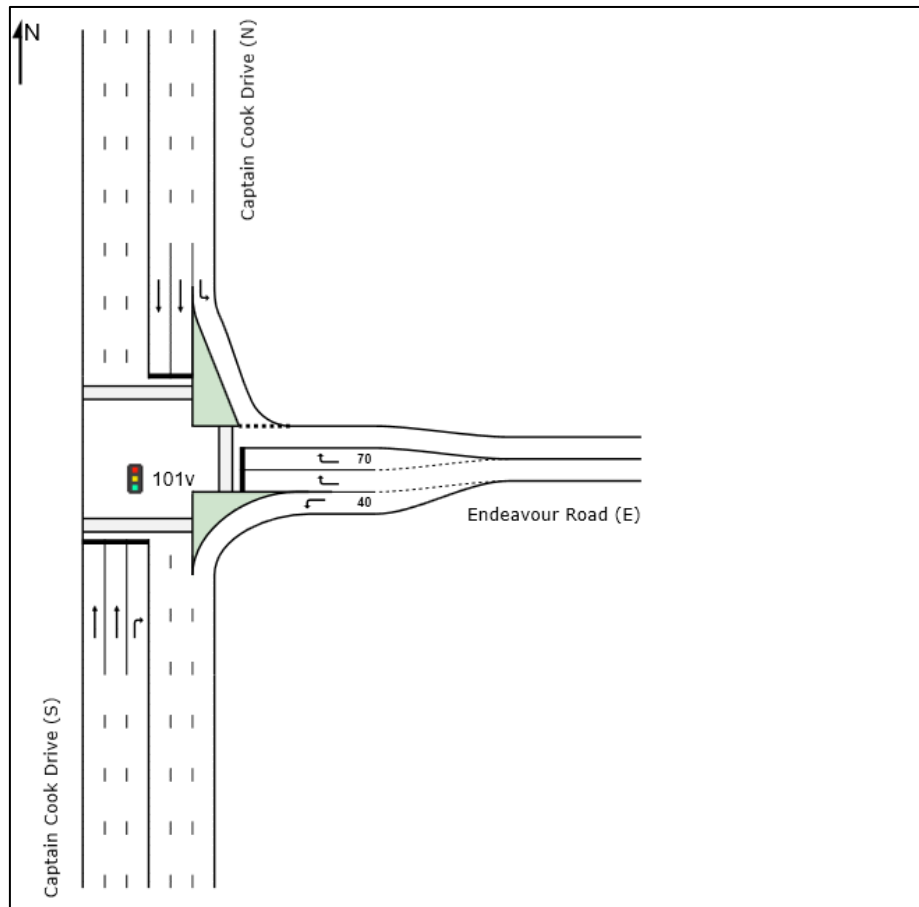


FIGURE 1: CAPTAIN COOK DRIVE / ENDEAVOUR ROAD INTERIM SIGNALISED INTERSECTION PRIOR TO ANY OCCUPATION

Based upon the above, the SIDRA model for the operation of the interim signalised intersection of Endeavour Road / Captain Cook Drive is shown in **Table 9** below, with detailed SIDRA outputs provided in **Annexure A** for reference.

TABLE 9: EXISTING INTERSECTION PERFORMANCES (SIDRA INTERSECTION 8.0)

| Intersection | Peak Hour | Degree of Saturation ⁽¹⁾ | Average Delay ⁽²⁾⁽⁵⁾ (sec/vehicle) | Level of Service ⁽³⁾⁽⁴⁾ | Control Type | Worst Movement |
|---|-----------|-------------------------------------|--|------------------------------------|-----------------------|--------------------------------|
| EXISTING PERFORMANCE + SHARKS STAGE 3 & 4 | | | | | | |
| Captain Cook Drive / Endeavour Road | AM | 0.95 | 15.8 (Worst: 47.3) | N/A (Worst: D) | Give Way (Seagull) | RT from Captain Cook Drive (S) |
| | PM | 1.01 | 19.2 (Worst: >70) | N/A (Worst: F) | | RT from Endeavour Road (E) |
| EXISTING PERFORMANCE + SHARKS STAGE 3 & 4 | | | | | | |
| Captain Cook Drive / Endeavour Road | AM | 0.75 | 20 | B | Signalised | N/A |
| | PM | 0.55 | 14.3 | B | | N/A |

NOTES:

- (1) Degree of Saturation is the ratio of demand to capacity for the most disadvantaged movement.
- (2) Average delay is the delay experienced on average by all vehicles. The value in brackets represents the delay to the most disadvantaged movement.
- (3) Level of Service is a qualitative measure of performance describing operational conditions. There are six levels of service, designated from A to F, with A representing the best operational condition and level of service F the worst. The LoS of the intersection is shown in bold, and the LoS of the most disadvantaged movement is shown in brackets.
- (4) Intersection LOS and Major Road Approach LoS are not applicable (N/A) for two-way sign control since the average delays is not a good LOS measure due to zero delays associated with major road movements
- (5) Average delay of seagull intersection (Captain Cook Drive / Endeavour Road) is based upon Stage 1 only.

If the intersection of Captain Cook Drive / Endeavour Road is temporarily upgraded to the above intersection, this will assist in delaying the upgrade to the intersection of Gannons Road / Captain Cook Drive, by displacing right turning traffic onto Captain Cook Drive from Gannons Road to Endeavour Road. Considering this, an assessment of the development under the following stages will be assessed to determine the timing for the next road infrastructure upgrade:

- Stage 1 – Building L1;
- Stage 2 – Building D, E1, J1, J2;
- Stage 3 – Building H1, H2, H3;
- Stage 4 – Building F1, G1;
- Stage 5 – Building C1, K1, K2;
- Stage 6 – A1, B1.

The scale of each building of the development is shown in **Annexure B** for reference. It should be noted that based upon existing intersection traffic modelling completed to date within the MTE Report, the intersection of Gannons Road / Captain Cook Drive was capable of operating under the existing approved scale plus Stage 3 and 4 of the Sharks development, as such Stage 1 will not be modelled.

The estimated traffic generation of Stage 1 and 2 is shown in **Table 10** below.

TABLE 10: STAGE 1 & 2 ESTIMATED TRAFFIC GENERATION – MASTERPLAN

| Use | Scale | Peak Period | Generation Rate | Trips | Split |
|-----------------------------|-----------------------------|-------------|---------------------------|--------------------|------------------------|
| Industrial | 25,272m ² GFA | AM | 1 per 100m ² | 253 ⁽¹⁾ | 202 in, 51 out |
| | | PM | | | 51 in, 202 out |
| Industrial Ancillary Office | 7,382m ² GFA | AM | 2 per 100m ² | 148 ⁽¹⁾ | 118 in, 30 out |
| | | PM | | | 30 in, 118 out |
| Warehouse Ancillary Office | 3,246m ² GFA | AM | 2 per 100m ² | 65 ⁽¹⁾ | 54 in, 11 out |
| | | PM | | | 11 in, 54 out |
| Commercial Office | 15,394m ² GFA | AM | 2 per 100m ² | 308 ⁽¹⁾ | 248 in, 60 out |
| | | PM | | | 60 in, 248 out |
| Pub | 2,770m ² GFA | AM | N/A | N/A | N/A |
| | | PM | 2.5 per 100m ² | 69 ⁽²⁾ | 35 in, 34 out |
| TOTAL | - | AM | - | 774 | 622 in, 152 out |
| | | PM | | 843 | 187 in, 656 out |

Note: (1) Assumes 80% inbound, 20% outbound during AM peak: Vice versa for PM peak.

(2) Assumes 50% inbound, 50% outbound during AM peak and PM peak hour period

Based upon the above traffic generation and the trip distribution as shown in **Annexure C** for reference, which has been modified to account for the more attractive route via Endeavour Road / Captain Cook Drive, the SIDRA results are summarised in **Table 11** below, with detailed SIDRA results provided in **Annexure D** for reference.

TABLE 11: INTERSECTION PERFORMANCES (SIDRA INTERSECTION 8.0)

| Intersection | Peak Hour | Degree of Saturation ⁽¹⁾ | Average Delay ⁽²⁾ (sec/vehicle) | Level of Service ⁽³⁾⁽⁴⁾ | Control Type | Worst Movement |
|--|-----------|-------------------------------------|---|------------------------------------|--------------|------------------------------------|
| EXISTING PERFORMANCE + SHARKS STAGE 3 & 4 | | | | | | |
| Gannons Road / Captain Cook Drive | AM | 0.74 | 8.8 (Worst: 18.7) | A (Worst: B) | Roundabout | U-Turn from Captain Cook Drive (E) |
| | PM | 0.75 | 9.4 (Worst: 19.2) | A (Worst: B) | | |
| Captain Cook Drive / Endeavour Road | AM | 0.75 | 20 | B | Signalised | N/A |
| | PM | 0.68 | 17.2 | B | | N/A |
| EXISTING PERFORMANCE + SHARKS STAGE 3 & 4 + STAGE 1, & 2 Development | | | | | | |
| Gannons Road / Captain Cook Drive | AM | 0.83 | 11.3 (Worst: 22.6) | A (Worst: B) | Roundabout | U-Turn from Captain Cook Drive (E) |
| | PM | 0.85 | 18 (Worst: 49.7) | B (Worst: D) | | RT from Site Access (N) |
| Captain Cook Drive / Endeavour Road | AM | 0.81 | 22 | B | Signalised | N/A |
| | PM | 0.7 | 19.1 | B | | N/A |

NOTES:

- (1) Degree of Saturation is the ratio of demand to capacity for the most disadvantaged movement.
- (2) Average delay is the delay experienced on average by all vehicles. The value in brackets represents the delay to the most disadvantaged movement.
- (3) Level of Service is a qualitative measure of performance describing operational conditions. There are six levels of service, designated from A to F, with A representing the best operational condition and level of service F the worst. The LoS of the intersection is shown in bold, and the LoS of the most disadvantaged movement is shown in brackets.
- (4) Intersection LOS and Major Road Approach LoS are not applicable (N/A) for two-way sign control since the average delays is not a good LOS measure due to zero delays associated with major road movements

As shown above, the intersection of Gannons Road / Captain Cook Drive is expected to operate at LoS “A” in the AM and LoS “B” in the PM peak hour period. Whilst the interim signalised intersection of Captain Cook Drive / Endeavour Road is expected to operate at LoS “B”. This indicates acceptable delays and spare capacity for both intersections. Hence, no further infrastructure upgrade is required prior to the completion of Stage 1 & 2.

The estimated traffic generation of Stage 1, 2 and 3 is shown in **Table 12** below.

TABLE 12: STAGE 1, 2 & 3 ESTIMATED TRAFFIC GENERATION – MASTERPLAN

| Use | Scale | Peak Period | Generation Rate | Trips | Split |
|-----------------------------|-----------------------------|-------------|---------------------------|--------------------|------------------------|
| Industrial | 25,272m ² GFA | AM | 1 per 100m ² | 253 ⁽¹⁾ | 202 in, 51 out |
| | | PM | | | 51 in, 202 out |
| Industrial Ancillary Office | 7,382m ² GFA | AM | 2 per 100m ² | 148 ⁽¹⁾ | 118 in, 30 out |
| | | PM | | | 30 in, 118 out |
| Warehouse Ancillary Office | 3,246m ² GFA | AM | 2 per 100m ² | 65 ⁽¹⁾ | 54 in, 11 out |
| | | PM | | | 11 in, 54 out |
| Commercial Office | 24,135m ² GFA | AM | 2 per 100m ² | 483 ⁽¹⁾ | 387 in, 96 out |
| | | PM | | | 96 in, 387 out |
| Retail | 2,311m ² GFA | AM | 1 per 100m ² | 23 ⁽¹⁾ | 18 in, 5 out |
| | | PM | 1 per 100m ² | | 5 in, 18 out |
| Pub | 2,770m ² GFA | AM | N/A | N/A | N/A |
| | | PM | 2.5 per 100m ² | 69 ⁽²⁾ | 35 in, 34 out |
| Hotel | 125 rooms | AM | 0.4 per room | 50 ⁽²⁾ | 25 in, 25 out |
| | | PM | | | 25 in, 25 out |
| TOTAL | - | AM | - | 1,022 | 804 in, 218 out |
| | | PM | | 1,091 | 253 in, 838 out |

Note: (1) Assumes 80% inbound, 20% outbound during AM peak: Vice versa for PM peak.

(2) Assumes 50% inbound, 50% outbound during AM peak and PM peak hour period

Based upon the above traffic generation and the trip distribution as shown in **Annexure C** for reference, due to the upgraded intersection of Endeavour Road / Captain Cook Drive, the SIDRA results are reproduced in **Table 13** below, with detailed SIDRA results provided in **Annexure D** for reference.

TABLE 13: INTERSECTION PERFORMANCES (SIDRA INTERSECTION 8.0)

| Intersection | Peak Hour | Degree of Saturation ⁽¹⁾ | Average Delay ⁽²⁾ (sec/vehicle) | Level of Service ⁽³⁾⁽⁴⁾ | Control Type | Worst Movement |
|--|-----------|-------------------------------------|---|------------------------------------|--------------|------------------------------------|
| EXISTING PERFORMANCE + SHARKS STAGE 3 & 4 | | | | | | |
| Gannons Road / Captain Cook Drive | AM | 0.74 | 8.8 (Worst: 18.7) | A (Worst: B) | Roundabout | U-Turn from Captain Cook Drive (E) |
| | PM | 0.75 | 9.4 (Worst: 19.2) | A (Worst: B) | | |
| Captain Cook Drive / Endeavour Road | AM | 0.75 | 20 | B | Signalised | N/A |
| | PM | 0.68 | 17.2 | B | | N/A |
| EXISTING PERFORMANCE + SHARKS STAGE 3 & 4 + STAGE 1, 2 & 3 Development | | | | | | |
| Gannons Road / Captain Cook Drive | AM | 0.86 | 12.6 (Worst: 24.6) | A (Worst: B) | Roundabout | U-Turn from Captain Cook Drive (E) |
| | PM | 1.093 | 39.8 (Worst: 245) | C (Worst: F) | | RT from Site Access (N) |
| Captain Cook Drive / Endeavour Road | AM | 0.83 | 22.8 | B | Signalised | N/A |
| | PM | 0.77 | 20 | B | | N/A |

NOTES:

- (1) Degree of Saturation is the ratio of demand to capacity for the most disadvantaged movement.
- (2) Average delay is the delay experienced on average by all vehicles. The value in brackets represents the delay to the most disadvantaged movement.
- (3) Level of Service is a qualitative measure of performance describing operational conditions. There are six levels of service, designated from A to F, with A representing the best operational condition and level of service F the worst. The LoS of the intersection is shown in bold, and the LoS of the most disadvantaged movement is shown in brackets.
- (4) Intersection LOS and Major Road Approach LoS are not applicable (N/A) for two-way sign control since the average delays is not a good LOS measure due to zero delays associated with major road movements

As shown above, the intersection of Gannons Road / Captain Cook Drive has a degree of saturation exceeding 1 during the PM peak hour period, indicating that the intersection is operating over capacity and as such requires an intersection upgrade. This is indicated by an excessive average delay for right turning vehicles from the site access of 245 seconds. Hence based upon the above, the roundabout of Gannons Road / Captain Cook Drive would need to be upgraded prior to the occupation of Stage 3.

The interim signalised intersection of Captain Cook Drive / Endeavour Road is expected to operate at LoS "B". This indicates acceptable delays.

The intersection modelling under the proposed masterplan intersection of Captain Cook Drive / Gannons Road is shown in **Table 14** below, with the detailed SIDRA outputs provided in **Annexure D** for reference, to ensure Stage 1, 2 & 3 of the proposal has acceptable traffic impacts.

TABLE 14: INTERSECTION PERFORMANCES (SIDRA INTERSECTION 8.0)

| Intersection | Peak Hour | Degree of Saturation ⁽¹⁾ | Average Delay ⁽²⁾ (sec/vehicle) | Level of Service ⁽³⁾⁽⁴⁾ | Control Type | Worst Movement |
|--|-----------|-------------------------------------|---|------------------------------------|--------------|------------------------------------|
| EXISTING PERFORMANCE + SHARKS STAGE 3 & 4 | | | | | | |
| Gannons Road / Captain Cook Drive | AM | 0.74 | 8.8 (Worst: 18.7) | A (Worst: B) | Roundabout | U-Turn from Captain Cook Drive (E) |
| | PM | 0.75 | 9.4 (Worst: 19.2) | A (Worst: B) | | |
| EXISTING PERFORMANCE + SHARKS STAGE 3 & 4 + STAGE 1, 2 & 3 Development | | | | | | |
| Gannons Road / Captain Cook Drive | AM | 0.77 | 28.7 | C | Signals | N/A |
| | PM | 0.77 | 30.1 | C | | N/A |

NOTES:

- (1) Degree of Saturation is the ratio of demand to capacity for the most disadvantaged movement.
- (2) Average delay is the delay experienced on average by all vehicles. The value in brackets represents the delay to the most disadvantaged movement.
- (3) Level of Service is a qualitative measure of performance describing operational conditions. There are six levels of service, designated from A to F, with A representing the best operational condition and level of service F the worst. The LoS of the intersection is shown in bold, and the LoS of the most disadvantaged movement is shown in brackets.
- (4) Intersection LOS and Major Road Approach LoS are not applicable (N/A) for two-way sign control since the average delays is not a good LOS measure due to zero delays associated with major road movements

As shown above, the intersection of Gannons Road / Captain Cook Drive is expected to operate at a Level of Service “C” in both the AM and PM peak hour periods. This indicates that Stage 1, 2 and 3 of the proposed development can be accommodated by a interim signalised intersection at Endeavour Road / Captain Cook Drive and the proposed upgrade to Gannons Road / Captain Cook Drive.

The estimated traffic generation of Stage 1, 2, 3 & 4 is shown in **Table 15** below.

TABLE 15: STAGE 1, 2, 3 & 4 ESTIMATED TRAFFIC GENERATION – MASTERPLAN

| Use | Scale | Peak Period | Generation Rate | Trips | Split |
|-----------------------------|-----------------------------|-------------|---------------------------|--------------------|--------------------------|
| Industrial | 25,272m ² GFA | AM | 1 per 100m ² | 253 ⁽¹⁾ | 202 in, 51 out |
| | | PM | | | 51 in, 202 out |
| Industrial Ancillary Office | 7,382m ² GFA | AM | 2 per 100m ² | 148 ⁽¹⁾ | 118 in, 30 out |
| | | PM | | | 30 in, 118 out |
| Warehouse Ancillary Office | 3,246m ² GFA | AM | 2 per 100m ² | 65 ⁽¹⁾ | 54 in, 11 out |
| | | PM | | | 11 in, 54 out |
| Commercial Office | 47,858m ² GFA | AM | 2 per 100m ² | 957 ⁽¹⁾ | 766 in, 191 out |
| | | PM | | | 191 in, 766 out |
| Retail | 4,313m ² GFA | AM | 1 per 100m ² | 43 ⁽¹⁾ | 35 in, 8 out |
| | | PM | 1 per 100m ² | | 8 in, 35 out |
| Pub | 2,770m ² GFA | AM | N/A | N/A | N/A |
| | | PM | 2.5 per 100m ² | 69 ⁽²⁾ | 35 in, 34 out |
| Hotel | 125 rooms | AM | 0.4 per room | 50 ⁽²⁾ | 25 in, 25 out |
| | | PM | | | 25 in, 25 out |
| TOTAL | - | AM | - | 1,516 | 1,200 in, 316 out |
| | | PM | | 1,585 | 351 in, 1,234 out |

Note: (1) Assumes 80% inbound, 20% outbound during AM peak: Vice versa for PM peak.

(2) Assumes 50% inbound, 50% outbound during AM peak and PM peak hour period

Based upon the above traffic generation and the trip distribution as shown in **Annexure C** for reference, due to the upgraded intersection of Endeavour Road / Captain Cook Drive, the SIDRA results are reproduced in **Table 16** below, with detailed SIDRA results provided in **Annexure D** for reference.

TABLE 16: INTERSECTION PERFORMANCES (SIDRA INTERSECTION 8.0)

| Intersection | Peak Hour | Degree of Saturation ⁽¹⁾ | Average Delay ⁽²⁾ (sec/vehicle) | Level of Service ⁽³⁾⁽⁴⁾ | Control Type | Worst Movement |
|---|-----------|-------------------------------------|---|------------------------------------|--------------|------------------------------------|
| EXISTING PERFORMANCE + SHARKS STAGE 3 & 4 | | | | | | |
| Gannons Road / Captain Cook Drive | AM | 0.74 | 8.8 (Worst: 18.7) | A (Worst: B) | Roundabout | U-Turn from Captain Cook Drive (E) |
| | PM | 0.75 | 9.4 (Worst: 19.2) | A (Worst: B) | | |
| Captain Cook Drive / Endeavour Road | AM | 0.75 | 20 | B | Signalised | N/A |
| | PM | 0.68 | 17.2 | B | | N/A |
| EXISTING PERFORMANCE + SHARKS STAGE 3 & 4 + STAGE 1, 2, 3 & 4 Development | | | | | | |
| Gannons Road / Captain Cook Drive | AM | 0.79 | 30.4 | C | Signalised | N/A |
| | PM | 0.90 | 39 | C | | N/A |
| Captain Cook Drive / Endeavour Road | AM | 0.86 | 24.5 | B | Signalised | N/A |
| | PM | 0.84 | 25.4 | B | | N/A |

NOTES:

- (1) Degree of Saturation is the ratio of demand to capacity for the most disadvantaged movement.
- (2) Average delay is the delay experienced on average by all vehicles. The value in brackets represents the delay to the most disadvantaged movement.
- (3) Level of Service is a qualitative measure of performance describing operational conditions. There are six levels of service, designated from A to F, with A representing the best operational condition and level of service F the worst. The LoS of the intersection is shown in bold, and the LoS of the most disadvantaged movement is shown in brackets.
- (4) Intersection LOS and Major Road Approach LoS are not applicable (N/A) for two-way sign control since the average delays is not a good LOS measure due to zero delays associated with major road movements

As shown above, the intersection of Gannons Road / Captain Cook Drive is operating at Level of Service C indicating acceptable delays. Whilst the intersection of Captain Cook Drive / Endeavour Road is expected to operate at Level of Service “B” indicating acceptable delays. This indicates that Stage 1, 2, 3 and 4 are acceptable with the upgraded Gannons Road / Captain Cook Drive and Endeavour Road / Captain Cook Drive signalised Intersections.

Considering the degree of saturation for both assessed intersection is approaching 1, it is expected that additional development will not be possible unless the masterplan road infrastructure as recommended within the MTE Report is provided.

The estimated traffic generation of Stage 1, 2, 3, 4 & 5 is shown in **Table 17** below.

TABLE 17: STAGE 1, 2, 3, 4 & 5 ESTIMATED TRAFFIC GENERATION – MASTERPLAN

| Use | Scale | Peak Period | Generation Rate | Trips | Split |
|-----------------------------|--------------------------|-------------|---------------------------|----------------------|--------------------------|
| Industrial | 25,272m ² GFA | AM | 1 per 100m ² | 253 ⁽¹⁾ | 202 in, 51 out |
| | | PM | | | 51 in, 202 out |
| Industrial Ancillary Office | 7,382m ² GFA | AM | 2 per 100m ² | 148 ⁽¹⁾ | 118 in, 30 out |
| | | PM | | | 30 in, 118 out |
| Warehouse Ancillary Office | 3,246m ² GFA | AM | 2 per 100m ² | 65 ⁽¹⁾ | 54 in, 11 out |
| | | PM | | | 11 in, 54 out |
| Commercial Office | 75,554m ² GFA | AM | 2 per 100m ² | 1,511 ⁽¹⁾ | 1,209 in, 302 out |
| | | PM | | | 302 in, 1,209 out |
| Retail | 5,104m ² GFA | AM | 1 per 100m ² | 51 ⁽¹⁾ | 41 in, 10 out |
| | | PM | 1 per 100m ² | | 10 in, 41 out |
| Pub | 2,770m ² GFA | AM | N/A | N/A | N/A |
| | | PM | 2.5 per 100m ² | 69 ⁽²⁾ | 35 in, 34 out |
| Hotel | 125 rooms | AM | 0.4 per room | 50 ⁽²⁾ | 25 in, 25 out |
| | | PM | | | 25 in, 25 out |
| TOTAL | - | AM | - | 2,078 | 1,649 in, 429 out |
| | | PM | | 2,147 | 464 in, 1,683 out |

Note: (1) Assumes 80% inbound, 20% outbound during AM peak: Vice versa for PM peak.
 (2) Assumes 50% inbound, 50% outbound during AM peak and PM peak hour period
 (3) for Simplicity the remaining food and beverage land uses have been assessed as a retail rate as the traffic generation rates are the same

Based upon the above traffic generation and the trip distribution as shown in **Annexure C** for reference, due to the upgraded intersection of Endeavour Road / Captain Cook Drive, the SIDRA results are reproduced in **Table 18** below, with detailed SIDRA results provided in **Annexure D** for reference.

TABLE 18: INTERSECTION PERFORMANCES (SIDRA INTERSECTION 8.0)

| Intersection | Peak Hour | Degree of Saturation ⁽¹⁾ | Average Delay ⁽²⁾ (sec/vehicle) | Level of Service ⁽³⁾⁽⁴⁾ | Control Type | Worst Movement |
|--|-----------|-------------------------------------|---|------------------------------------|--------------|------------------------------------|
| EXISTING PERFORMANCE + SHARKS STAGE 3 & 4 | | | | | | |
| Gannons Road / Captain Cook Drive | AM | 0.74 | 8.8 (Worst: 18.7) | A (Worst: B) | Roundabout | U-Turn from Captain Cook Drive (E) |
| | PM | 0.75 | 9.4 (Worst: 19.2) | A (Worst: B) | | |
| Captain Cook Drive / Endeavour Road | AM | 0.75 | 20 | B | Signalised | N/A |
| | PM | 0.68 | 17.2 | B | | N/A |
| EXISTING PERFORMANCE + SHARKS STAGE 3 & 4 + STAGE 1, 2, 3, 4 & 5 Development | | | | | | |
| Gannons Road / Captain Cook Drive | AM | 0.81 | 31.3 | C | Signalised | N/A |
| | PM | 1.01 | 70.7 | F | | N/A |
| Captain Cook Drive / Endeavour Road | AM | 0.87 | 27.3 | B | Signalised | N/A |
| | PM | 0.93 | 36.3 | C | | N/A |

NOTES:

- (5) Degree of Saturation is the ratio of demand to capacity for the most disadvantaged movement.
- (6) Average delay is the delay experienced on average by all vehicles. The value in brackets represents the delay to the most disadvantaged movement.
- (7) Level of Service is a qualitative measure of performance describing operational conditions. There are six levels of service, designated from A to F, with A representing the best operational condition and level of service F the worst. The LoS of the intersection is shown in bold, and the LoS of the most disadvantaged movement is shown in brackets.
- (8) Intersection LOS and Major Road Approach LoS are not applicable (N/A) for two-way sign control since the average delays is not a good LOS measure due to zero delays associated with major road movements

As shown above, the intersection of Gannons Road / Captain Cook Drive is operating at Level of Service “C” during the AM peak hour period and LoS “F” during the PM peak hour period, indicating that a infrastructure upgrade is required, or an alternative more attractive route is required. The intersection of Captain Cook Drive / Endeavour Road is operating at LoS “B” during the AM peak hour period and LoS “C” during the PM peak hour period. Further the right turn movement from Endeavour Road onto Captain Cook Drive is operating at LoS “F” indicating that this movement is at its operating capacity and a further shift of right turn movement from the Gannons Road / Captain Cook Drive would likely result in intersection failure.

Considering the above, prior to occupation of Stage 5, the proposed masterplan road infrastructure would be required to be built.

Please contact the undersigned on 8355 2440 should you require further information or assistance.

Yours faithfully,

McLaren Traffic Engineering



Matthew M^cCarthy
Senior Traffic Engineer
BE Civil Engineering
Masters of Engineering Science
RMS Accredited Level 1 Road Safety Auditor
RMS Accredited Work Zone Traffic Management Plan Designer and Inspector

ANNEXURE A: SIDRA RESULTS

(Sheet 1 of 2)

MOVEMENT SUMMARY

 **Site: 101v [Captain Cook Drive / Endeavour Road - Future AM, Stage 1 + Sharks - Conversion]**

Captain Cook Drive / Endeavour Road

Future Volumes (4/2/20) (Sharks)

Peak 7:30AM - 8:30AM

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles | | | | | | | | | | | | |
|---------------------------------|------|-----------------------------|------|------------------|----------------------|------------------|-----------------------------------|---------------------|--------------|---------------------|------------------|-----------------------|
| Mov ID | Turn | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Captain Cook Drive (S) | | | | | | | | | | | | |
| 2 | T1 | 1537 | 4.9 | 0.536 | 6.2 | LOS A | 17.9 | 130.7 | 0.44 | 0.41 | 0.44 | 54.4 |
| 3 | R2 | 518 | 3.3 | 0.644 | 33.7 | LOS C | 19.1 | 137.5 | 0.84 | 0.98 | 1.19 | 38.0 |
| Approach | | 2055 | 4.5 | 0.644 | 13.2 | LOS A | 19.1 | 137.5 | 0.54 | 0.55 | 0.63 | 49.1 |
| East: Endeavour Road (E) | | | | | | | | | | | | |
| 4 | L2 | 191 | 13.1 | 0.112 | 5.8 | LOS A | 0.0 | 0.0 | 0.00 | 0.52 | 0.00 | 54.5 |
| 6 | R2 | 33 | 21.2 | 0.144 | 55.4 | LOS D | 1.7 | 14.3 | 0.91 | 0.73 | 0.91 | 30.8 |
| Approach | | 224 | 14.3 | 0.144 | 13.1 | LOS A | 1.7 | 14.3 | 0.13 | 0.55 | 0.13 | 49.0 |
| North: Captain Cook Drive (N) | | | | | | | | | | | | |
| 7 | L2 | 189 | 5.3 | 0.202 | 10.8 | LOS A | 2.7 | 20.0 | 0.45 | 0.68 | 0.45 | 50.3 |
| 8 | T1 | 881 | 11.9 | 0.749 | 39.7 | LOS C | 23.4 | 180.2 | 0.96 | 0.85 | 0.97 | 36.3 |
| Approach | | 1070 | 10.7 | 0.749 | 34.6 | LOS C | 23.4 | 180.2 | 0.87 | 0.82 | 0.88 | 38.2 |
| All Vehicles | | 3349 | 7.1 | 0.749 | 20.0 | LOS B | 23.4 | 180.2 | 0.62 | 0.64 | 0.68 | 45.0 |

ANNEXURE A: SIDRA RESULTS

(Sheet 2 of 2)

MOVEMENT SUMMARY

 **Site: 101v [Captain Cook Drive / Endeavour Road - Future PM, Stage 1 + Sharks interim upgrade]**

Captain Cook Drive / Endeavour Road

Future Volumes (4/2/20) (Sharks)

Peak 4:30PM - 5:30PM

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles | | | | | | | | | | | | |
|---------------------------------|------|-----------------------------|------|------------------|----------------------|------------------|-----------------------------------|---------------------|--------------|---------------------|------------------|-----------------------|
| Mov ID | Turn | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Captain Cook Drive (S) | | | | | | | | | | | | |
| 2 | T1 | 1147 | 1.6 | 0.405 | 6.4 | LOS A | 12.4 | 88.3 | 0.41 | 0.37 | 0.41 | 54.3 |
| 3 | R2 | 208 | 1.4 | 0.472 | 38.4 | LOS C | 10.4 | 73.7 | 0.91 | 0.90 | 1.05 | 36.3 |
| Approach | | 1355 | 1.5 | 0.472 | 11.3 | LOS A | 12.4 | 88.3 | 0.49 | 0.45 | 0.51 | 50.4 |
| East: Endeavour Road (E) | | | | | | | | | | | | |
| 4 | L2 | 637 | 1.1 | 0.346 | 5.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.8 |
| 6 | R2 | 204 | 2.9 | 0.673 | 57.7 | LOS E | 11.6 | 83.0 | 0.99 | 0.84 | 1.02 | 30.4 |
| Approach | | 841 | 1.5 | 0.673 | 18.3 | LOS B | 11.6 | 83.0 | 0.24 | 0.60 | 0.25 | 46.0 |
| North: Captain Cook Drive (N) | | | | | | | | | | | | |
| 7 | L2 | 91 | 7.7 | 0.090 | 12.4 | LOS A | 1.7 | 12.8 | 0.42 | 0.65 | 0.42 | 49.1 |
| 8 | T1 | 1353 | 1.0 | 0.676 | 22.9 | LOS B | 29.0 | 205.1 | 0.80 | 0.73 | 0.80 | 43.6 |
| Approach | | 1444 | 1.5 | 0.676 | 22.2 | LOS B | 29.0 | 205.1 | 0.78 | 0.72 | 0.78 | 43.9 |
| All Vehicles | | 3640 | 1.5 | 0.676 | 17.2 | LOS B | 29.0 | 205.1 | 0.55 | 0.59 | 0.56 | 46.6 |

ANNEXURE B: MASTERPLAN SCALE SPLIT BETWEEN BUILDINGS
(Sheet 1 of 1)

| ID | | Business Unit | | Individual | | Active Incident Period | | Variance | | Accident Workforce | | Collective Business | | Total | | Person's Storage | | Recreation | | Hotel | | Total | | Car Parking | | |
|-----|-------|---------------|-------|------------|------------|------------------------|------------|----------|------------|--------------------|------------|---------------------|------------|----------|------------|------------------|------------|------------|------------|----------|------------|----------|------------|-------------|------------|----------|
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lst | Cat | Sub-Cat | Level | Eligible | UnEligible | Eligible | UnEligible | 50% | 100% | Eligible | UnEligible | 50% | 100% | Eligible | UnEligible | 50% | 100% | Eligible | UnEligible | 50% | 100% | Eligible | UnEligible | 50% | 100% | |
| | | | | Eligible | UnEligible | Eligible | UnEligible | Eligible | UnEligible | Eligible | UnEligible | Eligible | UnEligible | Eligible | UnEligible | Eligible | UnEligible | Eligible | UnEligible | Eligible | UnEligible | Eligible | UnEligible | Eligible | UnEligible | Eligible |
| A | Lines | House | A1 | 1 | - | - | - | - | - | 277 | - | 277 | - | 277 | - | 277 | - | 277 | - | 277 | - | 277 | - | 277 | - | 277 |
| B | Lines | House | A1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 9 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 10 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 11 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 12 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 13 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 14 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 15 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 16 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 17 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 18 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 19 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 20 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 21 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 22 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 23 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 24 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 25 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 26 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 27 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 28 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 29 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 30 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 31 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 32 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 33 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 34 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 35 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 36 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 37 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 38 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 39 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 40 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 41 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 42 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 43 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 44 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 45 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 46 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 47 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 48 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 49 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 50 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 51 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 52 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 53 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 54 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 55 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 56 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 57 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 58 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 59 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 60 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 61 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 62 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 63 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 64 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 65 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | Lines | House | A1 | 66 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | | | | |

98

Indicative Site Evolution

7.15 Indicative Area Schedule

Key Project Metrics

- 150,000 sqm Industrial Floorspace
- 100,000 sqm of Commercial Floorspace
- 8,000 sqm of Retail
- New 3,600 sqm Boutique Hotel
- 800 sqm of Recreation Space
- New tavern fronting Solander Fields
- 5,440 new jobs upon completion (refer to Retail Impact Assessment for further detail)

GBA to GFA Efficiencies and Assumptions

- Warehouse / Industrial - 85% GBA > GFA
 Commercial - 85% GBA > GFA
 Retail - 85% GBA > GFA
 Food & Beverage - 85% GBA > GFA
 Recreation - 85% GBA > GFA
 Hotel - 85% GBA > GFA
- Gross Building Area is the total floor area of the floorplate including external areas.
- Gross Floor Area (as per the standard instrument definition) is assumed based upon the above stated efficiencies



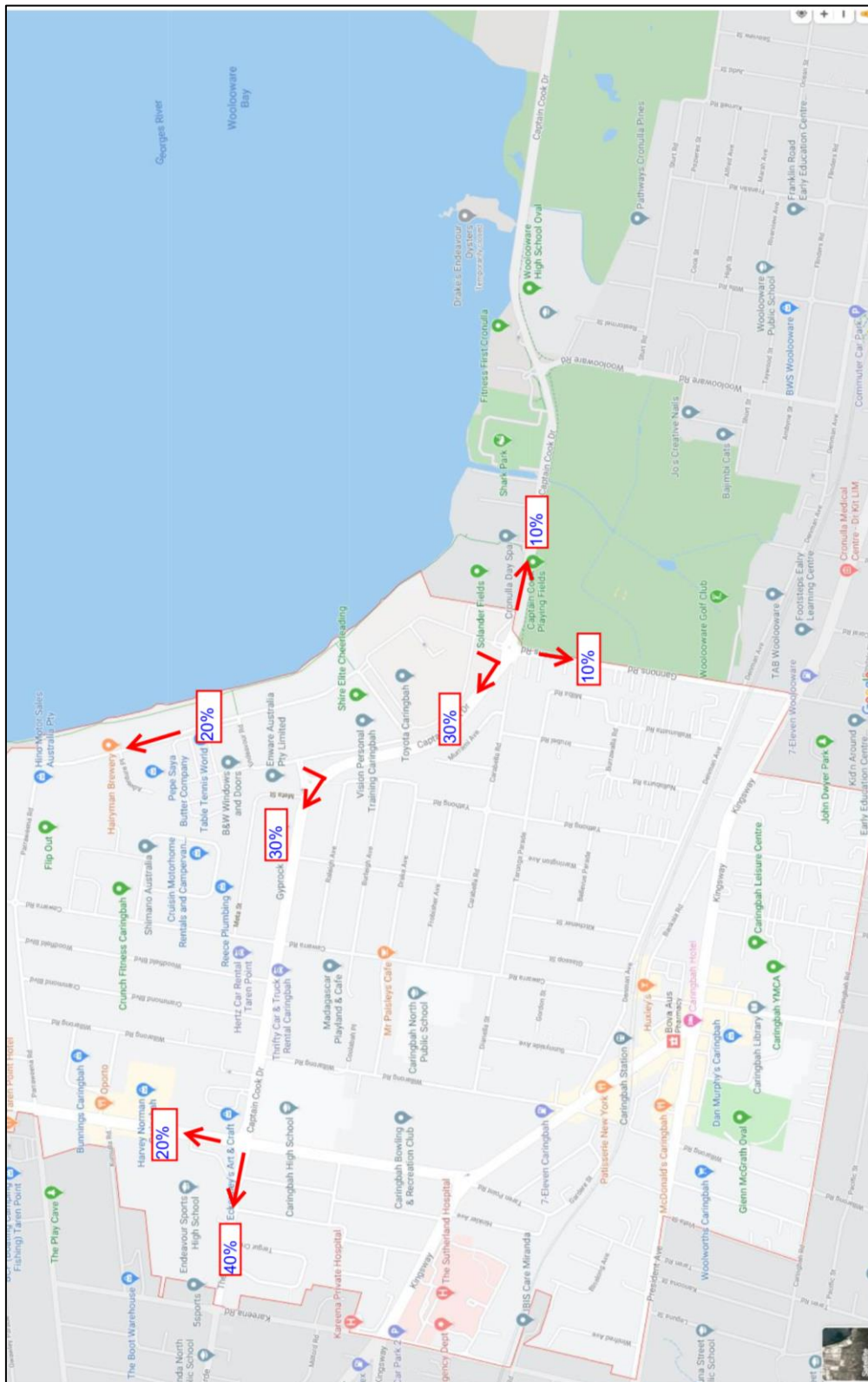
SJB

13 Endeavour Road

ANNEXURE C: MASTERPLAN SCALE SPLIT BETWEEN BUILDINGS

(Sheet 1 of 2)

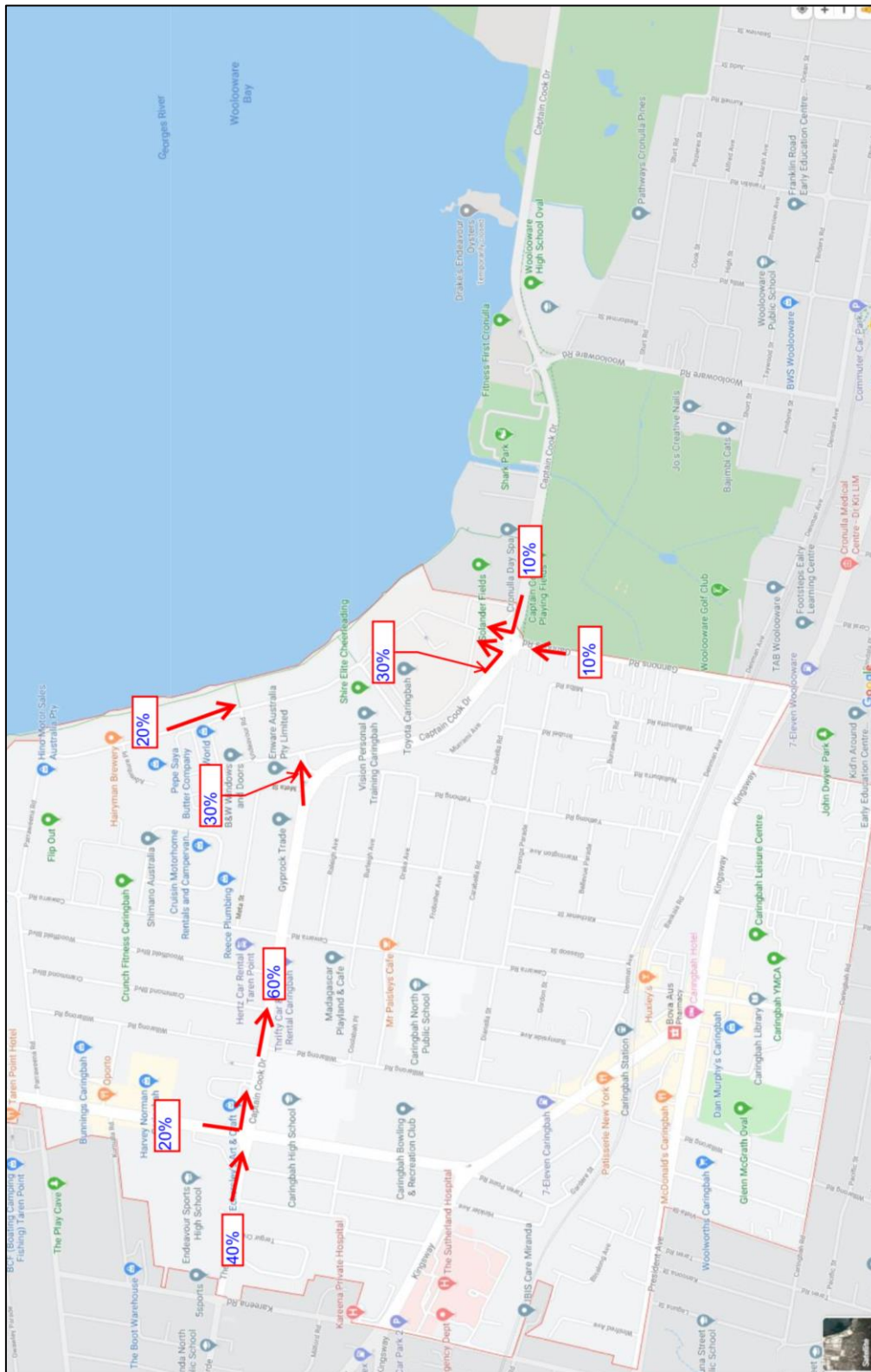
Outbound



ANNEXURE C: MASTERPLAN SCALE SPLIT BETWEEN BUILDINGS

(Sheet 2 of 2)

Inbound



ANNEXURE D: SIDRA RESULTS FOR STAGED INFRASTRUCTURE WORKS

(Sheet 1 of 20)

MOVEMENT SUMMARY



Site: 1 [Captain Cook Drive / Gannons Road - Future AM + Sharks + Stage 1 & 2]

Captain Cook Drive / Gannons Road
Future Volumes (4/2/20) + Sharks + Stage 1 & 2
Peak 8:00AM - 9:00AM
Site Category: (None)
Roundabout

| 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: Gannons Rd (S) | | | | | | | | | | | | |
| 1 | L2 | 783 | 1.4 | 0.433 | 2.3 | LOS A | 0.0 | 0.0 | 0.00 | 0.34 | 0.00 | 48.8 |
| 2 | T1 | 62 | 0.0 | 0.624 | 13.1 | LOS A | 4.7 | 34.3 | 0.95 | 1.10 | 1.24 | 32.7 |
| 3 | R2 | 253 | 5.1 | 0.624 | 17.0 | LOS B | 4.7 | 34.3 | 0.95 | 1.10 | 1.24 | 45.6 |
| 3u | U | 1 | 0.0 | 0.624 | 18.6 | LOS B | 4.7 | 34.3 | 0.95 | 1.10 | 1.24 | 43.2 |
| Approach | | 1099 | 2.2 | 0.624 | 6.3 | LOS A | 4.7 | 34.3 | 0.27 | 0.56 | 0.36 | 46.7 |
| East: Captain Cook Drive (E) | | | | | | | | | | | | |
| 4 | L2 | 157 | 3.8 | 0.827 | 15.8 | LOS B | 11.9 | 89.8 | 0.98 | 1.16 | 1.50 | 46.6 |
| 5 | T1 | 1186 | 10.5 | 0.827 | 15.7 | LOS B | 12.3 | 93.6 | 0.98 | 1.14 | 1.49 | 51.8 |
| 6 | R2 | 62 | 0.0 | 0.827 | 19.7 | LOS B | 12.3 | 93.6 | 0.98 | 1.13 | 1.47 | 38.5 |
| 6u | U | 25 | 12.0 | 0.827 | 22.6 | LOS B | 12.3 | 93.6 | 0.98 | 1.13 | 1.47 | 52.1 |
| Approach | | 1430 | 9.3 | 0.827 | 16.0 | LOS B | 12.3 | 93.6 | 0.98 | 1.14 | 1.49 | 50.4 |
| North: Toyota Access (N) | | | | | | | | | | | | |
| 7 | L2 | 19 | 0.0 | 0.051 | 7.0 | LOS A | 0.2 | 1.7 | 0.78 | 0.75 | 0.78 | 38.0 |
| 8 | T1 | 28 | 0.0 | 0.145 | 4.8 | LOS A | 0.8 | 5.8 | 0.82 | 0.84 | 0.82 | 35.4 |
| 9 | R2 | 55 | 1.8 | 0.145 | 7.6 | LOS A | 0.8 | 5.8 | 0.82 | 0.84 | 0.82 | 38.2 |
| 9u | U | 1 | 0.0 | 0.145 | 8.3 | LOS A | 0.8 | 5.8 | 0.82 | 0.84 | 0.82 | 30.7 |
| Approach | | 103 | 1.0 | 0.145 | 6.7 | LOS A | 0.8 | 5.8 | 0.82 | 0.83 | 0.82 | 37.2 |
| West: Captain Cook Drive (W) | | | | | | | | | | | | |
| 10 | L2 | 193 | 0.0 | 0.626 | 9.0 | LOS A | 6.2 | 46.4 | 0.81 | 0.84 | 0.93 | 38.8 |
| 11 | T1 | 688 | 13.1 | 0.626 | 9.2 | LOS A | 6.4 | 48.8 | 0.81 | 0.83 | 0.91 | 57.7 |
| 12 | R2 | 413 | 9.2 | 0.626 | 13.6 | LOS A | 6.4 | 48.8 | 0.80 | 0.82 | 0.88 | 51.0 |
| 12u | U | 7 | 57.1 | 0.626 | 17.6 | LOS B | 6.4 | 48.8 | 0.80 | 0.82 | 0.88 | 46.0 |
| Approach | | 1301 | 10.1 | 0.626 | 10.6 | LOS A | 6.4 | 48.8 | 0.80 | 0.83 | 0.90 | 51.8 |
| All Vehicles | | 3933 | 7.4 | 0.827 | 11.3 | LOS A | 12.3 | 93.6 | 0.72 | 0.86 | 0.96 | 49.3 |

ANNEXURE D: SIDRA RESULTS FOR STAGED INFRASTRUCTURE WORKS

(Sheet 2 of 20)

MOVEMENT SUMMARY



Site: 1 [Captain Cook Drive / Gannons Road - Future PM + Sharks + Stage 1 & 2]

Captain Cook Drive / Gannons Road
Future Volumes (4/2/20) + Sharks Stage + Stage 1 & 2
Peak 4:30PM - 5:30PM
Site Category: (None)
Roundabout

| 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: Gannons Rd (S) | | | | | | | | | | | | |
| 1 | L2 | 456 | 1.3 | 0.252 | 2.3 | LOS A | 0.0 | 0.0 | 0.00 | 0.34 | 0.00 | 48.8 |
| 2 | T1 | 21 | 4.8 | 0.346 | 8.0 | LOS A | 2.1 | 14.9 | 0.84 | 0.93 | 0.85 | 34.2 |
| 3 | R2 | 199 | 1.0 | 0.346 | 11.5 | LOS A | 2.1 | 14.9 | 0.84 | 0.93 | 0.85 | 49.2 |
| 3u | U | 1 | 100.0 | 0.346 | 17.8 | LOS B | 2.1 | 14.9 | 0.84 | 0.93 | 0.85 | 45.2 |
| Approach | | 677 | 1.5 | 0.346 | 5.2 | LOS A | 2.1 | 14.9 | 0.27 | 0.53 | 0.28 | 48.3 |
| East: Captain Cook Drive (E) | | | | | | | | | | | | |
| 4 | L2 | 84 | 3.6 | 0.853 | 33.5 | LOS C | 13.2 | 94.1 | 1.00 | 1.39 | 2.19 | 38.2 |
| 5 | T1 | 850 | 2.0 | 0.853 | 32.5 | LOS C | 14.5 | 103.3 | 1.00 | 1.40 | 2.19 | 43.1 |
| 6 | R2 | 19 | 0.0 | 0.853 | 36.4 | LOS C | 14.5 | 103.3 | 1.00 | 1.40 | 2.19 | 33.0 |
| 6u | U | 29 | 0.0 | 0.853 | 38.8 | LOS C | 14.5 | 103.3 | 1.00 | 1.40 | 2.19 | 44.2 |
| Approach | | 982 | 2.0 | 0.853 | 32.9 | LOS C | 14.5 | 103.3 | 1.00 | 1.40 | 2.19 | 42.4 |
| North: Toyota Access (N) | | | | | | | | | | | | |
| 7 | L2 | 66 | 0.0 | 0.263 | 12.6 | LOS A | 1.4 | 10.0 | 0.92 | 0.92 | 0.92 | 35.9 |
| 8 | T1 | 74 | 0.0 | 0.846 | 46.2 | LOS D | 9.5 | 66.4 | 1.00 | 1.76 | 2.31 | 25.5 |
| 9 | R2 | 216 | 0.0 | 0.846 | 48.9 | LOS D | 9.5 | 66.4 | 1.00 | 1.76 | 2.31 | 27.0 |
| 9u | U | 1 | 0.0 | 0.846 | 49.7 | LOS D | 9.5 | 66.4 | 1.00 | 1.76 | 2.31 | 22.9 |
| Approach | | 357 | 0.0 | 0.846 | 41.6 | LOS C | 9.5 | 66.4 | 0.99 | 1.61 | 2.05 | 27.9 |
| West: Captain Cook Drive (W) | | | | | | | | | | | | |
| 10 | L2 | 56 | 0.0 | 0.797 | 9.7 | LOS A | 12.0 | 85.0 | 0.89 | 0.81 | 1.05 | 38.7 |
| 11 | T1 | 1330 | 1.1 | 0.797 | 9.5 | LOS A | 12.0 | 85.0 | 0.87 | 0.79 | 1.01 | 58.0 |
| 12 | R2 | 630 | 1.1 | 0.797 | 13.7 | LOS A | 11.9 | 83.9 | 0.84 | 0.76 | 0.95 | 51.0 |
| 12u | U | 17 | 0.0 | 0.797 | 16.0 | LOS B | 11.9 | 83.9 | 0.84 | 0.76 | 0.95 | 57.9 |
| Approach | | 2033 | 1.1 | 0.797 | 10.9 | LOS A | 12.0 | 85.0 | 0.86 | 0.78 | 0.99 | 54.9 |
| All Vehicles | | 4049 | 1.3 | 0.853 | 18.0 | LOS B | 14.5 | 103.3 | 0.81 | 0.96 | 1.26 | 46.5 |

ANNEXURE D: SIDRA RESULTS FOR STAGED INFRASTRUCTURE WORKS

(Sheet 3 of 20)

MOVEMENT SUMMARY



Site: 1 [Captain Cook Drive / Gannons Road - Future AM + Sharks + Stage 1, 2 & 3]

Captain Cook Drive / Gannons Road
Future Volumes (4/2/20) + Sharks + Stage 1, 2 & 3
Peak 8:00AM - 9:00AM
Site Category: (None)
Roundabout

| 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: Gannons Rd (S) | | | | | | | | | | | | |
| 1 | L2 | 783 | 1.4 | 0.433 | 2.3 | LOS A | 0.0 | 0.0 | 0.00 | 0.34 | 0.00 | 48.8 |
| 2 | T1 | 80 | 0.0 | 0.684 | 15.3 | LOS B | 5.5 | 40.0 | 0.98 | 1.14 | 1.35 | 32.1 |
| 3 | R2 | 253 | 5.1 | 0.684 | 19.1 | LOS B | 5.5 | 40.0 | 0.98 | 1.14 | 1.35 | 44.5 |
| 3u | U | 1 | 0.0 | 0.684 | 20.7 | LOS B | 5.5 | 40.0 | 0.98 | 1.14 | 1.35 | 42.2 |
| Approach | | 1117 | 2.1 | 0.684 | 7.1 | LOS A | 5.5 | 40.0 | 0.29 | 0.58 | 0.40 | 46.0 |
| East: Captain Cook Drive (E) | | | | | | | | | | | | |
| 4 | L2 | 157 | 3.8 | 0.855 | 17.9 | LOS B | 13.6 | 102.3 | 1.00 | 1.22 | 1.66 | 45.4 |
| 5 | T1 | 1186 | 10.5 | 0.855 | 17.8 | LOS B | 14.1 | 106.8 | 1.00 | 1.21 | 1.64 | 50.4 |
| 6 | R2 | 80 | 0.0 | 0.855 | 21.6 | LOS B | 14.1 | 106.8 | 1.00 | 1.19 | 1.62 | 37.7 |
| 6u | U | 25 | 12.0 | 0.855 | 24.6 | LOS B | 14.1 | 106.8 | 1.00 | 1.19 | 1.62 | 50.6 |
| Approach | | 1448 | 9.2 | 0.855 | 18.1 | LOS B | 14.1 | 106.8 | 1.00 | 1.21 | 1.64 | 48.9 |
| North: Toyota Access (N) | | | | | | | | | | | | |
| 7 | L2 | 26 | 0.0 | 0.072 | 7.3 | LOS A | 0.3 | 2.4 | 0.80 | 0.79 | 0.80 | 37.9 |
| 8 | T1 | 25 | 0.0 | 0.181 | 5.1 | LOS A | 1.1 | 7.4 | 0.85 | 0.88 | 0.85 | 35.2 |
| 9 | R2 | 75 | 1.3 | 0.181 | 7.8 | LOS A | 1.1 | 7.4 | 0.85 | 0.88 | 0.85 | 38.0 |
| 9u | U | 1 | 0.0 | 0.181 | 8.6 | LOS A | 1.1 | 7.4 | 0.85 | 0.88 | 0.85 | 30.5 |
| Approach | | 127 | 0.8 | 0.181 | 7.2 | LOS A | 1.1 | 7.4 | 0.84 | 0.86 | 0.84 | 37.3 |
| West: Captain Cook Drive (W) | | | | | | | | | | | | |
| 10 | L2 | 240 | 0.0 | 0.669 | 10.1 | LOS A | 7.2 | 54.1 | 0.86 | 0.90 | 1.04 | 38.5 |
| 11 | T1 | 688 | 13.1 | 0.669 | 10.3 | LOS A | 7.5 | 57.9 | 0.86 | 0.89 | 1.02 | 57.0 |
| 12 | R2 | 413 | 9.2 | 0.669 | 14.6 | LOS B | 7.5 | 57.9 | 0.85 | 0.87 | 1.00 | 50.5 |
| 12u | U | 7 | 57.1 | 0.669 | 18.7 | LOS B | 7.5 | 57.9 | 0.85 | 0.87 | 1.00 | 45.6 |
| Approach | | 1348 | 9.8 | 0.669 | 11.6 | LOS A | 7.5 | 57.9 | 0.86 | 0.89 | 1.02 | 50.7 |
| All Vehicles | | 4040 | 7.2 | 0.855 | 12.6 | LOS A | 14.1 | 106.8 | 0.75 | 0.92 | 1.07 | 48.1 |

ANNEXURE D: SIDRA RESULTS FOR STAGED INFRASTRUCTURE WORKS

(Sheet 4 of 20)

MOVEMENT SUMMARY



Site: 1 [Captain Cook Drive / Gannons Road - Future PM + Sharks + Stage 1, 2 & 3]

Captain Cook Drive / Gannons Road
Future Volumes (4/2/20) + Sharks Stage + Stage 1, 2 & 3
Peak 4:30PM - 5:30PM
Site Category: (None)
Roundabout

| 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: Gannons Rd (S) | | | | | | | | | | | | |
| 1 | L2 | 456 | 1.3 | 0.252 | 2.3 | LOS A | 0.0 | 0.0 | 0.00 | 0.34 | 0.00 | 48.8 |
| 2 | T1 | 27 | 3.7 | 0.366 | 8.4 | LOS A | 2.3 | 16.0 | 0.85 | 0.95 | 0.89 | 34.1 |
| 3 | R2 | 199 | 1.0 | 0.366 | 11.9 | LOS A | 2.3 | 16.0 | 0.85 | 0.95 | 0.89 | 49.0 |
| 3u | U | 1 | 100.0 | 0.366 | 18.4 | LOS B | 2.3 | 16.0 | 0.85 | 0.95 | 0.89 | 45.0 |
| Approach | | 683 | 1.5 | 0.366 | 5.4 | LOS A | 2.3 | 16.0 | 0.28 | 0.54 | 0.30 | 48.0 |
| East: Captain Cook Drive (E) | | | | | | | | | | | | |
| 4 | L2 | 84 | 3.6 | 0.914 | 50.5 | LOS D | 18.3 | 130.8 | 1.00 | 1.63 | 2.95 | 32.6 |
| 5 | T1 | 850 | 2.0 | 0.914 | 49.1 | LOS D | 20.5 | 146.0 | 1.00 | 1.65 | 2.96 | 36.1 |
| 6 | R2 | 25 | 0.0 | 0.914 | 52.7 | LOS D | 20.5 | 146.0 | 1.00 | 1.66 | 2.97 | 28.8 |
| 6u | U | 29 | 0.0 | 0.914 | 55.1 | LOS D | 20.5 | 146.0 | 1.00 | 1.66 | 2.97 | 37.0 |
| Approach | | 988 | 2.0 | 0.914 | 49.5 | LOS D | 20.5 | 146.0 | 1.00 | 1.65 | 2.96 | 35.6 |
| North: Toyota Access (N) | | | | | | | | | | | | |
| 7 | L2 | 85 | 0.0 | 0.351 | 15.2 | LOS B | 2.0 | 14.1 | 0.94 | 0.99 | 1.04 | 35.0 |
| 8 | T1 | 92 | 0.0 | 1.093 | 242.1 | LOS F | 54.3 | 379.8 | 1.00 | 5.56 | 8.85 | 11.0 |
| 9 | R2 | 269 | 0.0 | 1.093 | 244.8 | LOS F | 54.3 | 379.8 | 1.00 | 5.56 | 8.85 | 11.2 |
| 9u | U | 1 | 0.0 | 1.093 | 245.5 | LOS F | 54.3 | 379.8 | 1.00 | 5.56 | 8.85 | 10.5 |
| Approach | | 447 | 0.0 | 1.093 | 200.5 | LOS F | 54.3 | 379.8 | 0.99 | 4.69 | 7.36 | 12.8 |
| West: Captain Cook Drive (W) | | | | | | | | | | | | |
| 10 | L2 | 76 | 0.0 | 0.814 | 10.4 | LOS A | 13.0 | 92.0 | 0.92 | 0.84 | 1.11 | 38.6 |
| 11 | T1 | 1330 | 1.1 | 0.814 | 10.2 | LOS A | 13.0 | 92.0 | 0.90 | 0.82 | 1.08 | 57.8 |
| 12 | R2 | 630 | 1.1 | 0.814 | 14.2 | LOS A | 12.9 | 91.1 | 0.87 | 0.79 | 1.01 | 50.7 |
| 12u | U | 17 | 0.0 | 0.814 | 16.6 | LOS B | 12.9 | 91.1 | 0.87 | 0.79 | 1.01 | 57.6 |
| Approach | | 2053 | 1.1 | 0.814 | 11.5 | LOS A | 13.0 | 92.0 | 0.89 | 0.81 | 1.06 | 54.4 |
| All Vehicles | | 4171 | 1.2 | 1.093 | 39.8 | LOS C | 54.3 | 379.8 | 0.83 | 1.38 | 2.06 | 36.3 |

ANNEXURE D: SIDRA RESULTS FOR STAGED INFRASTRUCTURE WORKS

(Sheet 5 of 20)

MOVEMENT SUMMARY

 **Site: 1v [Captain Cook Drive / Gannons Road - Future AM + Sharks + Refinement of Lane Lengths Stage 1, 2 & 3]**

Captain Cook Drive / Gannons Road

Future Volumes (4/2/20) + Sharks 3 & 4 + Stage 1, 2 & 3

Peak 8:00AM - 9:00AM

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site Optimum Cycle Time - Minimum Delay)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

| 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 | Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Gannons Rd (S) | | | | | | | | | | | | |
| 1 | L2 | 783 | 1.4 | 0.433 | 4.5 | LOS A | 0.0 | 0.0 | 0.00 | 0.47 | 0.00 | 47.8 |
| 2 | T1 | 80 | 0.0 | 0.170 | 43.0 | LOS D | 3.7 | 26.1 | 0.84 | 0.72 | 0.84 | 26.3 |
| 3 | R2 | 253 | 5.1 | 0.770 | 55.3 | LOS D | 14.9 | 109.0 | 0.99 | 0.91 | 1.10 | 30.4 |
| Approach | | 1116 | 2.2 | 0.770 | 18.7 | LOS B | 14.9 | 109.0 | 0.29 | 0.59 | 0.31 | 40.2 |
| East: Captain Cook Drive (E) | | | | | | | | | | | | |
| 4 | L2 | 157 | 3.8 | 0.181 | 26.7 | LOS B | 5.3 | 38.6 | 0.63 | 0.75 | 0.63 | 40.6 |
| 5 | T1 | 1186 | 10.5 | 0.752 | 27.3 | LOS B | 29.2 | 222.5 | 0.85 | 0.76 | 0.85 | 46.1 |
| 6 | R2 | 80 | 0.0 | 0.260 | 54.9 | LOS D | 4.2 | 29.2 | 0.92 | 0.76 | 0.92 | 26.3 |
| Approach | | 1423 | 9.1 | 0.752 | 28.7 | LOS C | 29.2 | 222.5 | 0.83 | 0.76 | 0.83 | 43.6 |
| North: Toyota Access (N) | | | | | | | | | | | | |
| 7 | L2 | 26 | 0.0 | 0.104 | 39.0 | LOS C | 2.3 | 16.0 | 0.80 | 0.65 | 0.80 | 28.5 |
| 8 | T1 | 25 | 0.0 | 0.104 | 37.0 | LOS C | 2.3 | 16.0 | 0.80 | 0.65 | 0.80 | 27.2 |
| 9 | R2 | 75 | 1.3 | 0.257 | 44.8 | LOS D | 3.7 | 26.5 | 0.88 | 0.72 | 0.88 | 27.2 |
| Approach | | 126 | 0.8 | 0.257 | 42.1 | LOS C | 3.7 | 26.5 | 0.85 | 0.69 | 0.85 | 27.5 |
| West: Captain Cook Drive (W) | | | | | | | | | | | | |
| 10 | L2 | 240 | 0.0 | 0.517 | 27.0 | LOS B | 17.4 | 128.6 | 0.75 | 0.75 | 0.82 | 34.1 |
| 11 | T1 | 688 | 13.1 | 0.517 | 23.1 | LOS B | 18.6 | 144.7 | 0.76 | 0.70 | 0.78 | 47.9 |
| 12 | R2 | 413 | 9.2 | 0.764 | 61.2 | LOS E | 13.2 | 99.7 | 1.00 | 0.86 | 1.07 | 29.8 |
| Approach | | 1341 | 9.5 | 0.764 | 35.5 | LOS C | 18.6 | 144.7 | 0.83 | 0.76 | 0.88 | 38.0 |
| All Vehicles | | 4006 | 7.1 | 0.770 | 28.7 | LOS C | 29.2 | 222.5 | 0.68 | 0.71 | 0.70 | 40.0 |

ANNEXURE D: SIDRA RESULTS FOR STAGED INFRASTRUCTURE WORKS

(Sheet 6 of 20)

MOVEMENT SUMMARY

 **Site: 1v [Captain Cook Drive / Gannons Road - Future PM + Sharks + Refinement of Lane Lengths + Stage 1, 2 & 3]**

Captain Cook Drive / Gannons Road

Future Volumes (4/2/20) + Sharks 3 & 4 + Stage 1, 2 & 3

Peak 4:30PM - 5:30PM

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site Optimum Cycle Time - Minimum Delay)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

| 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 | Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Gannons Rd (S) | | | | | | | | | | | | |
| 1 | L2 | 456 | 1.3 | 0.252 | 4.4 | LOS A | 0.0 | 0.0 | 0.00 | 0.47 | 0.00 | 47.8 |
| 2 | T1 | 27 | 3.7 | 0.055 | 40.0 | LOS C | 1.2 | 8.6 | 0.79 | 0.66 | 0.79 | 26.9 |
| 3 | R2 | 199 | 1.0 | 0.768 | 59.3 | LOS E | 12.0 | 84.8 | 1.00 | 0.92 | 1.14 | 29.7 |
| Approach | | 682 | 1.3 | 0.768 | 21.8 | LOS B | 12.0 | 84.8 | 0.32 | 0.61 | 0.36 | 39.5 |
| East: Captain Cook Drive (E) | | | | | | | | | | | | |
| 4 | L2 | 84 | 3.6 | 0.148 | 39.2 | LOS C | 3.6 | 25.8 | 0.77 | 0.75 | 0.77 | 35.7 |
| 5 | T1 | 850 | 2.0 | 0.738 | 40.6 | LOS C | 23.6 | 168.1 | 0.95 | 0.83 | 0.96 | 39.5 |
| 6 | R2 | 25 | 0.0 | 0.140 | 62.0 | LOS E | 1.4 | 9.7 | 0.95 | 0.71 | 0.95 | 25.0 |
| Approach | | 959 | 2.1 | 0.738 | 41.0 | LOS C | 23.6 | 168.1 | 0.93 | 0.82 | 0.94 | 38.6 |
| North: Toyota Access (N) | | | | | | | | | | | | |
| 7 | L2 | 85 | 0.0 | 0.340 | 36.4 | LOS C | 6.8 | 47.5 | 0.85 | 0.82 | 1.11 | 29.1 |
| 8 | T1 | 92 | 0.0 | 0.340 | 34.4 | LOS C | 6.8 | 47.5 | 0.85 | 0.82 | 1.11 | 27.8 |
| 9 | R2 | 269 | 0.0 | 0.756 | 50.3 | LOS D | 15.5 | 108.7 | 0.99 | 0.92 | 1.07 | 26.2 |
| Approach | | 446 | 0.0 | 0.756 | 44.4 | LOS D | 15.5 | 108.7 | 0.93 | 0.88 | 1.09 | 27.1 |
| West: Captain Cook Drive (W) | | | | | | | | | | | | |
| 10 | L2 | 76 | 0.0 | 0.747 | 21.7 | LOS B | 21.4 | 151.2 | 0.88 | 0.79 | 0.88 | 36.8 |
| 11 | T1 | 1330 | 1.1 | 0.747 | 15.5 | LOS B | 22.0 | 155.6 | 0.88 | 0.79 | 0.88 | 53.8 |
| 12 | R2 | 630 | 1.1 | 0.600 | 44.5 | LOS D | 17.4 | 123.1 | 0.89 | 0.83 | 0.89 | 34.5 |
| Approach | | 2036 | 1.1 | 0.747 | 24.7 | LOS B | 22.0 | 155.6 | 0.88 | 0.80 | 0.88 | 45.2 |
| All Vehicles | | 4123 | 1.2 | 0.768 | 30.1 | LOS C | 23.6 | 168.1 | 0.81 | 0.78 | 0.83 | 39.8 |

ANNEXURE D: SIDRA RESULTS FOR STAGED INFRASTRUCTURE WORKS

(Sheet 7 of 20)

MOVEMENT SUMMARY

 **Site: 1v [Captain Cook Drive / Gannons Road - Future AM + Sharks + Refinement of Lane Lengths Stage 1, 2,3 & 4]**

Captain Cook Drive / Gannons Road

Future Volumes (4/2/20) + Sharks 3 & 4 + Stage 1, 2, 3 & 4

Peak 8:00AM - 9:00AM

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site Optimum Cycle Time - Minimum Delay)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

| 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 | Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Gannons Rd (S) | | | | | | | | | | | | |
| 1 | L2 | 783 | 1.4 | 0.433 | 4.5 | LOS A | 0.0 | 0.0 | 0.00 | 0.47 | 0.00 | 47.8 |
| 2 | T1 | 120 | 0.0 | 0.238 | 42.1 | LOS C | 5.6 | 39.1 | 0.84 | 0.74 | 0.84 | 26.5 |
| 3 | R2 | 253 | 5.1 | 0.773 | 55.1 | LOS D | 15.0 | 109.3 | 0.99 | 0.92 | 1.11 | 30.4 |
| Approach | | 1156 | 2.1 | 0.773 | 19.4 | LOS B | 15.0 | 109.3 | 0.30 | 0.59 | 0.33 | 39.5 |
| East: Captain Cook Drive (E) | | | | | | | | | | | | |
| 4 | L2 | 157 | 3.8 | 0.188 | 28.0 | LOS B | 5.5 | 39.8 | 0.64 | 0.75 | 0.64 | 40.1 |
| 5 | T1 | 1186 | 10.5 | 0.790 | 30.4 | LOS C | 30.3 | 231.5 | 0.87 | 0.80 | 0.90 | 44.4 |
| 6 | R2 | 120 | 0.0 | 0.390 | 56.1 | LOS D | 6.4 | 44.9 | 0.94 | 0.79 | 0.94 | 26.1 |
| Approach | | 1463 | 8.9 | 0.790 | 32.2 | LOS C | 30.3 | 231.5 | 0.85 | 0.79 | 0.87 | 41.5 |
| North: Toyota Access (N) | | | | | | | | | | | | |
| 7 | L2 | 36 | 0.0 | 0.156 | 38.0 | LOS C | 3.6 | 25.3 | 0.80 | 0.66 | 0.80 | 28.8 |
| 8 | T1 | 45 | 0.0 | 0.156 | 36.0 | LOS C | 3.6 | 25.3 | 0.80 | 0.66 | 0.80 | 27.5 |
| 9 | R2 | 104 | 1.0 | 0.365 | 46.1 | LOS D | 5.3 | 37.7 | 0.90 | 0.75 | 0.90 | 27.0 |
| Approach | | 185 | 0.5 | 0.365 | 42.1 | LOS C | 5.3 | 37.7 | 0.86 | 0.71 | 0.86 | 27.4 |
| West: Captain Cook Drive (W) | | | | | | | | | | | | |
| 10 | L2 | 366 | 0.0 | 0.597 | 26.6 | LOS B | 20.0 | 145.3 | 0.79 | 0.81 | 0.87 | 33.8 |
| 11 | T1 | 688 | 13.1 | 0.597 | 25.2 | LOS B | 22.2 | 172.5 | 0.81 | 0.75 | 0.83 | 46.6 |
| 12 | R2 | 413 | 9.2 | 0.764 | 61.2 | LOS E | 13.2 | 99.7 | 1.00 | 0.86 | 1.07 | 29.8 |
| Approach | | 1467 | 8.7 | 0.764 | 35.7 | LOS C | 22.2 | 172.5 | 0.86 | 0.79 | 0.91 | 37.2 |
| All Vehicles | | 4271 | 6.6 | 0.790 | 30.4 | LOS C | 30.3 | 231.5 | 0.71 | 0.74 | 0.74 | 38.6 |

ANNEXURE D: SIDRA RESULTS FOR STAGED INFRASTRUCTURE WORKS

(Sheet 8 of 20)

MOVEMENT SUMMARY

 **Site: 1v [Captain Cook Drive / Gannons Road - Future PM + Sharks + Refinement of Lanes + Stage 1, 2, 3 & 4]**

Captain Cook Drive / Gannons Road

Future Volumes (4/2/20) + Sharks 3 & 4 + Stage 1, 2, 3 & 4

Peak 4:30PM - 5:30PM

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 121 seconds (Site Optimum Cycle Time - Minimum Delay)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

| 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 | Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Gannons Rd (S) | | | | | | | | | | | | |
| 1 | L2 | 456 | 1.3 | 0.252 | 4.4 | LOS A | 0.0 | 0.0 | 0.00 | 0.47 | 0.00 | 47.8 |
| 2 | T1 | 37 | 2.7 | 0.052 | 30.6 | LOS C | 1.4 | 10.1 | 0.69 | 0.64 | 0.69 | 28.8 |
| 3 | R2 | 199 | 1.0 | 0.598 | 45.8 | LOS D | 10.4 | 73.3 | 0.92 | 0.82 | 0.92 | 33.3 |
| Approach | | 692 | 1.3 | 0.598 | 17.7 | LOS B | 10.4 | 73.3 | 0.30 | 0.58 | 0.30 | 41.2 |
| East: Captain Cook Drive (E) | | | | | | | | | | | | |
| 4 | L2 | 84 | 3.6 | 0.153 | 40.6 | LOS C | 3.7 | 26.4 | 0.78 | 0.75 | 0.78 | 35.2 |
| 5 | T1 | 850 | 2.0 | 0.767 | 43.2 | LOS D | 24.6 | 175.4 | 0.96 | 0.86 | 1.00 | 38.4 |
| 6 | R2 | 35 | 0.0 | 0.363 | 70.4 | LOS E | 2.1 | 14.9 | 1.00 | 0.72 | 1.00 | 23.7 |
| Approach | | 969 | 2.1 | 0.767 | 44.0 | LOS D | 24.6 | 175.4 | 0.95 | 0.85 | 0.98 | 37.3 |
| North: Toyota Access (N) | | | | | | | | | | | | |
| 7 | L2 | 123 | 0.0 | 0.351 | 31.2 | LOS C | 9.3 | 65.2 | 0.77 | 0.80 | 1.07 | 30.4 |
| 8 | T1 | 132 | 0.0 | 0.351 | 29.3 | LOS C | 9.3 | 65.2 | 0.77 | 0.80 | 1.07 | 28.9 |
| 9 | R2 | 389 | 0.0 | 0.894 | 58.9 | LOS E | 26.3 | 183.8 | 0.96 | 1.11 | 1.27 | 24.7 |
| Approach | | 644 | 0.0 | 0.894 | 47.6 | LOS D | 26.3 | 183.8 | 0.89 | 0.99 | 1.19 | 26.4 |
| West: Captain Cook Drive (W) | | | | | | | | | | | | |
| 10 | L2 | 105 | 0.0 | 0.881 | 37.8 | LOS C | 34.5 | 243.5 | 0.99 | 0.97 | 1.11 | 31.6 |
| 11 | T1 | 1330 | 1.1 | 0.881 | 31.5 | LOS C | 34.8 | 246.2 | 0.99 | 0.97 | 1.12 | 43.6 |
| 12 | R2 | 630 | 1.1 | 0.872 | 61.8 | LOS E | 22.6 | 160.1 | 0.99 | 0.91 | 1.14 | 29.7 |
| Approach | | 2065 | 1.1 | 0.881 | 41.0 | LOS C | 34.8 | 246.2 | 0.99 | 0.95 | 1.12 | 37.5 |
| All Vehicles | | 4370 | 1.2 | 0.894 | 39.0 | LOS C | 34.8 | 246.2 | 0.86 | 0.87 | 0.97 | 35.8 |

ANNEXURE D: SIDRA RESULTS FOR STAGED INFRASTRUCTURE WORKS

(Sheet 9 of 20)

MOVEMENT SUMMARY



Site: 1v [Captain Cook Drive / Gannons Road - Future AM + Sharks + Stage 1, 2,3,4 & 5]

Captain Cook Drive / Gannons Road

Future Volumes (4/2/20) + Sharks 3 & 4 + Stage 1, 2, 3, 4 & 5

Peak 8:00AM - 9:00AM

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site Optimum Cycle Time - Minimum Delay)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

| Movement Performance - Vehicles | | | | | | | | | | | | |
|---------------------------------|------|-----------------------------|------|------------------|----------------------|------------------|--------------------------------------|------------------------|--------------|---------------------|------------------|-----------------------|
| Mov ID | Turn | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Gannons Rd (S) | | | | | | | | | | | | |
| 1 | L2 | 783 | 1.4 | 0.433 | 4.5 | LOS A | 0.0 | 0.0 | 0.00 | 0.47 | 0.00 | 47.8 |
| 2 | T1 | 165 | 0.0 | 0.316 | 42.2 | LOS C | 7.8 | 54.5 | 0.85 | 0.76 | 0.85 | 26.5 |
| 3 | R2 | 253 | 5.1 | 0.791 | 56.5 | LOS D | 15.3 | 111.5 | 1.00 | 0.94 | 1.14 | 30.1 |
| Approach | | 1201 | 2.0 | 0.791 | 20.6 | LOS B | 15.3 | 111.5 | 0.33 | 0.61 | 0.36 | 38.7 |
| East: Captain Cook Drive (E) | | | | | | | | | | | | |
| 4 | L2 | 157 | 3.8 | 0.188 | 28.0 | LOS B | 5.5 | 39.8 | 0.64 | 0.75 | 0.64 | 40.1 |
| 5 | T1 | 1186 | 10.5 | 0.800 | 31.0 | LOS C | 30.3 | 230.7 | 0.87 | 0.81 | 0.91 | 44.0 |
| 6 | R2 | 165 | 0.0 | 0.566 | 58.6 | LOS E | 9.2 | 64.2 | 0.98 | 0.81 | 0.98 | 25.6 |
| Approach | | 1508 | 8.6 | 0.800 | 33.7 | LOS C | 30.3 | 230.7 | 0.86 | 0.80 | 0.89 | 40.5 |
| North: Toyota Access (N) | | | | | | | | | | | | |
| 7 | L2 | 49 | 0.0 | 0.196 | 37.6 | LOS C | 4.7 | 32.8 | 0.81 | 0.67 | 0.81 | 28.8 |
| 8 | T1 | 56 | 0.0 | 0.196 | 35.7 | LOS C | 4.7 | 32.8 | 0.81 | 0.67 | 0.81 | 27.5 |
| 9 | R2 | 138 | 0.7 | 0.524 | 48.8 | LOS D | 7.4 | 52.4 | 0.94 | 0.79 | 0.94 | 26.5 |
| Approach | | 243 | 0.4 | 0.524 | 43.5 | LOS D | 7.4 | 52.4 | 0.88 | 0.74 | 0.88 | 27.2 |
| West: Captain Cook Drive (W) | | | | | | | | | | | | |
| 10 | L2 | 501 | 0.0 | 0.655 | 24.5 | LOS B | 21.3 | 152.6 | 0.80 | 0.85 | 0.90 | 34.3 |
| 11 | T1 | 688 | 13.1 | 0.655 | 26.1 | LOS B | 25.2 | 195.8 | 0.84 | 0.77 | 0.86 | 46.2 |
| 12 | R2 | 413 | 9.2 | 0.806 | 63.6 | LOS E | 13.6 | 102.9 | 1.00 | 0.88 | 1.12 | 29.3 |
| Approach | | 1602 | 8.0 | 0.806 | 35.2 | LOS C | 25.2 | 195.8 | 0.87 | 0.82 | 0.94 | 36.7 |
| All Vehicles | | 4554 | 6.2 | 0.806 | 31.3 | LOS C | 30.3 | 230.7 | 0.72 | 0.75 | 0.77 | 37.7 |

ANNEXURE D: SIDRA RESULTS FOR STAGED INFRASTRUCTURE WORKS

(Sheet 10 of 20)

MOVEMENT SUMMARY



Site: 1v [Captain Cook Drive / Gannons Road - Future PM + Sharks + Stage 1, 2, 3, 4 & 5]

Captain Cook Drive / Gannons Road

Future Volumes (4/2/20) + Sharks 3 & 4 + Stage 1, 2, 3, 4 & 5

Peak 4:30PM - 5:30PM

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 146 seconds (Site Optimum Cycle Time - Minimum Delay)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

| 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 | Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Gannons Rd (S) | | | | | | | | | | | | |
| 1 | L2 | 456 | 1.3 | 0.252 | 4.4 | LOS A | 0.0 | 0.0 | 0.00 | 0.47 | 0.00 | 47.8 |
| 2 | T1 | 48 | 2.1 | 0.086 | 44.5 | LOS D | 2.5 | 17.6 | 0.77 | 0.68 | 0.77 | 26.0 |
| 3 | R2 | 199 | 1.0 | 0.997 | 145.4 | LOS F | 22.6 | 159.5 | 1.00 | 1.37 | 1.92 | 17.5 |
| Approach | | 703 | 1.3 | 0.997 | 47.1 | LOS D | 22.6 | 159.5 | 0.34 | 0.74 | 0.60 | 31.0 |
| East: Captain Cook Drive (E) | | | | | | | | | | | | |
| 4 | L2 | 84 | 3.6 | 0.158 | 48.4 | LOS D | 4.4 | 32.1 | 0.79 | 0.76 | 0.79 | 32.7 |
| 5 | T1 | 850 | 2.0 | 0.803 | 54.1 | LOS D | 30.3 | 215.8 | 0.98 | 0.89 | 1.03 | 34.5 |
| 6 | R2 | 46 | 0.0 | 0.576 | 86.0 | LOS F | 3.5 | 24.2 | 1.00 | 0.75 | 1.05 | 21.5 |
| Approach | | 980 | 2.0 | 0.803 | 55.1 | LOS D | 30.3 | 215.8 | 0.96 | 0.87 | 1.01 | 33.4 |
| North: Toyota Access (N) | | | | | | | | | | | | |
| 7 | L2 | 168 | 0.0 | 0.407 | 33.6 | LOS C | 15.1 | 105.9 | 0.74 | 0.80 | 1.05 | 29.8 |
| 8 | T1 | 176 | 0.0 | 0.407 | 31.6 | LOS C | 15.1 | 105.9 | 0.74 | 0.80 | 1.05 | 28.4 |
| 9 | R2 | 524 | 0.0 | 1.000 | 127.8 | LOS F | 56.6 | 396.5 | 1.00 | 1.58 | 1.83 | 16.9 |
| Approach | | 868 | 0.0 | 1.000 | 90.1 | LOS F | 56.6 | 396.5 | 0.90 | 1.27 | 1.52 | 20.3 |
| West: Captain Cook Drive (W) | | | | | | | | | | | | |
| 10 | L2 | 139 | 0.0 | 0.950 | 67.5 | LOS E | 55.4 | 391.1 | 1.00 | 1.09 | 1.28 | 25.2 |
| 11 | T1 | 1330 | 1.1 | 0.950 | 60.9 | LOS E | 55.7 | 393.5 | 1.00 | 1.09 | 1.28 | 32.3 |
| 12 | R2 | 630 | 1.1 | 1.012 | 115.7 | LOS F | 39.6 | 279.9 | 1.00 | 1.07 | 1.52 | 20.6 |
| Approach | | 2099 | 1.0 | 1.012 | 77.8 | LOS F | 55.7 | 393.5 | 1.00 | 1.09 | 1.35 | 27.2 |
| All Vehicles | | 4650 | 1.1 | 1.012 | 70.7 | LOS F | 56.6 | 396.5 | 0.87 | 1.02 | 1.20 | 27.0 |

ANNEXURE D: SIDRA RESULTS FOR STAGED INFRASTRUCTURE WORKS

(Sheet 11 of 20)

MOVEMENT SUMMARY

 **Site: 101v [Captain Cook Drive / Endeavour Road - Future AM, Stage 1 + Sharks - Conversion]**

Captain Cook Drive / Endeavour Road

Future Volumes (4/2/20) (Sharks)

Peak 7:30AM - 8:30AM

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles | | | | | | | | | | | | |
|---------------------------------|------|-----------------------------|------|------------------|----------------------|------------------|-----------------------------------|---------------------|--------------|---------------------|------------------|-----------------------|
| Mov ID | Turn | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Captain Cook Drive (S) | | | | | | | | | | | | |
| 2 | T1 | 1537 | 4.9 | 0.536 | 6.2 | LOS A | 17.9 | 130.7 | 0.44 | 0.41 | 0.44 | 54.4 |
| 3 | R2 | 518 | 3.3 | 0.644 | 33.7 | LOS C | 19.1 | 137.5 | 0.84 | 0.98 | 1.19 | 38.2 |
| Approach | | 2055 | 4.5 | 0.644 | 13.2 | LOS A | 19.1 | 137.5 | 0.54 | 0.55 | 0.63 | 49.2 |
| East: Endeavour Road (E) | | | | | | | | | | | | |
| 4 | L2 | 191 | 13.1 | 0.112 | 5.8 | LOS A | 0.0 | 0.0 | 0.00 | 0.52 | 0.00 | 54.5 |
| 6 | R2 | 33 | 21.2 | 0.072 | 54.5 | LOS D | 0.8 | 7.0 | 0.90 | 0.70 | 0.90 | 31.0 |
| Approach | | 224 | 14.3 | 0.112 | 12.9 | LOS A | 0.8 | 7.0 | 0.13 | 0.55 | 0.13 | 49.1 |
| North: Captain Cook Drive (N) | | | | | | | | | | | | |
| 7 | L2 | 189 | 5.3 | 0.202 | 10.8 | LOS A | 2.7 | 20.0 | 0.45 | 0.68 | 0.45 | 50.3 |
| 8 | T1 | 881 | 11.9 | 0.749 | 39.7 | LOS C | 23.4 | 180.2 | 0.96 | 0.85 | 0.97 | 36.3 |
| Approach | | 1070 | 10.7 | 0.749 | 34.6 | LOS C | 23.4 | 180.2 | 0.87 | 0.82 | 0.88 | 38.2 |
| All Vehicles | | 3349 | 7.1 | 0.749 | 20.0 | LOS B | 23.4 | 180.2 | 0.62 | 0.64 | 0.68 | 45.0 |

ANNEXURE D: SIDRA RESULTS FOR STAGED INFRASTRUCTURE WORKS

(Sheet 12 of 20)

MOVEMENT SUMMARY

 **Site: 101v [Captain Cook Drive / Endeavour Road - Future AM, Stage 1 + Sharks - Conversion + Stage 1 & 2]**

Captain Cook Drive / Endeavour Road

Future Volumes (4/2/20) (Sharks) + Stage 1 & 2

Peak 7:30AM - 8:30AM

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles | | | | | | | | | | | | |
|---------------------------------|------|-----------------------------|------|------------------|----------------------|------------------|-----------------------------------|---------------------|--------------|---------------------|------------------|-----------------------|
| Mov ID | Turn | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Captain Cook Drive (S) | | | | | | | | | | | | |
| 2 | T1 | 1583 | 4.7 | 0.552 | 6.3 | LOS A | 18.8 | 137.2 | 0.45 | 0.42 | 0.45 | 54.3 |
| 3 | R2 | 518 | 3.3 | 0.711 | 39.0 | LOS C | 20.5 | 147.6 | 0.90 | 1.01 | 1.32 | 36.2 |
| Approach | | 2101 | 4.4 | 0.711 | 14.4 | LOS A | 20.5 | 147.6 | 0.56 | 0.56 | 0.66 | 48.3 |
| East: Endeavour Road (E) | | | | | | | | | | | | |
| 4 | L2 | 191 | 13.1 | 0.112 | 5.8 | LOS A | 0.0 | 0.0 | 0.00 | 0.52 | 0.00 | 54.5 |
| 6 | R2 | 79 | 8.9 | 0.160 | 55.2 | LOS D | 2.1 | 15.6 | 0.91 | 0.73 | 0.91 | 31.0 |
| Approach | | 270 | 11.9 | 0.160 | 20.2 | LOS B | 2.1 | 15.6 | 0.27 | 0.58 | 0.27 | 44.7 |
| North: Captain Cook Drive (N) | | | | | | | | | | | | |
| 7 | L2 | 376 | 2.7 | 0.387 | 12.4 | LOS A | 7.3 | 52.1 | 0.55 | 0.73 | 0.55 | 49.3 |
| 8 | T1 | 1068 | 9.8 | 0.813 | 40.9 | LOS C | 29.9 | 226.7 | 0.97 | 0.92 | 1.04 | 35.9 |
| Approach | | 1444 | 8.0 | 0.813 | 33.5 | LOS C | 29.9 | 226.7 | 0.86 | 0.87 | 0.91 | 38.7 |
| All Vehicles | | 3815 | 6.3 | 0.813 | 22.0 | LOS B | 29.9 | 226.7 | 0.65 | 0.68 | 0.73 | 43.9 |

ANNEXURE D: SIDRA RESULTS FOR STAGED INFRASTRUCTURE WORKS

(Sheet 13 of 20)

MOVEMENT SUMMARY

 **Site: 101v [Captain Cook Drive / Endeavour Road - Future AM, Stage 1 + Sharks + Stage 1, 2 & 3]**

Captain Cook Drive / Endeavour Road

Future Volumes (4/2/20) (Sharks) + Stage 1, 2 & 3

Peak 7:30AM - 8:30AM

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles | | | | | | | | | | | | |
|---------------------------------|------|-----------------------------|------|------------------|----------------------|------------------|-----------------------------------|---------------------|--------------|---------------------|------------------|-----------------------|
| Mov ID | Turn | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Captain Cook Drive (S) | | | | | | | | | | | | |
| 2 | T1 | 1602 | 4.7 | 0.558 | 6.4 | LOS A | 19.2 | 140.0 | 0.46 | 0.42 | 0.46 | 54.3 |
| 3 | R2 | 518 | 3.3 | 0.730 | 40.6 | LOS C | 20.9 | 150.2 | 0.91 | 1.02 | 1.35 | 35.7 |
| Approach | | 2120 | 4.3 | 0.730 | 14.7 | LOS B | 20.9 | 150.2 | 0.57 | 0.57 | 0.67 | 48.1 |
| East: Endeavour Road (E) | | | | | | | | | | | | |
| 4 | L2 | 191 | 13.1 | 0.112 | 5.8 | LOS A | 0.0 | 0.0 | 0.00 | 0.52 | 0.00 | 54.5 |
| 6 | R2 | 99 | 7.1 | 0.198 | 55.5 | LOS D | 2.6 | 19.4 | 0.92 | 0.74 | 0.92 | 30.9 |
| Approach | | 290 | 11.0 | 0.198 | 22.7 | LOS B | 2.6 | 19.4 | 0.31 | 0.60 | 0.31 | 43.3 |
| North: Captain Cook Drive (N) | | | | | | | | | | | | |
| 7 | L2 | 429 | 2.3 | 0.433 | 12.9 | LOS A | 9.0 | 64.6 | 0.58 | 0.74 | 0.58 | 49.0 |
| 8 | T1 | 1121 | 9.4 | 0.832 | 41.9 | LOS C | 32.1 | 242.9 | 0.98 | 0.94 | 1.06 | 35.6 |
| Approach | | 1550 | 7.4 | 0.832 | 33.9 | LOS C | 32.1 | 242.9 | 0.87 | 0.88 | 0.93 | 38.5 |
| All Vehicles | | 3960 | 6.0 | 0.832 | 22.8 | LOS B | 32.1 | 242.9 | 0.67 | 0.69 | 0.75 | 43.5 |

ANNEXURE D: SIDRA RESULTS FOR STAGED INFRASTRUCTURE WORKS

(Sheet 14 of 20)

MOVEMENT SUMMARY

 **Site: 101v [Captain Cook Drive / Endeavour Road - Future AM, Stage 1 + Sharks + Stage 1, 2, 3 & 4]**

Captain Cook Drive / Endeavour Road

Future Volumes (4/2/20) (Sharks) + Stage 1, 2, 3 & 4

Peak 7:30AM - 8:30AM

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 125 seconds (Site Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles | | | | | | | | | | | | |
|---------------------------------|------|-----------------------------|------|------------------|----------------------|------------------|-----------------------------------|---------------------|--------------|---------------------|------------------|-----------------------|
| Mov ID | Turn | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Captain Cook Drive (S) | | | | | | | | | | | | |
| 2 | T1 | 1632 | 4.6 | 0.561 | 6.2 | LOS A | 19.8 | 144.3 | 0.44 | 0.41 | 0.44 | 54.4 |
| 3 | R2 | 518 | 3.3 | 0.765 | 45.1 | LOS D | 23.0 | 165.5 | 0.94 | 1.04 | 1.42 | 34.1 |
| Approach | | 2150 | 4.3 | 0.765 | 15.6 | LOS B | 23.0 | 165.5 | 0.56 | 0.56 | 0.68 | 47.6 |
| East: Endeavour Road (E) | | | | | | | | | | | | |
| 4 | L2 | 191 | 13.1 | 0.112 | 5.8 | LOS A | 0.0 | 0.0 | 0.00 | 0.52 | 0.00 | 54.5 |
| 6 | R2 | 128 | 5.5 | 0.263 | 58.8 | LOS E | 3.6 | 26.2 | 0.94 | 0.76 | 0.94 | 30.1 |
| Approach | | 319 | 10.0 | 0.263 | 27.0 | LOS B | 3.6 | 26.2 | 0.38 | 0.62 | 0.38 | 41.2 |
| North: Captain Cook Drive (N) | | | | | | | | | | | | |
| 7 | L2 | 549 | 1.8 | 0.544 | 14.4 | LOS A | 14.2 | 100.8 | 0.65 | 0.77 | 0.65 | 48.0 |
| 8 | T1 | 1241 | 8.5 | 0.856 | 43.8 | LOS D | 37.9 | 284.8 | 0.99 | 0.96 | 1.08 | 34.9 |
| Approach | | 1790 | 6.4 | 0.856 | 34.8 | LOS C | 37.9 | 284.8 | 0.88 | 0.91 | 0.95 | 38.1 |
| All Vehicles | | 4259 | 5.6 | 0.856 | 24.5 | LOS B | 37.9 | 284.8 | 0.68 | 0.71 | 0.77 | 42.6 |

ANNEXURE D: SIDRA RESULTS FOR STAGED INFRASTRUCTURE WORKS

(Sheet 15 of 20)

MOVEMENT SUMMARY

 **Site: 101v [Captain Cook Drive / Endeavour Road - Future AM, Stage 1 + Sharks + Stage 1, 2, 3 4 & 5]**

Captain Cook Drive / Endeavour Road

Future Volumes (4/2/20) (Sharks) + Stage 1, 2, 3 4 & 5

Peak 7:30AM - 8:30AM

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 145 seconds (Site Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles | | | | | | | | | | | | |
|---------------------------------|------|-----------------------------|------|------------------|----------------------|------------------|-----------------------------------|---------------------|--------------|---------------------|------------------|-----------------------|
| Mov ID | Turn | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Captain Cook Drive (S) | | | | | | | | | | | | |
| 2 | T1 | 1666 | 4.5 | 0.554 | 5.8 | LOS A | 21.2 | 153.9 | 0.40 | 0.37 | 0.40 | 54.8 |
| 3 | R2 | 518 | 3.3 | 0.784 | 53.2 | LOS D | 27.8 | 199.9 | 0.96 | 1.06 | 1.46 | 31.8 |
| Approach | | 2184 | 4.2 | 0.784 | 17.0 | LOS B | 27.8 | 199.9 | 0.53 | 0.54 | 0.65 | 46.7 |
| East: Endeavour Road (E) | | | | | | | | | | | | |
| 4 | L2 | 191 | 13.1 | 0.112 | 5.8 | LOS A | 0.0 | 0.0 | 0.00 | 0.52 | 0.00 | 54.5 |
| 6 | R2 | 162 | 4.3 | 0.362 | 69.5 | LOS E | 5.4 | 38.9 | 0.96 | 0.77 | 0.96 | 27.7 |
| Approach | | 353 | 9.1 | 0.362 | 35.0 | LOS C | 5.4 | 38.9 | 0.44 | 0.64 | 0.44 | 37.8 |
| North: Captain Cook Drive (N) | | | | | | | | | | | | |
| 7 | L2 | 684 | 1.5 | 0.676 | 18.2 | LOS B | 25.0 | 177.0 | 0.78 | 0.83 | 0.78 | 45.8 |
| 8 | T1 | 1376 | 7.6 | 0.866 | 46.1 | LOS D | 47.3 | 352.8 | 0.98 | 0.95 | 1.05 | 34.2 |
| Approach | | 2060 | 5.6 | 0.866 | 36.8 | LOS C | 47.3 | 352.8 | 0.92 | 0.91 | 0.96 | 37.3 |
| All Vehicles | | 4597 | 5.2 | 0.866 | 27.3 | LOS B | 47.3 | 352.8 | 0.70 | 0.71 | 0.77 | 41.3 |

ANNEXURE D: SIDRA RESULTS FOR STAGED INFRASTRUCTURE WORKS

(Sheet 16 of 20)

MOVEMENT SUMMARY

 **Site: 101v [Captain Cook Drive / Endeavour Road - Future PM, Stage 1 + Sharks interim upgrade]**

Captain Cook Drive / Endeavour Road

Future Volumes (4/2/20) (Sharks)

Peak 4:30PM - 5:30PM

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 140 seconds (Site Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles | | | | | | | | | | | | |
|---------------------------------|------|-----------------------------|------|------------------|----------------------|------------------|-----------------------------------|---------------------|--------------|---------------------|------------------|-----------------------|
| Mov ID | Turn | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Captain Cook Drive (S) | | | | | | | | | | | | |
| 2 | T1 | 1147 | 1.6 | 0.378 | 4.8 | LOS A | 11.6 | 82.3 | 0.33 | 0.30 | 0.33 | 55.6 |
| 3 | R2 | 208 | 1.4 | 0.552 | 32.9 | LOS C | 12.6 | 89.2 | 0.95 | 0.88 | 0.95 | 38.5 |
| Approach | | 1355 | 1.5 | 0.552 | 9.1 | LOS A | 12.6 | 89.2 | 0.42 | 0.39 | 0.42 | 52.1 |
| East: Endeavour Road (E) | | | | | | | | | | | | |
| 4 | L2 | 637 | 1.1 | 0.346 | 5.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.8 |
| 6 | R2 | 204 | 2.9 | 0.436 | 67.5 | LOS E | 6.6 | 47.2 | 0.97 | 0.78 | 0.97 | 28.1 |
| Approach | | 841 | 1.5 | 0.436 | 20.7 | LOS B | 6.6 | 47.2 | 0.23 | 0.59 | 0.23 | 44.7 |
| North: Captain Cook Drive (N) | | | | | | | | | | | | |
| 7 | L2 | 91 | 7.7 | 0.114 | 22.9 | LOS B | 3.0 | 22.7 | 0.56 | 0.69 | 0.56 | 43.1 |
| 8 | T1 | 1353 | 1.0 | 0.549 | 15.0 | LOS B | 25.3 | 178.6 | 0.61 | 0.55 | 0.61 | 48.1 |
| Approach | | 1444 | 1.5 | 0.549 | 15.5 | LOS B | 25.3 | 178.6 | 0.60 | 0.56 | 0.60 | 47.8 |
| All Vehicles | | 3640 | 1.5 | 0.552 | 14.3 | LOS A | 25.3 | 178.6 | 0.45 | 0.50 | 0.45 | 48.5 |

ANNEXURE D: SIDRA RESULTS FOR STAGED INFRASTRUCTURE WORKS

(Sheet 17 of 20)

MOVEMENT SUMMARY

 **Site: 101v [Captain Cook Drive / Endeavour Road - Future PM, Stage 1 + Sharks interim upgrade + Stage 1 & 2 - C]**

Captain Cook Drive / Endeavour Road

Future Volumes (4/2/20) (Sharks) + Stage 1 & 2

Peak 4:30PM - 5:30PM

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles | | | | | | | | | | | | |
|---------------------------------|------|-----------------------------|------|------------------|----------------------|------------------|-----------------------------------|---------------------|--------------|---------------------|------------------|-----------------------|
| Mov ID | Turn | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Captain Cook Drive (S) | | | | | | | | | | | | |
| 2 | T1 | 1344 | 1.3 | 0.479 | 7.3 | LOS A | 16.2 | 114.8 | 0.46 | 0.42 | 0.46 | 53.6 |
| 3 | R2 | 208 | 1.4 | 0.501 | 41.8 | LOS C | 10.6 | 74.9 | 0.93 | 0.92 | 1.13 | 35.3 |
| Approach | | 1552 | 1.4 | 0.501 | 11.9 | LOS A | 16.2 | 114.8 | 0.52 | 0.48 | 0.55 | 50.1 |
| East: Endeavour Road (E) | | | | | | | | | | | | |
| 4 | L2 | 637 | 1.1 | 0.346 | 5.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.8 |
| 6 | R2 | 401 | 1.5 | 0.643 | 55.9 | LOS D | 11.5 | 81.4 | 0.98 | 0.82 | 0.98 | 30.8 |
| Approach | | 1038 | 1.3 | 0.643 | 25.1 | LOS B | 11.5 | 81.4 | 0.38 | 0.64 | 0.38 | 42.3 |
| North: Captain Cook Drive (N) | | | | | | | | | | | | |
| 7 | L2 | 147 | 4.8 | 0.140 | 12.0 | LOS A | 2.7 | 19.8 | 0.42 | 0.66 | 0.42 | 49.5 |
| 8 | T1 | 1409 | 1.0 | 0.704 | 23.4 | LOS B | 30.9 | 218.3 | 0.82 | 0.75 | 0.82 | 43.4 |
| Approach | | 1556 | 1.3 | 0.704 | 22.3 | LOS B | 30.9 | 218.3 | 0.78 | 0.74 | 0.78 | 43.9 |
| All Vehicles | | 4146 | 1.3 | 0.704 | 19.1 | LOS B | 30.9 | 218.3 | 0.58 | 0.62 | 0.59 | 45.5 |

ANNEXURE D: SIDRA RESULTS FOR STAGED INFRASTRUCTURE WORKS

(Sheet 18 of 20)

MOVEMENT SUMMARY

 **Site: 101v [Captain Cook Drive / Endeavour Road - Future PM, Stage 1 + Sharks + Stage 1, 2 & 3]**

Captain Cook Drive / Endeavour Road

Future Volumes (4/2/20) (Sharks) + Stage 1, 2 & 3

Peak 4:30PM - 5:30PM

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles | | | | | | | | | | | | |
|---------------------------------|------|-----------------------------|------|------------------|----------------------|------------------|-----------------------------------|---------------------|--------------|---------------------|------------------|-----------------------|
| Mov ID | Turn | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Captain Cook Drive (S) | | | | | | | | | | | | |
| 2 | T1 | 1398 | 1.3 | 0.499 | 7.5 | LOS A | 17.2 | 122.0 | 0.47 | 0.43 | 0.47 | 53.4 |
| 3 | R2 | 208 | 1.4 | 0.506 | 42.3 | LOS C | 10.6 | 75.1 | 0.93 | 0.93 | 1.14 | 35.1 |
| Approach | | 1606 | 1.3 | 0.506 | 12.0 | LOS A | 17.2 | 122.0 | 0.53 | 0.49 | 0.55 | 50.0 |
| East: Endeavour Road (E) | | | | | | | | | | | | |
| 4 | L2 | 637 | 1.1 | 0.346 | 5.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.8 |
| 6 | R2 | 455 | 1.3 | 0.766 | 59.7 | LOS E | 14.6 | 103.3 | 0.99 | 0.88 | 1.11 | 29.9 |
| Approach | | 1092 | 1.2 | 0.766 | 28.2 | LOS B | 14.6 | 103.3 | 0.41 | 0.67 | 0.46 | 40.8 |
| North: Captain Cook Drive (N) | | | | | | | | | | | | |
| 7 | L2 | 167 | 4.2 | 0.159 | 12.2 | LOS A | 3.1 | 22.6 | 0.44 | 0.67 | 0.44 | 49.4 |
| 8 | T1 | 1429 | 1.0 | 0.714 | 23.6 | LOS B | 31.6 | 223.2 | 0.83 | 0.75 | 0.83 | 43.3 |
| Approach | | 1596 | 1.3 | 0.714 | 22.4 | LOS B | 31.6 | 223.2 | 0.79 | 0.74 | 0.79 | 43.8 |
| All Vehicles | | 4294 | 1.3 | 0.766 | 20.0 | LOS B | 31.6 | 223.2 | 0.59 | 0.63 | 0.62 | 45.1 |

ANNEXURE D: SIDRA RESULTS FOR STAGED INFRASTRUCTURE WORKS

(Sheet 19 of 20)

MOVEMENT SUMMARY

 **Site: 101v [Captain Cook Drive / Endeavour Road - Future PM, Stage 1 + Sharks + Stage 1, 2, 3 & 4 - Copy]**

Captain Cook Drive / Endeavour Road

Future Volumes (4/2/20) (Sharks) + Stage 1, 2, 3 & 4

Peak 4:30PM - 5:30PM

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles | | | | | | | | | | | | |
|---------------------------------|------|--------------|------|-----------|---------------|------------------|----------------------------|----------------|--------------|---------------------|------------------|---------------|
| Mov ID | Turn | Demand Flows | | Deg. Satn | Average Delay | Level of Service | 95% Back of Queue Vehicles | Queue Distance | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed |
| | | Total | HV % | v/c | sec | | veh | m | | | | km/h |
| South: Captain Cook Drive (S) | | | | | | | | | | | | |
| 2 | T1 | 1517 | 1.2 | 0.611 | 13.4 | LOS A | 25.7 | 181.7 | 0.64 | 0.59 | 0.64 | 49.2 |
| 3 | R2 | 208 | 1.4 | 0.617 | 53.6 | LOS D | 11.1 | 78.7 | 0.97 | 0.97 | 1.35 | 31.7 |
| Approach | | 1725 | 1.2 | 0.617 | 18.2 | LOS B | 25.7 | 181.7 | 0.68 | 0.63 | 0.72 | 46.1 |
| East: Endeavour Road (E) | | | | | | | | | | | | |
| 4 | L2 | 637 | 1.1 | 0.346 | 5.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.8 |
| 6 | R2 | 574 | 1.0 | 0.839 | 57.2 | LOS E | 22.2 | 156.9 | 0.95 | 0.92 | 1.16 | 30.5 |
| Approach | | 1211 | 1.1 | 0.839 | 30.1 | LOS C | 22.2 | 156.9 | 0.45 | 0.72 | 0.55 | 39.9 |
| North: Captain Cook Drive (N) | | | | | | | | | | | | |
| 7 | L2 | 196 | 3.6 | 0.162 | 8.8 | LOS A | 2.3 | 16.8 | 0.34 | 0.65 | 0.34 | 51.8 |
| 8 | T1 | 1458 | 1.0 | 0.821 | 32.1 | LOS C | 38.0 | 268.4 | 0.94 | 0.87 | 0.97 | 39.3 |
| Approach | | 1654 | 1.3 | 0.821 | 29.3 | LOS C | 38.0 | 268.4 | 0.87 | 0.85 | 0.89 | 40.5 |
| All Vehicles | | 4590 | 1.2 | 0.839 | 25.4 | LOS B | 38.0 | 268.4 | 0.69 | 0.73 | 0.74 | 42.3 |

ANNEXURE D: SIDRA RESULTS FOR STAGED INFRASTRUCTURE WORKS

(Sheet 20 of 20)

MOVEMENT SUMMARY

 **Site: 101v [Captain Cook Drive / Endeavour Road - Future PM, Stage 1 + Sharks + Stage 1,2,3,4 &5]**

Captain Cook Drive / Endeavour Road

Future Volumes (4/2/20) (Sharks) + Stage 1,2,3,4 &5

Peak 4:30PM - 5:30PM

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 125 seconds (Site Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles | | | | | | | | | | | | |
|---------------------------------|------|-----------------------------|------|------------------|----------------------|------------------|-----------------------------------|---------------------|--------------|---------------------|------------------|-----------------------|
| Mov ID | Turn | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Captain Cook Drive (S) | | | | | | | | | | | | |
| 2 | T1 | 1652 | 1.1 | 0.721 | 19.2 | LOS B | 35.2 | 249.0 | 0.77 | 0.71 | 0.77 | 45.6 |
| 3 | R2 | 208 | 1.4 | 0.710 | 63.6 | LOS E | 12.1 | 86.0 | 1.00 | 1.01 | 1.54 | 29.2 |
| Approach | | 1860 | 1.1 | 0.721 | 24.2 | LOS B | 35.2 | 249.0 | 0.80 | 0.74 | 0.86 | 42.9 |
| East: Endeavour Road (E) | | | | | | | | | | | | |
| 4 | L2 | 637 | 1.1 | 0.346 | 5.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.8 |
| 6 | R2 | 709 | 0.8 | 0.928 | 75.2 | LOS F | 32.6 | 230.0 | 0.93 | 1.02 | 1.37 | 26.5 |
| Approach | | 1346 | 1.0 | 0.928 | 42.3 | LOS C | 32.6 | 230.0 | 0.49 | 0.79 | 0.72 | 35.2 |
| North: Captain Cook Drive (N) | | | | | | | | | | | | |
| 7 | L2 | 230 | 3.0 | 0.175 | 7.6 | LOS A | 1.8 | 13.2 | 0.28 | 0.63 | 0.28 | 52.7 |
| 8 | T1 | 1492 | 0.9 | 0.908 | 50.4 | LOS D | 50.7 | 358.1 | 1.00 | 1.05 | 1.17 | 32.9 |
| Approach | | 1722 | 1.2 | 0.908 | 44.7 | LOS D | 50.7 | 358.1 | 0.90 | 0.99 | 1.05 | 34.6 |
| All Vehicles | | 4928 | 1.1 | 0.928 | 36.3 | LOS C | 50.7 | 358.1 | 0.75 | 0.84 | 0.89 | 37.5 |