SV/19-0114

15 August 2023

Traffic • Parking • Transport

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MFY Pty Ltd
ABN 79 102 630 759

Mr. Brad Cunnington
Cunnington Rosse Town Planning & Consulting
631 Stuart Highway
BERRIMAH NT 0821

Dear Brad,

PROPOSED MIXED-USE DEVELOPMENT, 7 PACKARD PLACE, LARRAKEYAH DARWIN

I refer to the proposed mixed-use development at 7 Packard Place, Larrakeyah, which is the former ASTI Motel site. The proposal is a variation to an existing approval. As requested, I have reviewed the traffic impact associated with the current proposal as illustrated in Troppo Architects' Prelim DA Set dated 15 June 2023.

A traffic impact assessment of the approved development was undertaken by MFY in 2019. The assessment is detailed in the report titled *Asti Motel Redevelopment, 7 Packard Place, Darwin – June 2019* which is attached to this report. It identified that the traffic generated by the proposed development will be readily accommodated at the surrounding intersections.

The current proposal consists of two multi-storey buildings and will include the following:

- 56 residential apartments;
- 63 serviced apartments;
- a 196 m^2 office/reception area;
- an 80 m^2 gym; and
- a multi-storey car park in each building.

The office/reception and the gym will only cater for the residents of the proposed development and therefore will be ancillary. Accordingly, the traffic generated by the proposed development will relate to the apartments. The following traffic generation rates were adopted for the residential and serviced apartments in the previous assessment:

- residential apartments: 0.53 trips in the am peak hour and 0.32 trips in the pm peak hour; and
- serviced apartments: 0.4 trips in the am and pm peak hour.

Based on these rates, the proposed development will generate 55 trips in the am peak hour and 43 trips in the pm peak hour.

By way of comparison, the 2019 assessment identified that the approved development would have generated 72 trips in the am peak hour and 57 trips in the pm peak hour. Accordingly, the proposed development will generate less traffic than the approved development.

In addition to the above, it is also important to understand if the conditions on the adjacent road network have changed between the current and the previous assessment. Key roads that provide connectivity to and from Greater Darwin adjacent to the site include Daly Street and Gilruth Avenue. A comparison of the annual average daily traffic (AADT) volumes in 2019 and 2022 on these roads have been provided based on the Department of Infrastructure, Planning and Logistics (DIPL) Annual Traffic Report 2022. Table 1 identifies the comparison.

Table 1: AADT comparison

Roads	2019 AADT	2022 AADT
Stuart Highway	24,788	24,669
Gilruth Avenue	14,443	14,316

The above results identify that there was no traffic growth in the vicinity between 2019 and 2022. As such, the traffic conditions adjacent to the site are unlikely to have changed from when the previous traffic assessment was undertaken.

It is evident from the above analysis that the current proposal will generate a lower volume of traffic than previously assessed, and the current conditions are similar to those in 2019. Accordingly, the assessment completed in 2019 is relevant for this proposal. Based on the findings of the 2019 assessment, the traffic generated by the proposed development will be readily accommodated on the road network.

Yours sincerely,
MFY PTY LTD

Suresh Vijayakumar
Senior Traffic Engineer

Encl: *MFY's Traffic and Parking Report Asti Motel Redevelopment, 7 Packard Place, Darwin – June 2019*

Joondanna Investments Pty Ltd

ASTI MOTEL REDEVELOPMENT
7 PACKARD PLACE, DARWIN

TRAFFIC REPORT

June 2019

19-0114

Traffic • Parking • Transport

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DOCUMENT ISSUE

Revision issue	Date	Description	Approved by
Final	18 June 2019	Final Report	MLM

CONTENTS

1.0 EXECUTIVE SUMMARY

MFY Pty Ltd has been engaged by Joondanna Investments Pty Ltd to undertake a traffic assessment for the proposed redevelopment of the Asti Motel located at 7 Packard Place, Darwin.

The proposal comprises of the demolition of the existing Asti Motel and construction of a mixed-used development in the form of an eight-storey, 13-storey and six-storey buildings. It will include 140 units (multiple dwelling) and serviced apartments. A small café, management and administration offices, and a gym associated with the motel are also proposed.

The traffic that is expected to be generated by the proposed development (72 vehicles per hour (vph) in the morning and 57 vph in the evening peak periods) will be distributed via the adjacent road network. The increase in movements on the surrounding road network will generally be low and readily accommodated. An assessment of the impact of the proposal on the intersections of Smith Street/ Montoro Court and the Smith Street/Packard Place/Dashwood Crescent has been undertaken. Analysis of future conditions at the intersection, using a ten-year design horizon, identify that the intersections will work satisfactorily in the current configurations.

This report also gives consideration to representations that have been received as they relate to traffic or parking matters associated with the subject development.

The report is based on Troppo Architects' Drawing No PR04 dated 22 March 2019 and has been prepared in accordance with the Austroads "Guide to Traffic Management – Part 12: Traffic Impacts of Developments". Specifically, the MFY report has been based on the traffic impact assessment report structure outlined in Appendix C of the Austroads' Guide (albeit it is worth noting the structure is a suggested approach only and not a specific requirement of the Guide).

2.0 PROPOSED DEVELOPMENT

The proposal is to redevelop the Asti Motel to comprise of three residential buildings with multiple units and serviced apartments. The buildings will also include ancillary components, an office, a gym and a small café. Three car parking levels will be provided to service the development in addition to the at-grade parking provision.

2.1 BACKGROUND DEVELOPMENT

The subject site is partially developed land consisting of the existing three-storey, 40 room Asti Motel. Two accommodation blocks were located on the subject site but have now been demolished.

2.2 DESCRIPTION OF ON-SITE DEVELOPMENT

2.2.1 LAND USE AND INTENSITY

The proposed development comprises construction of an eight-storey building, a 13-storey building and a six-storey building. These building will comprise of:

- 55 one-bedroom units/apartments;
- 73 two-bedroom units/apartments;
- 12 three-bedroom units/apartments;
- a 113 m^2 café;
- a 21 m^2 office;
- a 61 m^2 gym; and
- 68 m^2 of ancillary space.

The proportional split between units and serviced apartment is 51% serviced apartments and 49% units.

Vehicle access to/from the site will be provided via a two-way crossover on Montoro Court, at the north-western boundary of the allotment. Another two-way access will be provided to Packard Place, towards the southern corner of the allotment. The crossovers will provide access to the basement car park and loading and refuse area.

Pedestrian access will be provided to/from the subject site in conjunction with existing footpaths located on both sides of Smith Street.

2.2.2 LOCATION

The subject site is located on the south-western side of Smith Street between Packard Place and Montoro Court.

2.2.3 ZONING

The site is located within the Tourist Commercial (TC) zone of the Northern Territory Planning Scheme (the Planning Scheme).

2.2.4 PHASING AND TIMING

Excavation of the site has commenced, based on the previously approved proposal. Therefore, the additional development will be able to be accommodated within these "early works" (as the building footprint between the two proposals will be consistent).

3.0 EXISTING AREA CONDITIONS

3.1 STUDY AREA

3.1.1 AREA OF INFLUENCE

The study area is illustrated on Figure 1 and includes the subject site, neighbouring properties, and the adjacent local road network.

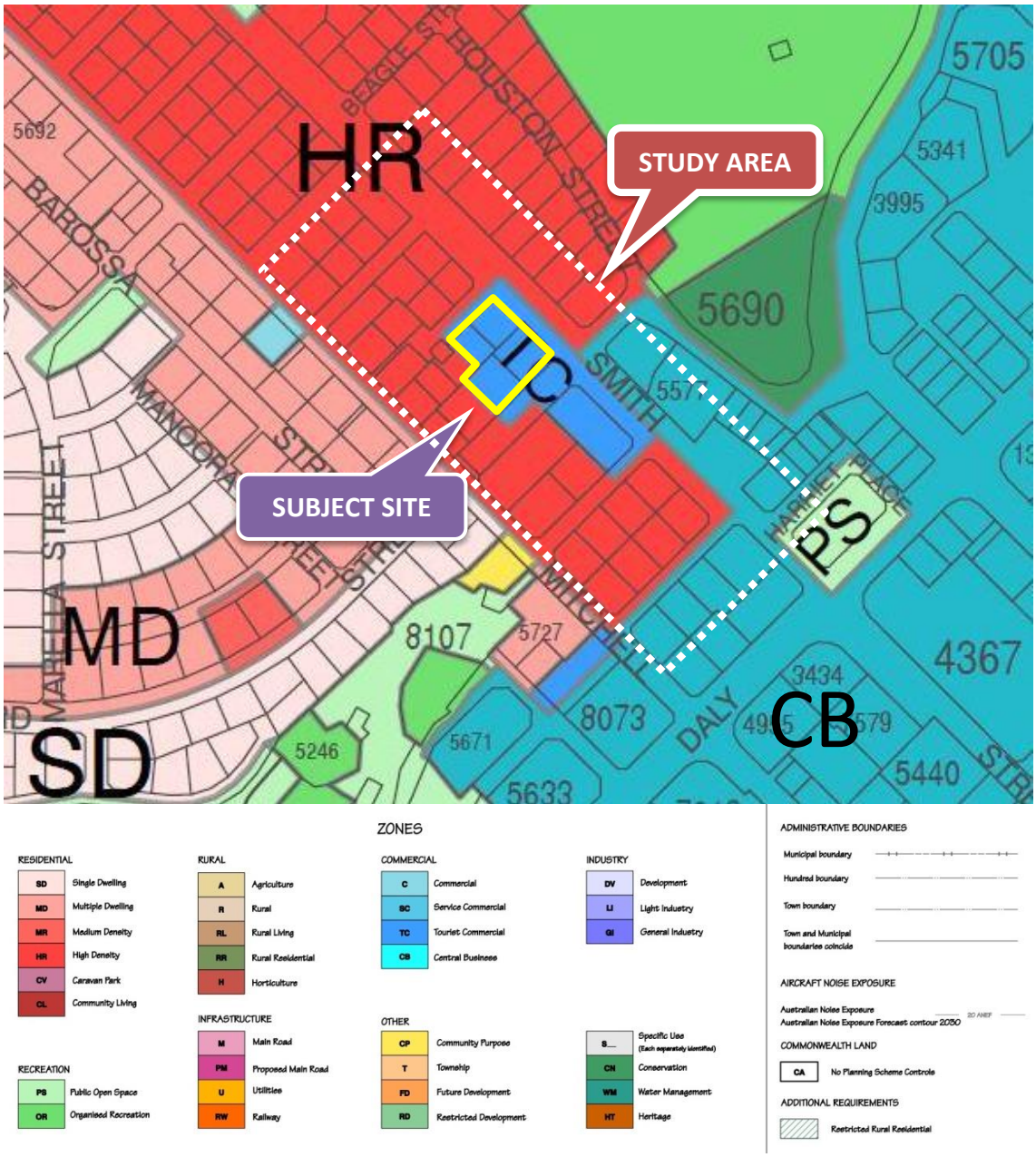


Figure 1: Study area locality and zoning (NT Planning Scheme Zoning Maps)

3.1.2 AREA OF SIGNIFICANT TRANSPORTATION IMPACT

The additional traffic generated by the proposed development is relatively low (as detailed in Section 4.1) compared with the surrounding road network volumes. The surrounding roads and intersections will be able to accommodate the small increases in movements generated by the site. A detailed traffic assessment has been undertaken of the impact on Montoro Court/Smith Street and Packard Place/ Smith Street/Dashwood Crescent intersections.

3.2 STUDY AREA LAND USE

3.2.1 EXISTING LAND USES

Surrounding the site is a mix of developments, with multi-level residential apartments being the predominant land use. Some minor retail uses on the north-eastern side of Smith Street, particularly toward Daly Street, are also present.

3.2.2 EXISTING ZONING

The study area has three zones: Tourist Commercial (TC) (within which the subject site is located), Central Business (CB) and High Density Residential (HR). Figure 1 illustrates the zoning for the study area.

The Planning Scheme details that the primary purpose of Zone TC is to provide for uses or development servicing tourism, including commercial and residential activities.

3.2.3 ANTICIPATED FUTURE DEVELOPMENT

Continued development within Darwin and the vicinity of the study area will occur within the assessments design horizon. The Department of Infrastructure, Planning and Logistics (DIPL) has specified that the annual growth in the road network will be in the order of 2% per annum.

3.3 SITE ACCESSIBILITY

3.3.1 AREA ROADWAY SYSTEM

The road network surrounding the site comprises a traditional grid network layout. The roads in the locality of the subject site are under the care and control of the City of Darwin.

Smith Street is a two-way collector road, generally comprising two lanes. Smith Street comprises an 11 m wide (approximately) carriageway. A 50 km/h speed limit applies to this section of Smith Street adjacent to the subject site. A 60 km/h limit applies to Smith Street, from Packard Place toward Daly Street.

Montoro Court is a two-way local road, approximately 7.5 m wide, which terminates in a cul-de-sac at its south-western end. The general urban speed limit of 50 km/h applies to this road.

Packard Place is a two-way local road, approximately 7.5 m wide, which terminates in a cul-de-sac at its south-western end. The general urban speed limit of 50 km/h applies to this road. Packard Place forms a four-leg intersection with Smith Street and Dashwood Crescent.

A service road is located parallel to Smith Street adjacent to the subject site and provides access to 19 angled parking spaces for use by the general public. Access into the service road is provided from Packard Place.

No parking controls have been implemented on Smith Street, Montoro Court or Packard Place, notwithstanding the provision of the angled parking spaces adjacent to Smith Street.

3.3.2 TRAFFIC VOLUMES AND CONDITIONS

Traffic data for the intersection of Smith Street with both Montoro Court and Packard Place/Dashwood Crescent were obtained from turning count surveys undertaken in June 2019.

A seasonal adjustment factor has previously been calculated by MFY for other projects within close proximity to the subject site within the Darwin area and is provided in Table 1.

Table 1: Seasonal adjustment factor

Month	Daily Traffic Volumes			Seasonal Adjustment Factor
	UDVDP003	UDVDP007	Combined	
January	23,784	7,032	30,816	1.17
February	27,185	6,701	33,886	1.06
March	27,144	6,564	33,708	1.07
April	27,285	7,020	34,305	1.05
May	28,586	7,651	36,237	0.99
June	29,835	7,791	37,626	0.96
July	29,836	8,132	37,968	0.95
August	29,415	7,525	36,940	0.97
September	28,904	7,525	36,429	0.99
October	28,544	7,268	35,812	1.01
November	28,547	11,248	39,795	0.90
December	25,257	9,583	34,840	1.03
Annual average day traffic (AADT)	**27,727**	**8,277**	**36,004**	**1.00**

Figure 2 illustrates the existing traffic movements occurring at the Smith Street/ Montoro Court intersection, during the am and pm peak hours. Figure 3 illustrates the existing traffic movements occurring at the Smith Street/Packard Place/Dashwood Crescent intersection, during the am and pm peak hours.

Considering that the traffic volumes in June are above the annual average, the turning volumes have not been adjusted.

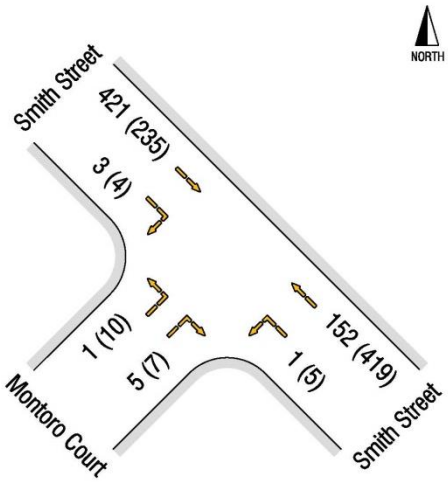


Figure 2: 2019 peak hour traffic movements at the Smith Street/Montoro Court intersection [am/(pm)]

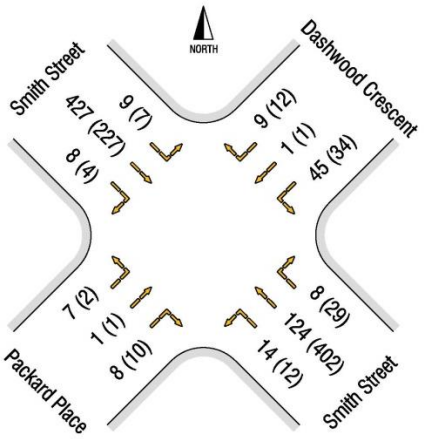


Figure 3: 2019 peak hour traffic movements at the Smith Street/Packard Place/Dashwood Crescent intersection [am/(pm)]

3.3.3 TRANSIT SERVICE

Public bus services within the CBD generally operate along a route which utilises Daly Street, Mitchell Street, the Darwin Bus Interchange and Cavenagh Street. No services operate along Smith Street to the north-west of Daly Street.

The following bus stops are located within a short walk from the subject site, followed by the routes serviced at each location:

- Mitchell Street Stop 240 – routes 4 and 14;
- Mitchell Street Stop 121 – routes 4, 6 and 14;
- Mitchell Street Stop 178 – routes 4, 5, 6, 8, 10, 14, OL1 and OL2; and
- Daly Street Stop – routes 5, 6, 8 and10;

3.3.4 PEDESTRIANS AND BICYCLISTS

Pedestrians can travel on either side of the road, as dual footpaths are provided adjacent to roads in the vicinity of the subject site.

Cyclist movements are generally accommodated within the carriageway on the surrounding roads (i.e. share with vehicles), albeit cyclists can also utilise the footpath network.

A shared pedestrian/cycle path is provided along Smith Street adjacent to the subject site. A footpath is provided on the other side of Smith Street.

The broader cycle network includes off-road cycle paths within reasonable proximity to the site, including the north-south off-road path to the west of Stuart Highway, the off-road path that is situated parallel to Gardens Road and the off-road path adjacent The Esplanade.

4.0 PROJECT TRAFFIC

4.1 SITE TRAFFIC

4.1.1 TRIP GENERATION

The NSW Roads and Maritime Services *"Guide to Traffic Generating Developments"* (RMS Guide) provides trip generation rates for a variety of land uses, including those proposed. The RMS Guide identifies the following peak hour rates relevant to the subject proposal:

- high density residential (am) – 0.53 trips per unit in the am peak hour and 0.32 trips per unit;
- serviced apartments (motel) – 0.4 trips per suite in the am and pm peak hours;
- café – five trips per 100 m² of gross floor area in the am and peak hours; and
- office/reception (am) – 1.6 trips per 100 m² in the am peak hour and 1.2 trips per 100 m².

It is considered that the gym will only cater for the residents and therefore will not generate any additional trips. Given that the RMS Guide does not specify a trip generation rate for land uses classified as "serviced apartments", the forecast trip generation rate a land uses of similar nature, motel has been applied.

Table 2 illustrates the forecast peak hour trips on the basis of the above rates.

Table 2: Forecast peak hour trip generation

Development Use	Quantity	Vehicle Trips Rate	
		Trip Rate am (pm)	Peak Hr Trips am (pm)
Serviced Apartments	69	0.4 (0.4) per suite	28 (28)
Multiple Dwellings	70	0.53 (0.32) per suite	37 (22)
Café	113 m^2	5 (5) per 100m^2	6 (6)
Meeting/Reception	94 m^2	1.6 (1.2) per 100m^2	2 (2)
Total			**72 (57)**

On the basis of the above, approximately 72 am and 57 pm peak hour movements could be generated by the subject development. It is considered that the peaks for the

various components may not directly coincide. Nevertheless, the assessment provides a "worst case" scenario of these peaks coinciding.

4.1.2 TRIP DISTRIBUTION

The following assumptions have been adopted in relation to am and pm directions of flows for trips generated by each component:

- multiple dwellings – 20% in/80% out in the am and 70% in/30% out in the pm;
- serviced apartments – 20% in/80% out in the am and 60% in/40% out in the pm;
- café – 50% in/50 % out in the am and pm; and
- meeting – 80% in/20 % out in the am and vice-versa in the pm.

Based on the above distribution:

- 17 trips will be to the site and 55 trips will be from the site in the am peak hour; and
- 35 trips will be to the site and 22 trips will be from the site in the pm peak hour.

The general distribution of traffic associated with the site has been assumed to be 70% to/from the Packard Place and 30% to/from Montoro Court.

In regards to the directional distribution to/from the site, it is anticipated that:

- 70% of the trips will originate from the east (i.e. Darwin City); and
- 30% of the trips will originate from the west.

4.1.3 MODAL SPLIT

The above traffic generation rates include general consideration of the proportion of motor vehicle use for users associated with the site. In reality, the trip generation rates are expected to be conservative, as Darwin has higher levels of walking and cycling (i.e. for journey to work trips) than other Australian capital cities, and the site has a relatively high level of public transport accessibility.

4.1.4 TRIP ASSIGNMENT

Based on the above forecasts, trip assignment has been undertaken for the intersection of Smith Street and Montoro Court, and Smith Street, Packard Place and Dashwood Crescent. Figures 4 and 5 illustrate the additional movements at the intersections.

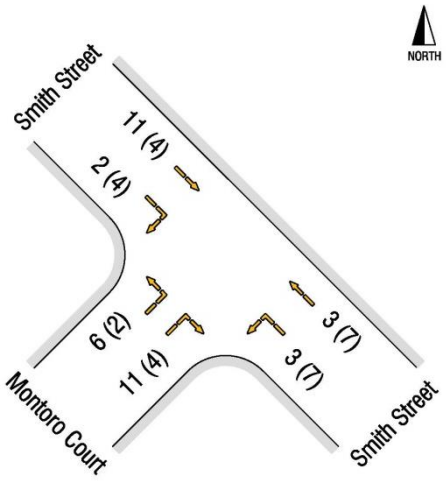


Figure 4: Additional peak hour movements at the Smith Street/Montoro Court intersection [am/(pm)]

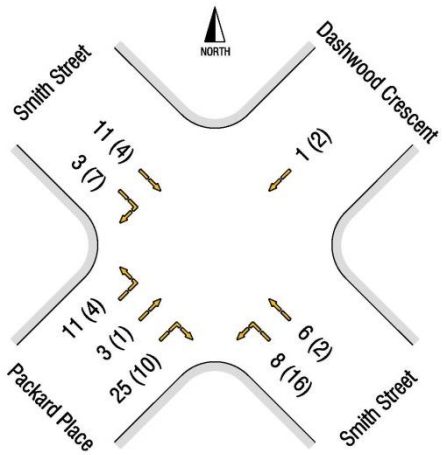


Figure 5: Additional peak hour movements at the Smith Street/Packard Place/Dashwood Crescent intersection [am/(pm)]

4.2 FUTURE TRAFFIC

The existing traffic volumes at the Smith Street/Packard Place and the Smith Street/ Packard Place/Dashwood Crescent intersections have been extrapolated to a future "base" horizon year. An annual growth rate of 2% per annum has been applied, as identified by DIPL. A ten-year design horizon has been selected for assessment of the proposal (i.e. 2029).

Figures 6 and 7 illustrate the "base" case future traffic volumes (i.e. without the subject development) at the intersections.

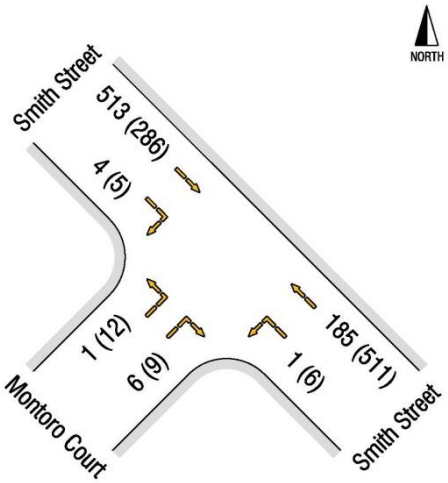


Figure 6: 2029 design year base case peak hour volumes at the Smith Street/Montoro Court intersection [am/(pm)]

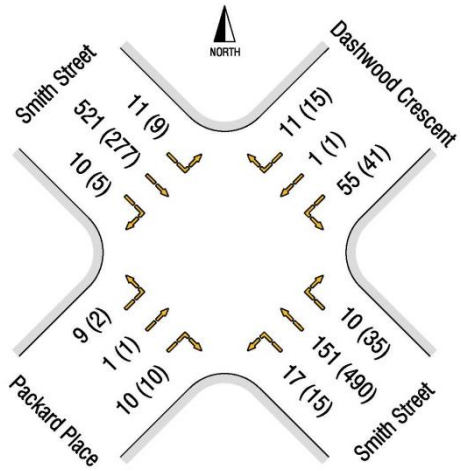


Figure 7: 2029 design year base case peak hour volumes at the Smith Street/Packard Place/ Dashwood Crescent intersection [am/(pm)]

4.3 TOTAL TRAFFIC

Figures 8 and 9 illustrate the forecast future traffic volumes for the 2029 design year, including the volumes associated with the development.

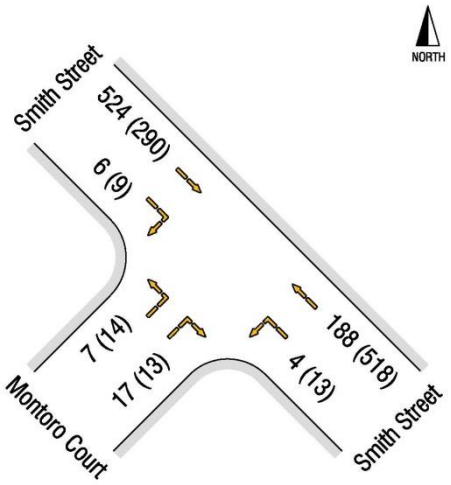


Figure 8: Forecast future (base case plus development) peak hour volumes at the Smith Street/Montoro Court intersection [am/(pm)]

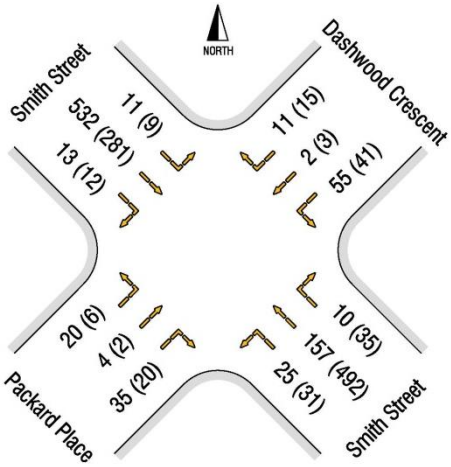


Figure 9: Forecast future (base case plus development) peak hour volumes at the Smith Street/Packard Place/Dashwood Crescent intersection [am/(pm)]

5.0 TRANSPORTATION ANALYSIS

5.1 SITE ACCESS

Access to the site will be provided via a two-way crossover on Packard Place and Montoro Court, as per the existing situation. The crossovers will provide access to the loading zone and car parking levels. The existing access to the Smith Street service road will be removed from the proposed redevelopment of the Asti Motel.

As requested by Council, swept path assessments of refuse/delivery vehicle (a medium rigid vehicle) entering and exiting the site and the loading bay were undertaken and are illustrated in Figures 10 and 11.

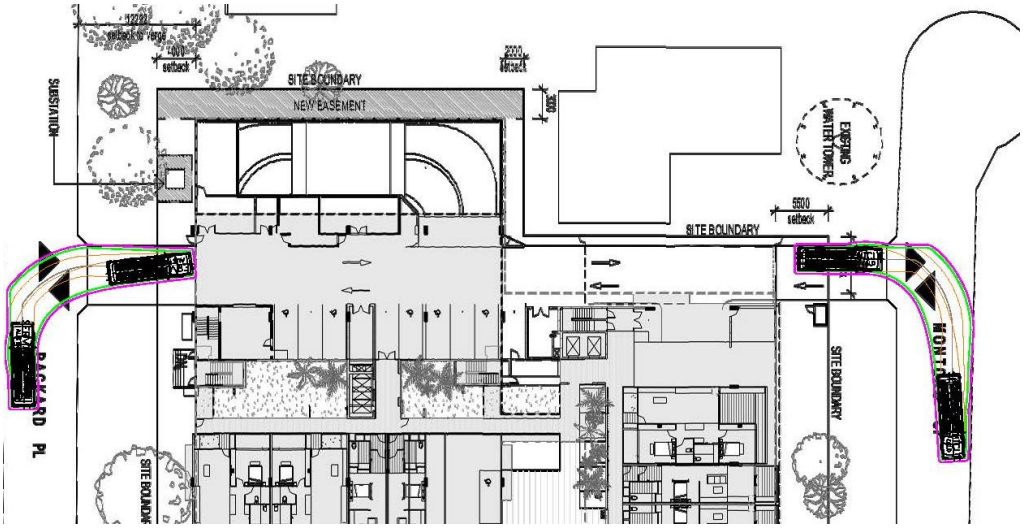


Figure 10: Refuse vehicle entering and exiting the site

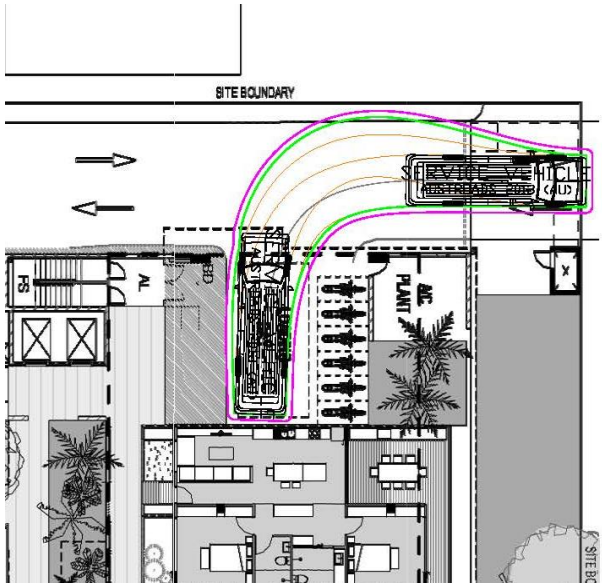


Figure 11: A medium rigid vehicle (MRV) reversing into the loading area

The figures identify that the refuse/delivery vehicle will be able to enter and exit the site in a forward direction and will be able to reverse into the loading area within the site...

Pedestrian connectivity will be provided through the use of existing pedestrian infrastructure and connections to and from the proposed development. Further details in respect to these connections will be discussed with Council during detailed design.

5.2 CAPACITY AND LEVEL OF SERVICE

SIDRA intersection modelling software has been utilised to analyse the capacity and Level of Service of the Smith Street/Montoro Court and Smith Street/Packard Place intersections. These analyses have been summarised in Sections 5.2.1 and 5.2.2. Detailed output from the SIDRA analysis is provided in Appendix A.

5.2.1 SMITH STREET/MONTORO COURT

5.2.1.1 *Existing Conditions*

The performance of the intersection for the existing (2019) traffic scenario is summarised in Table 3.

Table 3: 2019 existing performance indicators for the Smith Street/Montoro Court intersection

Turning Movement	am			pm		
	Degree of Saturation	95th percentile queue (m)	Average Delay (sec)	Degree of Saturation	95th percentile queue (m)	Average Delay (sec)
Montoro Ct (SW) - R-Turn	0.01	0.2	5.6	0.02	0.3	5.8
Smith St (NW) - R-Turn	0.25	0.1	5.1	0.14	0.4	6.1

The above analysis indicates that the intersection of Smith Street and Montoro Court currently operates satisfactorily with minimal queues and delays, in both the am and pm peak hours.

5.2.1.2 *Background Conditions*

The performance of the intersection for the base case (2029 based on 2% pa growth) traffic scenario is summarised in Table 4.

Table 4: 2029 background conditions performance indicators for the Smith Street/Montoro Court intersection

Turning Movement	am			pm		
	Degree of Saturation	95th percentile queue (m)	Average Delay (sec)	Degree of Saturation	95th percentile queue (m)	Average Delay (sec)
Montoro Ct (SW) - R-Turn	0.01	0.1	5.9	0.02	0.5	6.3
Smith St (NW) - R-Turn	0.31	0.2	5.3	0.17	0.4	6.6

The SIDRA analysis for the forecast background conditions indicates that the intersection of Smith Street and Montoro Court will operate satisfactorily with minimal increase in queues and delays as compared to the existing scenario.

5.2.1.3 *Total Traffic*

The performance of the intersection for the future total (base case plus development) traffic scenario is summarised in Table 5.

Table 5: 2029 total traffic performance indicators for the Smith Street/Montoro Court intersection

Turning Movement	am			pm		
	Degree of Saturation	95th percentile queue (m)	Average Delay (sec)	Degree of Saturation	95th percentile queue (m)	Average Delay (sec)
Montoro Ct (SW) - R-Turn	0.02	0.5	6.1	0.03	0.7	6.4
Smith St (NW) - R-Turn	0.31	0.4	5.3	0.18	0.7	6.7

With the addition of development volumes to the 2029 “background” volumes, the intersection of Smith Street and Montoro Court will continue to operate satisfactorily with minimal queues and delays.

5.2.2 DASHWOOD CRESCENT/SMITH STREET/PACKARD PLACE

5.2.2.1 *Existing Conditions*

The performance of the intersection for the existing traffic scenario is summarised in Table 6.

Table 6: 2019 existing performance indicators for the Dashwood Crescent/Smith Street/Packard Place intersection

Turning Movement	am			pm		
	Degree of Saturation	95th percentile queue (m)	Average Delay (sec)	Degree of Saturation	95th percentile queue (m)	Average Delay (sec)
Dashwood Cr (NE) - R-Turn	0.05	1.5	5.9	0.04	1.1	6.1
Smith St (SE) - R-Turn	0.09	0.6	6.0	0.26	1.9	5.4
Packard Pl (SW) - R-Turn	0.01	0.3	5.9	0.01	0.2	6.2
Smith St (NW) - R-Turn	0.26	0.5	5.0	0.14	0.3	6.0

The above analysis indicates that the intersection of Dashwood Crescent, Smith Street and Packard Place currently operates satisfactorily, with minimal queues and delays in both the AM and PM peak hours.

5.2.2.2 *Background Conditions*

The performance of the intersection for the base case (2029 based on 2% pa growth) traffic scenario is summarised in Table 7.

Table 7: 2029 background performance indicators for the Dashwood Crescent/Smith Street/Packard Place intersection

Turning Movement	am			pm		
	Degree of Saturation	95th percentile queue (m)	Average Delay (sec)	Degree of Saturation	95th percentile queue (m)	Average Delay (sec)
Dashwood Cr (NE) - R-Turn	0.06	2.0	6.3	0.05	1.4	6.7
Smith St (SE) - R-Turn	0.11	0.9	6.5	0.32	0.9	5.7
Packard Pl (SW) - R-Turn	0.02	0.4	6.4	0.02	0.3	6.7
Smith St (NW) - R-Turn	0.32	0.7	5.2	0.17	0.3	6.6

The SIDRA analysis for the forecast background conditions indicated that the intersection of Dashwood Crescent, Smith Street and Packard Place will operate satisfactorily with minimal increase in queues and delays as compared to existing scenario.

5.2.2.3 *Total Traffic*

The performance of the intersection for the future total (base case plus development) traffic scenario is summarised in Table 8.

Table 8: 2029 total traffic performance indicators for the Dashwood Crescent/Smith Street/Packard Place intersection

Turning Movement	am			pm		
	Degree of Saturation	95th percentile queue (m)	Average Delay (sec)	Degree of Saturation	95th percentile queue (m)	Average Delay (sec)
Dashwood Cr (NE) - R-Turn	0.07	2.1	6.4	0.05	1.5	6.8
Smith St (SE) - R-Turn	0.12	0.9	6.6	0.33	2.8	5.8
Packard Pl (SW) - R-Turn	0.06	1.3	6.6	0.03	0.7	6.9
Smith St (NW) - R-Turn	0.33	0.9	5.3	0.18	1.0	6.7

With the addition of development volumes to the 2029 "background" volumes, the intersection of Dashwood Crescent, Smith Street and Packard Place will continue to operate satisfactorily with minimal queues and delays.

5.3 TRANSPORTATION SAFETY

The SIDRA analysis of both intersections has indicated that the intersections will continue to operate satisfactorily, both in the "background condition" and "total traffic" scenarios.

The development will not require any road upgrades to cater for the additional traffic generated by the proposed development, as these volumes are relatively minor in comparison to the existing and future background volumes.

6.0 RESPONSE TO REPRESENTATIONS

Consideration has been given to the matters raised in the representations as they relate to traffic and parking. The concerns can be categorised in the following categories:

- access;
- traffic impact; and
- parking requirement.

6.1 ACCESS

The matters raised regarding access include:

- Packard Place and Montoro Court being too narrow for proposed development and for the driveway locations;
- The proposed gates will impact traffic flow by stopping traffic during operation; and
- existing sight line issues exiting Packard Place onto Smith Street.

The subject roads are designed for two-way traffic movements and currently service a number of similar multiple dwelling developments. The roads are adequate width to cater for such movements.

The proposed development has an existing access on each of these roadsThe Montoro Court access point will be retained in its existing location. The Packard Place access point is proposed to be relocated to maximise separation to the Smith Street intersection and therefore will result in a safer outcome. The access points will not be controlled by gates .

A review of the Packard Place/Smith Street intersection identified that sightlines meet relevant safety criteria. Council could liaise with drivers concerned about parking obstructing sightlines and apply parking controls if this was considered a safety issue.

6.2 TRAFFIC IMPACT

There was a concern that the traffic impact assessment was not current and that the surrounding road network will not be able to accommodate the increase in traffic as a result of the development. This report now updates the earlier assessment to check the potential traffic impact.

The current assessment has been undertaken based on turning counts obtained in June 2019. Traffic count detectors installed by the Department of Infrastructure, Planning and Logistics identify that typically, June experiences more traffic than the annual average. Regardless, the assessment has adopted the surveyed traffic volumes to preserve a conservative assessment.

The assessment confirms that the Montoro Court/Smith Street and the Packard Place/Smith Street intersections will operate satisfactorily with the additional traffic generated by the development for a ten-year design period.

6.3 PARKING REQUIREMENT

Concerns that the parking provided for the subject development will not adequately cater for the development and that the existing angled parking spaces on the service road are the property of the Council and should not be utilised by the development were raised. Accordingly, a parking assessment has been undertaken for the subject development to review the anticipated parking demand.

In order to assess the car parking provision required for the proposed development, the NTPS's "Table to Clause 6.5.1", which identifies car parking provision rates for a variety of land uses, has been applied. Rates for the Zone CB have been used due to the proximity of the subject site to the CBD area:

- multiple dwellings – one space per bed-sitter (studio) and one-bedroom dwelling, 1.5 spaces per two-bedroom dwelling, 1.7 spaces per three-bedroom dwelling and two spaces per dwelling with four or more bedrooms;
- café –three spaces for every 100 m² of net floor area; and
- serviced apartments – one space for every dwelling plus three spaces for every 100 m² of net floor area not within a dwelling.

On this basis, Table 1 summarises the car parking requirements associated with the current proposal.

Table 9: Parking requirements based on the NT Planning Scheme

Use	Quantity	Rate	Spaces
One-bedroom unit	28 units	one space per unit	28
Two-bedroom unit	37 units	1.5 spaces per unit	56
Three-bedroom unit	6 units	1.7 spaces per unit	10
Serviced apartments	69 units	one space per dwelling	69
Ancillary to serviced apartments [1]	145 m²	three space per 100 m²	72
Café	113 m²	six space per 100 m²	7

Total Spaces Required	**174**

[1] includes the gym, office and reception areas

The proposed multi-use development, therefore, requires a provision of 174 car parking spaces in accordance with the NTPS. The plans for the proposed development indicate that 201 spaces are proposed within the four car parking levels, which will meet the parking provision requirements of the NTPS for the Zone CB.

There were additional concerns that the serviced apartment enabled the use of a lower parking generation rate. Serviced apartments do not generate the same type of parking demand as residential dwellings as many visitors do not have a vehicle and there are only short periods when they are fully occupied. During a typical 'design' period, it would not be anticipate that all serviced apartments would be accommodated.

Notwithstanding, an additional assessment was undertaken applying the multiple dwelling rates for the serviced apartment as shown in Table 2.

Table 10: Parking requirements based on the NT Planning Scheme

Use	Quantity	Rate	Spaces
One-bedroom unit	28 units	one space per unit	28
Two-bedroom unit	37 units	1.5 spaces per unit	56
Three-bedroom unit	6 units	1.7 spaces per unit	10
One-bedroom serviced apartments	27 units	one space per unit	27
Two-bedroom serviced apartments	36 units	1.5 spaces per unit	54
Three-bedroom serviced apartments	6 units	1.7 spaces per unit	10
Ancillary to serviced apartments [1]	145 m²	three space per 100 m²	72
Café	113 m²	six space per 100 m²	7
Total Spaces Required			**196**

[1] includes the gym, office and reception areas

Accordingly, the provision of 201 spaces will readily accommodate the development even if the serviced apartments functioned as a multiple dwelling without the use of the angled parking spaces adjacent the site.

7.0 FINDINGS AND RECOMMENDATIONS

7.1 SITE ACCESSIBILITY

The site has been designed for access to/from Packard Place and Montoro Court. The proposal will retain one access point on each of these roads. A delivery/refuse vehicle will able to enter and exit the subject site in a forward direction.

7.2 TRANSPORTATION IMPACTS

The proposed development will generate an additional 72 trips and 57 trips in the am and pm peak hours, respectively. Such a volume is low and will be readily accommodated at the surrounding intersections, without the need to improve the intersection arrangements from a capacity perspective.

It is considered that the proposal will have minimal impact on the adjacent road network, even in the design horizon year (2029).

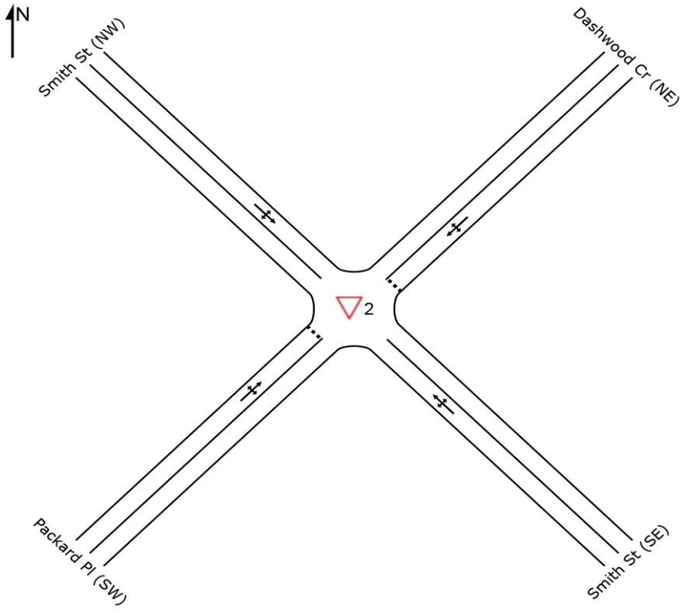
7.3 ROADWAY IMPROVEMENTS

The relatively small increase in traffic volumes associated with the subject development will not require any improvements to the existing road network.

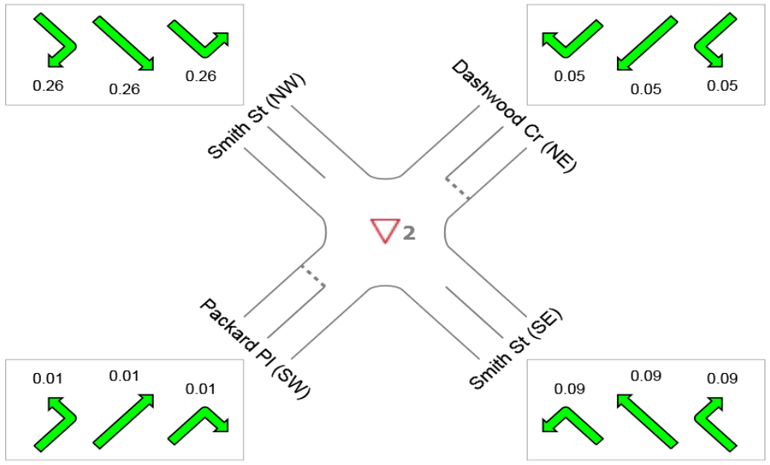
APPENDIX A

SIDRA ANALYSIS

INTERSECTION LAYOUT



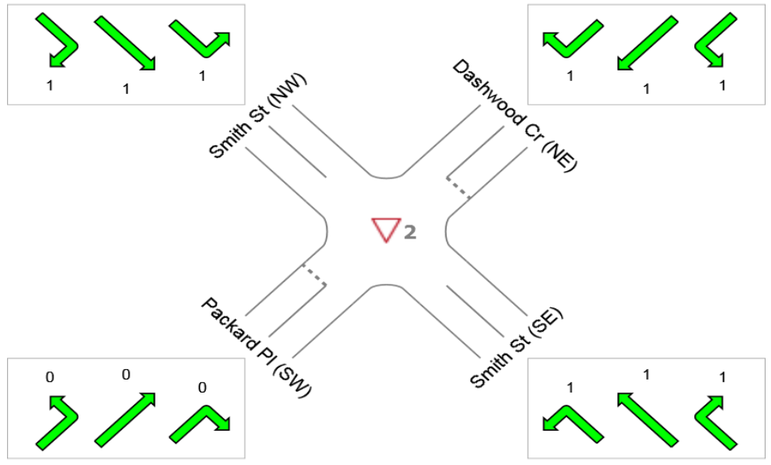
DEGREE OF SATURATION



Colour code based on Degree of Saturation

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

95%ile QUEUE DISTANCE (metres)



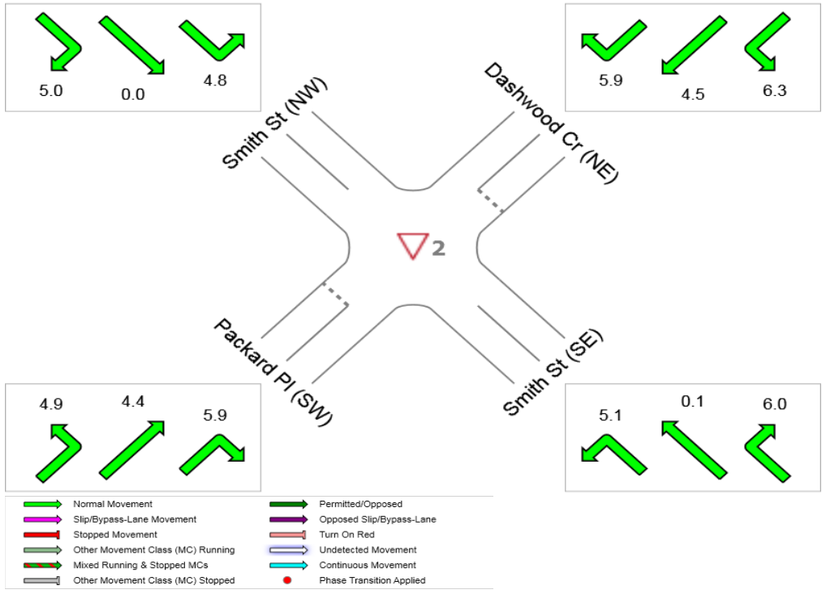
Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

DELAY (CONTROL) & LEVEL OF SERVICE

All Movement Classes

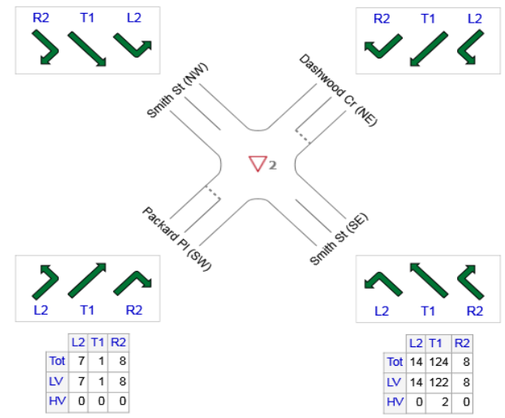
	Southeast	Northeast	Northwest	Southwest	Intersection
Delay (Control)	0.9	6.2	0.2	5.4	1
LOS	NA	A	NA	A	NA



INPUT VOLUMES

	R2	T1	L2
Tot	8	427	9
LV	8	418	9
HV	0	9	0

	R2	T1	L2
Tot	9	1	45
LV	9	1	44
HV	0	0	1



	L2	T1	R2
Tot	7	1	8
LV	7	1	8
HV	0	0	0

	L2	T1	R2
Tot	14	124	8
LV	14	122	8
HV	0	2	0

VOLUME SCENARIO: 2019 AM PEAK

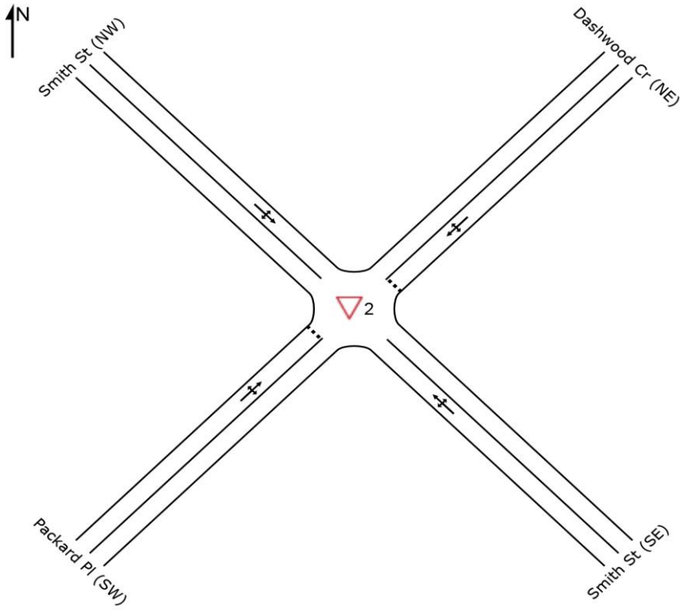
Colour code based on Level of Service

LOS A LOS B LOS C LOS D LOS E LOS F Continuous

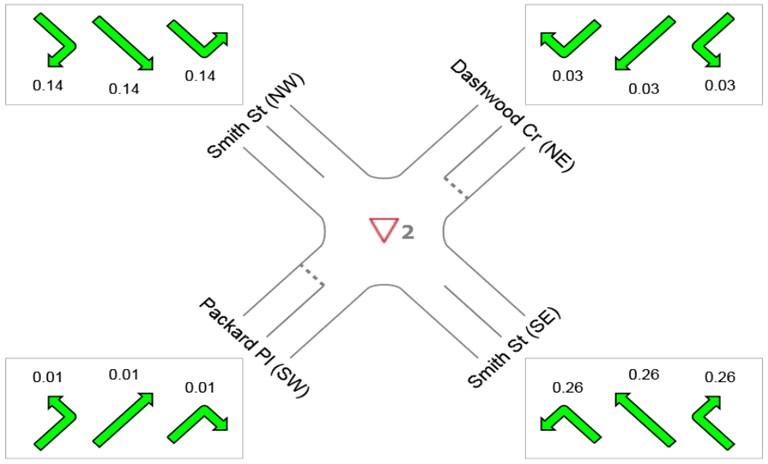
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

JOB NUMBER:	19-0114
PROJECT NAME:	ASTI MOTEL REDEVLOPMENT LARRAKEYAH, NORTHERN TERRITORY
INTERSECTION:	SMITH STREET / PACKARD PLACE
SCENARIO:	EXISTING AM PEAK

INTERSECTION LAYOUT



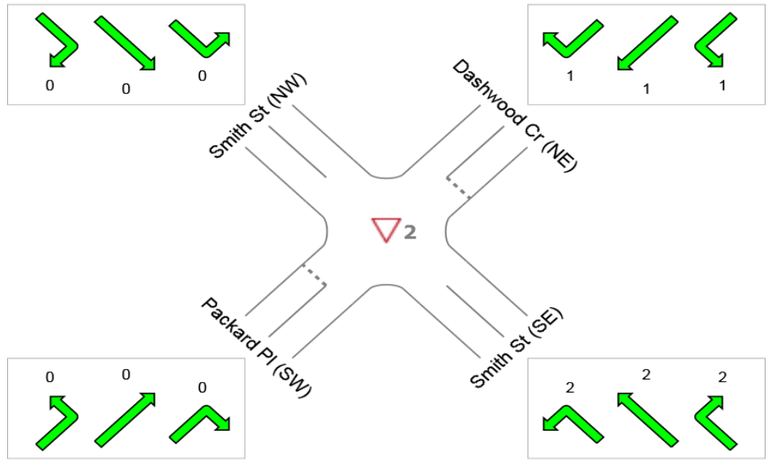
DEGREE OF SATURATION



Colour code based on Degree of Saturation

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

95%ile QUEUE DISTANCE (metres)



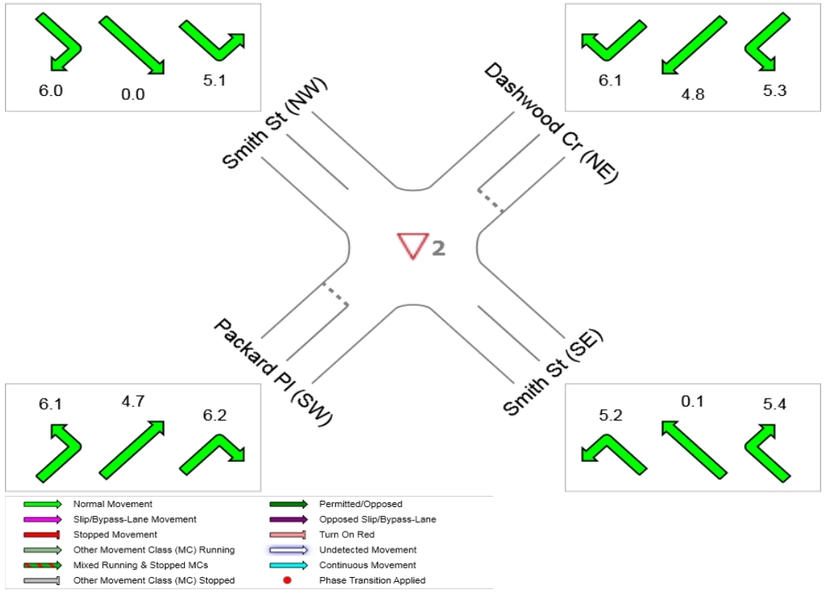
Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

DELAY (CONTROL) & LEVEL OF SERVICE

All Movement Classes

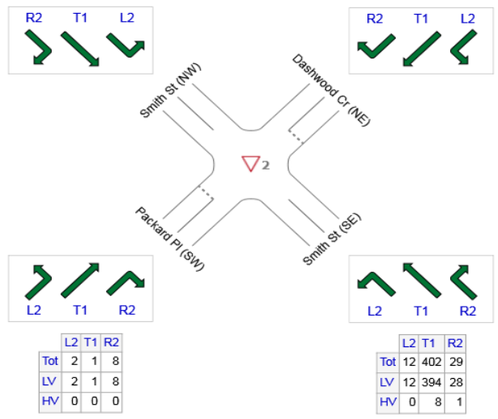
	Southeast	Northeast	Northwest	Southwest	Intersection
Delay (Control)	0.6	5.5	0.3	6	0.9
LOS	NA	A	NA	A	NA



INPUT VOLUMES

	R2	T1	L2
Tot	4	227	7
LV	4	222	7
HV	0	5	0

	R2	T1	L2
Tot	12	1	34
LV	12	1	33
HV	0	0	1



	L2	T1	R2
Tot	2	1	8
LV	2	1	8
HV	0	0	0

	L2	T1	R2
Tot	12	402	29
LV	12	394	28
HV	0	8	1

VOLUME SCENARIO: 2019 PM PEAK

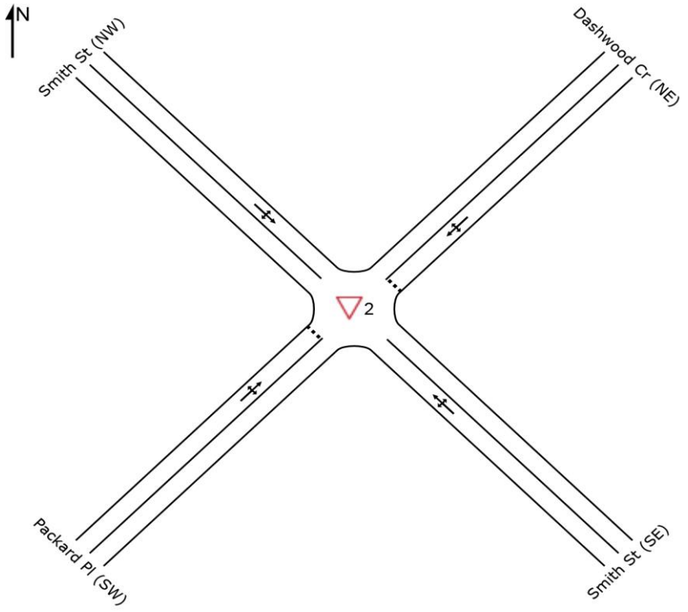
Colour code based on Level of Service

LOS A LOS B LOS C LOS D LOS E LOS F Continuous

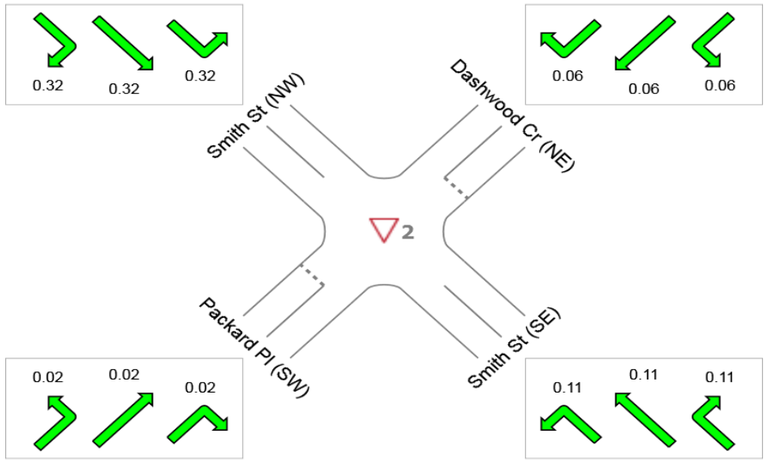
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

JOB NUMBER:	19-0114
PROJECT NAME:	ASTI MOTEL REDEVLOPMENT
	LARRAKEYAH, NORTHERN TERRITORY
INTERSECTION:	SMITH STREET / PACKARD PLACE
SCENARIO:	EXISTING PM PEAK

INTERSECTION LAYOUT



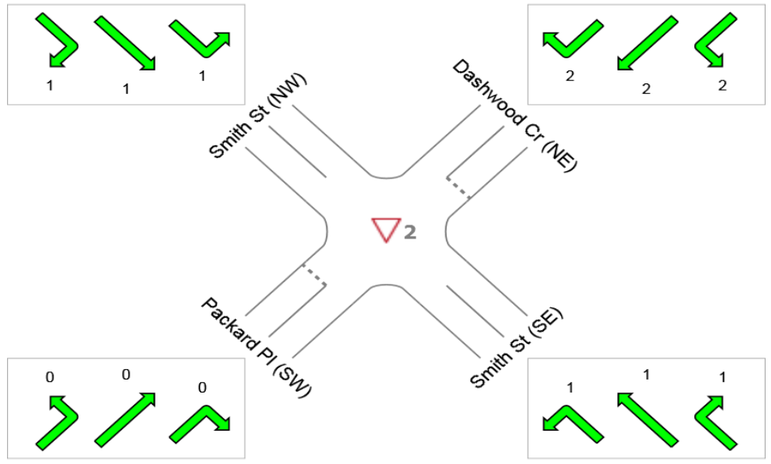
DEGREE OF SATURATION



Colour code based on Degree of Saturation

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

95%ile QUEUE DISTANCE (metres)



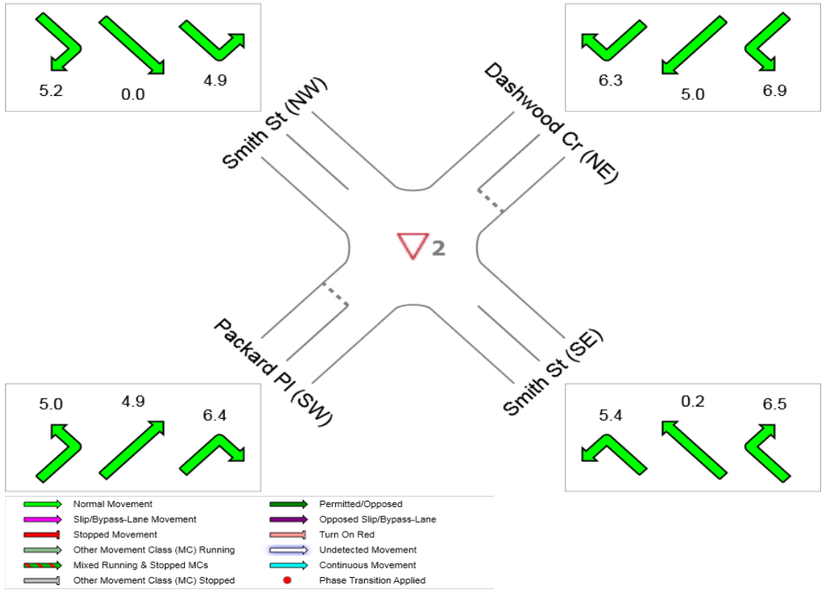
Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

DELAY (CONTROL) & LEVEL OF SERVICE

All Movement Classes

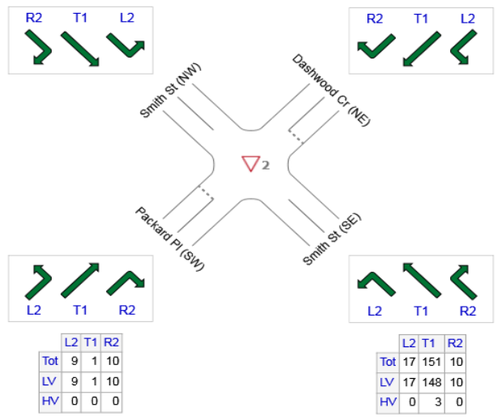
	Southeast	Northeast	Northwest	Southwest	Intersection
Delay (Control)	1	6.8	0.2	5.7	1.1
LOS	NA	A	NA	A	NA



INPUT VOLUMES

	R2	T1	L2
Tot	10	521	11
LV	10	511	11
HV	0	10	0

	R2	T1	L2
Tot	11	1	55
LV	11	1	54
HV	0	0	1



	L2	T1	R2
Tot	9	1	10
LV	9	1	10
HV	0	0	0

	L2	T1	R2
Tot	17	151	10
LV	17	148	10
HV	0	3	0

VOLUME SCENARIO: 2029 AM PEAK

Colour code based on Level of Service

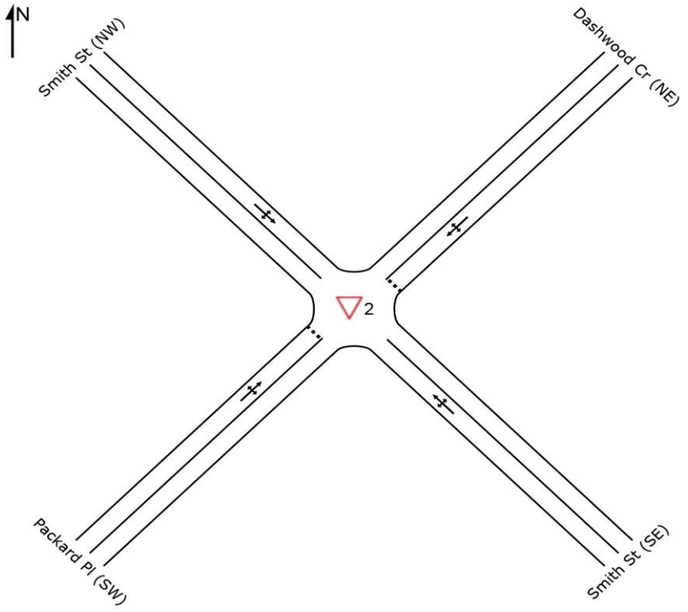
LOS A LOS B LOS C LOS D LOS E LOS F Continuous

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

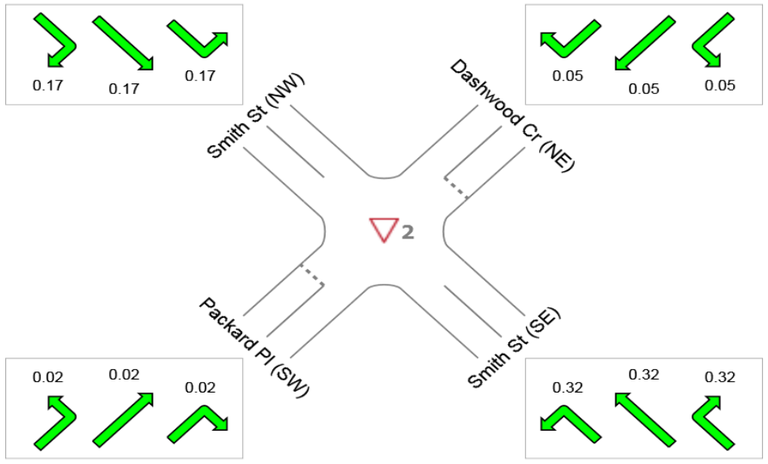
JOB NUMBER:	19-0114
PROJECT NAME:	ASTI MOTEL REDEVLOPMENT
	LARRAKEYAH, NORTHERN TERRITORY

INTERSECTION:	SMITH STREET / PACKARD PLACE
SCENARIO:	2029 AM PEAK

INTERSECTION LAYOUT



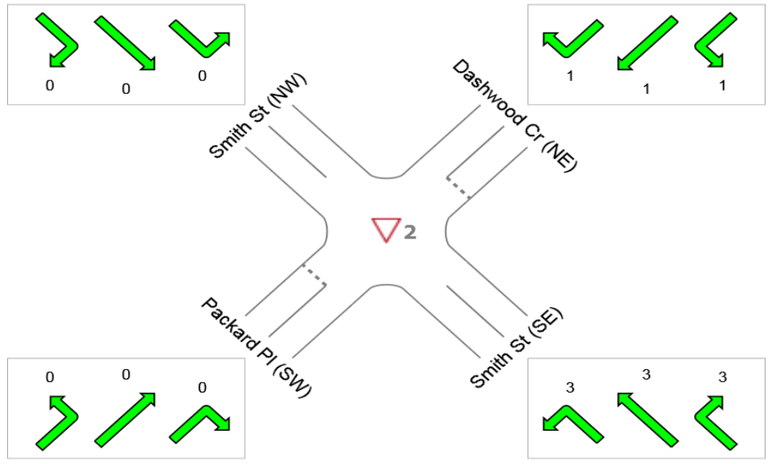
DEGREE OF SATURATION



Colour code based on Degree of Saturation

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

95%ile QUEUE DISTANCE (metres)



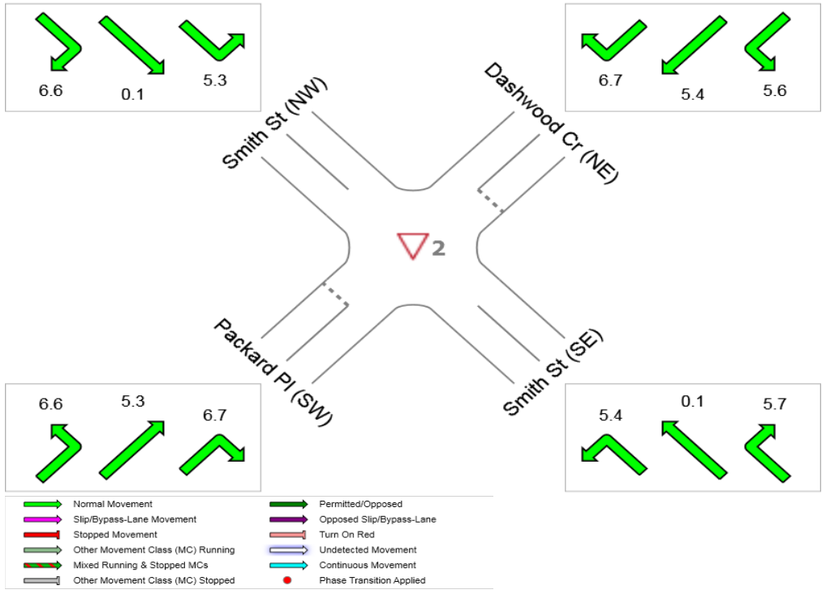
Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

DELAY (CONTROL) & LEVEL OF SERVICE

All Movement Classes

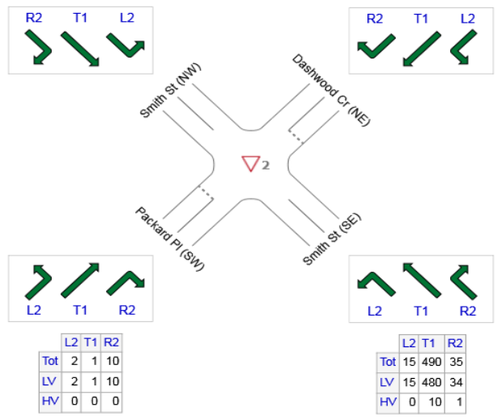
	Southeast	Northeast	Northwest	Southwest	Intersection
Delay (Control)	0.6	5.9	0.3	6.6	0.9
LOS	NA	A	NA	A	NA



INPUT VOLUMES

	R2	T1	L2
Tot	5	277	9
LV	5	271	9
HV	0	6	0

	R2	T1	L2
Tot	15	1	41
LV	15	1	40
HV	0	0	1



	L2	T1	R2
Tot	2	1	10
LV	2	1	10
HV	0	0	0

	L2	T1	R2
Tot	15	490	35
LV	15	480	34
HV	0	10	1

VOLUME SCENARIO: 2029 PM PEAK

Colour code based on Level of Service

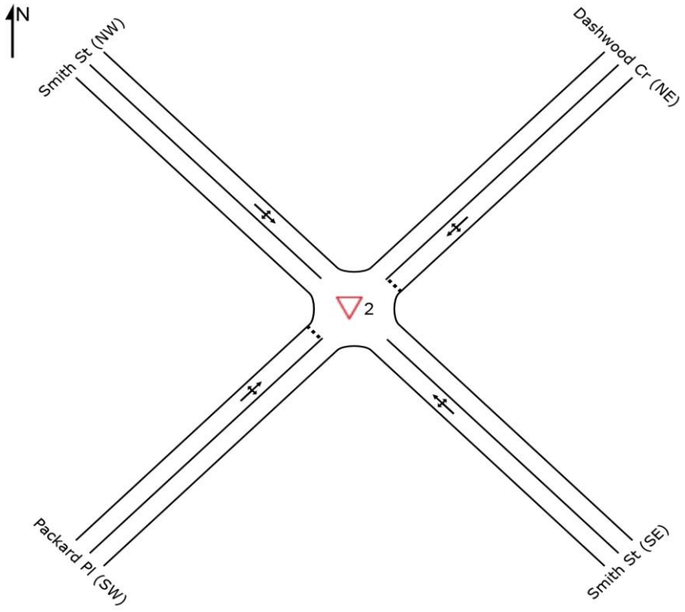
LOS A LOS B LOS C LOS D LOS E LOS F Continuous

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

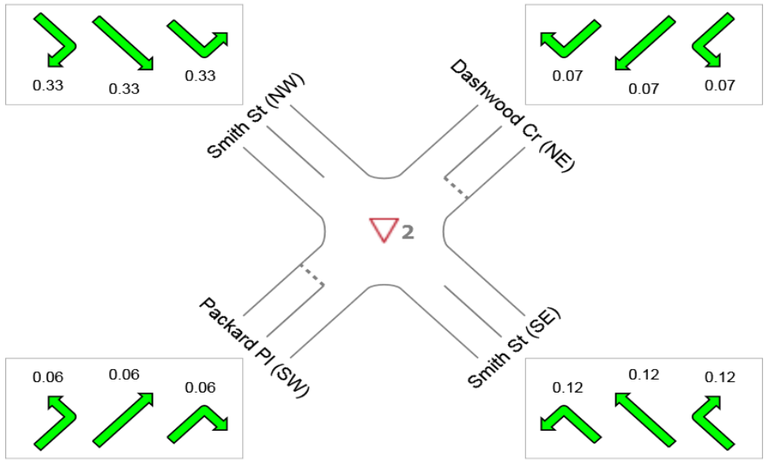
JOB NUMBER:	19-0114
PROJECT NAME:	ASTI MOTEL REDEVLOPMENT LARRAKEYAH, NORTHERN TERRITORY

INTERSECTION:	SMITH STREET / PACKARD PLACE
SCENARIO:	2029 PM PEAK

INTERSECTION LAYOUT



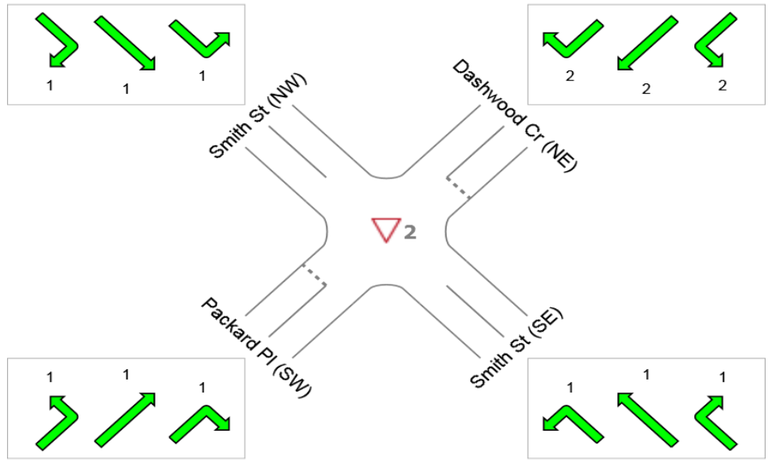
DEGREE OF SATURATION



Colour code based on Degree of Saturation

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

95%ile QUEUE DISTANCE (metres)



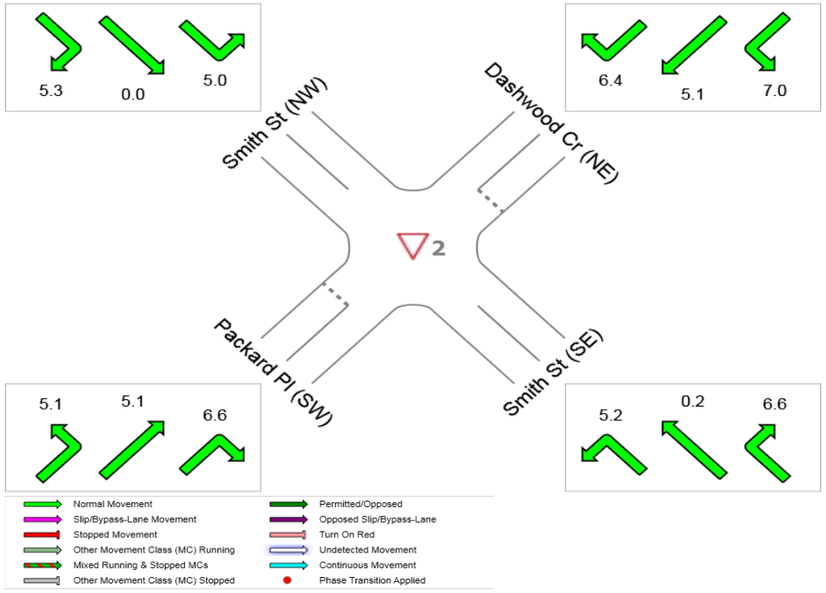
Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

DELAY (CONTROL) & LEVEL OF SERVICE

All Movement Classes

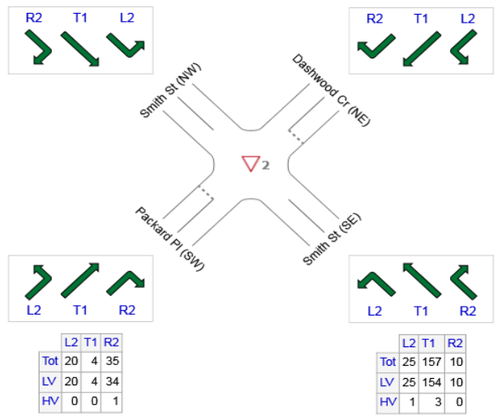
	Southeast	Northeast	Northwest	Southwest	Intersection
Delay (Control)	1.2	6.8	0.2	6	1.3
LOS	NA	A	NA	A	NA



INPUT VOLUMES

	R2	T1	L2
Tot	13	532	11
LV	13	521	11
HV	0	11	0

	R2	T1	L2
Tot	11	2	55
LV	11	2	54
HV	0	0	1



	L2	T1	R2
Tot	20	4	35
LV	20	4	34
HV	0	0	1

	L2	T1	R2
Tot	25	157	10
LV	25	154	10
HV	1	3	0

VOLUME SCENARIO: 2029 AM PEAK WITH DEVELOPMENT

Colour code based on Level of Service

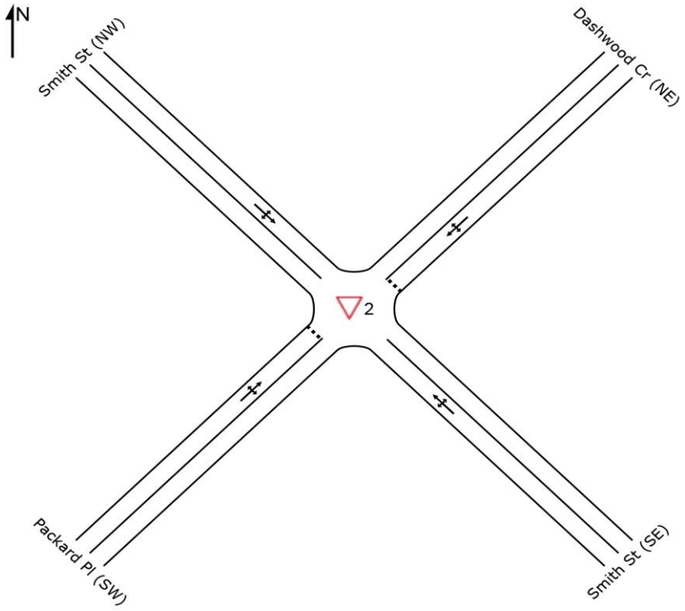
LOS A LOS B LOS C LOS D LOS E LOS F Continuous

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

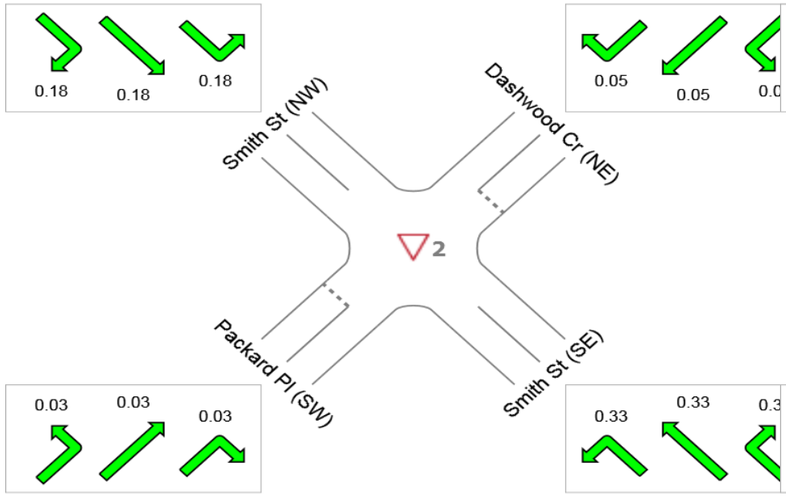
JOB NUMBER:	19-0114
PROJECT NAME:	ASTI MOTEL REDEVLOPMENT LARRAKEYAH, NORTHERN TERRITORY

INTERSECTION:	SMITH STREET / PACKARD PLACE
SCENARIO:	2029 AM PEAK WITH DEVELOPMENT

INTERSECTION LAYOUT



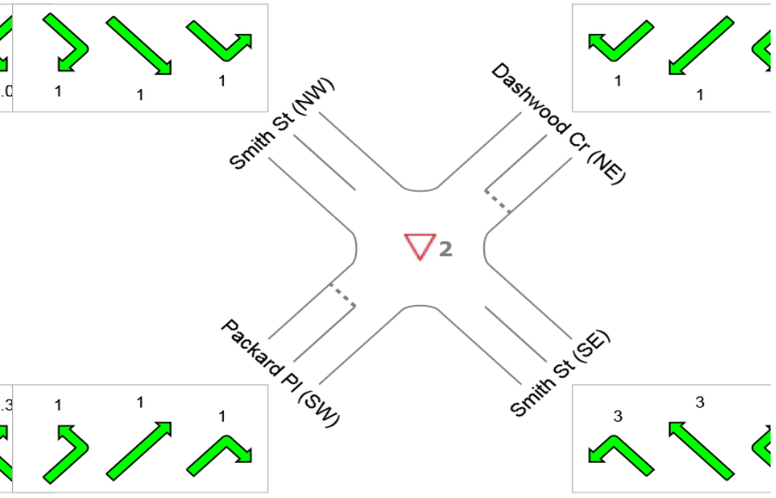
DEGREE OF SATURATION



Colour code based on Degree of Saturation

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

95%ile QUEUE DISTANCE (metres)



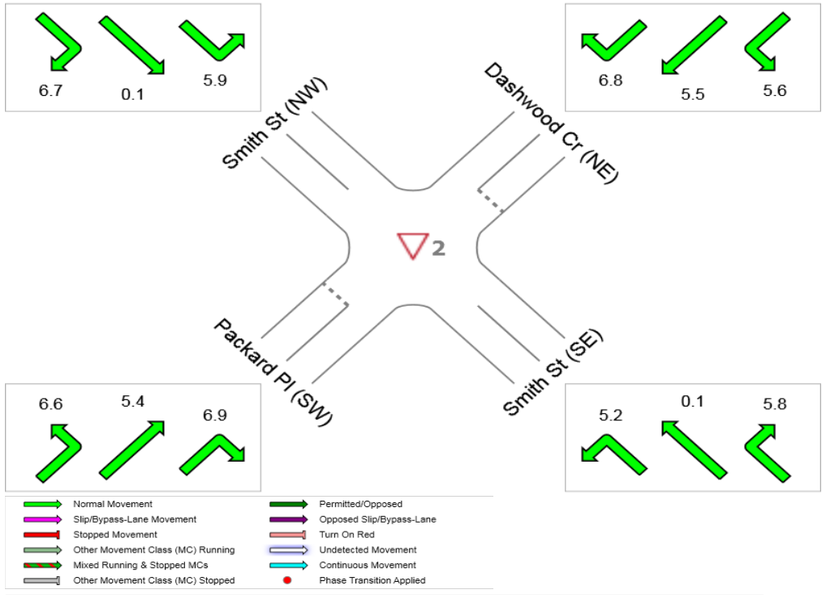
Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

DELAY (CONTROL) & LEVEL OF SERVICE

All Movement Classes

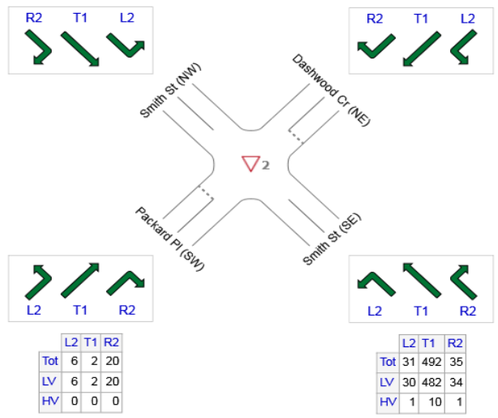
	Southeast	Northeast	Northwest	Southwest	Intersection
Delay (Control)	0.7	5.9	0.6	6.7	1.2
LOS	NA	A	NA	A	NA



INPUT VOLUMES

	R2	T1	L2
Tot	12	281	9
LV	12	275	9
HV	0	6	0

	R2	T1	L2
Tot	15	3	41
LV	15	3	40
HV	0	0	1



	L2	T1	R2
Tot	6	2	20
LV	6	2	20
HV	0	0	0

	L2	T1	R2
Tot	31	492	35
LV	30	482	34
HV	1	10	1

VOLUME SCENARIO: 2029 PM PEAK WITH DEVELOPMENT

Colour code based on Level of Service

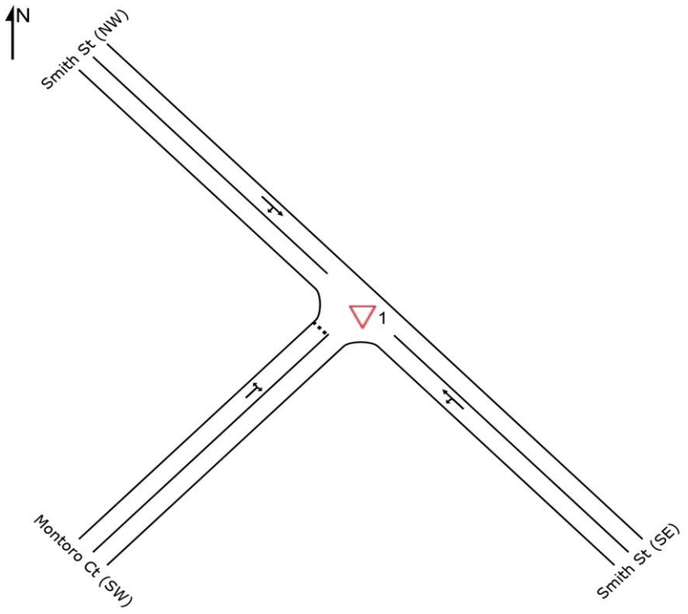
LOS A LOS B LOS C LOS D LOS E LOS F Continuous

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

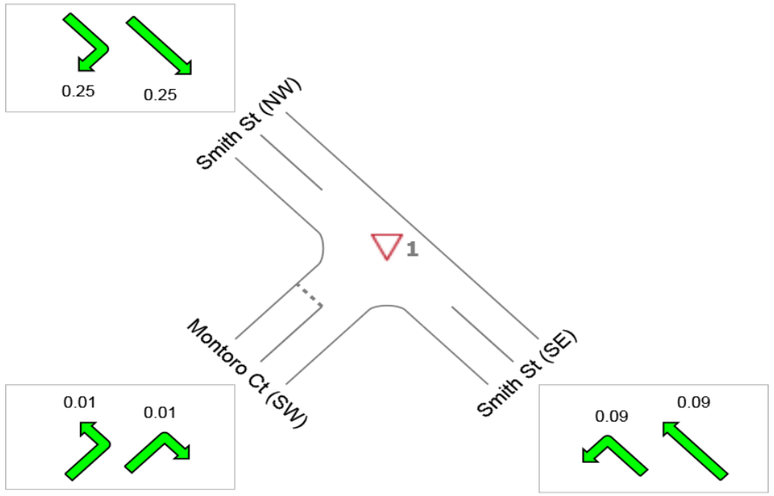
JOB NUMBER:	19-0114
PROJECT NAME:	ASTI MOTEL REDEVLOPMENT LARRAKEYAH, NORTHERN TERRITORY

INTERSECTION:	SMITH STREET / PACKARD PLACE
SCENARIO:	2029 PM PEAK WITH DEVELOPMENT

INTERSECTION LAYOUT



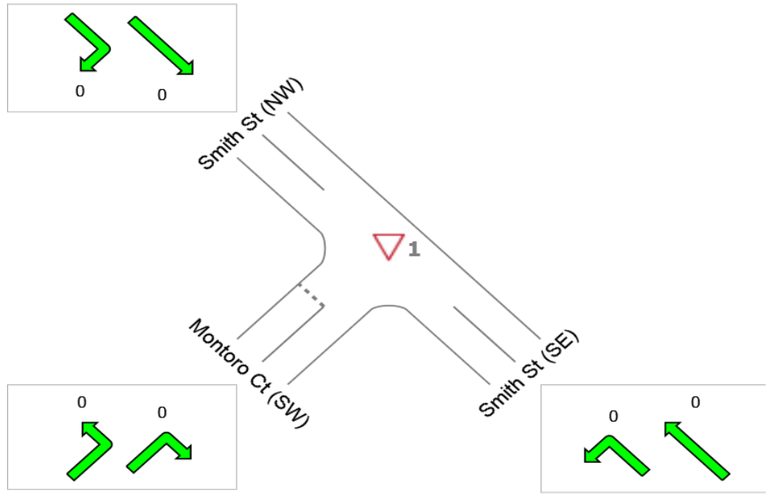
DEGREE OF SATURATION



Colour code based on Degree of Saturation

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

95%ile QUEUE DISTANCE (metres)



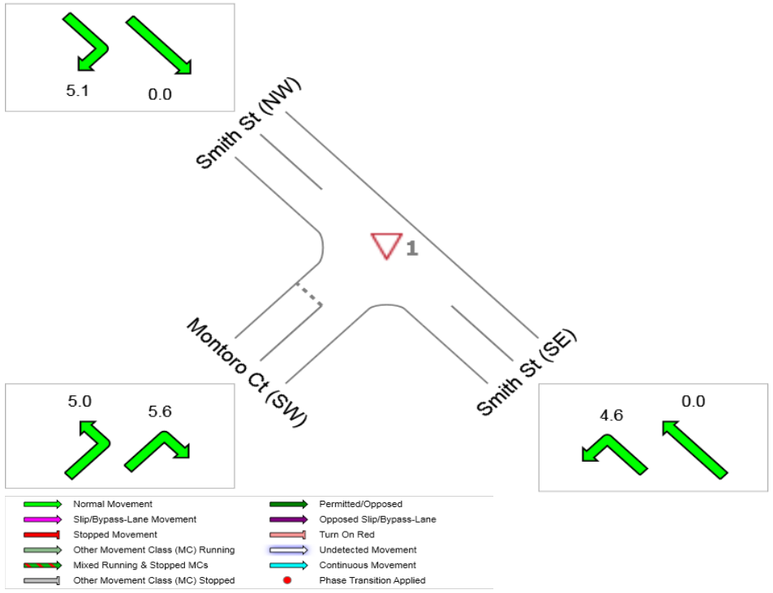
Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

DELAY (CONTROL) & LEVEL OF SERVICE

All Movement Classes

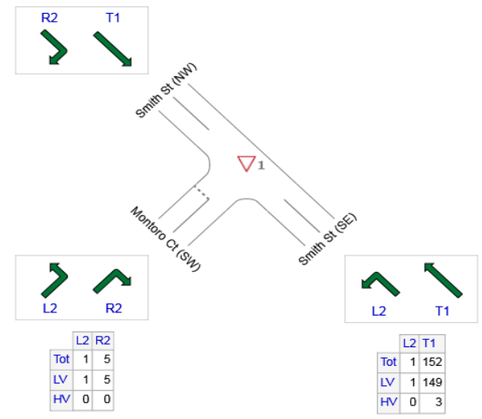
	Southeast	Northwest	Southwest	Intersection	
Delay (Control)	0	0	5.5	0.1	
LOS	NA	NA	A	NA	



Normal Movement
Slip/Bypass-Lane Movement
Stopped Movement
Other Movement Class (MC) Running
Mixed Running & Stopped MCs
Other Movement Class (MC) Stopped
Permitted/Opposed
Opposed Slip/Bypass-Lane
Turn On Red
Undetected Movement
Continuous Movement
Phase Transition Applied

INPUT VOLUMES

	R2	T1
Tot	3	421
LV	3	413
HV	0	8



	L2	R2
Tot	1	5
LV	1	5
HV	0	0

	L2	T1
Tot	1	152
LV	1	149
HV	0	3

VOLUME SCENARIO: 2019 AM PEAK

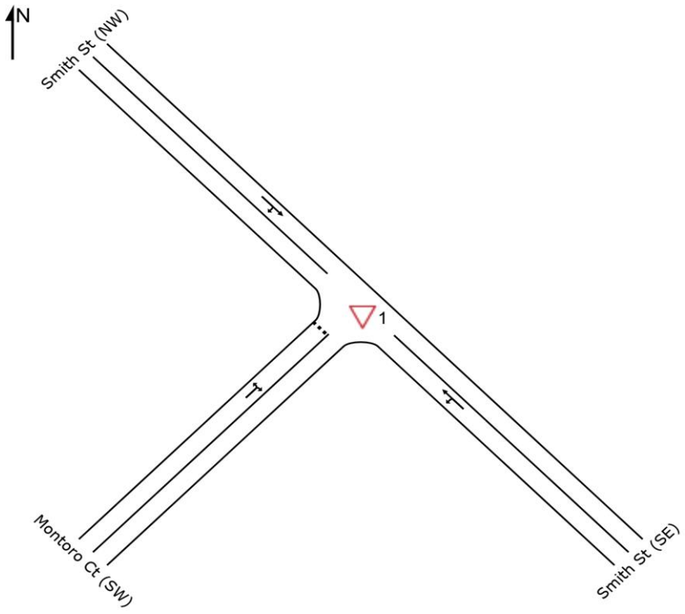
Colour code based on Level of Service

LOS A LOS B LOS C LOS D LOS E LOS F Continuous

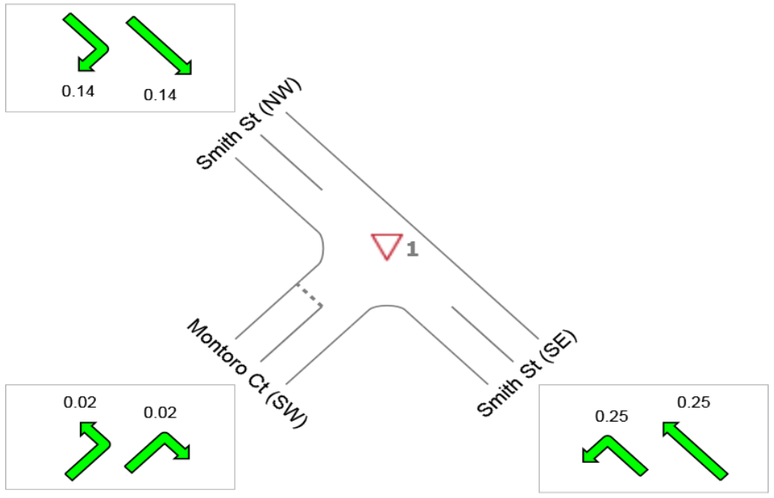
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

JOB NUMBER:	19-0114
PROJECT NAME:	ASTI MOTEL REDEVLOPMENT LARRAKEYAH, NORTHERN TERRITORY
INTERSECTION:	SMITH STREET / MONTORO COURT
SCENARIO:	EXISTING AM PEAK

INTERSECTION LAYOUT



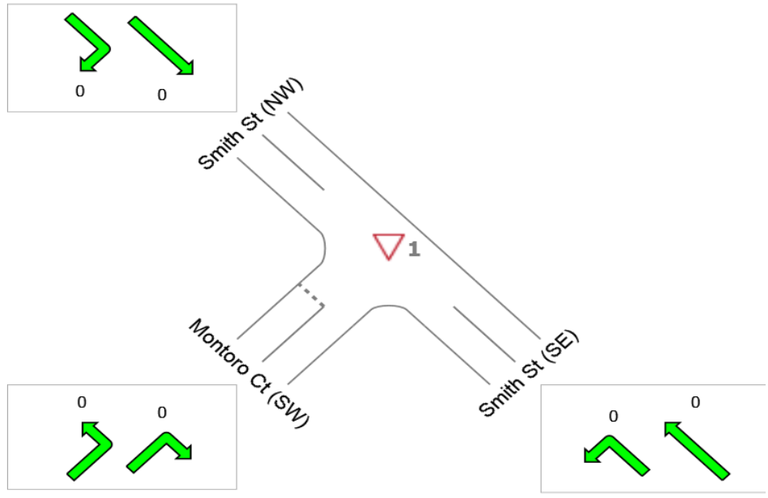
DEGREE OF SATURATION



Colour code based on Degree of Saturation

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

95%ile QUEUE DISTANCE (metres)



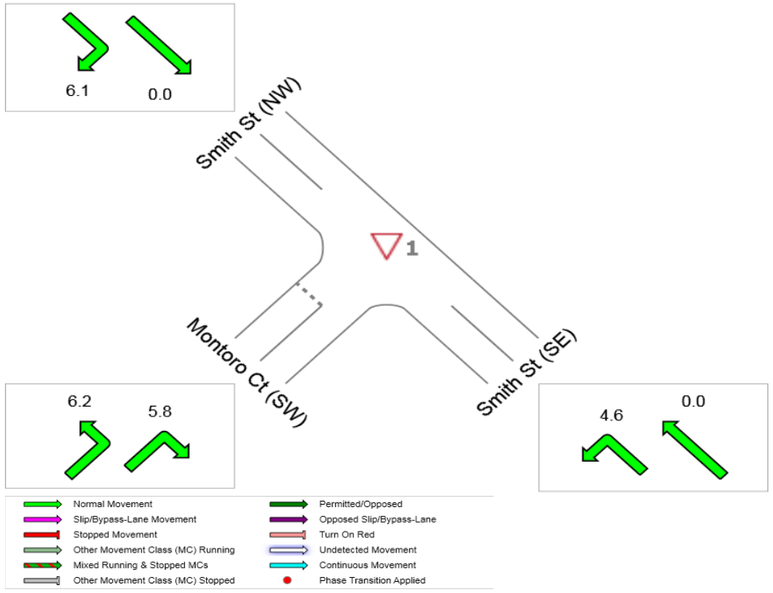
Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

DELAY (CONTROL) & LEVEL OF SERVICE

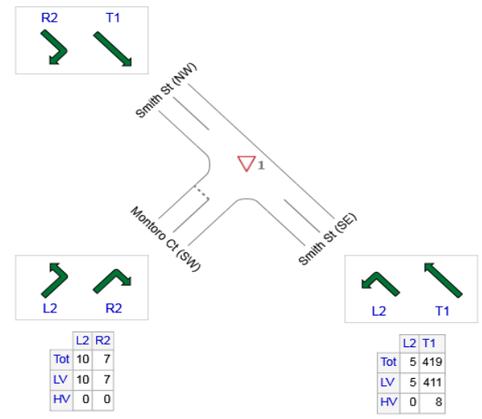
All Movement Classes

	Southeast	Northwest	Southwest	Intersection	
Delay (Control)	0.1	0.1	6	0.2	
LOS	NA	NA	A	NA	



INPUT VOLUMES

	R2	T1
Tot	4	235
LV	4	230
HV	0	5



	L2	R2
Tot	10	7
LV	10	7
HV	0	0

	L2	T1
Tot	5	419
LV	5	411
HV	0	8

VOLUME SCENARIO: 2019 PM PEAK

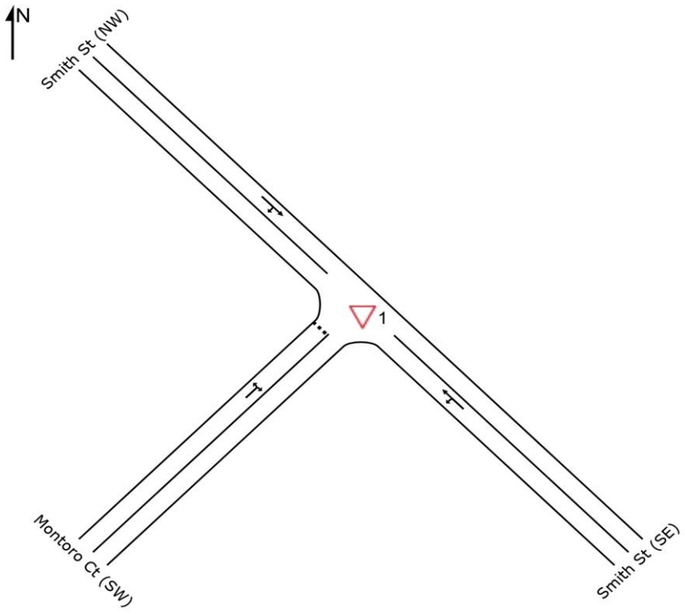
Colour code based on Level of Service

LOS A LOS B LOS C LOS D LOS E LOS F Continuous

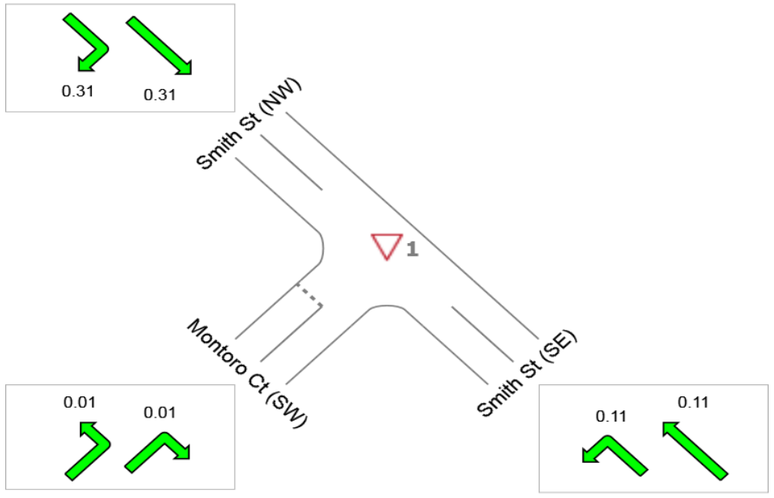
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

JOB NUMBER:	19-0114
PROJECT NAME:	ASTI MOTEL REDEVLOPMENT LARRAKEYAH, NORTHERN TERRITORY
INTERSECTION:	SMITH STREET / MONTORO COURT
SCENARIO:	EXISTING PM PEAK

INTERSECTION LAYOUT



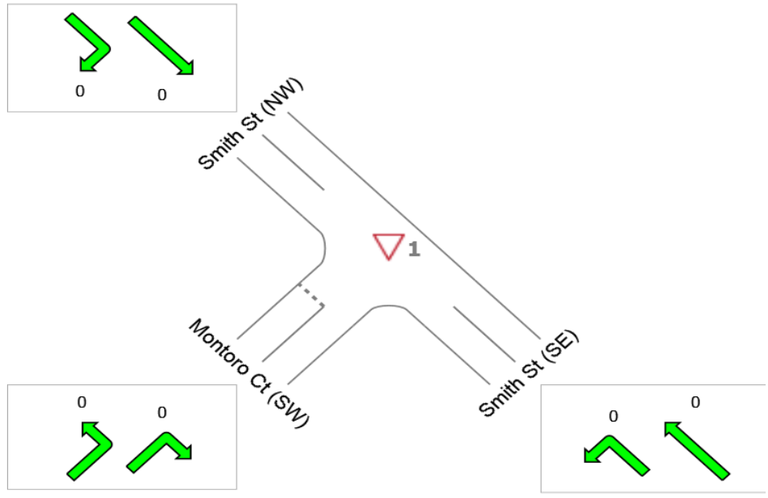
DEGREE OF SATURATION



Colour code based on Degree of Saturation

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

95%ile QUEUE DISTANCE (metres)



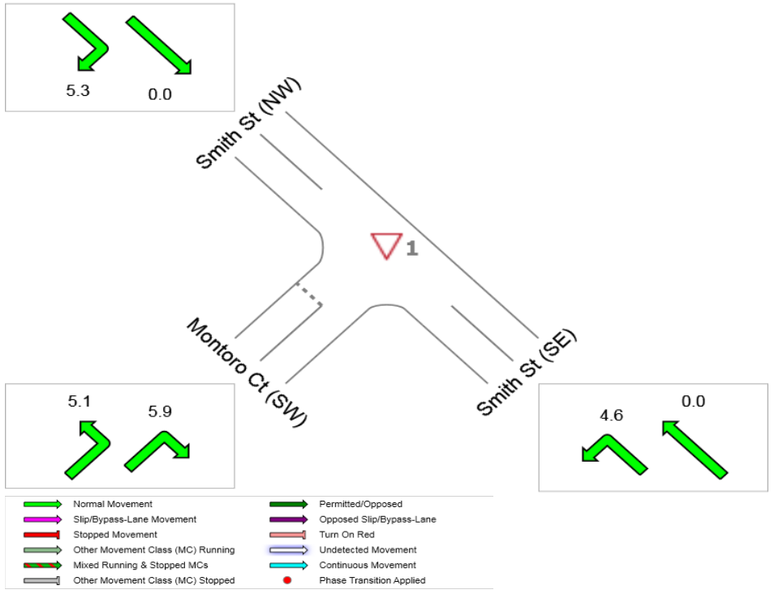
Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

DELAY (CONTROL) & LEVEL OF SERVICE

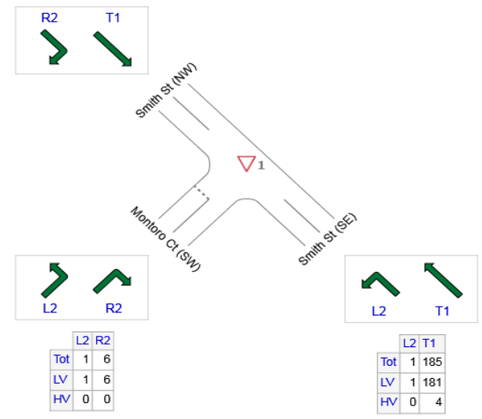
All Movement Classes

	Southeast	Northwest	Southwest	Intersection	
Delay (Control)	0	0	5.8	0.1	
LOS	NA	NA	A	NA	



INPUT VOLUMES

	R2	T1
Tot	4	513
LV	4	503
HV	0	10



	L2	R2
Tot	1	6
LV	1	6
HV	0	0

	L2	T1
Tot	1	185
LV	1	181
HV	0	4

VOLUME SCENARIO: 2029 AM PEAK

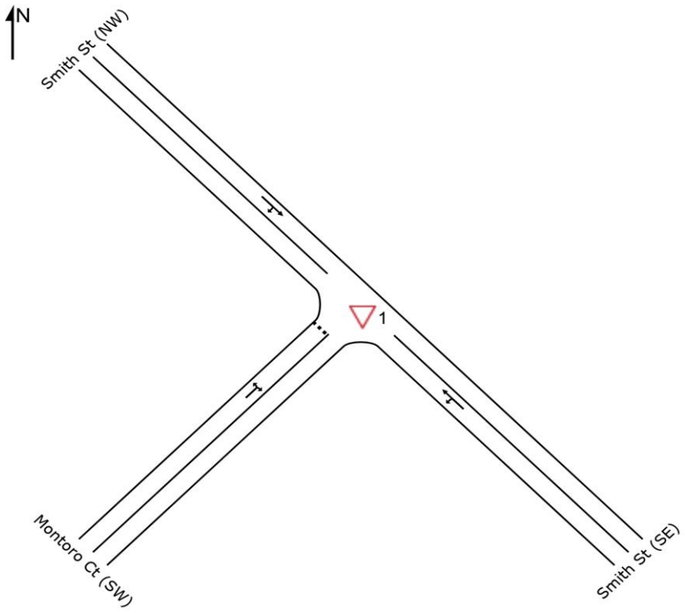
Colour code based on Level of Service

LOS A LOS B LOS C LOS D LOS E LOS F Continuous

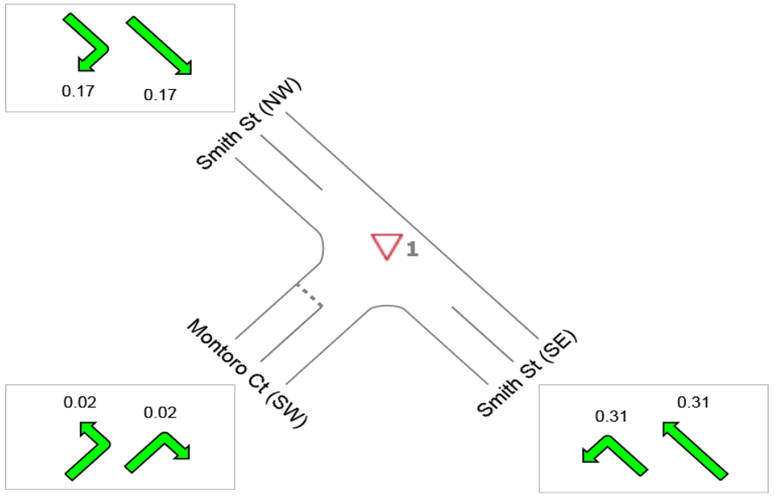
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

JOB NUMBER:	19-0114
PROJECT NAME:	ASTI MOTEL REDEVLOPMENT LARRAKEYAH, NORTHERN TERRITORY
INTERSECTION:	SMITH STREET / MONTORO COURT
SCENARIO:	2029 AM PEAK

INTERSECTION LAYOUT



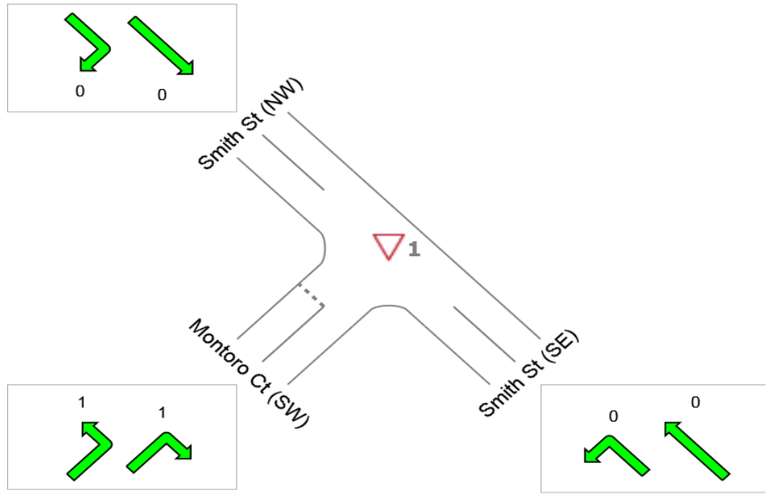
DEGREE OF SATURATION



Colour code based on Degree of Saturation

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

95%ile QUEUE DISTANCE (metres)



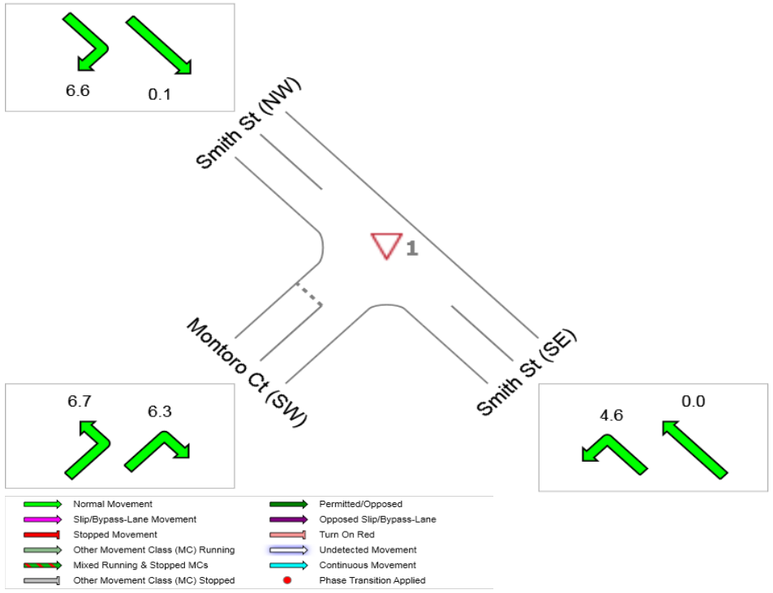
Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

DELAY (CONTROL) & LEVEL OF SERVICE

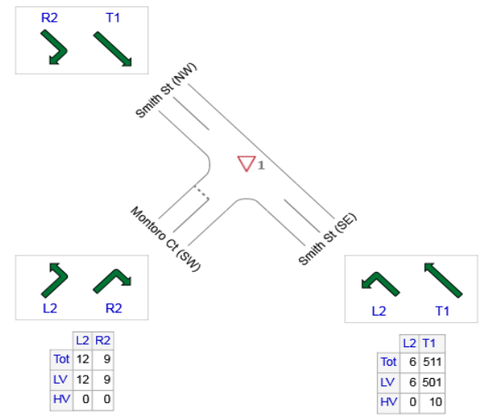
All Movement Classes

	Southeast	Northwest	Southwest	Intersection	
Delay (Control)	0.1	0.2	6.5	0.3	
LOS	NA	NA	A	NA	



INPUT VOLUMES

	R2	T1
Tot	5	286
LV	5	280
HV	0	6



	L2	R2
Tot	12	9
LV	12	9
HV	0	0

	L2	T1
Tot	6	511
LV	6	501
HV	0	10

VOLUME SCENARIO: 2029 PM PEAK

Colour code based on Level of Service

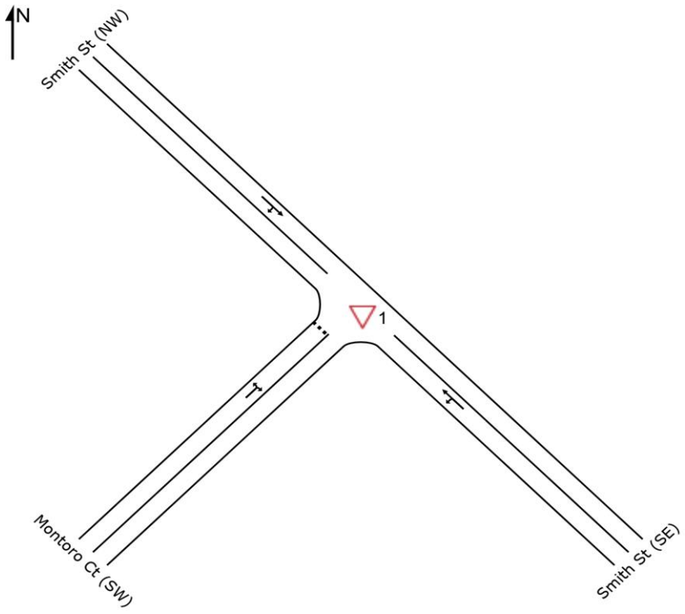
LOS A LOS B LOS C LOS D LOS E LOS F Continuous

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

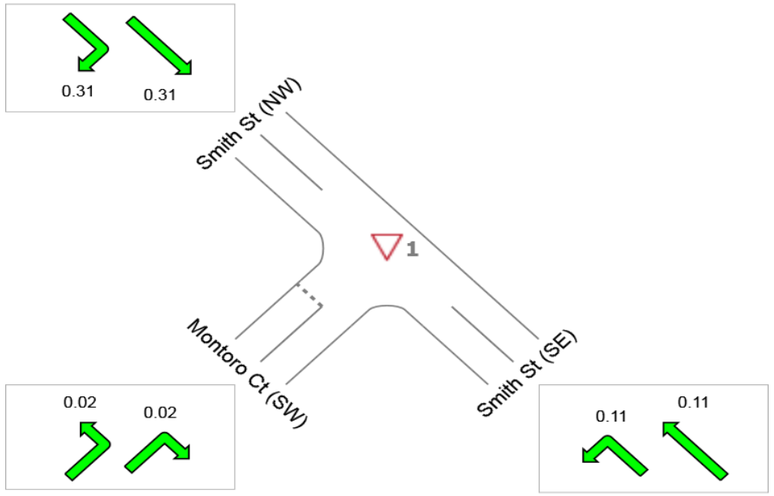
JOB NUMBER:	19-0114
PROJECT NAME:	ASTI MOTEL REDEVLOPMENT LARRAKEYAH, NORTHERN TERRITORY

INTERSECTION:	SMITH STREET / MONTORO COURT
SCENARIO:	2029 PM PEAK

INTERSECTION LAYOUT



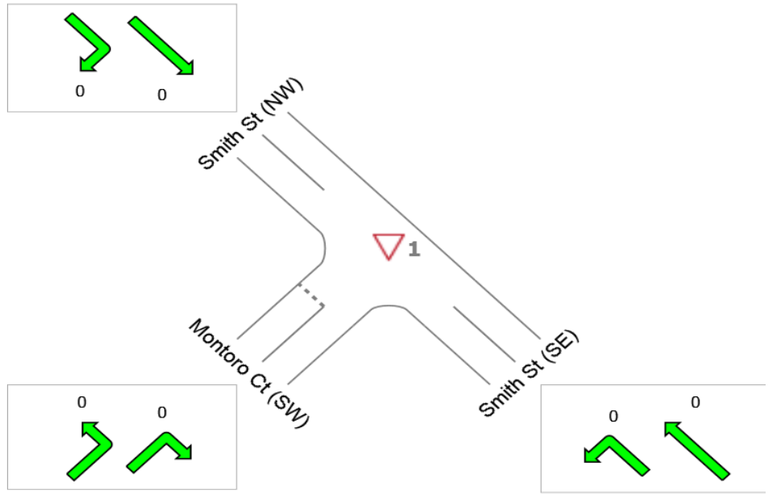
DEGREE OF SATURATION



Colour code based on Degree of Saturation

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

95%ile QUEUE DISTANCE (metres)



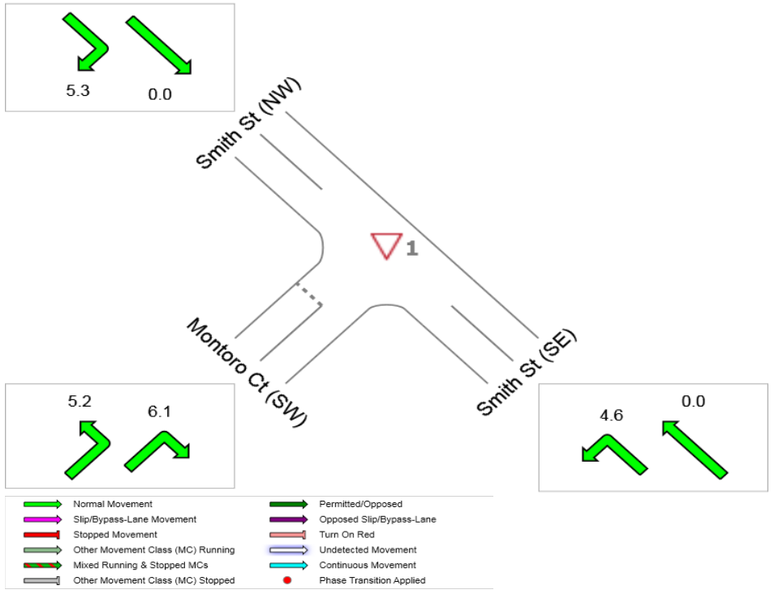
Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

DELAY (CONTROL) & LEVEL OF SERVICE

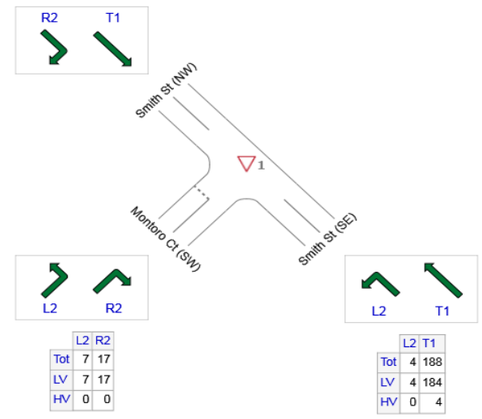
All Movement Classes

	Southeast	Northwest	Southwest	Intersection	
Delay (Control)	0.1	0.1	5.8	0.3	
LOS	NA	NA	A	NA	



INPUT VOLUMES

	R2	T1
Tot	6	524
LV	6	514
HV	0	10



	L2	R2
Tot	7	17
LV	7	17
HV	0	0

	L2	T1
Tot	4	188
LV	4	184
HV	0	4

VOLUME SCENARIO: 2029 AM PEAK WITH DEVELOPMENT

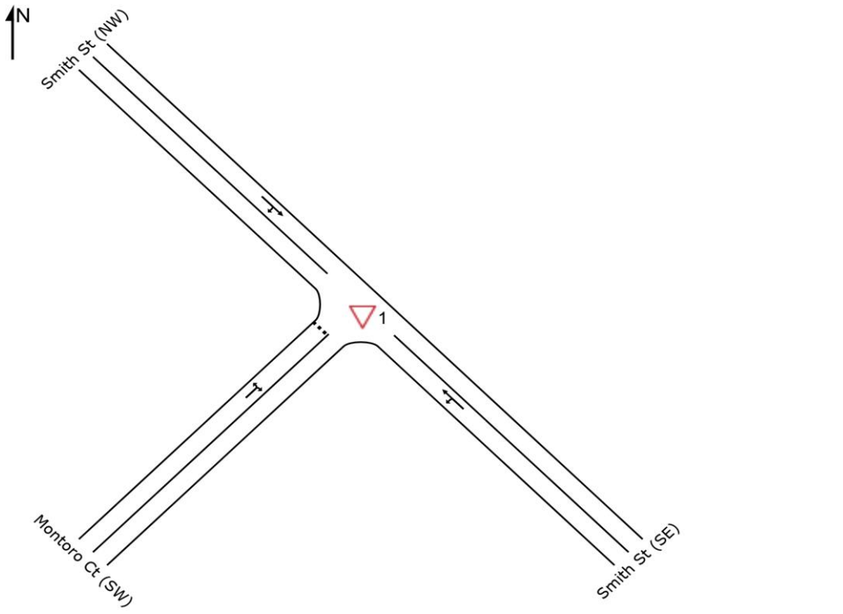
Colour code based on Level of Service

LOS A LOS B LOS C LOS D LOS E LOS F Continuous

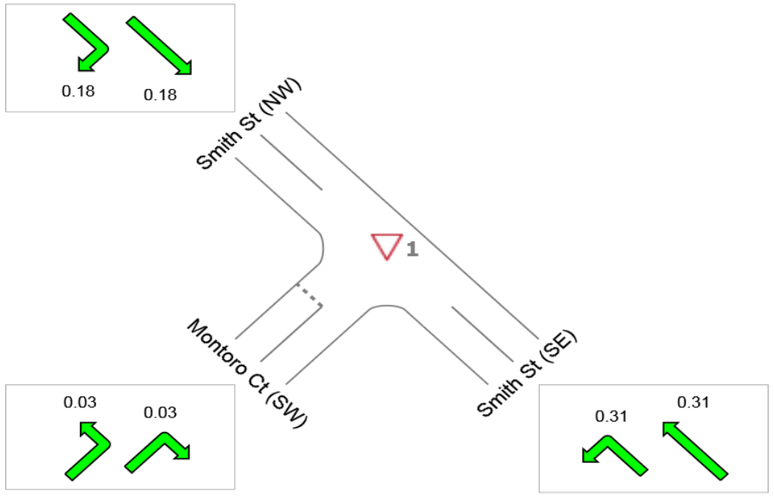
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

JOB NUMBER:	19-0114
PROJECT NAME:	ASTI MOTEL REDEVLOPMENT LARRAKEYAH, NORTHERN TERRITORY
INTERSECTION:	SMITH STREET / MONTORO COURT
SCENARIO:	2029 AM PEAK WITH DEVELOPMENT

INTERSECTION LAYOUT



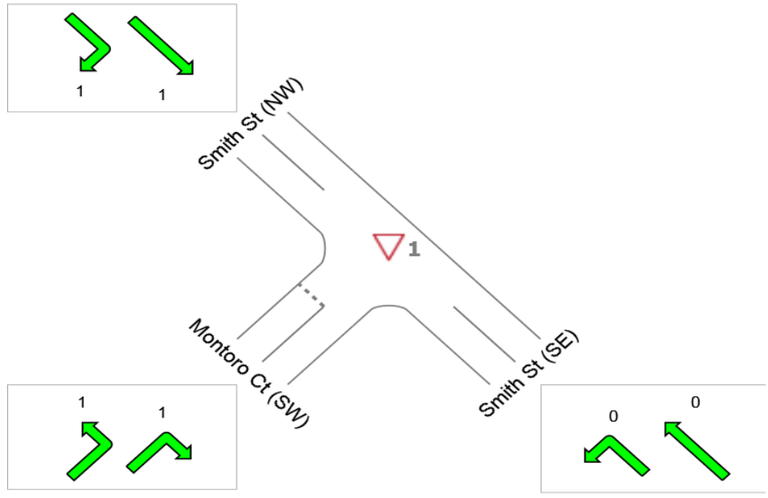
DEGREE OF SATURATION



Colour code based on Degree of Saturation

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

95%ile QUEUE DISTANCE (metres)



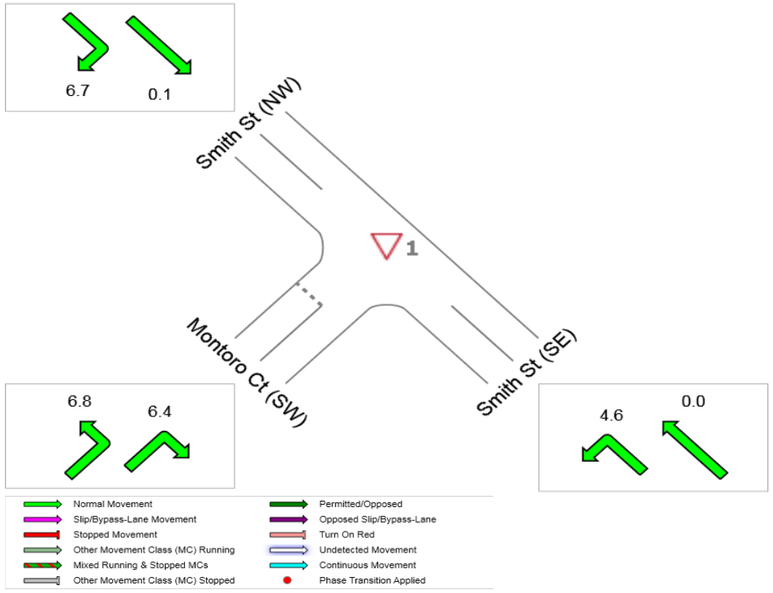
Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

DELAY (CONTROL) & LEVEL OF SERVICE

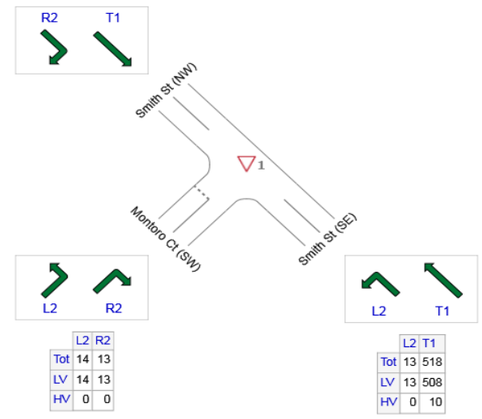
All Movement Classes

	Southeast	Northwest	Southwest	Intersection	
Delay (Control)	0.1	0.3	6.6	0.4	
LOS	NA	NA	A	NA	



INPUT VOLUMES

	R2	T1
Tot	9	290
LV	9	284
HV	0	6



	L2	R2
Tot	14	13
LV	14	13
HV	0	0

	L2	T1
Tot	13	518
LV	13	508
HV	0	10

VOLUME SCENARIO: 2029 PM PEAK WITH DEVELOPMENT

Colour code based on Level of Service

LOS A LOS B LOS C LOS D LOS E LOS F Continuous

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

JOB NUMBER:	19-0114
PROJECT NAME:	ASTI MOTEL REDEVLOPMENT LARRAKEYAH, NORTHERN TERRITORY
INTERSECTION:	SMITH STREET / MONTORO COURT
SCENARIO:	2029 PM PEAK WITH DEVELOPMENT