Appendix C3

Construction Traffic Monitoring Report

NOONAMAH RIDGE

INTRAPAC

Intrapac

Noonamah Ridge Estate

Construction Monitoring Report

Issue | 16 November 2015

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 240596-00

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1 Introduction

1.1 Report Purpose

Arup has been engaged by Byrne Design on behalf of Intrapac to prepare the Construction Monitoring Report (CMR) to support the EIS of the Noonamah Ridge Estate (NRE) Development located within the Shire of Litchfield as shown in Figure 1.

The purpose of this report is to provide an interim assessment of the monitoring methodology during construction stages. Given the construction details have not been confirmed, it is recommended to update this document with specific details (intersections and routes to be monitored etc.) once they are known.

1.2 Previous Documents

Other documents that should be read in conjunction with this report include:

- **NRE Transport Impact Assessment (TIA), Arup, 25 August 2015:** an assessment that focuses on the transport impact as a result of the development for various stages; and
- **NRE Conceptual Traffic Management Plan, 16 November 2015:** a document that provides an overview of the approach to traffic management and site safety management during works associated with the proposed development.

1.3 Report Structure

The report is structured as follows:

- Section 1 introduces the assessment (this section);
- Section 2 describes the existing conditions in vicinity of the site;
- Section 3 outlines the development proposal;
- Section 4 outlines the construction monitoring strategy;
- Section 5 describes the next steps.

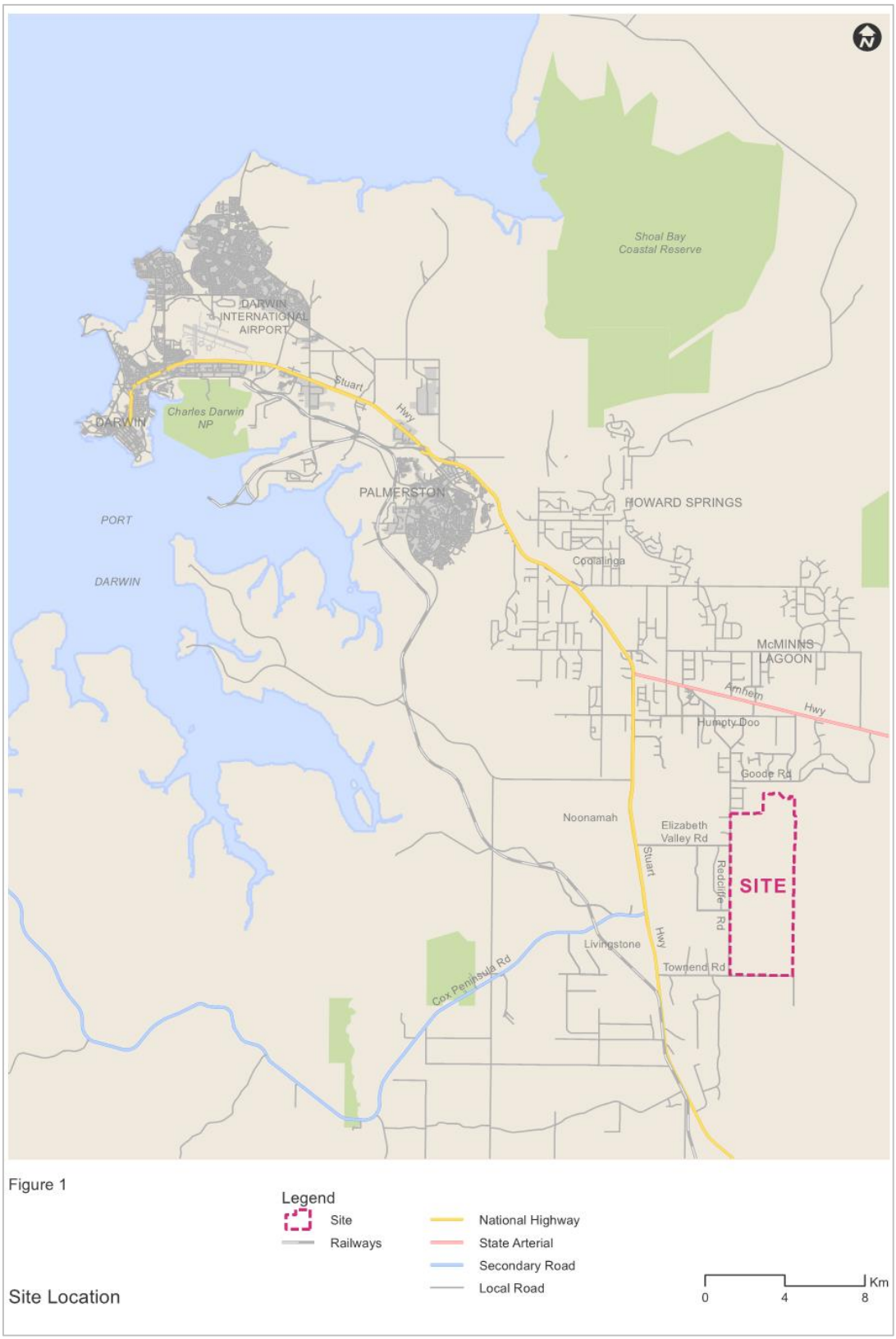


Figure 1 Site location

2 Existing Conditions

2.1 Road Network

Figure 2 shows the existing road hierarchy and overall road network within the local area. The Stuart Highway, a key road within the study area is a National Highway and only 3.5km (closet point) from the site.

Further information of these roads including photos of the existing conditions is shown in the TIA report.

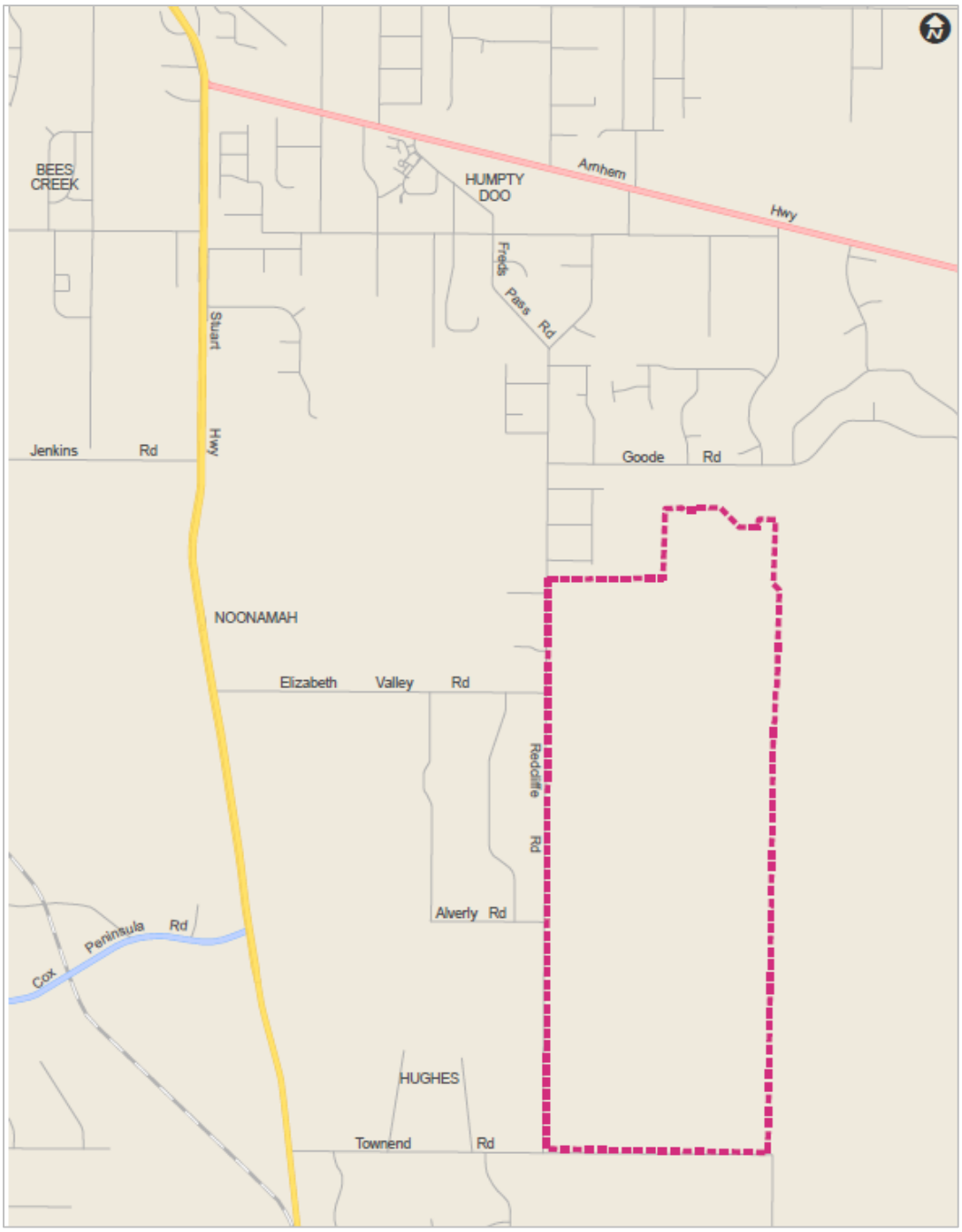


Figure 2 Existing road network

2.2 Traffic Volumes and Profiles

SCATS data obtained at the junction of Stuart Highway / Arnhem Highways has been used to understand the hourly traffic volume profile shown in Figure 3.

This profile was based on traffic data from Thursday 6th November 2014 and includes the overall traffic volumes through the intersection over the day. The data shows a typical daily traffic profile with distinct peaks at approximately 7-8am and 4-6pm (PM peak hour 5-6pm).

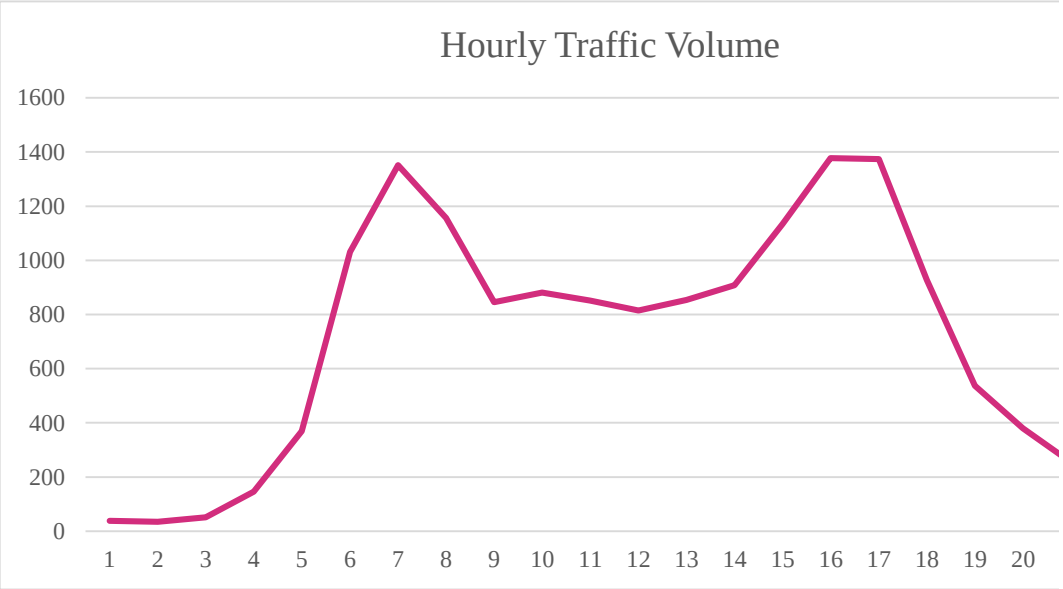


Figure 3 Hourly traffic volume profile over a 24 hour period: Stuart Highway/Arnhem Highway intersection

The existing daily traffic volumes are shown in the figure below. The traffic volumes shown are based on information from:

- SCATS data;
- 2013 Annual Traffic Report (DOT website);
- Litchfield Council traffic counts: daily two-way traffic data only.

Traffic volumes are generally quite low throughout the study area. The Stuart Highway (north of Cox Peninsula Road) and Arnhem Highway (west of Humpty Doo) have moderate traffic volumes with more than 3,000 vehicles per day per direction.

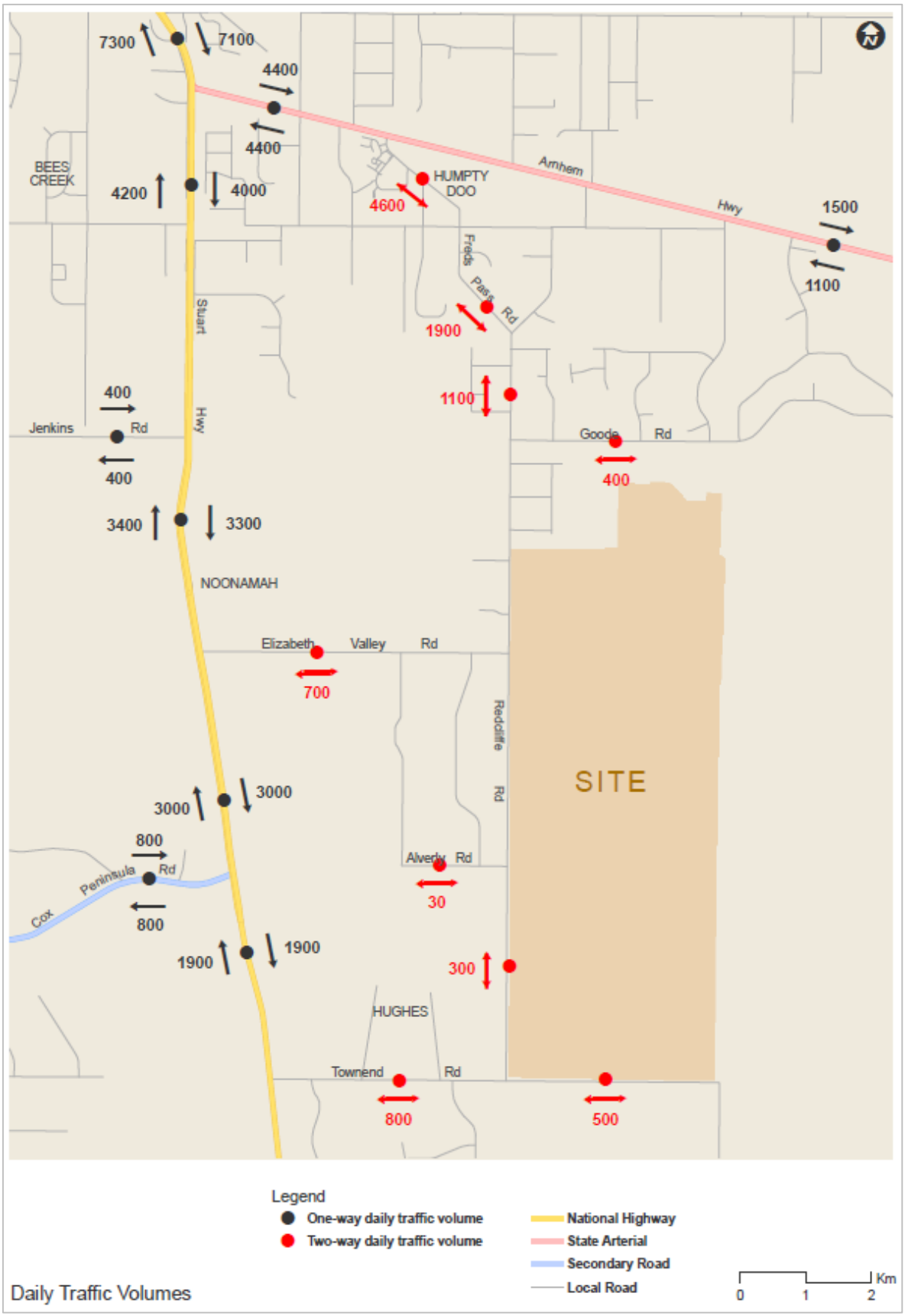
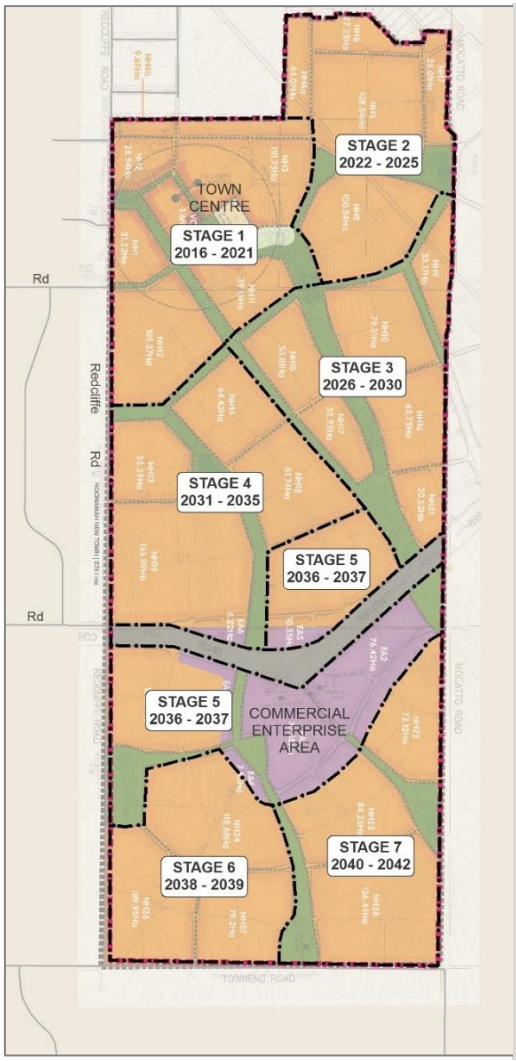


Figure 4 Existing daily traffic volumes

3 Proposed Development

The concept master plan for NRE is provided in Figure 5 with Table 1 providing a breakdown of the high level development programme.



NRE is a development 36km south-east of Darwin CBD. The site is currently undeveloped with occasional residential, agricultural and other rural activities. NRE is proposed as a master-planned rural and per-urban community, with a range of living alternatives. It is envisaged to comprise approximately 4,155 homes accommodating around 11,000 people, and will be delivered over approximately 27 year timeframe. It will consist of two rural activity centres, potentially including local shops and services, as well as community facilities. An enterprise area is also proposed.

Further information on the proposed development is discussed within the TIA report.

Figure 5 Concept master plan

Table 1 Development program

Stage	Timeframe (Year)	Land Uses	Land Area (ha)	No. Residential Lots
Stage 1	1 – 6	Residential Village Centre	320 1.6	640 lots
Stage 2	7 – 10	Residential	301	611 lots
Stage 3	11 – 15	Residential	292	584 lots
Stage 4	16 – 20	Residential	357	713 lots
Stage 5	21 – 22	Residential Enterprise Area	202 192	405 lots
Stage 6	23 – 24	Residential	308	616 lots
Stage 7	25 – 27	Residential	283	586 lots

4 Construction Monitoring Strategy

There is the potential for impacts to the local community as a result of the construction works. While this is noted, the impacts are expected to be minor given only 100-200 dwellings are constructed on-site each year.

Some key expected impacts include:

- impacts to other vehicles;
- vehicular access impacts;
- emergency vehicle impacts; and
- pavement deterioration impacts.

4.1 Impacts to Other Vehicles

The traffic generation of the development itself is expected to have a far greater impact than construction traffic in terms of capacity, delays and overall travel times along the Stuart Highway. While this is noted, some delays are expected as a result of construction traffic that is required to build the road infrastructure as well as the 100-200 dwellings on-site each year.

Recommended measures to assist in monitoring the impacts to other vehicles include:

- quarterly meetings with key stakeholders during construction stages to obtain feedback on monitor network performance and identify the need for further monitoring tasks.
- construction contractor will be required to provide reports every six months on crash incidents as well as travel times for vehicles along key routes. This could be achieved through automatic tube counts to understand changes to travel speeds and could be prepared prior to quarterly meetings with key stakeholders.

The recommended monitoring measures should be agreed with stakeholders prior to construction.

4.2 Vehicular Access Impacts to Noonamah, Palmerstone and Surrounds

It is acknowledged there is the potential for vehicular access and safety implications associated with the truck movements during construction stages.

Recommended measures to assist in monitoring vehicle access impacts include:

- quarterly meetings with key stakeholders during construction stages to obtain feedback on the performance of key intersections that access Palmerstone, Noonamah and Humpty Doo and identify the need for further monitoring tasks.

- construction contractor will be required to provide reports every six months on the performance of key intersections – this may include the intersection of :
  - Arnhem Highway / Freds Pass Road;
  - Stuart Highway / Elizabeth Valley Road; and
  - Stuart Highway / Lambrick Ave / Howard Springs Road.

  This could be achieved through a combination of SCATS traffic volumes and automatic tube counts to understand the number and type of heavy vehicles.

4.3 Emergency Vehicle Impacts

Recommended measures to assist in monitoring the impacts to emergency vehicles will be done through the quarterly meetings with key stakeholders. This is to obtain feedback on emergency vehicles impacts and to provide a platform to consider alternative traffic management measures.

4.4 Pavement Deterioration Impacts

It is acknowledged some pavement deterioration on key construction routes may occur.

Recommended measures to assist in monitoring pavement deterioration impacts include:

- a survey of the existing pavement conditions along the construction routes be undertaken prior to construction commencing so that deterioration resulting from the construction phase can be monitored.
- a survey to inspect changes to pavement conditions to occur annually (subject to the quality of the existing condition). Discussions can be held between the developer and road authorities to determine reimbursement of any costs associated with any change in pavement life.
- where any pavement damage occurs which requires immediate upgrades, Council should contact the Principal Contractor regarding pavement works e.g. refill large pot holes. Agreement on pavement works is required between council and contractor prior to construction.
- quarterly meetings with key stakeholders during construction stages to obtain feedback on pavement issues and to identify the need for further monitoring tasks.

5 Next Steps

The purpose of this report is to provide an interim assessment of the monitoring methodology during construction stages. Given the construction details have not been confirmed, it is recommended to update this document with specific details (intersections and routes to be monitored etc.) once they are known.