



711 HUNTER ST NEWCASTLE

TRAFFIC IMPACT ASSESSMENT

FOR: Luke McNamara – Development Manager
CLIENT: Hunter Street JV Co Pty Ltd
DOCUMENT NO: N21112_RPT_001 REV / A
DATE: 02/11/2022



TABLE OF CONTENTS

TABLE OF FIGURES	4
LIST OF TABLES	5
1 INTRODUCTION	6
1.1 Stage 1	6
1.2 Stage 2	7
1.3 Site Details	7
2 BACKGROUND & EXISTING CONDITIONS	8
2.1 Location and Land Use	8
2.2 Planning Zones	9
2.3 Road Network	10
2.3.1 National Park Street	10
2.3.2 Hunter Street	10
2.3.3 King Street	11
2.3.4 King Street – Service Road	12
2.3.5 Stewart Avenue	13
2.4 Public Transport	14
2.5 Bicycle Facilities	14
3 DEVELOPMENT PROPOSAL	16
4 TRAFFIC GENERATION	17
4.1 SEPP Considerations	17
4.2 Existing Traffic Conditions	17
4.3 Road Capacity	17
4.4 Traffic Generation	18
4.4.1 High-Density Residential Flat Dwellings	18
4.4.2 Business/retail Space	19
4.4.3 Development Traffic Generation	19
4.4.4 Stage 1 Development Traffic Generation	19
4.4.5 Combined Development Traffic Generation	19
4.5 Traffic Distribution	19
4.5.1 Combined Development Traffic Distribution	21
5 TRAFFIC IMPACT	22
5.1 Performance Metrics	22
5.2 Performance Metrics	22
5.3 SIDRA Network Layout	23

5.4	Modelling Assumptions	23
5.5	Results	24
5.6	Traffic Impact	25
5.7	Servicing	25
5.8	Pedestrian Facilities	26
5.9	Alternative Transport Facilities	26
5.10	Construction Routes	26
6	PARKING CONSIDERATIONS	27
6.1	Stage 1 Development Car Parking	27
6.2	Combined Development Car Parking	27
6.3	Bicycle Provisions	28
6.4	Stage 1 Development Bicycle Parking	28
6.5	Combined Development Bicycle Parking	28
6.6	Stage 1 Development Motorcycle Parking	29
6.7	Combined Development Motorcycle Parking	29
6.8	Stage 1 Development Electric Vehicle Charing Point	29
6.9	Combined Development Electric Vehicle Charing Point	30
7	CAR PARK DESIGN & CIRCULATION	31
7.1	Car Park Access	31
7.2	Car Park Design	31
7.3	Car Park Circulation	32
7.4	Overall Development Sightlines	34
8	CONCLUSION	35
	APPENDIX A – SIDRA OUTPUTS	36
	APPENDIX B – SWEPT PATHS	37

TABLE OF FIGURES

Figure 1 - Site Location (Urbis, 2022)	7
Figure 2 - Subject Site Locality (Google Maps, 2022)	8
Figure 3 - Subject Site (Nearmap, 2022).....	8
Figure 4 - Existing Vehicular Access via National Park Street (Google Maps, 2022)	9
Figure 5 - Planning Scheme Zones (NSW Government, 2022)	9
Figure 6 - National Park Street - Facing Northeast (Google Maps, 2022)	10
Figure 7 - Hunter Street - Facing West (Google Maps, 2022)	11
Figure 8 – King Street – Facing West (Google Maps, 2022)	11
Figure 9 – King Street – Facing East (Google Maps, 2022)	12
Figure 10 – King Street Service Road (Google Maps, 2022)	12
Figure 11 - Stewart Avenue – Facing Northeast (Google Maps, 2022)	13
Figure 12 – Stewart Avenue – Facing Southwest (Google Maps, 2022).....	13
Figure 13 - Newcastle Transport Network Map (NSW Government, 2022).....	14
Figure 14 – Active Travel Map (UON, 2022)	15
Figure 15 - On-Road Bike Lane Along King Street (Google Maps, 2022)	15
Figure 16 – Assumed Inbound Percentage Distribution.....	20
Figure 17 – Assumed Outbound Percentage Distribution.....	20
Figure 18 – Combined Development Inbound Traffic Distribution	21
Figure 19 – Combined Development Outbound Traffic Distribution	21
Figure 20 – Maximum Practical Degree of Saturation (RMS Traffic Modelling Guidelines, 2013)	22
Figure 21 - Control delay for Vehicle LoS Calculations (RMS Traffic Modelling Guidelines, 2013)	22
Figure 22 - SIDRA Network Layout	23
Figure 23 – Proposed Access/Egress Options.....	26
Figure 24 – Proposed Site Access	31
Figure 25 – Passenger Vehicle Entry/Exit	32
Figure 26 – Passenger Vehicle Circulation.....	33
Figure 27 – Waste Collection Vehicle Entry/Exit	33
Figure 28 – Waste Collection Vehicle Maneuvering.....	34

LIST OF TABLES

Table 1 – 2022 Peak Hour Volumes.....	17
Table 2 – Mid-Block Capacity (RTA, 2002).....	18
Table 3 – 2022 Mid-block Capacity (ADD).....	18
Table 4 - Weekday Generation Rates (RMS, 2013)	18
Table 5 - Stage 1 Traffic Generation.....	19
Table 6 - Combined Traffic Generation	19
Table 7 – Stewart Avenue & Little King Street Results.....	24
Table 8 – Stewart Avenue & King Street Results.....	24
Table 9 – King Street & Little King Street Results.....	24
Table 10 – King Street & National Park Street Results	24
Table 11 – Hunter Street & National Park Street Results.....	24
Table 12 - Results Comparison	25
Table 13 - Stage 1 Planning Scheme Car Parking Requirement	27
Table 14 - Combined Development Planning Scheme Car Parking Requirement.....	27
Table 15 - Stage 1 Planning Scheme Bicycle Parking Requirement	28
Table 16 - Combined Development Planning Scheme Bicycle Parking Requirement.....	28
Table 17 - Stage 1 Planning Scheme Motorcycle Parking Requirement	29
Table 18 - Combined Development Planning Scheme Motorcycle Parking Requirement	29
Table 19 - Stage 1 Planning Scheme EV Charging Point Requirement.....	29
Table 20 - Combined Development Planning Scheme EV Charging Point Requirement	30

Document Control

Revision	Date	Description	Prepared	Reviewed	Approved
A	02/11/2022	Issued for DA submission	WL/MK	MK	SP

1 INTRODUCTION

BG&E has been engaged to undertake a Traffic Impact Assessment (TIA) of the proposed mixed use development at 711 Hunter Street, Newcastle.

The TIA has been prepared by BG&E on behalf of Hunter Street JV CoP/L (the applicant). It accompanies a Statement of Environmental Effects (SEE) in support of a Development Application (DA) at 711 Hunter Street, Newcastle West (the site).

This TIA comprises the following:

- A traffic study of the area surrounding the site;
- A traffic impact assessment of the proposed development including the predicted traffic generation and its impact on existing road and intersection capacities; and
- A car parking demand assessment including bicycle parking for the proposed development against statutory requirements.

The development has undergone an Architectural Design Competition where three competitors put forward their designs in accordance with the brief. The Plus Architecture scheme was recommended by the Jury as the winning scheme in the competitive design process.

The overall outcome of the proposal aims to develop a mixed-use precinct with high quality tower forms providing a positive relationship to the immediate surrounds and acknowledging the surrounding heritage context. The proposal intends to act as a landmark for Newcastle West with a curated mix of eclectic and creative retail, F&B and business/retail opportunities activating the ground levels.

The key features are summarised below:

- Demolition of the existing business/retail premises and ancillary structures on-site;
- Construction of a mixed-use precinct forming active ground and podium levels reaching 5 storeys of retail and business/retail tenancies, with two tower forms for residential apartments reaching 26 storeys comprising of 258 apartments;
- Podium level car park for 300 cars incorporated within the podium levels;
- Communal open space for residents located on level 5 and 17;
- Vehicle access to the site via Little King Street;
- Associated landscaping with the public domain improvements;
- An urban plaza fronting National Park Street providing opportunities for activation and public art; and
- Construction of ancillary infrastructure and utilities as required.

It is noted that the overall development will form two separate concurrent DA's. Stage 1 will form the northern tower and podium elements and Stage 2 will form the southern tower and podium elements. These separate DA components are explored further below.

1.1 Stage 1

The northern tower will include business/retail and retail tenancies at ground level which will be accessible via National Park Street, Little King Street and Hunter Street. The podium levels will be situated above ground and contain car parking for both visitors and residents, accessed via Little King Street. Level 5 to Level 25 will contain a mixture of residential apartments ranging from 1 bedroom to 3 bedrooms. A numerical breakdown of Stage 1 is shown below:

- 136 apartments including: 35 one bedroom, 74 two bedroom, 26 three bedroom, 1 four bedroom.
- Total GFA: 13,581 sqm
- Floor space ratio: 5.41:1
- Total car parking spaces: 165 spaces over 4 podium levels

1.2 Stage 2

The southern tower will include business/retail and retail tenancies at ground level which will be accessible via National Park Street, Little King Street and Hunter Street. The podium levels will be situated above ground and contain car parking for both visitors and residents, accessed via Little King Street. Level 1 to Level 25 will contain a mixture of residential apartments ranging from 1 bedroom to 3 bedrooms.

- 122 apartments including: 35 one bedroom, 72 two bedroom, 15 three bedroom.
- Total GFA: 12,027 sqm
- Floor space ratio: 5.43:1
- Total car parking spaces: 135 spaces over 4 podium levels

Both stages will include surrounding landscaping, public domain works and green spaces. The strata and stratum approach are detailed further in the SEE.

1.3 Site Details

Site address: 711 Hunter Street, Newcastle West.

Lot and DP: as Lot 1 in DP 867617.

Site area: 4,724 m².

Boundaries: The site has frontages of 48m to Hunter Street to the north, 113m to National Park Street to the east and 43m to King Street to the south.

Heritage Significance: Not identified as a heritage item but is adjoining an identified local heritage item to the south-west, namely the Army Drill Hall (I508) located at 498 King Street and is diagonally adjacent to the Bank Corner which is a locally listed heritage item located at 744 Hunter Street. The site is also located within the Newcastle City Centre Heritage Conservation Area



Figure 1 - Site Location (Urbis, 2022)

2 BACKGROUND & EXISTING CONDITIONS

2.1 Location and Land Use

As presented in Section 1.3, the subject site is located at 711 Hunter Street, Newcastle. The site is bound by Hunter Street, National Park Street and the King Street Service Road.

The existing site is currently occupied by two adjoining 3-storey buildings. The existing business/retail operations comprise of two musical instrument stores in the northern building and a retail (Slimes Boardstore) and a fitness centre (Anytime Fitness) in the southern building.

The location of the subject site and surrounding area is presented in Figure 2 and an aerial photograph is presented in Figure 3.

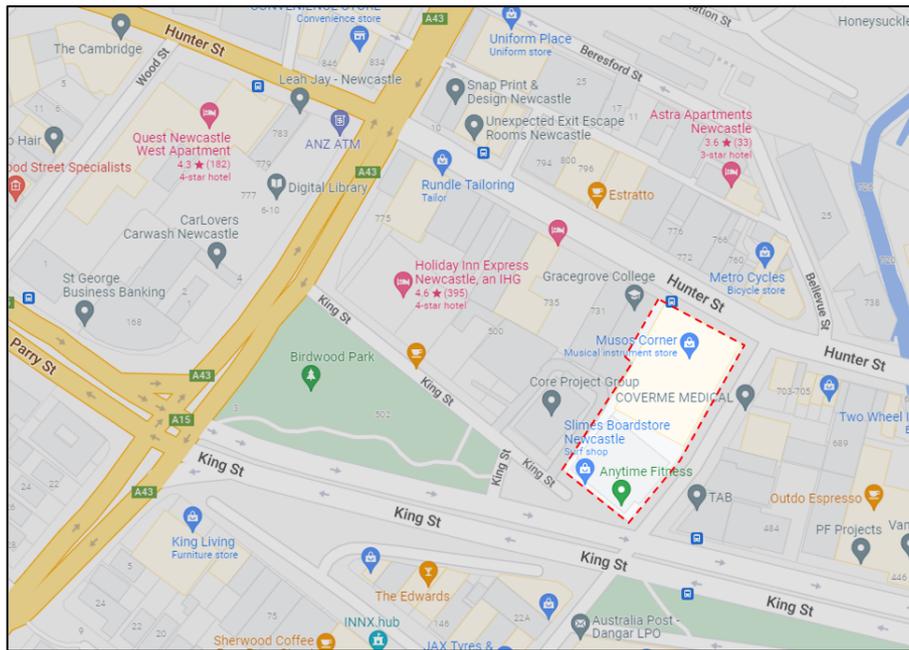


Figure 2 - Subject Site Locality (Google Maps, 2022)



Figure 3 - Subject Site (Nearmap, 2022)

Currently, the subject site has one vehicular access at National Park Street which leads to an off-street carpark as illustrated in Figure 4.



Figure 4 - Existing Vehicular Access via National Park Street (Google Maps, 2022)

2.2 Planning Zones

The total site area is approximately 4724 m² and is zoned B3 – Business/retail Core in accordance with Newcastle LEP (2012) within the Newcastle City Centre area, as presented in Figure 5.

The surrounding area is generally business/retail whilst a SP2 - Road Infrastructure Zone is located approximately 180m west of the site and a SP2 – Railway is about 110m north of the subject site.



Figure 5 - Planning Scheme Zones (NSW Government, 2022)

2.3 Road Network

2.3.1 National Park Street

National Park Street is a local collector road under the authority of Newcastle City Council. The road runs in a southwest–northeast orientation between Glebe Road to the south and Hunter Street to the north.

The road features a carriageway width of approximately 12.7m. The road features a single traffic lane in each direction with kerbside parallel parking, a footpath on both sides of the road and several large trees on the eastern side of the road. The on-road parking features restricted 1P and 2P parking between 9AM-5PM Monday to Friday and 9AM-12PM on Saturdays. There is also a loading zone located on the eastern side of the road.

Adjacent to the subject site, National Park Street is subject to a posted speed limit of 50km/hr. A street view representation of the National Park Street is presented in Figure 6.



Figure 6 - National Park Street - Facing Northeast (Google Maps, 2022)

2.3.2 Hunter Street

Hunter Street is a major collector road under the authority of Newcastle City Council. The road runs a west–east orientation between Stewart Avenue to the west and Pacific Street to the east.

Adjacent to the subject site, Hunter Street features two traffic lanes in each direction with a carriageway width of approximately 12m and is subject to a posted speed limit of 60km/h. Kerbside ticketed parking is available with a time restriction of 2P between 9AM-5PM Monday to Friday and 9AM-12PM on Saturday. There is also a bus stop located on Hunter Street fronting the subject site.

A street view representation of the Hunter Street, near the development site, is presented in Figure 7.



Figure 7 - Hunter Street - Facing West (Google Maps, 2022)

2.3.3 King Street

King Street is a major Regional Road under the authority of Newcastle City Council. It runs in an east-west orientation between Stewart Avenue to the west and Darby Street to the east. King Street provides a connection to the inner suburbs of Hamilton and Cooks Hill.

In the vicinity of the development site, King Street features a five-lane, split carriageway and is subject to a posted speed limit of 60km/h. The eastbound carriageway features a two-lanes with an approximate carriageway width of 8.3m whilst the westbound carriageway features a three-lanes with an approximate carriageway width of 9.8m.

A street view representation of King Street in vicinity of the development site facing west and east is presented in Figure 8 and Figure 9 respectively.



Figure 8 - King Street - Facing West (Google Maps, 2022)



Figure 9 – King Street – Facing East (Google Maps, 2022)

2.3.4 King Street – Service Road

The King Street ‘Service Road’ (Little King Street) runs parallel to King Street and provides access to several businesses and residences. Access to the service road is provided at intersections with Stewart Avenue and King Street.

The Service Road features a single carriageway with a traffic lane in each direction and an approximate width of 11.8m. The road is subject to a posted speed limit of 50 km/hr and feature kerbside, ticketed parking is available with restrictions varying from ¼P to 2P.

A street view representation of the King Street Service Road is presented in Figure 10.



Figure 10 – King Street Service Road (Google Maps, 2022)

2.3.5 Stewart Avenue

Stewart Avenue is a major Arterial Road under the authority of the NSW State Government. The road runs a northeast – southwest orientation through Newcastle West and Hamilton South.

In the vicinity of the development site, Stewart Avenue features a 4 lane, split carriageway arrangement and is subject to a posted speed limit of 60km/h. The northeast bound carriageway has a width of approximately 7.2m whilst the southwest bound carriageway has a width of approximately 8m. The road also features an on-road bike lane and dedicated turning lanes for the adjacent intersections.

A street view representation of Stewart Avenue in vicinity of the development site facing northeast and southwest is presented in Figure 11 and Figure 12 respectively.



Figure 11 - Stewart Avenue – Facing Northeast (Google Maps, 2022)



Figure 12 – Stewart Avenue – Facing Southwest (Google Maps, 2022)

2.4 Public Transport

The development site has excellent access to all forms of public transport including light rail, heavy rail, bus services and ferry services.

Newcastle Transport (Keolis Downer) runs the current public transport services in the area adjacent to the site. There are two bus stops in close vicinity to the current site; one located at the northern frontage of the site along Hunter Street, which services the Route 11, 12, 13, 22, 24 & 47 bus services. The other is located at the northeast corner of the intersection of National Park Street and King Street and services the Route 22, 23, 10X, 714 & 836 bus services.

Further, Newcastle Interchange is located 300m away and provides access to Central Coast & Newcastle Line and Hunter Line.

The public transport provisions adjacent to the site are illustrated in Figure 13.



Figure 13 - Newcastle Transport Network Map (NSW Government, 2022)

2.5 Bicycle Facilities

There are some dedicated bicycle provisions within the vicinity of the site as presented in Figure 14. Cycle routes can be found along sections of the following roads:

- King Street
- National Park Street
- Stewart Avenue
- Hunter Street
- Corlette Street
- Laman Street
- Auckland Street
- Dumaresq Street
- Parkway Avenue

Adjacent to the site, King Street has marked, on-road cycle lanes in both directions as illustrated in Figure 15. Further, as mentioned in Section 2.3. of this report, Stewart Avenue also has on-road bike lanes in both directions.

Bicycle parking facilities, in the form of bicycle racks, are also available along the King Street Service Road and Hunter Street.

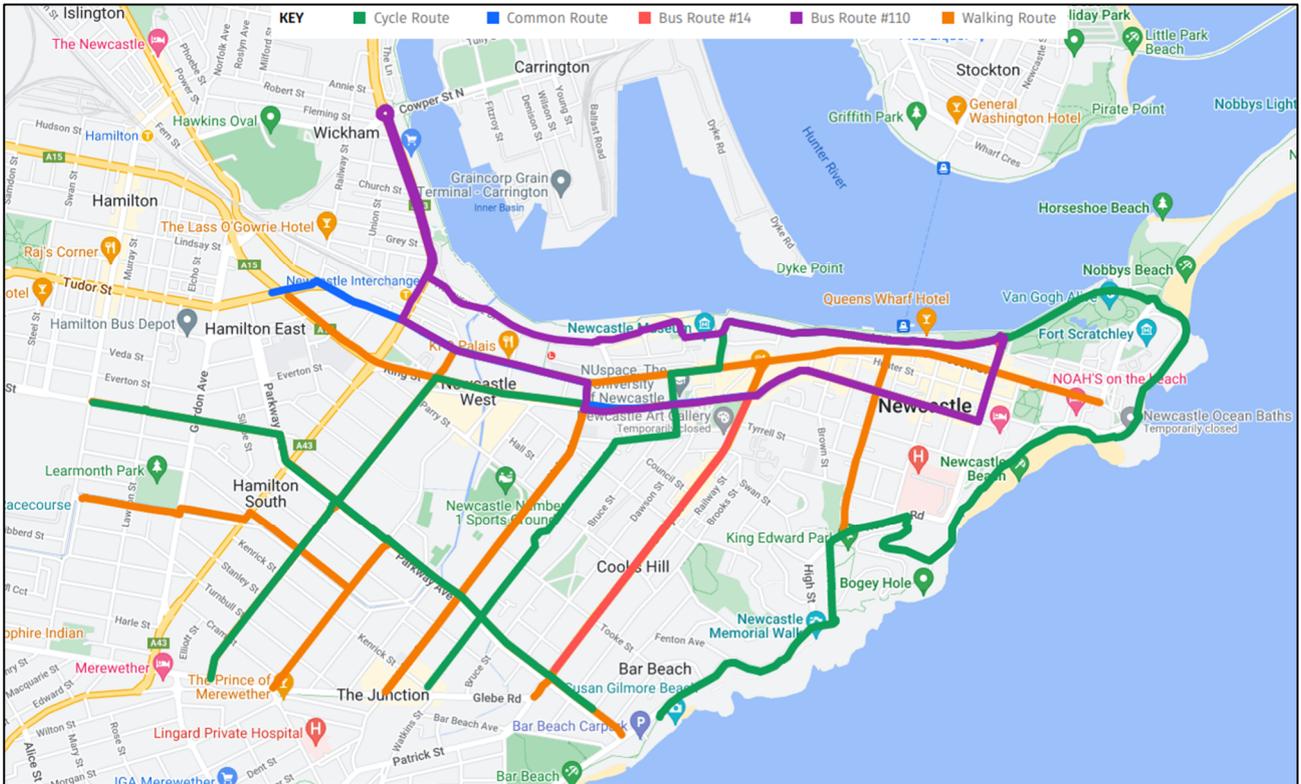


Figure 14 – Active Travel Map (UON, 2022)



Figure 15 - On-Road Bike Lane Along King Street (Google Maps, 2022)

3 DEVELOPMENT PROPOSAL

As specified in Section 1 of this report, the proposal involves the demolition of the existing two adjoining 3-storey buildings and the construction of a shop top housing development. Overall, the proposed development comprises two, multi-storey buildings with carparking from Level 1 to Level 4, business/retail tenancies from the ground floor to Level 2 and residential units over Level 1 to Level 25.

The construction of the development is proposed to be staged and it is envisaged that the northern portion of the building will be constructed first with the southern portion to follow.

Specifically, the development involves:

- The demolition of the 2 adjoining 3-storey buildings and the associated carpark.
- Two stages of construction:
 - Stage 1: Construction of the northern side building comprising:
 - 35 x one-bedroom units
 - 74 x two-bedroom units
 - 26 x three-bedroom units
 - 1 x four-bedroom unit
 - Approx. 614m² of business/retail space
 - Stage 2: construction of the southern side building comprising:
 - 35 x one-bedroom units
 - 72 x two-bedroom units
 - 15 x three-bedroom units
 - Approx. 529m² of business/retail space
- Removal of the existing vehicular access at National Park Street.
- Construction of new internal roadways and driveway, and a new vehicular access to the King Street Service Road.

4 TRAFFIC GENERATION

4.1 SEPP Considerations

Based on the criteria stipulated in Section 2.121 and Schedule 3 of the State Environmental Planning Policy (SEPP), it is anticipated that the development application will not need to be referred to TfNSW based on the following:

- The development does not have access directly from a classified road or within 90m from a road classified road.
- The business/retail (commercial) premises associated with the development is less than 10,000m² in GFA under both stages.
- The residential portion of the development is less than 300 dwellings under both stages.

4.2 Existing Traffic Conditions

As part of this assessment, BG&E engaged Trans Traffic Survey to undertake traffic data collection for a number of intersection adjacent to the development site. The collection of data is considered essential in this assessment to understand the existing traffic condition and set a base line to compare the post-development scenario to. Further, the intersection turning counts serve as input into the SIDRA analysis which aims to quantify the traffic impact the development will have on the adjacent intersections.

Data collection was undertaken for the AM & PM peak on the 10th of August 2022 for the following intersections:

- King Street & National Park Street.
- Stewart Avenue & King Street.
- King Street & King Street Service Road.
- Hunter Street & National Park Street.

Peak hour volumes for the above roads are presented below in Table 1.

Table 1 – 2022 Peak Hour Volumes

ROAD	SECTION	AM V/HR	PM V/HR
King Street	West of Little King Street (WB)	1448	1183
King Street	East of Little King Street (EB)	1080	1460
Little King Street	North of King Street (WB)	234	238
National Park Street	North of King Street	26	441
National Park Street	South of King Street	58	520
Stewart Avenue	North of King Street	973	1218
Stewart Avenue	South of King Street	1250	823
Hunter Street	West of National Park Street	752	508
Hunter Street	East of National Park Street	477	695

4.3 Road Capacity

Though the capacity of roads is generally determined by assessing the capacity of intersections, Table 4.3 of the RMS' RTA Guide to Traffic Generating Developments provides some guidance on mid-block capacities for urban roads and likely levels of service as presented in Table 2.

Table 2 – Mid-Block Capacity (RTA, 2002).

Typical mid-block capacities for urban roads with interrupted flow

Type of Road	One-Way Mid-block Lane Capacity (pcu/hr)	
Median or inner lane:	Divided Road	1,000
	Undivided Road	900
Outer or kerb lane:	With Adjacent Parking Lane	900
	Clearway Conditions	900
	Occasional Parked Cars	600
4 lane undivided:	Occasional Parked Cars	1,500
	Clearway Conditions	1,800
4 lane divided:	Clearway Conditions	1,900

Based on the RTA mid-block capacities, the capacity of the roads located within the vicinity of the sites has been determined and is presented in Table 3.

Table 3 – 2022 Mid-block Capacity (ADD)

ROAD	SECTION	CAPACITY (V/HR)
King Street	West of Little King Street (WB)	3800
King Street	East of Little King Street (EB)	3800
Little King Street	North of King Street (WB)	900
National Park Street	North of King Street	900
National Park Street	South of King Street	900
Stewart Avenue	North of King Street	3800
Stewart Avenue	South of King Street	3800
Hunter Street	West of National Park Street	3000
Hunter Street	East of National Park Street	3000

4.4 Traffic Generation

Both the RMS' Guide to Traffic Generating Developments and Technical Direction (TD) provide specific advice on the traffic generation potential of various land uses.

With respect to business/retail premises and high-density residential buildings, the RMS TD is considered to be more appropriate with respect to land-use descriptions for the proposed development. Therefore, the listed rates in the NSW RMS TD have been adopted in this assessment.

4.4.1 High-Density Residential Flat Dwellings

Table 4 presents the weekday rates for the high density residential dwellings from the RMS TD.

Table 4 - Weekday Generation Rates (RMS, 2013)

Weekday Rates	Sydney Average	Sydney Range	Regional Average	Regional Range
AM peak (1 hour) vehicle trips per unit	0.19	0.07-0.32	0.53	0.39-0.67
AM peak (1 hour) vehicle trips per car space	0.15	0.09-0.29	0.35	0.32-0.37
AM peak (1 hour) vehicle trips per bedroom	0.09	0.03-0.13	0.21	0.20-0.22
PM peak (1 hour) vehicle trips per unit	0.15	0.06-0.41	0.32	0.22-0.42
PM peak (1hour) vehicle trips per car space	0.12	0.05-0.28	0.26	0.11-0.40
PM peak (1 hour) vehicle trips per bedroom	0.07	0.03-0.17	0.15	0.07-0.22
Daily vehicle trips per unit	1.52	0.77-3.14	4.58	4.37-4.78
Daily vehicle trips per car space	1.34	0.56-2.16	3.22	2.26-4.18
Daily vehicle trips per bedroom	0.72	0.35-1.29	1.93	1.59-2.26

For the proposed development, the regional rates presented in the RMS TD have been adopted and include:

Daily vehicle trips = 4.58 per unit
Morning peak hour vehicle trips = 0.53 per unit
Evening peak hour vehicle trips = 0.32 per unit

4.4.2 Business/retail Space

Though the future use of the business/retail space is unclear, the generation rates for ‘Office Blocks’ has been adopted. The generation rates, as presented in the RMS TD, include:

Daily vehicle trips = 11 per 100 m2 gross floor area (GFA)
Morning peak hour vehicle trips = 1.6 per 100 m2 gross floor area (GFA)
Evening peak hour vehicle trips = 1.2 per 100 m2 gross floor area (GFA)

4.4.3 Development Traffic Generation

As the construction of the development is proposed to be staged, the estimated traffic generation for the development has also been staged and is explored in the following sections of this report.

4.4.4 Stage 1 Development Traffic Generation

The estimated traffic generation associated with the Stage 1 development is presented in Table 5.

A daily traffic generation of 691 vehicles per day is expected with 82 vehicle trips in the AM peak and 51 in the PM peak.

Table 5 - Stage 1 Traffic Generation

USE	SIZE	RATES			TRAFFIC GENERATION		
		Daily	AM peak	PM peak	Daily (v/pd)	AM peak (v/ph)	PM peak (v/ph)
Residential	136	4.58 per unit	0.53 per unit	0.32 per unit	623	72	44
Business/Retail	614m ² GFA	11 per 100m ² GFA	1.6 per 100m ² GFA	1.2 per 100m ² GFA	68	10	7
TOTAL					691	82	51

4.4.5 Combined Development Traffic Generation

The estimated traffic generation associated with the overall development (Stage 1 & 2 combined) is presented in Table 6.

A daily traffic generation of 1308 vehicles per day is expected with 155 vehicle trips in the AM peak and 96 in the PM peak.

Table 6 - Combined Traffic Generation

USE	SIZE	RATES			TRAFFIC GENERATION		
		Daily	AM peak	PM peak	Daily (v/pd)	AM peak (v/ph)	PM peak (v/ph)
Residential	258	4.58 per unit	0.53 per unit	0.32 per unit	1182	137	83
Business/Retail	1143m ² GFA	11 per 100m ² GFA	1.6 per 100m ² GFA	1.2 per 100m ² GFA	126	18	14
TOTAL					1308	155	96

4.5 Traffic Distribution

In order to undertake the traffic assessment, the peak hour traffic generation associated with the site must be distributed through the adjacent road network.

As the exact distribution of traffic will vary in practise, a number of assumptions need to be applied in this process. The assumptions adopted in the traffic distribution from the site include:

- For the residential traffic generation component, 70% outbound and 30% inbound trips will occur in the AM peak. In the PM peak, this is mirrored so 30% inbound trips and 30% outbound trips occur.

- For the business/retail traffic generation component, 70% inbound and 30% outbound trips will occur in the AM peak. In the PM peak, this is mirrored so 70% outbound trips and 30% inbound trips occur.

In addition, the assumed percentage of inbound and outbound traffic distribution is presented in Figure 16 and Figure 17 respectively.

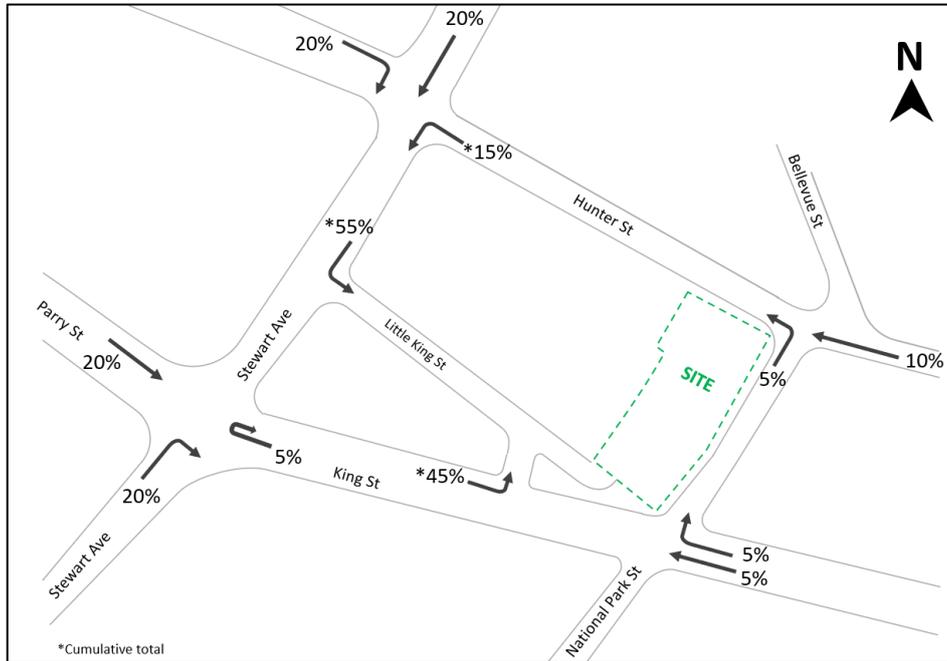


Figure 16 – Assumed Inbound Percentage Distribution

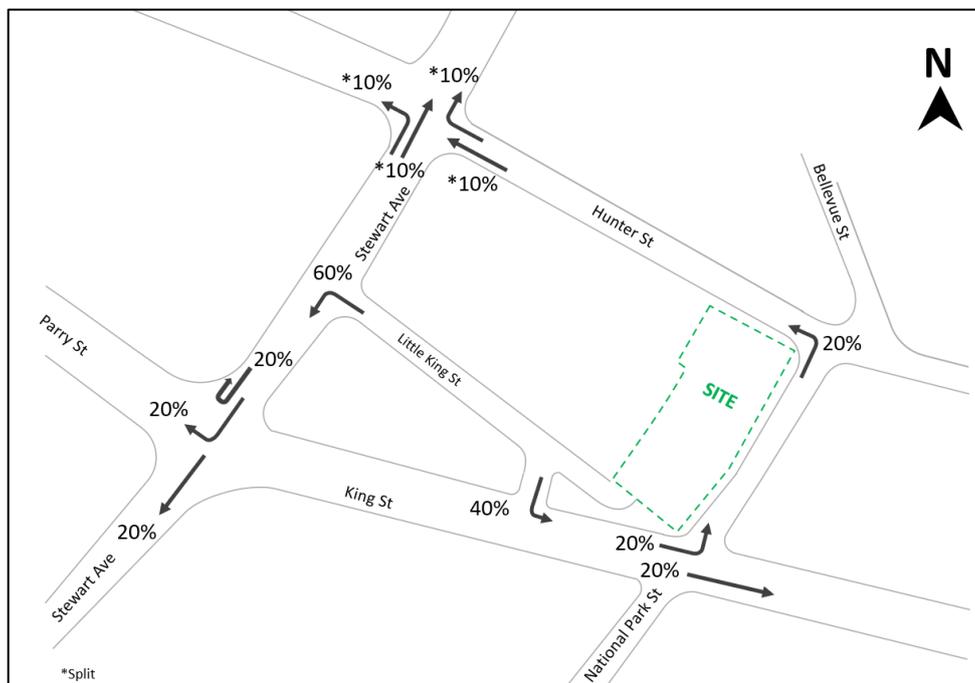


Figure 17 – Assumed Outbound Percentage Distribution

4.5.1 Combined Development Traffic Distribution

The AM and PM traffic distribution for the combined development, for both inbound and outbound is presented in Figure 18 and Figure 19 respectively.

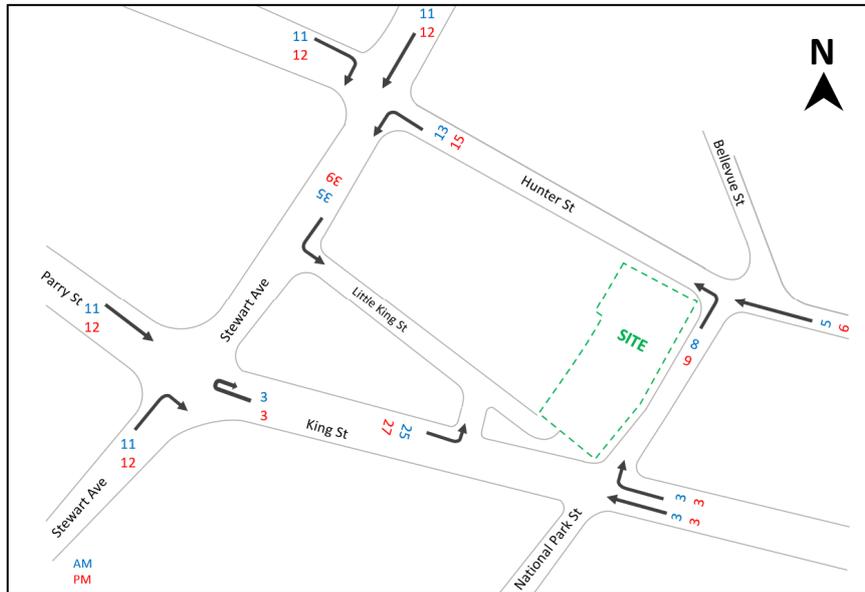


Figure 18 – Combined Development Inbound Traffic Distribution

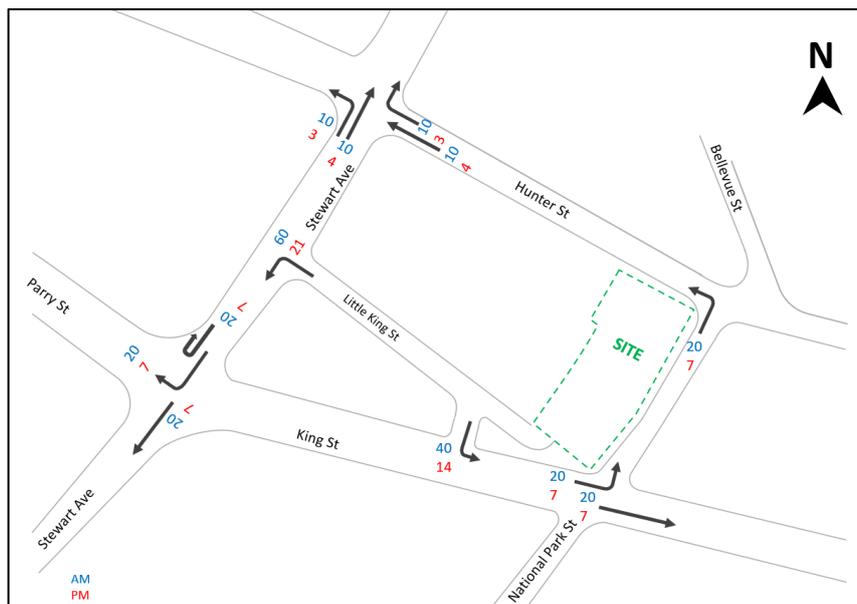


Figure 19 – Combined Development Outbound Traffic Distribution

5 TRAFFIC IMPACT

The proposed development is anticipated to have an effect on the surrounding road network. To understand and quantify the traffic impact of the proposed development, a SIDRA network assessment has been undertaken considering adjacent intersections which may be impacted by the proposed development including:

- Stewart Avenue & Little King Street.
- Stewart Avenue and King Street.
- King Street & Little King Street.
- King Street and National Park Street.
- Hunter Street and National Park Street.

5.1 Performance Metrics

The intersections have been analysed using the traffic modelling software, SIDRA.

SIDRA is a micro-analytic software package which is widely used and accepted as a tool to evaluate signalised and unsignalised intersections.

5.2 Performance Metrics

Key performance metrics used to analyse the performance of the intersection assessed include the Degree of Saturation (DoS), Level of Service (LoS), Average Delay and 95th Percentile Queue.

The target DoS and LoS criteria is in accordance with the RMS Traffic Modelling Guidelines. The target DoS for the signalised intersections within the vicinity of the site is 0.9 while the target LoS is LoS D. The adopted DoS and LoS parameters adopted in this assessment are presented in Figure 20 and Figure 21 respectively.

Table 14.2 Maximum practical degree of saturation

Intersection type	Maximum practical degree of saturation
Signals	0.90
Roundabouts	0.85
Sign-controlled	0.80
Continuous lanes	0.98

Figure 20 – Maximum Practical Degree of Saturation (RMS Traffic Modelling Guidelines, 2013)

LoS	Control delay per vehicle in seconds (d) (including geometric delay)
All intersection types	
A	d < 14
B	d < 15 to 28
C	d < 29 to 42
D	d < 43 to 56
E	d ≤ 57 to 70
F	d > 70

Figure 21 - Control Delay for Vehicle LoS Calculations (RMS Traffic Modelling Guidelines, 2013)

5.3 SIDRA Network Layout

The adopted overall SIDRA network is presented in Figure 22. Detailed layout plans for each intersection can be found in Appendix A of this report.

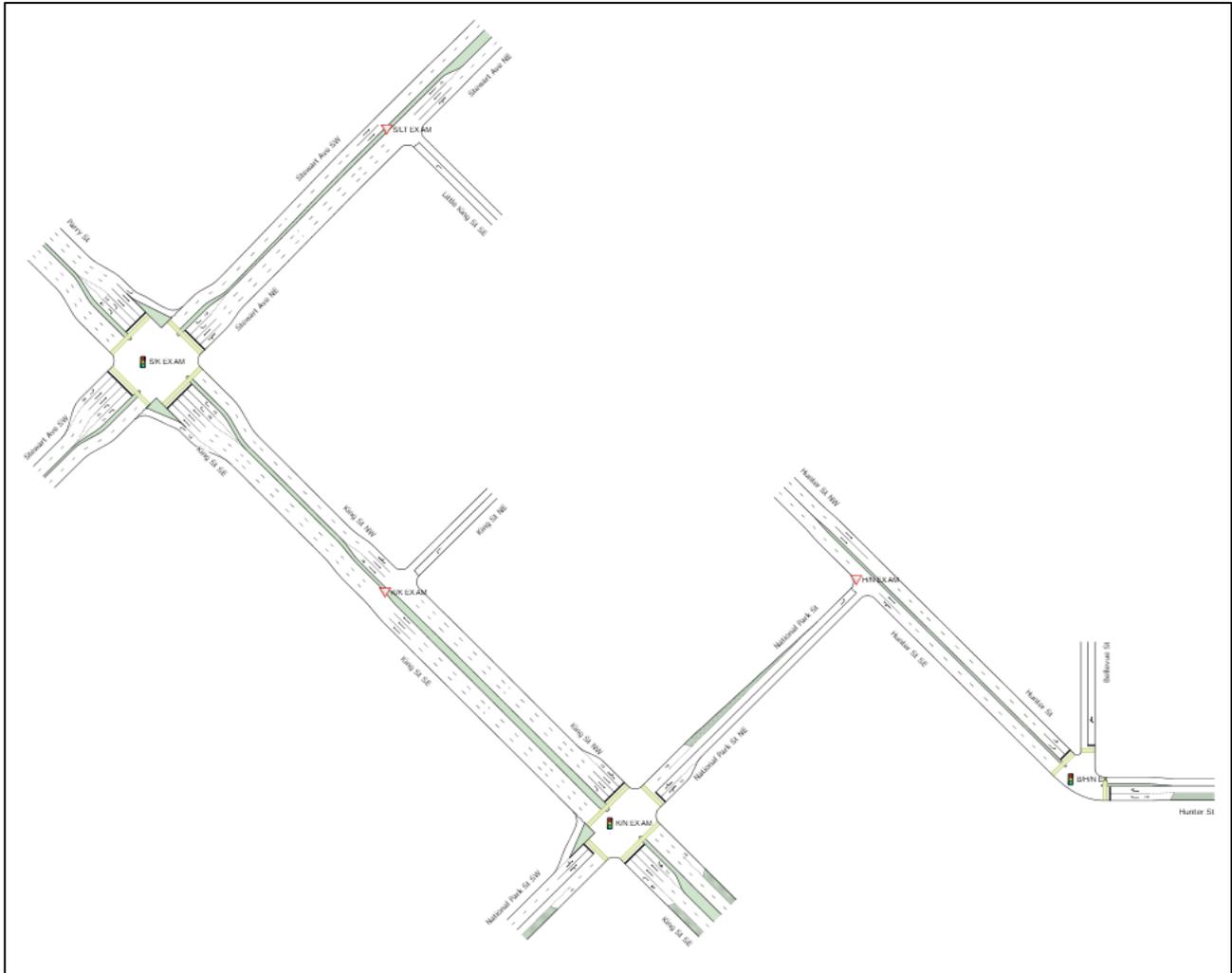


Figure 22 - SIDRA Network Layout

5.4 Modelling Assumptions

- The existing intersection configuration, layout and lane lengths/widths have been adopted as observed on aerial imagery.
- Adopted traffic volumes are in accordance with the calculations as presented in Section 4 and the survey undertaken by Trans Traffic Survey.
- A first principals process has been adopted to estimate traffic volumes at the Stewart St & Little King Street intersection including an assumption that the volumes entering/existing Little King Street are similar to those entering Little King Street at the King Street intersection.
- It has been assumed that the combined development (Stage 1 & 2) will be open in 2025.
- A 1.5% compounded traffic growth has been assumed and projected to the assumed opening year.
- A flow period of 60 minutes has been adopted in this assessment to ensure input volumes match demand volumes.
- Site level of Service (LoS) Method has been adopted as Delay (RTA NSW) and therefore the delay experienced dictates the LoS of the intersection.
- SIDRA default gap acceptance has been adopted in the assessment.
- All other SIDRA default parameters have been maintained.

5.5 Results

Summary result tables are presented for the intersections listed in Section 5.0 of this report, in Table 7 to Table 11 respectively.

The summary results tables highlight key performance parameters such as the DoS, LoS, Average Delay and 95th Percentile Queue for each intersection, considering both the existing and future scenario. Detailed SIDRA outputs can be found in Appendix A of this report.

Table 7 – Stewart Avenue & Little King Street Results

INTERSECTION	SCENARIO	PEAK	DoS	LoS	AVG DELAY (s)	95th%ile QUEUE (m)
Stewart Avenue & Little King Street	Existing 2022	AM	0.416	A*	6.4*	6.1*
		PM	0.451	A*	7.2*	7.8*
	2025 + Stage 1 Development	AM	0.493	A*	6.8*	8.8*
		PM	0.497	A*	7.6*	9.7*
	2025 + Stage 1 & 2 Development	AM	0.537	A*	7.0*	10.8*
		PM	0.51	A*	7.6*	10.2*

** Representative of the minor road approach*

Table 8 – Stewart Avenue & King Street Results

INTERSECTION	SCENARIO	PEAK	DoS	LoS	AVG DELAY	95th%ile QUEUE
Stewart Avenue & King Street	Existing 2022	AM	0.897	D	46.7	219.6 (NW)
		PM	0.859	D	44.4	183.3 (NW)
	2025 + Stage 1 Development	AM	0.943	E	66.7	412.6 (NW)
		PM	0.888	D	50.0	226.4 (NW)
	2025 + Stage 1 & 2 Development	AM	0.952	E	60.6	431.2 (NW)
		PM	0.892	D	50.3	229.8 (NW)

Table 9 – King Street & Little King Street Results

INTERSECTION	SCENARIO	PEAK	DoS	LoS	AVG DELAY	95th%ile QUEUE
King Street & Little King Street	Existing 2022	AM	0.563	A*	8.1*	28.5*
		PM	0.504	A*	6.0*	15.4*
	2025 + Stage 1 Development	AM	0.645	A*	9.9*	47.3*
		PM	0.548	A*	6.7*	21.8*
	2025 + Stage 1 & 2 Development	AM	0.688	A*	10.9*	50.7*
		PM	0.559	A*	6.8*	22.8*

** Representative of the minor road approach*

Table 10 – King Street & National Park Street Results

INTERSECTION	SCENARIO	PEAK	DoS	LoS	AVG DELAY	95th%ile QUEUE
King Street & National Park Street	Existing 2022	AM	0.820	C	32.0	103.7 (SE)
		PM	0.691	C	30.2	158.7 (SE)
	2025 + Stage 1 Development	AM	0.781	C	36.2	137.6 (SE)
		PM	0.709	C	32.0	179.1 (SE)
	2025 + Stage 1 & 2 Development	AM	0.790	C	36.0	136.6 (SE)
		PM	0.709	C	32.1	179.3 (SE)

Table 11 – Hunter Street & National Park Street Results

INTERSECTION	SCENARIO	PEAK	DoS	LoS	AVG DELAY	95th%ile QUEUE
Hunter Street & National Park Street	Existing 2022	AM	0.197	A*	5.6*	3.3*
		PM	0.184	A*	6.1*	4.0*
	2025 + Stage 1 Development	AM	0.206	A*	5.7*	3.7*
		PM	0.199	A*	6.3*	4.5*
	2025 + Stage 1 & 2 Development	AM	0.206	A*	5.7*	4.2*
		PM	0.2	A*	6.3*	4.8*

** Representative of the minor road approach*

5.6 Traffic Impact

The development is not expected to negatively impact the function of nearby intersections. The modelling shows that all intersections will function effectively in the post development scenario with the exception of the intersection of Stewart Avenue & King Street in the 2025 AM peak period.

Though the intersection of Stewart Avenue & King Street will not meet traffic performance targets in the 2025 AM peak period, it is noted that the influence that the traffic generated by the development has on this result is minor.

As presented in Table 12, it can be seen that in a 'No Development' scenario, the intersection is also not expected to meet traffic performance targets in the 2025 AM Peak.

Table 12 - Results Comparison

INTERSECTION	SCENARIO	PEAK	DoS	LoS	AVG DELAY	95th%ile QUEUE
Stewart Avenue & King Street	2025 & No Development	AM	0.928	E	63.6	386.3 (NW)
	2025 + Stage 1 & 2 Development	AM	0.952	E	60.6	431.2 (NW)

It is also noted that traffic growth has been assumed using a compounded 1.5% growth rate. This form of extrapolation does not consider the impacts of land use changes over time or transport modals changes which may occur due to infrastructure improvements.

5.7 Servicing

In accordance with the Newcastle DCP, waste collection for the proposed development is envisaged to be undertaken from the dedicated waste collection zone, within the ground level of the development (associated with Stage 1). The waste collection vehicle is anticipated to enter and exit in a forward direction with appropriate space available to undertake turning manoeuvres within the development. As waste is to be collected, emptied and bins returned within the site, on-street garbage collection is not anticipated which accords with the requirements of the DCP. Waste collection will also be programmed appropriately to ensure it does not coincide with peak period traffic generating periods. For detailed information relating to waste management associated with the proposed development, refer to the Operational Waste Management Plan prepared by Elephants Foot (Report No: 3469).

The business/retail premises within both stages of the development are likely to be serviced by small or medium rigid vehicles, typically courier vans, with short turnover periods. It is expected that these vehicles will be able to make use of the available off-street parking in addition to the dedicated loading bay on the ground level of the Stage 1 development. The vehicles servicing the business/retail premises located within Stage 2 of the development are also proposed to make use of the loading zone associated with Stage 1 of the development. Further, there is available on-street parking/loading zones on National Park Street which could also be utilised for servicing purposes.

It is also noted that the project team will engage with Council regarding the opportunity to introduce loading zones and short drop-off pickup areas on National Park Street.

In addition to allowing loading for the business/retail uses, the increased residential population will need these areas to safely support the Gig economy users (Uber eats/Deliveroo etc) and for general pick-up/drop-off including for taxi/Uber. The removal of all driveway crossings from National Park Street proposed as part of the Development should help facilitate this without the need to minimise the level of on-street parking.

Overall, it is considered that the proposed development can be adequately serviced using the proposed on-site parking/loading bay provisions or utilise the available on-street parking on National Park Street.

5.8 Pedestrian Facilities

The proposed development is anticipated to generate pedestrian demands from residents, visitors, and business/retail premises patrons. Within the proposed development area, a comprehensive network of concrete footpaths already exists including pedestrian crosswalks at the nearby intersections.

As such, it can be concluded that additional pedestrian facilities are not required as part of this proposed development. It is noted however that footways across the frontages of the proposed development will be embellished as part of the development in accordance with the requirements of the DCP.

5.9 Alternative Transport Facilities

The proposed development is anticipated to generate an increase in alternative transport modes from residents, visitors, and business/retail premises patrons.

As explored in Section 2.4 of this report, the site has excellent access to public transport facilities including bus routes/stops, light rail and heavy rail. As such, it can be considered that the existing alternative transport facilities and provisions within the area are suitable for the development.

It is also noted that the landscape design incorporates flexibility in the location of the Hunter Street bus stop in order to facilitate future bus seating within the property boundary, or additional footpath width should TfNSW seek to erect new bus stop infrastructure within the footpath/road reserve.

5.10 Construction Routes

Access/Egress to the site for delivery vehicles and associated construction vehicles is proposed to be undertaken from either King Street or Stewart Avenue, leading to the Little King Street and ultimately to the site. The proposed access/egress options are presented in Figure 23.

Both King Street & Stewart Avenue are major, multi-lane roads and can acceptably provide access/egress for large construction/delivery vehicles.

Details pertaining to final construction vehicle routes, entry/egress, parking and hoarding are anticipated to be finalised as part of the Construction Traffic Management Plan (CTMP). It is also envisaged that dialogue will be maintained with TfNSW to maintain the bus stop on Hunter Street during construction.

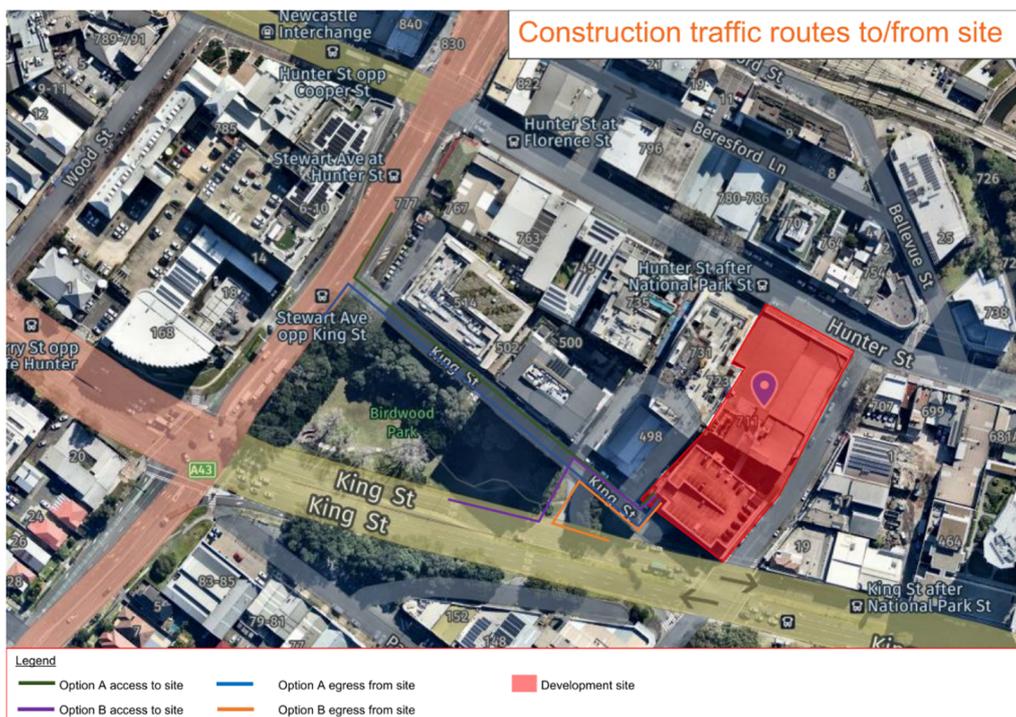


Figure 23 – Proposed Access/Egress Options

6 PARKING CONSIDERATIONS

The parking policy and requirements applicable to the proposed development are specified in Chapter 7.03 Traffic Parking and Access of Newcastle City Council’s Development Control Plan and approved amendments to the DCP. As the subject site is located within the City Centre area, the assessment is subject to the requirement of Council’s DCP.

6.1 Stage 1 Development Car Parking

The car parking requirements for Stage 1 of the proposed development has been summarised in Table 13.

Table 13 - Stage 1 Planning Scheme Car Parking Requirement

USE	SIZE	PLANNING SCHEME PARKING RATE	CAR PARKING	AVG RATE PROVIDED	COMPLIANT?
Residential	35 x 1-bed	Small (<75m ² or 1-bed) - Max average of one space per dwelling	22	0.63 per dwelling	Yes
	74 x 2-bed	Medium (<75m ² -100m ² or 2-bed) - Max average of one space per dwelling	67	0.9 per dwelling	Yes
	27 x 3 or more bed	Large (>100m ² or 3-bed) - Max average of two space per dwelling	38	1.4 per dwelling	Yes
Residential (visitor)	137 dwellings	No minimum or maximum rate	28	0.2 per dwelling	Yes
Business/Retail	613.84m ² GFA	1 space per 60m ²	10	1 space per 60m ²	Yes
TOTAL			165		

As presented in Table 13, Stage 1 of the development is proposed to provide 165 car parking spaces including 13 accessible spaces which complies the DCP parking requirement.

6.2 Combined Development Car Parking

The car parking requirements for the combined development has been summarised in Table 14.

Table 14 - Combined Development Planning Scheme Car Parking Requirement

USE	SIZE	PLANNING SCHEME PARKING RATE	CAR PARKING	AVG RATE PROVIDED	COMPLIANT?
Residential	70 x 1-bed	Small (<75m ² or 1-bed) - Max average of one space per dwelling	42	0.6 per dwelling	Yes
	146 x 2-bed	Medium (<75m ² -100m ² or 2-bed) - Max average of one space per dwelling	131	0.9 per dwelling	Yes
	42 x 3 or more bed	Large (>100m ² or 3-bed) - Max average of two space per dwelling	59	1.4 per dwelling	Yes
Residential (visitor)	259 dwellings	No minimum or maximum rate	49	0.37 per dwelling	Yes
Business/Retail	1143.27m ² GFA	1 space per 60m ²	19	1 space per 60m ²	Yes
TOTAL			300		

As presented in Table 14, the combined development proposed to provide 300 car parking spaces including 20 accessible spaces which complies the DCP parking requirement.

6.3 Bicycle Provisions

The bicycle parking requirement applicable to the proposed development is also specified in the Newcastle DCP. It is noted that the bicycle provisions for the proposed site are subject to the following assumptions:

- The bicycle parking provision for the residential dwellings in the Newcastle City Centre area is not listed in the Newcastle DCP 2012 or approved amendments. Therefore, the city-wide residential rate has been adopted. i.e. 1 space per dwelling plus 1 space per 10 dwellings; and
- The bike parking requirement for a specialised retail premises is 1 space per 20 staff (Class 2), however, it is difficult to predict the number of staff for the proposed development at this stage. Therefore, a bicycle rate for an office premises has been adopted i.e. 1 space per 200m² GFA.

6.4 Stage 1 Development Bicycle Parking

The bicycle parking requirement for Stage 1 of the proposed development has been summarised in Table 15.

Table 15 - Stage 1 Planning Scheme Bicycle Parking Requirement

USE	SIZE	PLANNING SCHEME BICYCLE PARKING RATE	BIKE PARKING
Residential	136 dwellings	1 space per dwelling	136
Residential (visitor)	136 dwellings	1 space per 10 dwellings (Class 3) for visitors.	14
Business/Retail	613.84m ² GFA	1 space per 200m ²	3
TOTAL			153

As presented in Table 15, the proposed development has a planning scheme bicycle parking requirement of 153 bicycle parking spaces under the Newcastle DCP. As Stage 1 of the proposed development is proposed to provide 160 bicycle parking spaces, the DCP parking requirement is satisfied.

6.5 Combined Development Bicycle Parking

The bicycle parking requirements for the combined development has been summarised in Table 16.

Table 16 - Combined Development Planning Scheme Bicycle Parking Requirement

USE	SIZE	PLANNING SCHEME BICYCLE PARKING RATE	BIKE PARKING
Residential	258 dwellings	1 space per dwelling	258
Residential (visitor)	258 dwellings	1 space per 10 dwellings (Class 3) for visitors.	26
Business/Retail	1143.27m ² GFA	1 space per 200m ²	6
TOTAL			290

As presented in Table 16, the proposed development has a planning scheme bicycle parking requirement of 290 bicycle parking spaces under the Newcastle DCP whilst the combined development is proposed to provide 297 bicycle parking spaces including 9 on the publicly accessible ground floor area.

As such the DCP parking requirement with respect to bicycle parking is considered satisfied.

6.6 Stage 1 Development Motorcycle Parking

The motorcycle parking requirements for Stage 1 of the proposed development has been summarised in Table 17.

Table 17 - Stage 1 Planning Scheme Motorcycle Parking Requirement

USE	CAR SPACES	PLANNING SCHEME MOTORCYCLE PARKING RATE	MOTORCYCLE PARKING
Motorcycle (Resident)	155	1 space per 20 car spaces	8
Motorcycle (Business/Retail)	10	1 space per 20 car spaces	0
TOTAL			8

As presented in Table 17, the proposed development has a planning scheme motorcycle parking requirement of 8 spaces. Stage 1 of the development is proposed to provide 8 motorcycle parking spaces and as such, the DCP motorcycle parking requirement is considered satisfied.

6.7 Combined Development Motorcycle Parking

The bicycle parking requirements for the combined development has been summarised in Table 18.

Table 18 - Combined Development Planning Scheme Motorcycle Parking Requirement

USE	CAR SPACES	PLANNING SCHEME MOTORCYCLE PARKING RATE	MOTORCYCLE PARKING
Motorcycle (Resident)	258	1 space per 20 car spaces	14
Motorcycle (Business/Retail)	19	1 space per 20 car spaces	0
TOTAL			14

As presented in Table 18, the proposed development has a planning scheme motorcycle parking requirement of 14 spaces. The combined development is proposed to provide 17 motorcycle parking spaces and as such, the DCP motorcycle parking requirement is considered satisfied.

6.8 Stage 1 Development Electric Vehicle Charing Point

The Electric Vehicle (EV) charging point requirement for Stage 1 of the proposed development has been summarised in Table 19.

Table 19 - Stage 1 Planning Scheme EV Charging Point Requirement

USE	CAR SPACES	EV CHARGING POINT REQUIREMENT	EV CHARGING POINTS
Electric Vehicle Charging Point	165	1 or 5% of car spaces	9

As presented in Table 19, the proposed development has a planning scheme EV charging point requirement of 9 spaces. As Stage 1 of the development is anticipated to meet this requirement, the DCP EV charging point requirement is considered satisfied.

6.9 Combined Development Electric Vehicle Charging Point

The EV charging point requirement for the combined development has been summarised in Table 20.

Table 20 - Combined Development Planning Scheme EV Charging Point Requirement

USE	CAR SPACES	EV CHARGING POINT REQUIREMENT	EV CHARGING POINTS
Electric Vehicle Charging Point	300	1 or 5% of car spaces	15

As presented in Table 20, the proposed development has a planning scheme EV charging point requirement of 15 spaces. As the combined development is anticipated to meet this requirement, the DCP EV charging point requirement is considered satisfied.

7 CAR PARK DESIGN & CIRCULATION

7.1 Car Park Access

On-site car parking for the development is proposed to be provided through a combined entry/exit access crossing from Little King Street as presented in Figure 24.

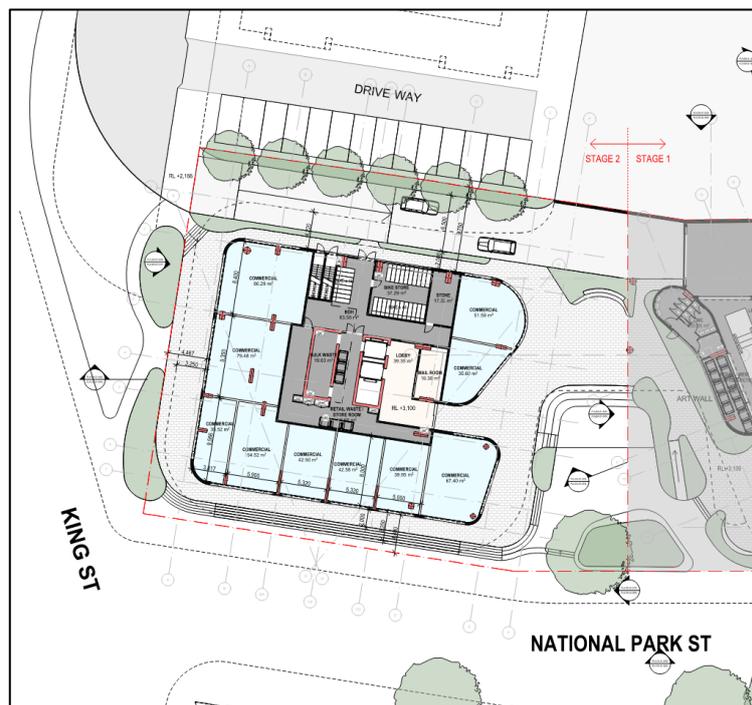


Figure 24 – Proposed Site Access

As per the requirements of AS2890.1-2004, a carpark with between 101 to 300 car parking spaces, accessed via a local road and providing long term parking for residential, domestic and employee purposes (Class 1A) requires a Category 2 access facility. A Category 2 access facility pertains to an entry width of between 6.0-9.0m without the need for driveway separation.

As the proposed access is a combined entry/exit driveway of approximately 6.5m wide, the access requirements of AS2890.1-2004 are satisfied.

In addition, the provision of a 6.5-metre-wide combined entry/exit driveway with forward entry and exit will ensure suitable pedestrian and vehicular sight lines are achieved in accordance with AS2890.1-2004. Vehicular sight lines from the proposed access have been observed to be in excess of the AS2890.1-2004 requirement of 45 metres to 69 metres within a 50 km/h speed zone.

7.2 Car Park Design

Overall, the proposed parking layout is considered to comply with AS2890.1-2004 and the Newcastle City Council’s DCP. The Newcastle DCP this document stipulates the following:

- Parking area dimensions and parking layout shall comply with Australian Standard 2890.1-2004 User Class 1A - Bays at 90 degrees - (being 2.4 metres wide and 5.4 metres long). A minimum aisle width of 5.8 metres shall be provided.

From the proposed development plans, the following is noted:

- Parking spaces are generally 5.4m long by 2.4m wide.
- Isle widths are a minimum 5.8m wide.
- Minimum headroom requirement of 2.2m is achieved.
- A flat landing of 5.0m is provided inside the property.
- A HRV can enter in a forward direction, undertake turning manoeuvres on the ground floor, load/unload contents and exit in a forward direction.
- Whilst no turning area is provided at the end of long blind aisles, it is proposed that these car parking spaces be allocated as residential car parking. Turning areas within the residential car parking can be considered as unnecessary as the traffic using the car park will have a known and secured car parking space available. Therefore, forward entry and exit from the site is still ensured.
- Though it is expected that there may be amendments to the car parking design throughout the DA process, currently, the proposed development plans comply of the requirements of AS2980.1-2004 and the Newcastle DCP.

7.3 Car Park Circulation

A swept path assessment has also been undertaken for the proposed development entry/exit and internal circulation roads and illustrated in Figure 25 to Figure 28.



Figure 25 – Passenger Vehicle Entry/Exit



Figure 26 – Passenger Vehicle Circulation



Figure 27 – Waste Collection Vehicle Entry/Exit

8 CONCLUSION

A TIA of the proposed mixed -use development at 711 Hunter Street, Newcastle has been undertaken by BG&E. Key findings from the TIA include:

- Additional traffic generated by the development site will not have an adverse impact on the surround road network.
- Surrounding intersections will continue to operate effectively in the post-development scenario except for the intersection of Stewart Avenue & King Street in the 2025 AM Peak period.
- It is noted that the influence that the traffic generated by the development has on the above is relatively minor.
- Stage 1 of the proposed development complies with the requirement of Section 7.03 of the Newcastle DCP and approved amendments with respect to car parking requirement.
- The combined development with the requirement of Section 7.03 of the Newcastle DCP and approved amendments with respect to car parking requirement.
- The proposed development complies with the requirement of Section 7.03 of the Newcastle DCP with respect to bicycle parking requirements under both Stage 1 and the Combined Development scenario.
- The proposed development complies with the requirement of Section 7.03 of the Newcastle DCP with respect to EV charging points.
- The proposed development is considered to adequately cater for service and delivery vehicle through off-street parking, off-street loading zones and on-street parking.
- Where access driveways have been removed, additional loading or 2-minute pick-up or drop-off areas can be introduced.
- A thorough existing concrete footpath existing currently exists within the vicinity of the site including pedestrian crosswalks at the nearby intersections. In addition, pedestrian facilities abutting the development will be embellished as part of the construction. As such, additional pedestrian facilities are not considered to be required.
- The site has excellent access to public transport facilities including bus routes/stops, light rail and heavy rail. As such, it can be considered that the existing alternative transport facilities and provisions within the area are suitable for the development.
- The development team maintain dialogue with TfNSW and Newcastle City to ensure the operations of the Hunter Street bus stop are not impacted as outlined in the Construction Management Plan.



APPENDIX A – SIDRA OUTPUTS

SITE LAYOUT

▽ Site: K/K EX AM [King St & Little King St EX AM (Site Folder: 2022 AM)]

K/K EX AM
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.

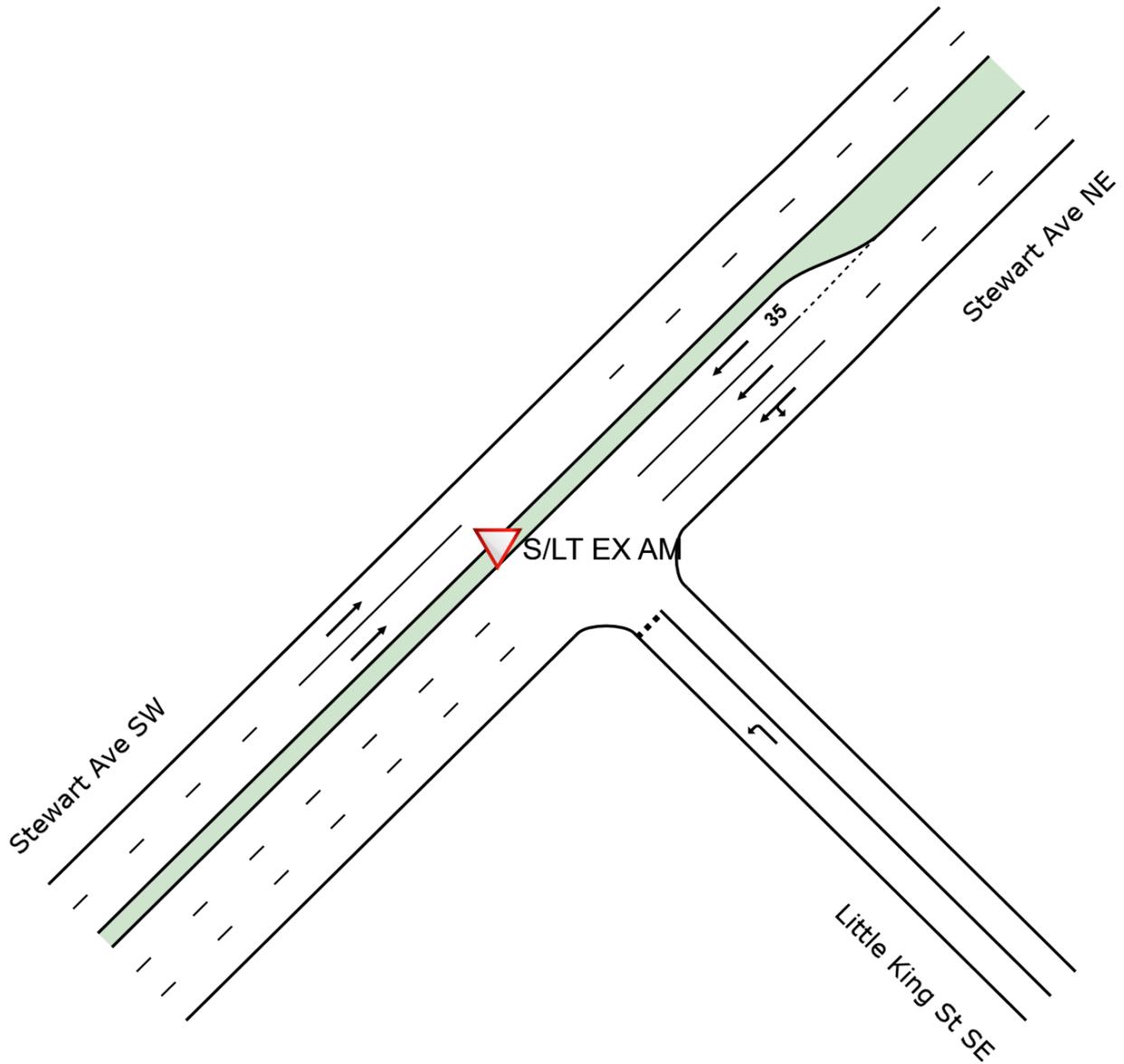


SITE LAYOUT

▽ Site: S/LT EX AM [Stewart Ave & Little King St EX AM (Site Folder: 2022 AM)]

S/LT EX AM
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.

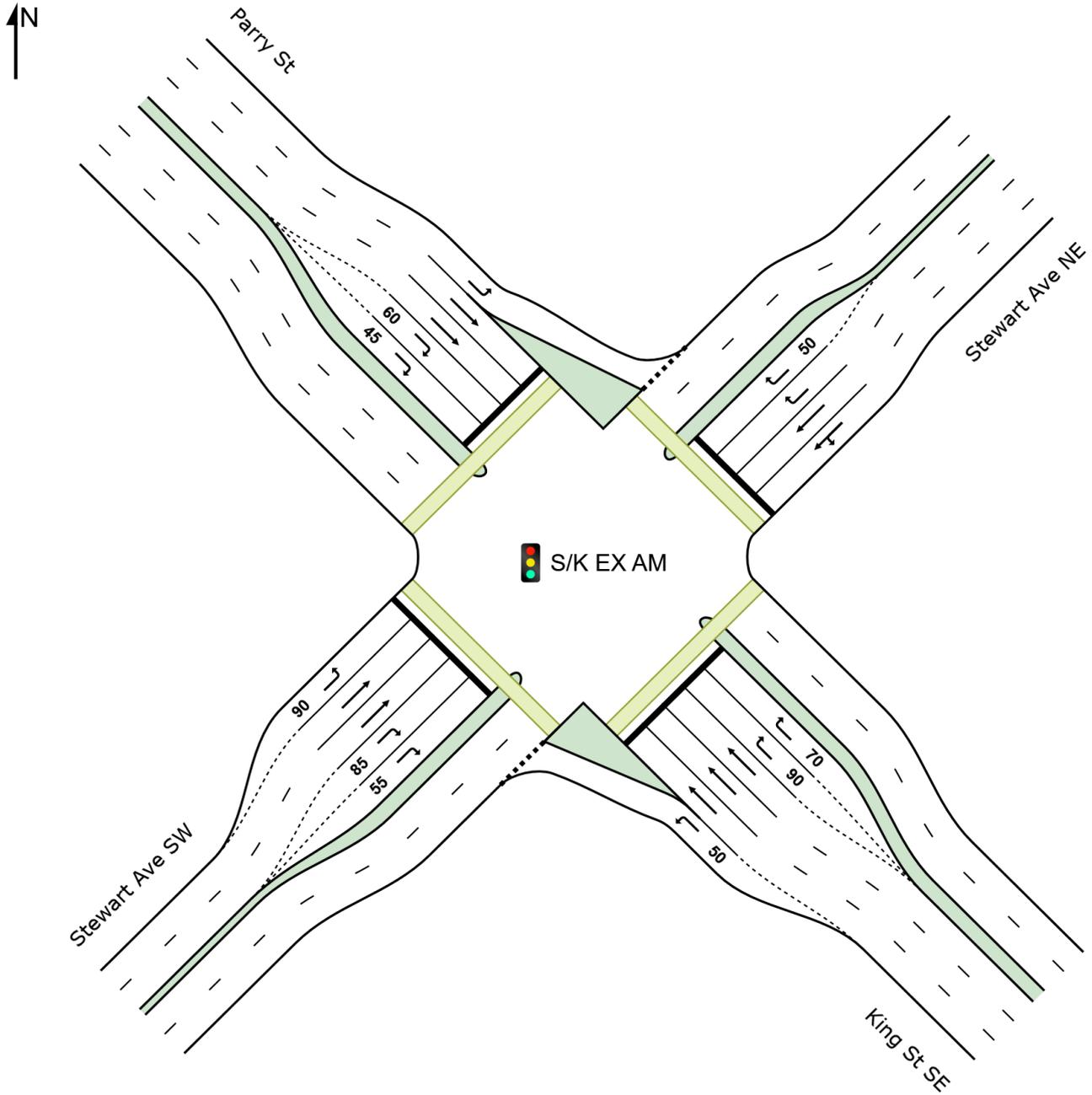


SITE LAYOUT

 Site: S/K EX AM [Stewart Ave & King St EX AM (Site Folder: 2022 AM)]

S/K EX AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.

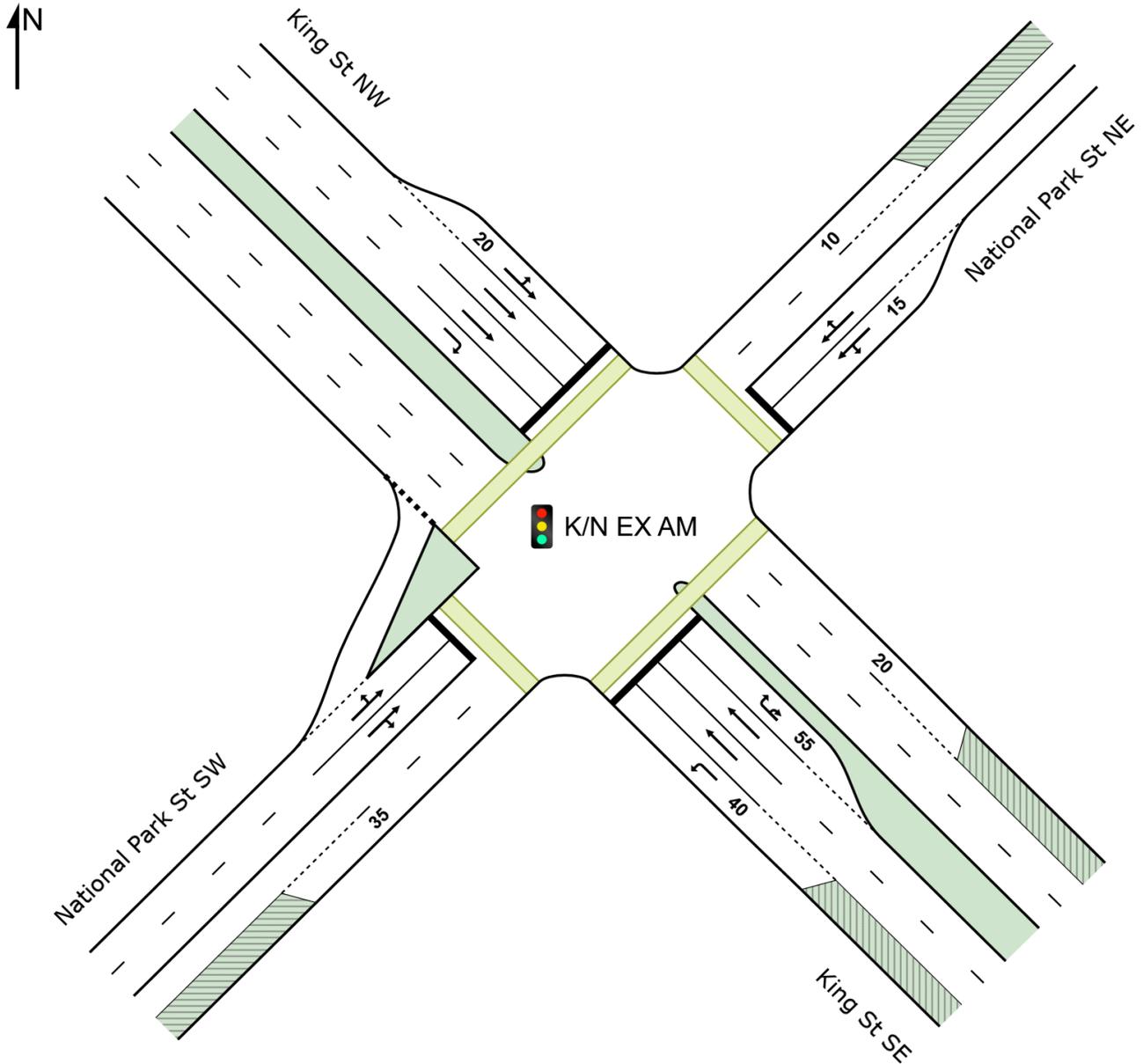


SITE LAYOUT

Site: K/N EX AM [King St & National Park St EX AM (Site Folder: 2022 AM)]

K/N EX AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.

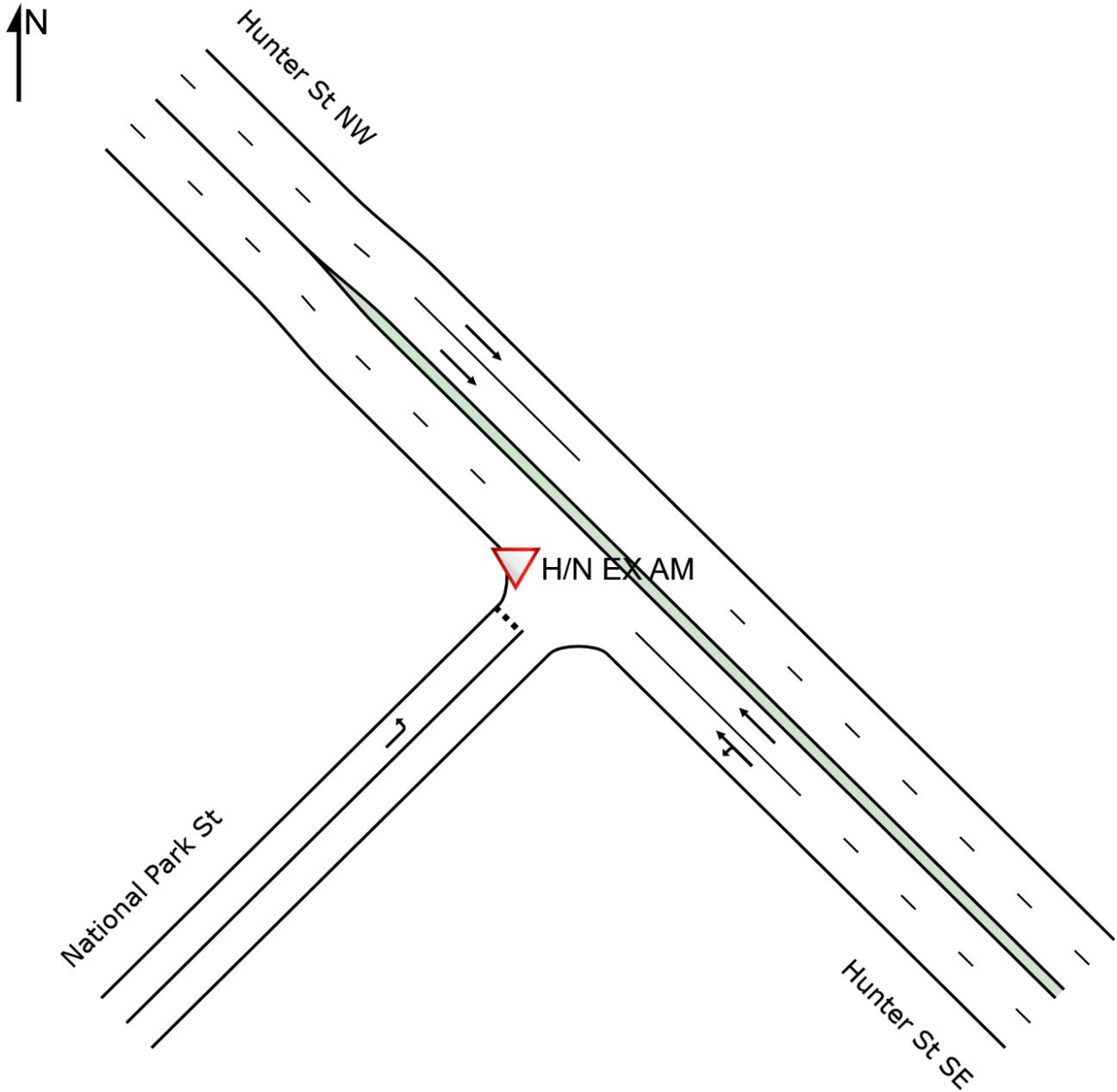


SITE LAYOUT

▽ Site: H/N EX AM [Hunter St & National Park St EX AM (Site Folder: 2022 AM)]

H/N EX AM
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



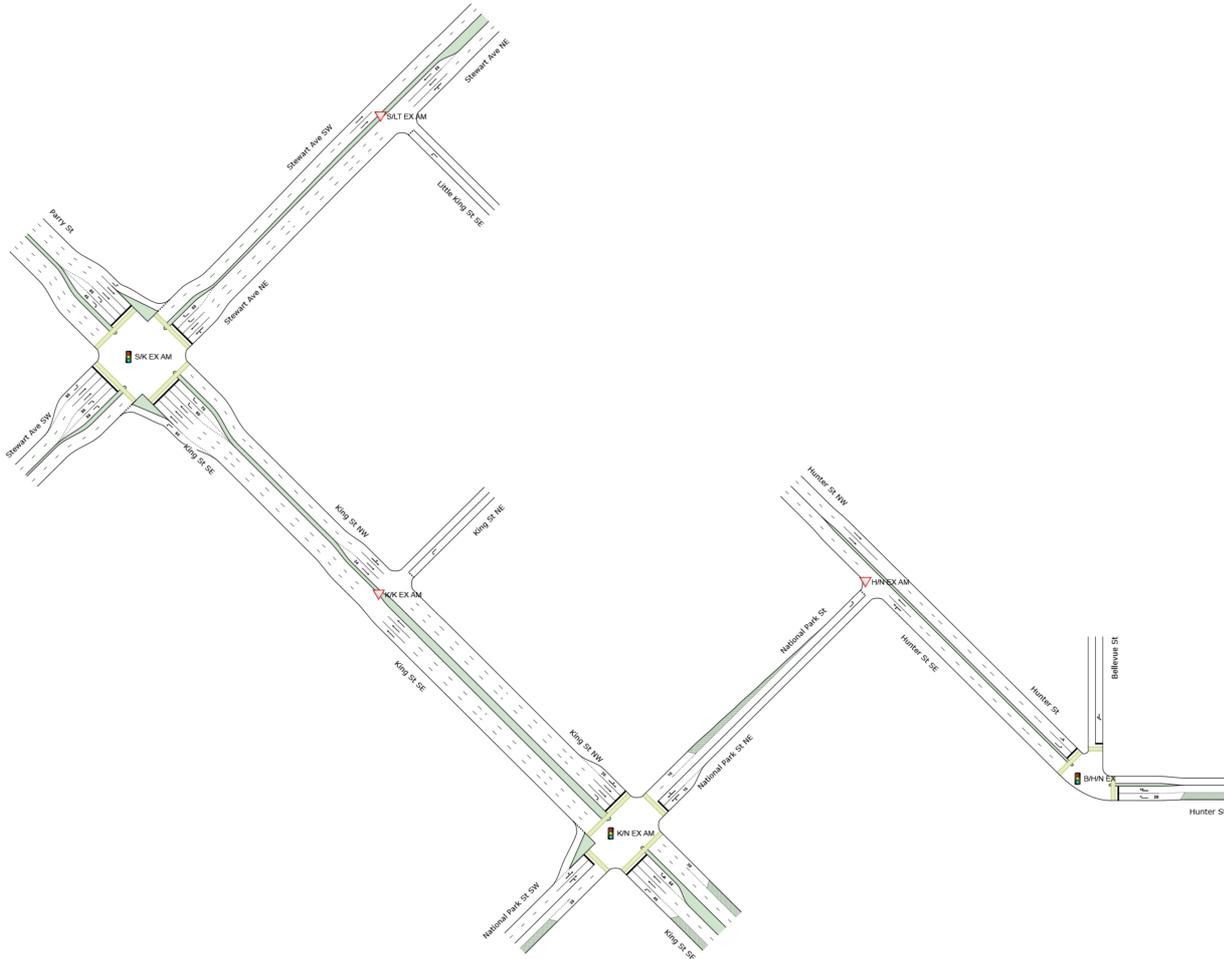
NETWORK LAYOUT

Network: N101 [2022 AM (Network Folder: 2022)]

New Network

Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SITES IN NETWORK			
Site ID	CCG ID	Site Name	
▽S/LT AM	EX NA	Stewart Ave & Little King St EX AM	
█S/K AM	EX NA	Stewart Ave & King St EX AM	
▽K/K AM	EX NA	King St & Little King St EX AM	
█K/N AM	EX NA	King St & National Park St EX AM	
▽H/N AM	EX NA	Hunter St & National Park St EX AM	
█B/H/N EX	EX NA	Bellevue St, Hunter St & National Park St EX AM	

MOVEMENT SUMMARY

Site: S/LT EX AM [Stewart Ave & Little King St EX AM (Site Folder: 2022 AM)]

Network: N101 [2022 AM (Network Folder: 2022)]

S/LT EX AM
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
SouthEast: Little King St SE														
1	L2	234	2.1	234	2.1	0.416	6.4	LOS A	0.9	6.1	0.30	0.60	0.30	32.7
Approach		234	2.1	234	2.1	0.416	6.4	LOS A	0.9	6.1	0.30	0.60	0.30	32.7
NorthEast: Stewart Ave NE														
4	L2	28	3.6	28	3.6	0.189	4.9	LOS A	0.0	0.0	0.00	0.09	0.00	49.3
5	T1	739	5.0	739	5.0	0.189	0.0	LOS A	0.3	2.5	0.00	0.02	0.00	58.1
Approach		767	5.0	767	5.0	0.189	0.2	NA	0.3	2.5	0.00	0.02	0.00	57.2
SouthWest: Stewart Ave SW														
11	T1	1273	3.5	1273	3.5	0.330	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach		1273	3.5	1273	3.5	0.330	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.8
All Vehicles		2274	3.8	2274	3.8	0.416	0.7	NA	0.9	6.1	0.03	0.07	0.03	54.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

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

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

MOVEMENT SUMMARY

Site: S/K EX AM [Stewart Ave & King St EX AM (Site Folder: 2022 AM)]

Network: N101 [2022 AM (Network Folder: 2022)]

S/K EX AM

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
SouthEast: King St SE														
4	L2	138	5.1	138	5.1	0.118	10.3	LOS A	2.4	17.6	0.40	0.62	0.40	44.9
5	T1	675	2.4	675	2.4	0.345	29.4	LOS C	9.0	64.5	0.80	0.67	0.80	34.4
6	R2	267	4.5	267	4.5	*0.897	71.8	LOS F	8.4	61.0	1.00	1.09	1.57	7.2
Approach		1080	3.2	1080	3.2	0.897	37.4	LOS C	9.0	64.5	0.80	0.77	0.94	27.5
NorthEast: Stewart Ave NE														
7	L2	168	1.8	168	1.8	0.766	47.3	LOS D	18.7	135.5	0.98	0.89	1.04	7.6
8	T1	588	5.8	588	5.8	0.766	42.9	LOS D	18.7	135.5	0.99	0.90	1.05	27.4
9	R2	217	2.3	217	2.3	0.539	57.3	LOS E	5.7	41.0	0.99	0.79	0.99	23.2
Approach		973	4.3	973	4.3	0.766	46.9	LOS D	18.7	135.5	0.99	0.87	1.03	24.0
NorthWest: Parry St														
10	L2	146	6.2	146	6.2	0.137	14.0	LOS A	3.1	23.1	0.46	0.67	0.46	41.4
11	T1	975	1.8	975	1.8	*0.851	45.2	LOS D	30.9	219.6	0.98	0.99	1.14	24.7
12	R2	223	3.1	223	3.1	0.743	63.9	LOS E	6.4	45.8	1.00	0.87	1.19	29.3
Approach		1344	2.5	1344	2.5	0.851	44.9	LOS D	30.9	219.6	0.93	0.93	1.07	26.9
SouthWest: Stewart Ave SW														
1	L2	85	4.7	85	4.7	0.120	28.4	LOS B	2.9	21.0	0.67	0.72	0.67	40.1
2	T1	860	2.7	860	2.7	*0.895	56.0	LOS D	27.2	194.5	1.00	1.08	1.30	21.8
3	R2	305	2.0	305	2.0	*0.827	65.2	LOS E	9.8	69.6	1.00	0.96	1.31	19.7
Approach		1250	2.6	1250	2.6	0.895	56.4	LOS D	27.2	194.5	0.98	1.03	1.26	22.5
All Vehicles		4647	3.1	4647	3.1	0.897	46.7	LOS D	30.9	219.6	0.92	0.91	1.08	25.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
SouthEast: King St SE											
P2	Full	50	49.3	LOS E	0.1	0.1	0.95	0.95	225.0	228.5	1.02
NorthEast: Stewart Ave NE											
P3	Full	50	49.3	LOS E	0.1	0.1	0.95	0.95	222.4	225.1	1.01
NorthWest: Parry St											
P4	Full	50	49.3	LOS E	0.1	0.1	0.95	0.95	225.3	228.8	1.02
SouthWest: Stewart Ave SW											

P1 Full	50	49.3	LOS E	0.1	0.1	0.95	0.95	225.1	228.6	1.02
All Pedestrians	200	49.3	LOS E	0.1	0.1	0.95	0.95	224.5	227.8	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: K/K EX AM [King St & Little King St EX AM (Site Folder: 2022 AM)]

Network: N101 [2022 AM (Network Folder: 2022)]

K/K EX AM
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist m				km/h
SouthEast: King St SE														
5	T1	1080	3.2	1080	3.2	0.187	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach		1080	3.2	1080	3.2	0.187	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
NorthEast: King St NE														
7	L2	234	2.1	234	2.1	0.563	8.1	LOS A	4.0	28.5	0.56	0.85	0.83	10.4
Approach		234	2.1	234	2.1	0.563	8.1	LOS A	4.0	28.5	0.56	0.85	0.83	10.4
NorthWest: King St NW														
10	L2	28	3.6	28	3.6	0.274	4.6	LOS A	8.6	61.2	0.00	0.03	0.00	35.1
11	T1	1420	1.8	1420	1.8	0.274	0.0	LOS A	19.4	138.1	0.00	0.01	0.00	49.5
Approach		1448	1.9	1448	1.9	0.274	0.1	NA	19.4	138.1	0.00	0.01	0.00	49.1
All Vehicles		2762	2.4	2762	2.4	0.563	0.8	NA	19.4	138.1	0.05	0.08	0.07	45.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

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

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

MOVEMENT SUMMARY

Site: K/N EX AM [King St & National Park St EX AM (Site Folder: 2022 AM)]

Network: N101 [2022 AM (Network Folder: 2022)]

K/N EX AM

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
SouthEast: King St SE														
4	L2	11	54.5	11	54.5	0.021	28.7	LOS C	0.4	3.7	0.64	0.66	0.64	37.9
5	T1	715	3.9	715	3.9	0.482	28.0	LOS B	14.3	103.7	0.80	0.73	0.80	31.5
6	R2	25	0.0	25	0.0	0.055	38.7	LOS C	1.0	7.3	0.79	0.70	0.79	26.7
6u	U	1	0.0	1	0.0	0.055	40.2	LOS C	1.0	7.3	0.79	0.70	0.79	36.1
Approach		752	4.5	752	4.5	0.482	28.4	LOS B	14.3	103.7	0.80	0.73	0.80	31.5
NorthEast: National Park St NE														
7	L2	10	0.0	10	0.0	0.028	44.4	LOS D	0.4	3.0	0.84	0.66	0.84	26.7
8	T1	8	0.0	8	0.0	0.057	40.4	LOS C	0.7	5.3	0.86	0.65	0.86	25.9
9	R2	8	12.5	8	12.5	0.057	45.0	LOS D	0.7	5.3	0.86	0.65	0.86	9.2
Approach		26	3.8	26	3.8	0.057	43.4	LOS D	0.7	5.3	0.85	0.65	0.85	22.7
NorthWest: King St NW														
10	L2	81	1.2	81	1.2	0.179	27.5	LOS B	4.6	32.6	0.69	0.67	0.69	8.2
11	T1	1190	1.9	1190	1.9	* 0.820	34.8	LOS C	12.4	88.1	0.92	0.88	0.99	29.7
12	R2	383	1.8	383	1.8	* 0.812	50.4	LOS D	12.4	88.1	1.00	0.97	1.12	22.4
Approach		1654	1.9	1654	1.9	0.820	38.0	LOS C	12.4	88.1	0.93	0.89	1.01	27.2
SouthWest: National Park St SW														
1	L2	357	1.7	357	1.7	0.347	8.3	LOS A	6.1	43.0	0.40	0.64	0.40	40.9
2	T1	62	3.2	62	3.2	* 0.254	41.4	LOS C	3.9	27.8	0.89	0.72	0.89	23.6
3	R2	22	0.0	22	0.0	0.254	45.9	LOS D	3.9	27.8	0.89	0.72	0.89	33.2
Approach		441	1.8	441	1.8	0.347	14.8	LOS B	6.1	43.0	0.49	0.66	0.49	36.5
All Vehicles		2873	2.6	2873	2.6	0.820	32.0	LOS C	14.3	103.7	0.83	0.81	0.87	29.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
SouthEast: King St SE											
P2	Full	50	49.3	LOS E	0.1	0.1	0.95	0.95	225.0	228.5	1.02
NorthEast: National Park St NE											
P3	Full	50	49.3	LOS E	0.1	0.1	0.95	0.95	215.4	216.0	1.00
NorthWest: King St NW											
P4	Full	50	49.3	LOS E	0.1	0.1	0.95	0.95	226.5	230.4	1.02

SouthWest: National Park St SW											
P1	Full	50	49.3	LOS E	0.1	0.1	0.95	0.95	215.4	216.0	1.00
All Pedestrians		200	49.3	LOS E	0.1	0.1	0.95	0.95	220.6	222.7	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: H/N EX AM [Hunter St & National Park St EX AM (Site Folder: 2022 AM)]

Network: N101 [2022 AM (Network Folder: 2022)]

H/N EX AM
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
SouthEast: Hunter St SE														
4	L2	24	8.3	24	8.3	0.134	2.2	LOS A	0.0	0.0	0.00	0.05	0.00	50.7
5	T1	483	5.8	483	5.8	0.134	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.8
Approach		507	5.9	507	5.9	0.134	0.1	NA	0.0	0.0	0.00	0.02	0.00	59.7
NorthWest: Hunter St NW														
11	T1	751	5.2	751	5.2	0.197	0.1	LOS A	9.9	72.7	0.00	0.00	0.00	59.9
Approach		751	5.2	751	5.2	0.197	0.1	NA	9.9	72.7	0.00	0.00	0.00	59.9
SouthWest: National Park St														
1	L2	136	2.2	136	2.2	0.127	5.6	LOS A	0.5	3.3	0.25	0.55	0.25	48.5
Approach		136	2.2	136	2.2	0.127	5.6	LOS A	0.5	3.3	0.25	0.55	0.25	48.5
All Vehicles		1394	5.2	1394	5.2	0.197	0.6	NA	9.9	72.7	0.02	0.06	0.02	58.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

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

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

MOVEMENT SUMMARY

Site: S/K EX AM [Stewart Ave & King St EX PM (Site Folder: 2022 PM)]

Network: N101 [2022 PM (Network Folder: 2022)]

S/K EX AM

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS [Total veh/h HV %]		ARRIVAL FLOWS [Total HV %]		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. Dist]		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: King St SE														
4	L2	238	2.5	238	2.5	0.226	13.7	LOS A	5.5	39.0	0.51	0.67	0.51	42.3
5	T1	822	1.0	822	1.0	0.497	35.6	LOS C	12.3	87.0	0.89	0.75	0.89	31.6
6	R2	400	1.8	400	1.8	*0.848	63.6	LOS E	11.8	84.2	1.00	0.98	1.31	8.0
Approach		1460	1.4	1460	1.4	0.848	39.7	LOS C	12.3	87.0	0.86	0.80	0.94	26.3
NorthEast: Stewart Ave NE														
7	L2	87	2.3	87	2.3	0.839	49.5	LOS D	19.1	135.5	1.00	0.97	1.13	7.8
8	T1	898	1.1	898	1.1	*0.839	44.4	LOS D	19.2	135.5	1.00	0.98	1.13	27.0
9	R2	233	0.9	233	0.9	*0.859	69.2	LOS E	7.1	49.8	1.00	0.97	1.45	20.6
Approach		1218	1.1	1218	1.1	0.859	49.5	LOS D	19.2	135.5	1.00	0.97	1.19	24.6
NorthWest: Parry St														
10	L2	108	4.6	108	4.6	0.105	10.6	LOS A	1.8	12.7	0.37	0.65	0.37	44.9
11	T1	870	0.7	870	0.7	*0.843	47.5	LOS D	26.0	183.3	0.98	0.97	1.14	24.0
12	R2	281	0.0	281	0.0	0.588	56.1	LOS D	7.4	51.6	0.99	0.80	0.99	31.3
Approach		1259	0.9	1259	0.9	0.843	46.2	LOS D	26.0	183.3	0.93	0.91	1.04	27.2
SouthWest: Stewart Ave SW														
1	L2	74	1.4	74	1.4	0.083	21.8	LOS B	2.1	14.9	0.57	0.70	0.57	43.3
2	T1	523	1.5	523	1.5	0.447	33.5	LOS C	11.4	80.5	0.86	0.73	0.86	29.2
3	R2	226	2.2	226	2.2	0.841	68.5	LOS E	6.8	48.3	1.00	0.95	1.40	19.0
Approach		823	1.7	823	1.7	0.841	42.1	LOS C	11.4	80.5	0.87	0.79	0.98	27.0
All Vehicles		4760	1.3	4760	1.3	0.859	44.4	LOS D	26.0	183.3	0.92	0.87	1.04	26.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist]		Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: King St SE											
P2	Full	50	49.3	LOS E	0.1	0.1	0.95	0.95	225.0	228.5	1.02
NorthEast: Stewart Ave NE											
P3	Full	50	49.3	LOS E	0.1	0.1	0.95	0.95	222.4	225.1	1.01
NorthWest: Parry St											
P4	Full	50	49.3	LOS E	0.1	0.1	0.95	0.95	225.3	228.8	1.02
SouthWest: Stewart Ave SW											

P1 Full	50	49.3	LOS E	0.1	0.1	0.95	0.95	225.1	228.6	1.02
All Pedestrians	200	49.3	LOS E	0.1	0.1	0.95	0.95	224.5	227.8	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: BG&E PTY LIMITED | Licence: NETWORK / 1PC | Processed: Saturday, 15 October 2022 2:36:41 PM

Project: \\bgencfts01\Projects\BGE\NTL\N21112\200 CALC\200.3 Traffic\Sidra calculation\Newcastle 1.sip9

MOVEMENT SUMMARY

Site: K/K EX AM [King St & Little King St EX PM (Site Folder: 2022 PM)]

Network: N101 [2022 PM (Network Folder: 2022)]

K/K EX AM
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
SouthEast: King St SE														
5	T1	1460	1.4	1460	1.4	0.249	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach		1460	1.4	1460	1.4	0.249	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
NorthEast: King St NE														
7	L2	238	0.0	238	0.0	0.504	6.0	LOS A	2.2	15.4	0.49	0.71	0.63	13.1
Approach		238	0.0	238	0.0	0.504	6.0	LOS A	2.2	15.4	0.49	0.71	0.63	13.1
NorthWest: King St NW														
10	L2	25	0.0	25	0.0	0.216	4.6	LOS A	3.7	25.9	0.00	0.03	0.00	35.1
11	T1	1158	1.1	1158	1.1	0.216	0.0	LOS A	10.7	75.8	0.00	0.01	0.00	49.5
Approach		1183	1.1	1183	1.1	0.216	0.1	NA	10.7	75.8	0.00	0.01	0.00	49.0
All Vehicles		2881	1.2	2881	1.2	0.504	0.6	NA	10.7	75.8	0.04	0.06	0.05	46.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

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

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

MOVEMENT SUMMARY

Site: K/N EX AM [King St/ National Park St EX PM (Site Folder: 2022 PM)]

Network: N101 [2022 PM (Network Folder: 2022)]

K/N EX AM

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
SouthEast: King St SE														
4	L2	14	28.6	14	28.6	0.024	28.9	LOS C	0.5	4.0	0.65	0.67	0.65	37.9
5	T1	993	2.1	993	2.1	0.687	31.5	LOS C	22.3	158.7	0.89	0.81	0.89	29.8
6	R2	33	0.0	33	0.0	0.069	38.1	LOS C	1.4	9.5	0.78	0.71	0.78	27.0
6u	U	1	0.0	1	0.0	0.069	39.5	LOS C	1.4	9.5	0.78	0.71	0.78	36.4
Approach		1041	2.4	1041	2.4	0.687	31.6	LOS C	22.3	158.7	0.88	0.80	0.88	29.9
NorthEast: National Park St NE														
7	L2	17	0.0	17	0.0	0.047	44.5	LOS D	0.7	5.2	0.84	0.68	0.84	26.7
8	T1	13	0.0	13	0.0	0.151	42.4	LOS C	1.9	13.3	0.88	0.71	0.88	25.0
9	R2	28	0.0	28	0.0	0.151	46.9	LOS D	1.9	13.3	0.88	0.71	0.88	8.7
Approach		58	0.0	58	0.0	0.151	45.2	LOS D	1.9	13.3	0.87	0.70	0.87	19.5
NorthWest: King St NW														
10	L2	63	0.0	63	0.0	0.151	27.9	LOS B	3.8	26.9	0.69	0.65	0.69	8.1
11	T1	994	1.2	994	1.2	*0.691	29.6	LOS C	12.5	88.1	0.87	0.77	0.87	32.1
12	R2	339	0.3	339	0.3	*0.687	43.6	LOS D	12.6	88.1	0.96	0.84	0.96	24.2
Approach		1396	0.9	1396	0.9	0.691	32.9	LOS C	12.6	88.1	0.88	0.78	0.88	29.2
SouthWest: National Park St SW														
1	L2	439	0.0	439	0.0	0.466	14.0	LOS A	11.2	78.2	0.59	0.77	0.59	36.4
2	T1	63	0.0	63	0.0	*0.242	41.2	LOS C	3.7	26.2	0.89	0.71	0.89	23.7
3	R2	18	0.0	18	0.0	0.242	45.7	LOS D	3.7	26.2	0.89	0.71	0.89	33.3
Approach		520	0.0	520	0.0	0.466	18.4	LOS B	11.2	78.2	0.64	0.76	0.64	34.1
All Vehicles		3015	1.3	3015	1.3	0.691	30.2	LOS C	22.3	158.7	0.84	0.78	0.84	30.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
SouthEast: King St SE											
P2	Full	50	49.3	LOS E	0.1	0.1	0.95	0.95	225.0	228.5	1.02
NorthEast: National Park St NE											
P3	Full	50	49.3	LOS E	0.1	0.1	0.95	0.95	215.4	216.0	1.00
NorthWest: King St NW											
P4	Full	50	49.3	LOS E	0.1	0.1	0.95	0.95	226.5	230.4	1.02

SouthWest: National Park St SW											
P1	Full	50	49.3	LOS E	0.1	0.1	0.95	0.95	215.4	216.0	1.00
All Pedestrians		200	49.3	LOS E	0.1	0.1	0.95	0.95	220.6	222.7	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: H/N EX AM [Hunter St/ National Park St EX PM (Site Folder: 2022 PM)]

Network: N101 [2022 PM (Network Folder: 2022)]

H/N EX AM
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
SouthEast: Hunter St SE														
4	L2	33	0.0	33	0.0	0.184	2.2	LOS A	0.0	0.0	0.00	0.05	0.00	50.4
5	T1	677	3.2	677	3.2	0.184	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.7
Approach		710	3.1	710	3.1	0.184	0.1	NA	0.0	0.0	0.00	0.02	0.00	59.7
NorthWest: Hunter St NW														
11	T1	508	4.9	508	4.9	0.133	0.0	LOS A	4.7	34.1	0.00	0.00	0.00	59.9
Approach		508	4.9	508	4.9	0.133	0.0	NA	4.7	34.1	0.00	0.00	0.00	59.9
SouthWest: National Park St														
1	L2	150	0.0	150	0.0	0.149	6.1	LOS A	0.6	4.0	0.30	0.58	0.30	48.1
Approach		150	0.0	150	0.0	0.149	6.1	LOS A	0.6	4.0	0.30	0.58	0.30	48.1
All Vehicles		1368	3.4	1368	3.4	0.184	0.7	NA	4.7	34.1	0.03	0.08	0.03	57.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

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

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

MOVEMENT SUMMARY

Site: S/LT EX AM [Stewart Ave & Little King St EX PM (Site Folder: 2022 PM)]

Network: N101 [2022 PM (Network Folder: 2022)]

S/LT EX AM
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
SouthEast: Little King St SE														
1	L2	238	0.0	238	0.0	0.451	7.2	LOS A	1.1	7.8	0.37	0.67	0.41	31.7
Approach		238	0.0	238	0.0	0.451	7.2	LOS A	1.1	7.8	0.37	0.67	0.41	31.7
NorthEast: Stewart Ave NE														
4	L2	25	0.0	25	0.0	0.260	4.9	LOS A	0.0	0.0	0.00	0.06	0.00	50.9
5	T1	980	1.4	980	1.4	0.260	0.0	LOS A	8.0	56.6	0.00	0.01	0.00	58.5
Approach		1005	1.4	1005	1.4	0.260	0.1	NA	8.0	56.6	0.00	0.01	0.00	58.0
SouthWest: Stewart Ave SW														
11	T1	1031	1.9	1031	1.9	0.265	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		1031	1.9	1031	1.9	0.265	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
All Vehicles		2274	1.5	2274	1.5	0.451	0.8	NA	8.0	56.6	0.04	0.08	0.04	54.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

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

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

MOVEMENT SUMMARY

Site: S/LT EX AM [Stewart Ave & Little King St 2025 AM (Site Folder: 2025 AM)]

Network: N101 [2025 AM (Network Folder: 2025 Stage 1&2)]

S/LT EX AM
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
SouthEast: Little King St SE														
1	L2	304	1.6	304	1.6	0.537	7.0	LOS A	1.5	10.8	0.31	0.62	0.35	32.2
Approach		304	1.6	304	1.6	0.537	7.0	LOS A	1.5	10.8	0.31	0.62	0.35	32.2
NorthEast: Stewart Ave NE														
4	L2	64	1.6	64	1.6	0.203	4.9	LOS A	0.0	0.0	0.00	0.17	0.00	47.4
5	T1	772	4.9	772	4.9	0.203	0.0	LOS A	8.3	61.5	0.00	0.03	0.00	56.6
Approach		836	4.7	836	4.7	0.203	0.4	NA	8.3	61.5	0.00	0.04	0.00	54.8
SouthWest: Stewart Ave SW														
11	T1	1331	3.5	1331	3.5	0.345	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach		1331	3.5	1331	3.5	0.345	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.8
All Vehicles		2471	3.6	2471	3.6	0.537	1.0	NA	8.3	61.5	0.04	0.09	0.04	53.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
 Vehicle movement LOS values are based on average delay per movement.
 Minor Road Approach LOS values are based on average delay for all vehicle movements.
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: S/K EX AM [Stewart Ave & King St 2025 AM (Site Folder: 2025 AM)]

Network: N101 [2025 AM (Network Folder: 2025 Stage 1&2)]

S/K EX AM

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site Practical Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
SouthEast: King St SE														
4	L2	144	4.9	144	4.9	0.121	12.4	LOS A	3.4	25.1	0.38	0.62	0.38	43.2
5	T1	706	2.4	706	2.4	0.345	37.9	LOS C	12.6	89.9	0.78	0.66	0.78	30.7
6	R2	280	4.6	280	4.6	*0.907	93.9	LOS F	12.0	87.4	1.00	1.05	1.48	5.7
6u	U	3	0.0	3	0.0	0.907	96.2	LOS F	11.8	85.9	1.00	1.05	1.48	5.7
Approach		1133	3.3	1133	3.3	0.907	48.6	LOS D	12.6	89.9	0.79	0.76	0.91	23.8
NorthEast: Stewart Ave NE														
7	L2	176	1.7	176	1.7	0.753	57.0	LOS E	18.7	135.5	0.97	0.86	0.98	6.4
8	T1	635	5.7	635	5.7	0.753	52.7	LOS D	18.7	135.5	0.97	0.86	0.98	24.4
9	R2	247	2.0	247	2.0	0.616	74.4	LOS F	9.7	69.2	1.00	0.80	1.00	19.6
9u	U	20	0.0	20	0.0	0.616	75.8	LOS F	9.3	66.0	1.00	0.80	1.00	4.8
Approach		1078	4.1	1078	4.1	0.753	58.8	LOS E	18.7	135.5	0.98	0.85	0.98	20.7
NorthWest: Parry St														
10	L2	152	5.9	152	5.9	0.152	17.5	LOS B	4.5	33.0	0.47	0.68	0.47	38.5
11	T1	1031	1.8	1031	1.8	*0.952	88.2	LOS F	60.6	431.2	1.00	1.18	1.37	15.9
12	R2	233	3.0	233	3.0	0.732	82.1	LOS F	8.8	63.2	1.00	0.85	1.12	25.6
Approach		1416	2.5	1416	2.5	0.952	79.6	LOS F	60.6	431.2	0.94	1.08	1.23	18.9
SouthWest: Stewart Ave SW														
1	L2	89	4.5	89	4.5	0.120	34.8	LOS C	4.0	28.9	0.66	0.73	0.66	37.4
2	T1	899	2.7	899	2.7	*0.932	79.7	LOS F	40.9	293.2	0.99	1.13	1.32	17.1
3	R2	330	1.8	330	1.8	*0.941	104.8	LOS F	17.7	125.6	1.00	1.12	1.60	14.0
Approach		1318	2.6	1318	2.6	0.941	83.0	LOS F	40.9	293.2	0.97	1.10	1.35	17.4
All Vehicles		4945	3.0	4945	3.0	0.952	68.9	LOS E	60.6	431.2	0.92	0.96	1.13	19.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
SouthEast: King St SE											
P2	Full	50	69.3	LOS F	0.2	0.2	0.96	0.96	245.0	228.5	0.93
NorthEast: Stewart Ave NE											
P3	Full	50	69.3	LOS F	0.2	0.2	0.96	0.96	242.4	225.1	0.93
NorthWest: Parry St											

P4 Full	50	69.3	LOS F	0.2	0.2	0.96	0.96	245.3	228.8	0.93
SouthWest: Stewart Ave SW										
P1 Full	50	69.3	LOS F	0.2	0.2	0.96	0.96	245.1	228.6	0.93
All Pedestrians	200	69.3	LOS F	0.2	0.2	0.96	0.96	244.5	227.8	0.93

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: K/K EX AM [King St & Little King St 2025 AM (Site Folder: 2025 AM)]

Network: N101 [2025 AM (Network Folder: 2025 Stage 1&2)]

K/K EX AM
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
SouthEast: King St SE														
5	T1	1130	3.3	1130	3.3	0.195	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach		1130	3.3	1130	3.3	0.195	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
NorthEast: King St NE														
7	L2	284	1.8	284	1.8	0.688	10.9	LOS A	7.1	50.7	0.58	0.99	1.10	8.2
Approach		284	1.8	284	1.8	0.688	10.9	LOS A	7.1	50.7	0.58	0.99	1.10	8.2
NorthWest: King St NW														
10	L2	54	1.9	54	1.9	0.293	4.6	LOS A	12.9	91.8	0.00	0.05	0.00	34.7
11	T1	1485	1.8	1485	1.8	0.293	0.0	LOS A	28.7	204.1	0.00	0.02	0.00	49.2
Approach		1539	1.8	1539	1.8	0.293	0.2	NA	28.7	204.1	0.00	0.02	0.00	48.4
All Vehicles		2953	2.4	2953	2.4	0.688	1.1	NA	28.7	204.1	0.06	0.11	0.11	43.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
 Vehicle movement LOS values are based on average delay per movement.
 Minor Road Approach LOS values are based on average delay for all vehicle movements.
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: K/N EX AM [King St & National Park St 2025 AM (Site Folder: 2025 AM)]

Network: N101 [2025 AM (Network Folder: 2025 Stage 1&2)]

K/N EX AM

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
SouthEast: King St SE														
4	L2	11	54.5	11	54.5	0.019	31.8	LOS C	0.4	4.6	0.59	0.66	0.59	36.8
5	T1	750	3.9	750	3.9	0.455	32.1	LOS C	18.9	136.6	0.75	0.70	0.75	29.5
6	R2	29	0.0	29	0.0	0.059	48.2	LOS D	1.6	11.2	0.77	0.71	0.77	23.6
6u	U	1	0.0	1	0.0	0.059	49.6	LOS D	1.6	11.2	0.77	0.71	0.77	33.1
Approach		791	4.4	791	4.4	0.455	32.7	LOS C	18.9	136.6	0.74	0.70	0.74	29.4
NorthEast: National Park St NE														
7	L2	10	0.0	10	0.0	0.032	61.5	LOS E	0.6	4.2	0.86	0.67	0.86	22.2
8	T1	8	0.0	8	0.0	0.068	58.7	LOS E	1.0	7.4	0.89	0.66	0.89	21.4
9	R2	8	12.5	8	12.5	0.068	63.3	LOS E	1.0	7.4	0.89	0.66	0.89	6.8
Approach		26	3.8	26	3.8	0.068	61.2	LOS E	1.0	7.4	0.88	0.67	0.88	18.4
NorthWest: King St NW														
10	L2	105	1.0	105	1.0	0.170	30.8	LOS C	5.7	40.2	0.64	0.68	0.64	7.2
11	T1	1264	1.9	1264	1.9	* 0.780	36.5	LOS C	12.4	88.1	0.88	0.80	0.88	29.0
12	R2	400	1.8	400	1.8	* 0.790	60.4	LOS E	12.4	88.1	0.99	0.91	1.03	20.2
Approach		1769	1.8	1769	1.8	0.790	41.6	LOS C	12.4	88.1	0.89	0.82	0.90	25.8
SouthWest: National Park St SW														
1	L2	373	1.6	373	1.6	0.372	9.1	LOS A	8.7	61.5	0.39	0.65	0.39	40.2
2	T1	65	3.1	65	3.1	* 0.308	59.6	LOS E	5.7	40.7	0.92	0.74	0.92	19.2
3	R2	23	0.0	23	0.0	0.308	64.1	LOS E	5.7	40.7	0.92	0.74	0.92	28.5
Approach		461	1.7	461	1.7	0.372	19.0	LOS B	8.7	61.5	0.49	0.66	0.49	33.9
All Vehicles		3047	2.5	3047	2.5	0.790	36.0	LOS C	18.9	136.6	0.79	0.76	0.80	27.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
SouthEast: King St SE											
P2	Full	50	69.3	LOS F	0.2	0.2	0.96	0.96	245.0	228.5	0.93
NorthEast: National Park St NE											
P3	Full	50	69.3	LOS F	0.2	0.2	0.96	0.96	235.4	216.0	0.92
NorthWest: King St NW											

P4 Full	50	69.3	LOS F	0.2	0.2	0.96	0.96	246.5	230.4	0.93
SouthWest: National Park St SW										
P1 Full	50	69.3	LOS F	0.2	0.2	0.96	0.96	235.4	216.0	0.92
All Pedestrians	200	69.3	LOS F	0.2	0.2	0.96	0.96	240.6	222.7	0.93

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: H/N EX AM [Hunter St & National Park St 2025 AM (Site Folder: 2025 AM)]

Network: N101 [2025 AM (Network Folder: 2025 Stage 1&2)]

H/N EX AM
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
SouthEast: Hunter St SE														
4	L2	25	8.0	25	8.0	0.141	2.2	LOS A	0.0	0.0	0.00	0.05	0.00	50.7
5	T1	510	5.7	510	5.7	0.141	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.8
Approach		535	5.8	535	5.8	0.141	0.1	NA	0.0	0.0	0.00	0.02	0.00	59.7
NorthWest: Hunter St NW														
11	T1	787	5.2	787	5.2	0.206	0.1	LOS A	11.4	83.1	0.00	0.00	0.00	59.9
Approach		787	5.2	787	5.2	0.206	0.1	NA	11.4	83.1	0.00	0.00	0.00	59.9
SouthWest: National Park St														
1	L2	170	1.8	170	1.8	0.160	5.7	LOS A	0.6	4.2	0.27	0.56	0.27	48.4
Approach		170	1.8	170	1.8	0.160	5.7	LOS A	0.6	4.2	0.27	0.56	0.27	48.4
All Vehicles		1492	5.0	1492	5.0	0.206	0.7	NA	11.4	83.1	0.03	0.07	0.03	57.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
 Vehicle movement LOS values are based on average delay per movement.
 Minor Road Approach LOS values are based on average delay for all vehicle movements.
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: S/LT EX AM [Stewart Ave & Little King St 2025 PM (Site Folder: 2025 PM)]

Network: N101 [2025 PM (Network Folder: 2025 Stage 1&2)]

S/LT EX AM
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
SouthEast: Little King St SE														
1	L2	270	0.0	270	0.0	0.510	7.6	LOS A	1.5	10.2	0.37	0.68	0.45	30.9
Approach		270	0.0	270	0.0	0.510	7.6	LOS A	1.5	10.2	0.37	0.68	0.45	30.9
NorthEast: Stewart Ave NE														
4	L2	65	0.0	65	0.0	0.279	4.9	LOS A	0.0	0.0	0.00	0.13	0.00	48.9
5	T1	1026	1.5	1026	1.5	0.279	0.0	LOS A	14.1	100.3	0.00	0.03	0.00	57.1
Approach		1091	1.4	1091	1.4	0.279	0.3	NA	14.1	100.3	0.00	0.04	0.00	55.8
SouthWest: Stewart Ave SW														
11	T1	1078	1.9	1078	1.9	0.277	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach		1078	1.9	1078	1.9	0.277	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.8
All Vehicles		2439	1.5	2439	1.5	0.510	1.0	NA	14.1	100.3	0.04	0.09	0.05	52.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
 Vehicle movement LOS values are based on average delay per movement.
 Minor Road Approach LOS values are based on average delay for all vehicle movements.
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: S/K EX AM [Stewart Ave & King St 2025 PM (Site Folder: 2025 PM)]

Network: N101 [2025 PM (Network Folder: 2025 Stage 1&2)]

S/K EX AM

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
SouthEast: King St SE														
4	L2	249	2.4	249	2.4	0.240	15.7	LOS B	6.6	47.3	0.53	0.67	0.53	40.9
5	T1	859	0.9	859	0.9	0.532	38.9	LOS C	14.6	102.9	0.89	0.76	0.89	30.3
6	R2	418	1.7	418	1.7	0.853	68.3	LOS E	13.6	96.4	1.00	0.98	1.29	7.5
6u	U	3	0.0	3	0.0	0.853	70.5	LOS F	13.5	96.0	1.00	0.98	1.29	7.5
Approach		1529	1.4	1529	1.4	0.853	43.2	LOS D	14.6	102.9	0.86	0.81	0.94	25.1
NorthEast: Stewart Ave NE														
7	L2	91	2.2	91	2.2	* 0.883	58.8	LOS E	19.1	135.5	1.00	1.03	1.20	6.6
8	T1	946	1.1	946	1.1	0.883	53.7	LOS D	19.2	135.5	1.00	1.03	1.20	24.3
9	R2	251	0.8	251	0.8	* 0.837	72.0	LOS F	8.4	59.1	1.00	0.95	1.34	20.1
9u	U	7	0.0	7	0.0	0.837	73.3	LOS F	8.2	58.1	1.00	0.95	1.34	5.0
Approach		1295	1.1	1295	1.1	0.883	57.7	LOS E	19.2	135.5	1.00	1.02	1.22	22.4
NorthWest: Parry St														
10	L2	113	4.4	113	4.4	0.114	11.2	LOS A	2.0	14.6	0.38	0.65	0.38	44.2
11	T1	921	0.7	921	0.7	* 0.892	58.1	LOS E	32.6	229.8	0.99	1.06	1.24	21.2
12	R2	294	0.0	294	0.0	0.588	59.8	LOS E	8.3	58.3	0.99	0.80	0.99	30.4
Approach		1328	0.8	1328	0.8	0.892	54.5	LOS D	32.6	229.8	0.94	0.97	1.11	24.7
SouthWest: Stewart Ave SW														
1	L2	77	1.3	77	1.3	0.086	23.2	LOS B	2.4	16.8	0.57	0.70	0.57	42.6
2	T1	547	1.5	547	1.5	0.467	36.7	LOS C	13.0	92.2	0.87	0.73	0.87	27.9
3	R2	248	2.0	248	2.0	0.804	70.7	LOS F	7.9	55.9	1.00	0.92	1.27	18.6
Approach		872	1.6	872	1.6	0.804	45.2	LOS D	13.0	92.2	0.88	0.78	0.95	25.9
All Vehicles		5024	1.2	5024	1.2	0.892	50.3	LOS D	32.6	229.8	0.92	0.90	1.06	24.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
SouthEast: King St SE											
P2	Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	230.0	228.5	0.99
NorthEast: Stewart Ave NE											
P3	Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	227.4	225.1	0.99
NorthWest: Parry St											

P4 Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	230.3	228.8	0.99
SouthWest: Stewart Ave SW										
P1 Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	230.1	228.6	0.99
All Pedestrians	200	54.3	LOS E	0.2	0.2	0.95	0.95	229.5	227.8	0.99

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: K/K EX AM [King St & Little King St 2025 PM (Site Folder: 2025 PM)]

Network: N101 [2025 PM (Network Folder: 2025 Stage 1&2)]

K/K EX AM
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
SouthEast: King St SE														
5	T1	1527	1.4	1527	1.4	0.261	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach		1527	1.4	1527	1.4	0.261	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
NorthEast: King St NE														
7	L2	263	0.0	263	0.0	0.559	6.8	LOS A	3.3	22.8	0.50	0.75	0.70	12.0
Approach		263	0.0	263	0.0	0.559	6.8	LOS A	3.3	22.8	0.50	0.75	0.70	12.0
NorthWest: King St NW														
10	L2	55	0.0	55	0.0	0.234	4.6	LOS A	5.0	35.1	0.00	0.07	0.00	34.5
11	T1	1211	1.2	1211	1.2	0.234	0.0	LOS A	14.1	100.1	0.00	0.02	0.00	49.1
Approach		1266	1.1	1266	1.1	0.234	0.2	NA	14.1	100.1	0.00	0.02	0.00	48.1
All Vehicles		3056	1.2	3056	1.2	0.559	0.7	NA	14.1	100.1	0.04	0.07	0.06	45.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
 Vehicle movement LOS values are based on average delay per movement.
 Minor Road Approach LOS values are based on average delay for all vehicle movements.
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: K/N EX AM [King St/ National Park St 2025 PM (Site Folder: 2025 PM)]

Network: N101 [2025 PM (Network Folder: 2025 Stage 1&2)]

K/N EX AM

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
SouthEast: King St SE														
4	L2	14	28.6	14	28.6	0.022	29.5	LOS C	0.5	4.2	0.63	0.67	0.63	37.7
5	T1	1041	2.1	1041	2.1	0.690	32.7	LOS C	25.2	179.3	0.88	0.80	0.88	29.2
6	R2	38	0.0	38	0.0	0.079	40.7	LOS C	1.7	11.9	0.78	0.71	0.78	26.0
6u	U	1	0.0	1	0.0	0.079	42.2	LOS C	1.7	11.9	0.78	0.71	0.78	35.4
Approach		1094	2.4	1094	2.4	0.690	32.9	LOS C	25.2	179.3	0.87	0.80	0.87	29.3
NorthEast: National Park St NE														
7	L2	18	0.0	18	0.0	0.052	48.9	LOS D	0.9	6.1	0.85	0.69	0.85	25.4
8	T1	14	0.0	14	0.0	0.167	46.9	LOS D	2.2	15.4	0.89	0.71	0.89	23.8
9	R2	29	0.0	29	0.0	0.167	51.5	LOS D	2.2	15.4	0.89	0.71	0.89	8.0
Approach		61	0.0	61	0.0	0.167	49.7	LOS D	2.2	15.4	0.88	0.71	0.88	18.5
NorthWest: King St NW														
10	L2	73	0.0	73	0.0	0.153	28.6	LOS C	4.3	30.2	0.67	0.66	0.67	7.9
11	T1	1047	1.2	1047	1.2	* 0.701	30.9	LOS C	12.5	88.1	0.86	0.76	0.86	31.5
12	R2	354	0.3	354	0.3	* 0.709	47.2	LOS D	12.6	88.1	0.96	0.85	0.97	23.2
Approach		1474	0.9	1474	0.9	0.709	34.7	LOS C	12.6	88.1	0.88	0.78	0.88	28.4
SouthWest: National Park St SW														
1	L2	459	0.0	459	0.0	0.501	16.4	LOS B	13.1	91.8	0.63	0.81	0.63	34.9
2	T1	66	0.0	66	0.0	* 0.265	45.9	LOS D	4.3	30.3	0.90	0.72	0.90	22.4
3	R2	19	0.0	19	0.0	0.265	50.4	LOS D	4.3	30.3	0.90	0.72	0.90	31.9
Approach		544	0.0	544	0.0	0.501	21.1	LOS B	13.1	91.8	0.67	0.79	0.67	32.5
All Vehicles		3173	1.3	3173	1.3	0.709	32.1	LOS C	25.2	179.3	0.84	0.79	0.84	29.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
SouthEast: King St SE											
P2	Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	230.0	228.5	0.99
NorthEast: National Park St NE											
P3	Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	220.4	216.0	0.98
NorthWest: King St NW											

P4 Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	231.5	230.4	1.00
SouthWest: National Park St SW										
P1 Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	220.4	216.0	0.98
All Pedestrians	200	54.3	LOS E	0.2	0.2	0.95	0.95	225.6	222.7	0.99

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: H/N EX AM [Hunter St/ National Park St 2025 PM (Site Folder: 2025 PM)]

Network: N101 [2025 PM (Network Folder: 2025 Stage 1&2)]

H/N EX AM
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
SouthEast: Hunter St SE														
4	L2	35	0.0	35	0.0	0.200	2.2	LOS A	0.0	0.0	0.00	0.05	0.00	50.4
5	T1	729	4.8	729	4.8	0.200	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.7
Approach		764	4.6	764	4.6	0.200	0.1	NA	0.0	0.0	0.00	0.02	0.00	59.7
NorthWest: Hunter St NW														
11	T1	531	4.9	531	4.9	0.139	0.0	LOS A	5.2	38.0	0.00	0.00	0.00	59.9
Approach		531	4.9	531	4.9	0.139	0.0	NA	5.2	38.0	0.00	0.00	0.00	59.9
SouthWest: National Park St														
1	L2	173	0.0	173	0.0	0.177	6.3	LOS A	0.7	4.8	0.32	0.59	0.32	47.8
Approach		173	0.0	173	0.0	0.177	6.3	LOS A	0.7	4.8	0.32	0.59	0.32	47.8
All Vehicles		1468	4.2	1468	4.2	0.200	0.8	NA	5.2	38.0	0.04	0.08	0.04	57.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
 Vehicle movement LOS values are based on average delay per movement.
 Minor Road Approach LOS values are based on average delay for all vehicle movements.
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: S/LT EX AM [Stewart Ave & Little King St 2025 AM - Stage 1 (Site Folder: 2025 AM Stage 1)]

Network: N101 [2025 AM - Stage 1 (Network Folder: 2025 Stage 1)]

S/LT EX AM
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
SouthEast: Little King St SE														
1	L2	277	1.8	277	1.8	0.493	6.8	LOS A	1.2	8.8	0.31	0.62	0.34	32.6
Approach		277	1.8	277	1.8	0.493	6.8	LOS A	1.2	8.8	0.31	0.62	0.34	32.6
NorthEast: Stewart Ave NE														
4	L2	45	2.2	45	2.2	0.200	4.9	LOS A	0.0	0.0	0.00	0.13	0.00	48.4
5	T1	772	4.9	772	4.9	0.200	0.0	LOS A	7.6	56.0	0.00	0.03	0.00	57.3
Approach		817	4.8	817	4.8	0.200	0.3	NA	7.6	56.0	0.00	0.03	0.00	56.0
SouthWest: Stewart Ave SW														
11	T1	1331	3.5	1331	3.5	0.345	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach		1331	3.5	1331	3.5	0.345	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.8
All Vehicles		2425	3.7	2425	3.7	0.493	0.9	NA	7.6	56.0	0.04	0.08	0.04	53.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
 Vehicle movement LOS values are based on average delay per movement.
 Minor Road Approach LOS values are based on average delay for all vehicle movements.
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

■ Site: S/K EX AM [Stewart Ave & King St 2025 AM - Stage 1 (Site Folder: 2025 AM Stage 1)]
 ■ Network: N101 [2025 AM - Stage 1 (Network Folder: 2025 Stage 1)]

S/K EX AM

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site Practical Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
SouthEast: King St SE														
4	L2	144	4.9	144	4.9	0.121	12.1	LOS A	3.4	24.6	0.38	0.62	0.38	43.5
5	T1	706	2.4	706	2.4	0.345	37.9	LOS C	12.5	89.7	0.78	0.66	0.78	30.7
6	R2	280	4.6	280	4.6	*0.895	91.9	LOS F	11.7	85.0	1.00	1.03	1.43	5.8
6u	U	1	0.0	1	0.0	0.895	94.1	LOS F	11.6	84.5	1.00	1.03	1.43	5.8
Approach		1131	3.3	1131	3.3	0.895	48.0	LOS D	12.5	89.7	0.79	0.75	0.89	24.0
NorthEast: Stewart Ave NE														
7	L2	176	1.7	176	1.7	0.745	56.7	LOS E	18.7	135.5	0.97	0.85	0.97	6.4
8	T1	626	5.8	626	5.8	0.745	52.3	LOS D	18.7	135.5	0.97	0.85	0.97	24.5
9	R2	238	2.1	238	2.1	0.569	73.9	LOS F	8.9	63.6	0.99	0.80	0.99	19.7
9u	U	11	0.0	11	0.0	0.569	75.3	LOS F	8.7	61.8	0.99	0.80	0.99	4.8
Approach		1051	4.2	1051	4.2	0.745	58.1	LOS E	18.7	135.5	0.98	0.84	0.98	20.9
NorthWest: Parry St														
10	L2	152	5.9	152	5.9	0.149	16.7	LOS B	4.3	31.7	0.46	0.68	0.46	39.2
11	T1	1026	1.9	1026	1.9	*0.943	82.7	LOS F	58.0	412.6	1.00	1.15	1.33	16.6
12	R2	233	3.0	233	3.0	0.732	82.1	LOS F	8.8	63.2	1.00	0.85	1.12	25.6
Approach		1411	2.5	1411	2.5	0.943	75.5	LOS F	58.0	412.6	0.94	1.05	1.20	19.6
SouthWest: Stewart Ave SW														
1	L2	89	4.5	89	4.5	0.120	34.8	LOS C	4.0	28.9	0.66	0.73	0.66	37.4
2	T1	899	2.7	899	2.7	*0.931	79.3	LOS F	40.8	292.1	0.99	1.13	1.32	17.2
3	R2	325	1.8	325	1.8	*0.910	95.1	LOS F	16.4	116.8	1.00	1.05	1.47	15.0
Approach		1313	2.6	1313	2.6	0.931	80.2	LOS F	40.8	292.1	0.97	1.08	1.31	17.8
All Vehicles		4906	3.1	4906	3.1	0.943	66.7	LOS E	58.0	412.6	0.92	0.94	1.11	20.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
SouthEast: King St SE											
P2	Full	50	69.3	LOS F	0.2	0.2	0.96	0.96	245.0	228.5	0.93
NorthEast: Stewart Ave NE											
P3	Full	50	69.3	LOS F	0.2	0.2	0.96	0.96	242.4	225.1	0.93
NorthWest: Parry St											

P4 Full	50	69.3	LOS F	0.2	0.2	0.96	0.96	245.3	228.8	0.93
SouthWest: Stewart Ave SW										
P1 Full	50	69.3	LOS F	0.2	0.2	0.96	0.96	245.1	228.6	0.93
All Pedestrians	200	69.3	LOS F	0.2	0.2	0.96	0.96	244.5	227.8	0.93

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: K/K EX AM [King St & Little King St 2025 AM - Stage 1
(Site Folder: 2025 AM Stage 1)]

Network: N101 [2025 AM -
Stage 1 (Network Folder: 2025
Stage 1)]

K/K EX AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
SouthEast: King St SE														
5	T1	1131	3.3	1131	3.3	0.195	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach		1131	3.3	1131	3.3	0.195	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
NorthEast: King St NE														
7	L2	264	1.9	264	1.9	0.645	9.9	LOS A	6.6	47.3	0.58	0.94	1.00	8.9
Approach		264	1.9	264	1.9	0.645	9.9	LOS A	6.6	47.3	0.58	0.94	1.00	8.9
NorthWest: King St NW														
10	L2	42	2.4	42	2.4	0.290	4.6	LOS A	13.1	93.2	0.00	0.04	0.00	34.9
11	T1	1485	1.8	1485	1.8	0.290	0.0	LOS A	28.3	201.0	0.00	0.01	0.00	49.4
Approach		1527	1.8	1527	1.8	0.290	0.2	NA	28.3	201.0	0.00	0.01	0.00	48.8
All Vehicles		2922	2.4	2922	2.4	0.645	1.0	NA	28.3	201.0	0.05	0.09	0.09	44.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

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

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: BG&E PTY LIMITED | Licence: NETWORK / 1PC | Processed: Tuesday, 25 October 2022 3:45:12 PM

Project: \\bgencfcs01\Projects\BGE\Ntl\N21112\200 CALC\200.3 Traffic\Sidra calculation\Newcastle 1.sip9

MOVEMENT SUMMARY

Site: K/N EX AM [King St & National Park St 2025 AM - Stage 1
(Site Folder: 2025 AM Stage 1)]

Network: N101 [2025 AM -
Stage 1 (Network Folder: 2025
Stage 1)]

K/N EX AM

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
SouthEast: King St SE														
4	L2	11	54.5	11	54.5	0.019	32.4	LOS C	0.4	4.6	0.59	0.66	0.59	36.5
5	T1	748	3.9	748	3.9	0.460	32.8	LOS C	19.0	137.6	0.75	0.71	0.75	29.2
6	R2	27	0.0	27	0.0	0.054	47.3	LOS D	1.5	10.3	0.76	0.70	0.76	23.8
6u	U	1	0.0	1	0.0	0.054	48.8	LOS D	1.5	10.3	0.76	0.70	0.76	33.3
Approach		787	4.4	787	4.4	0.460	33.3	LOS C	19.0	137.6	0.75	0.71	0.75	29.1
NorthEast: National Park St NE														
7	L2	10	0.0	10	0.0	0.032	61.5	LOS E	0.6	4.2	0.86	0.67	0.86	22.2
8	T1	8	0.0	8	0.0	0.068	58.7	LOS E	1.0	7.4	0.89	0.66	0.89	21.4
9	R2	8	12.5	8	12.5	0.068	63.3	LOS E	1.0	7.4	0.89	0.66	0.89	6.8
Approach		26	3.8	26	3.8	0.068	61.2	LOS E	1.0	7.4	0.88	0.67	0.88	18.4
NorthWest: King St NW														
10	L2	95	1.1	95	1.1	0.170	31.4	LOS C	5.7	40.2	0.64	0.67	0.64	7.2
11	T1	1254	1.9	1254	1.9	* 0.781	37.1	LOS C	12.4	88.1	0.89	0.80	0.89	28.8
12	R2	400	1.8	400	1.8	* 0.771	58.4	LOS E	12.4	88.1	0.98	0.89	1.01	20.7
Approach		1749	1.8	1749	1.8	0.781	41.6	LOS C	12.4	88.1	0.90	0.81	0.90	25.8
SouthWest: National Park St SW														
1	L2	373	1.6	373	1.6	0.370	9.1	LOS A	8.7	61.4	0.39	0.65	0.39	40.2
2	T1	65	3.1	65	3.1	* 0.308	59.6	LOS E	5.7	40.7	0.92	0.74	0.92	19.2
3	R2	23	0.0	23	0.0	0.308	64.1	LOS E	5.7	40.7	0.92	0.74	0.92	28.5
Approach		461	1.7	461	1.7	0.370	19.0	LOS B	8.7	61.4	0.49	0.66	0.49	33.9
All Vehicles		3023	2.5	3023	2.5	0.781	36.2	LOS C	19.0	137.6	0.80	0.76	0.80	27.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
SouthEast: King St SE											
P2	Full	50	69.3	LOS F	0.2	0.2	0.96	0.96	245.0	228.5	0.93
NorthEast: National Park St NE											
P3	Full	50	69.3	LOS F	0.2	0.2	0.96	0.96	235.4	216.0	0.92
NorthWest: King St NW											

P4 Full	50	69.3	LOS F	0.2	0.2	0.96	0.96	246.5	230.4	0.93
SouthWest: National Park St SW										
P1 Full	50	69.3	LOS F	0.2	0.2	0.96	0.96	235.4	216.0	0.92
All Pedestrians	200	69.3	LOS F	0.2	0.2	0.96	0.96	240.6	222.7	0.93

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: H/N EX AM [Hunter St & National Park St 2025 AM - Stage 1 (Site Folder: 2025 AM Stage 1)]

Network: N101 [2025 AM - Stage 1 (Network Folder: 2025 Stage 1)]

H/N EX AM
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
SouthEast: Hunter St SE														
4	L2	25	8.0	25	8.0	0.141	2.2	LOS A	0.0	0.0	0.00	0.05	0.00	50.7
5	T1	508	5.7	508	5.7	0.141	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.8
Approach		533	5.8	533	5.8	0.141	0.1	NA	0.0	0.0	0.00	0.02	0.00	59.7
NorthWest: Hunter St NW														
11	T1	787	5.2	787	5.2	0.206	0.1	LOS A	11.4	83.1	0.00	0.00	0.00	59.9
Approach		787	5.2	787	5.2	0.206	0.1	NA	11.4	83.1	0.00	0.00	0.00	59.9
SouthWest: National Park St														
1	L2	153	2.0	153	2.0	0.144	5.7	LOS A	0.5	3.7	0.26	0.56	0.26	48.4
Approach		153	2.0	153	2.0	0.144	5.7	LOS A	0.5	3.7	0.26	0.56	0.26	48.4
All Vehicles		1473	5.1	1473	5.1	0.206	0.7	NA	11.4	83.1	0.03	0.07	0.03	58.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
 Vehicle movement LOS values are based on average delay per movement.
 Minor Road Approach LOS values are based on average delay for all vehicle movements.
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: S/LT EX AM [Stewart Ave & Little King St 2025 PM - Stage 1 (Site Folder: 2025 PM Stage 1)]

Network: N101 [2025 PM - Stage 1 (Network Folder: 2025 Stage 1)]

S/LT EX AM
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
SouthEast: Little King St SE														
1	L2	261	0.0	261	0.0	0.497	7.6	LOS A	1.4	9.7	0.38	0.69	0.46	30.9
Approach		261	0.0	261	0.0	0.497	7.6	LOS A	1.4	9.7	0.38	0.69	0.46	30.9
NorthEast: Stewart Ave NE														
4	L2	43	0.0	43	0.0	0.275	4.9	LOS A	0.0	0.0	0.00	0.09	0.00	49.9
5	T1	1026	1.5	1026	1.5	0.275	0.0	LOS A	13.9	98.4	0.00	0.02	0.00	57.8
Approach		1069	1.4	1069	1.4	0.275	0.2	NA	13.9	98.4	0.00	0.02	0.00	57.0
SouthWest: Stewart Ave SW														
11	T1	1078	1.9	1078	1.9	0.277	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach		1078	1.9	1078	1.9	0.277	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.8
All Vehicles		2408	1.5	2408	1.5	0.497	0.9	NA	13.9	98.4	0.04	0.08	0.05	53.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
 Vehicle movement LOS values are based on average delay per movement.
 Minor Road Approach LOS values are based on average delay for all vehicle movements.
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

■ Site: S/K EX AM [Stewart Ave & King St 2025 PM - Stage 1 (Site Folder: 2025 PM Stage 1)]
 ■ Network: N101 [2025 PM - Stage 1 (Network Folder: 2025 Stage 1)]

S/K EX AM

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
SouthEast: King St SE														
4	L2	249	2.4	249	2.4	0.240	15.3	LOS B	6.5	46.6	0.52	0.67	0.52	41.2
5	T1	859	0.9	859	0.9	0.532	38.9	LOS C	14.6	102.9	0.89	0.76	0.89	30.3
6	R2	418	1.7	418	1.7	0.851	68.0	LOS E	13.5	95.8	1.00	0.98	1.29	7.5
6u	U	2	0.0	2	0.0	0.851	70.3	LOS E	13.5	95.6	1.00	0.98	1.29	7.5
Approach		1528	1.4	1528	1.4	0.851	43.0	LOS D	14.6	102.9	0.86	0.80	0.94	25.1
NorthEast: Stewart Ave NE														
7	L2	91	2.2	91	2.2	* 0.880	58.3	LOS E	19.1	135.5	1.00	1.02	1.19	6.6
8	T1	943	1.1	943	1.1	0.880	53.2	LOS D	19.2	135.5	1.00	1.03	1.19	24.4
9	R2	264	0.8	264	0.8	* 0.866	74.1	LOS F	8.8	62.3	1.00	0.99	1.42	19.7
9u	U	4	0.0	4	0.0	0.866	75.4	LOS F	8.8	61.8	1.00	0.99	1.42	4.9
Approach		1302	1.1	1302	1.1	0.880	57.9	LOS E	19.2	135.5	1.00	1.02	1.24	22.4
NorthWest: Parry St														
10	L2	113	4.4	113	4.4	0.114	10.9	LOS A	2.0	14.2	0.37	0.65	0.37	44.5
11	T1	916	0.7	916	0.7	* 0.888	57.2	LOS E	32.2	226.4	0.99	1.05	1.22	21.4
12	R2	294	0.0	294	0.0	0.588	59.8	LOS E	8.3	58.3	0.99	0.80	0.99	30.4
Approach		1323	0.8	1323	0.8	0.888	53.8	LOS D	32.2	226.4	0.94	0.96	1.10	24.9
SouthWest: Stewart Ave SW														
1	L2	77	1.3	77	1.3	0.086	23.2	LOS B	2.4	16.8	0.57	0.70	0.57	42.6
2	T1	547	1.5	547	1.5	0.467	36.7	LOS C	13.0	92.2	0.87	0.73	0.87	27.9
3	R2	243	2.1	243	2.1	0.788	70.0	LOS E	7.6	54.4	1.00	0.90	1.24	18.7
Approach		867	1.6	867	1.6	0.788	44.9	LOS D	13.0	92.2	0.88	0.78	0.94	26.0
All Vehicles		5020	1.2	5020	1.2	0.888	50.0	LOS D	32.2	226.4	0.92	0.90	1.06	24.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
SouthEast: King St SE											
P2	Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	230.0	228.5	0.99
NorthEast: Stewart Ave NE											
P3	Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	227.4	225.1	0.99
NorthWest: Parry St											

P4 Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	230.3	228.8	0.99
SouthWest: Stewart Ave SW										
P1 Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	230.1	228.6	0.99
All Pedestrians	200	54.3	LOS E	0.2	0.2	0.95	0.95	229.5	227.8	0.99

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: K/K EX AM [King St & Little King St 2025 PM - Stage 1
(Site Folder: 2025 PM Stage 1)]

Network: N101 [2025 PM -
Stage 1 (Network Folder: 2025
Stage 1)]

K/K EX AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
SouthEast: King St SE														
5	T1	1527	1.4	1527	1.4	0.261	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach		1527	1.4	1527	1.4	0.261	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
NorthEast: King St NE														
7	L2	256	0.0	256	0.0	0.548	6.7	LOS A	3.1	21.8	0.50	0.75	0.69	12.1
Approach		256	0.0	256	0.0	0.548	6.7	LOS A	3.1	21.8	0.50	0.75	0.69	12.1
NorthWest: King St NW														
10	L2	42	0.0	42	0.0	0.231	4.6	LOS A	4.9	35.0	0.00	0.05	0.00	34.8
11	T1	1211	1.2	1211	1.2	0.231	0.0	LOS A	13.9	98.4	0.00	0.02	0.00	49.3
Approach		1253	1.1	1253	1.1	0.231	0.2	NA	13.9	98.4	0.00	0.02	0.00	48.5
All Vehicles		3036	1.2	3036	1.2	0.548	0.6	NA	13.9	98.4	0.04	0.07	0.06	45.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

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

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: BG&E PTY LIMITED | Licence: NETWORK / 1PC | Processed: Tuesday, 25 October 2022 3:45:07 PM

Project: \\bgenctfs01\Projects\BGE\NTL\N21112\200 CALC\200.3 Traffic\Sidra calculation\Newcastle 1.sip9

MOVEMENT SUMMARY

Site: K/N EX AM [King St/ National Park St 2025 PM - Stage 1
(Site Folder: 2025 PM Stage 1)]

Network: N101 [2025 PM -
Stage 1 (Network Folder: 2025
Stage 1)]

K/N EX AM

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
SouthEast: King St SE														
4	L2	14	28.6	14	28.6	0.022	29.5	LOS C	0.5	4.2	0.63	0.67	0.63	37.7
5	T1	1040	2.1	1040	2.1	0.690	32.7	LOS C	25.1	179.1	0.88	0.80	0.88	29.2
6	R2	37	0.0	37	0.0	0.079	40.8	LOS C	1.7	11.9	0.78	0.71	0.78	26.0
6u	U	2	0.0	2	0.0	0.079	42.2	LOS C	1.7	11.9	0.78	0.71	0.78	35.4
Approach		1093	2.4	1093	2.4	0.690	32.9	LOS C	25.1	179.1	0.87	0.80	0.87	29.3
NorthEast: National Park St NE														
7	L2	18	0.0	18	0.0	0.052	48.8	LOS D	0.9	6.1	0.85	0.69	0.85	25.4
8	T1	14	0.0	14	0.0	0.167	46.9	LOS D	2.2	15.4	0.89	0.71	0.89	23.8
9	R2	29	0.0	29	0.0	0.167	51.5	LOS D	2.2	15.4	0.89	0.71	0.89	8.0
Approach		61	0.0	61	0.0	0.167	49.7	LOS D	2.2	15.4	0.88	0.71	0.88	18.5
NorthWest: King St NW														
10	L2	69	0.0	69	0.0	0.152	28.6	LOS C	4.3	30.0	0.67	0.65	0.67	8.0
11	T1	1044	1.2	1044	1.2	* 0.697	30.8	LOS C	12.5	88.1	0.86	0.76	0.86	31.5
12	R2	354	0.3	354	0.3	* 0.709	47.2	LOS D	12.6	88.1	0.96	0.85	0.97	23.2
Approach		1467	1.0	1467	1.0	0.709	34.7	LOS C	12.6	88.1	0.88	0.78	0.88	28.5
SouthWest: National Park St SW														
1	L2	459	0.0	459	0.0	0.501	16.4	LOS B	13.1	91.8	0.63	0.81	0.63	34.9
2	T1	66	0.0	66	0.0	* 0.265	45.9	LOS D	4.3	30.3	0.90	0.72	0.90	22.4
3	R2	19	0.0	19	0.0	0.265	50.4	LOS D	4.3	30.3	0.90	0.72	0.90	31.9
Approach		544	0.0	544	0.0	0.501	21.1	LOS B	13.1	91.8	0.67	0.79	0.67	32.5
All Vehicles		3165	1.3	3165	1.3	0.709	32.0	LOS C	25.1	179.1	0.84	0.79	0.84	29.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
SouthEast: King St SE											
P2	Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	230.0	228.5	0.99
NorthEast: National Park St NE											
P3	Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	220.4	216.0	0.98
NorthWest: King St NW											

P4 Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	231.5	230.4	1.00
SouthWest: National Park St SW										
P1 Full	50	54.3	LOS E	0.2	0.2	0.95	0.95	220.4	216.0	0.98
All Pedestrians	200	54.3	LOS E	0.2	0.2	0.95	0.95	225.6	222.7	0.99

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: H/N EX AM [Hunter St/ National Park St 2025 PM - Stage 1 (Site Folder: 2025 PM Stage 1)]

Network: N101 [2025 PM - Stage 1 (Network Folder: 2025 Stage 1)]

H/N EX AM
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
SouthEast: Hunter St SE														
4	L2	35	0.0	35	0.0	0.199	2.2	LOS A	0.0	0.0	0.00	0.05	0.00	50.4
5	T1	726	4.8	726	4.8	0.199	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.7
Approach		761	4.6	761	4.6	0.199	0.1	NA	0.0	0.0	0.00	0.02	0.00	59.7
NorthWest: Hunter St NW														
11	T1	531	4.9	531	4.9	0.139	0.0	LOS A	5.2	38.0	0.00	0.00	0.00	59.9
Approach		531	4.9	531	4.9	0.139	0.0	NA	5.2	38.0	0.00	0.00	0.00	59.9
SouthWest: National Park St														
1	L2	162	0.0	162	0.0	0.165	6.3	LOS A	0.6	4.5	0.32	0.59	0.32	47.9
Approach		162	0.0	162	0.0	0.165	6.3	LOS A	0.6	4.5	0.32	0.59	0.32	47.9
All Vehicles		1454	4.2	1454	4.2	0.199	0.8	NA	5.2	38.0	0.04	0.08	0.04	57.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
 Vehicle movement LOS values are based on average delay per movement.
 Minor Road Approach LOS values are based on average delay for all vehicle movements.
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: S/K EX AM [Stewart Ave & King St 2025 AM - Comparison
(Site Folder: 2025 AM Comparison)]

Network: N101 [2025 AM - Comparison (Network Folder: 2025 Stage 1&2)]

S/K EX AM

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
SouthEast: King St SE														
4	L2	144	4.9	144	4.9	0.120	12.0	LOS A	3.4	24.5	0.38	0.61	0.38	43.5
5	T1	706	2.4	706	2.4	0.345	37.9	LOS C	12.6	89.8	0.78	0.66	0.78	30.7
6	R2	280	4.6	280	4.6	*0.889	91.0	LOS F	11.5	84.0	1.00	1.02	1.41	5.9
Approach		1130	3.3	1130	3.3	0.889	47.7	LOS D	12.6	89.8	0.79	0.75	0.89	24.1
NorthEast: Stewart Ave NE														
7	L2	176	1.7	176	1.7	0.718	55.4	LOS D	18.7	135.5	0.96	0.85	0.96	6.5
8	T1	615	5.9	615	5.9	0.718	51.0	LOS D	18.7	135.5	0.96	0.84	0.96	24.9
9	R2	227	2.2	227	2.2	0.542	74.5	LOS F	8.0	57.3	0.99	0.79	0.99	19.6
Approach		1018	4.3	1018	4.3	0.718	57.0	LOS E	18.7	135.5	0.97	0.83	0.97	21.3
NorthWest: Parry St														
10	L2	152	5.9	152	5.9	0.144	16.9	LOS B	4.5	33.2	0.45	0.67	0.45	39.0
11	T1	1020	1.9	1020	1.9	*0.928	75.4	LOS F	54.3	386.3	0.99	1.10	1.27	17.7
12	R2	233	3.0	233	3.0	0.732	82.1	LOS F	8.8	63.2	1.00	0.85	1.12	25.6
Approach		1405	2.5	1405	2.5	0.928	70.2	LOS E	54.3	386.3	0.94	1.02	1.16	20.6
SouthWest: Stewart Ave SW														
1	L2	89	4.5	89	4.5	0.118	34.2	LOS C	3.9	28.6	0.65	0.72	0.65	37.7
2	T1	899	2.7	899	2.7	*0.910	71.3	LOS F	38.5	276.0	0.99	1.06	1.24	18.5
3	R2	319	1.9	319	1.9	*0.923	98.6	LOS F	16.4	116.7	1.00	1.08	1.52	14.6
Approach		1307	2.6	1307	2.6	0.923	75.5	LOS F	38.5	276.0	0.97	1.04	1.27	18.6
All Vehicles		4860	3.1	4860	3.1	0.928	63.6	LOS E	54.3	386.3	0.92	0.92	1.08	20.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
SouthEast: King St SE											
P2	Full	50	69.3	LOS F	0.2	0.2	0.96	0.96	245.0	228.5	0.93
NorthEast: Stewart Ave NE											
P3	Full	50	69.3	LOS F	0.2	0.2	0.96	0.96	242.4	225.1	0.93
NorthWest: Parry St											
P4	Full	50	69.3	LOS F	0.2	0.2	0.96	0.96	245.3	228.8	0.93

SouthWest: Stewart Ave SW											
P1	Full	50	69.3	LOS F	0.2	0.2	0.96	0.96	245.1	228.6	0.93
All Pedestrians		200	69.3	LOS F	0.2	0.2	0.96	0.96	244.5	227.8	0.93

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.



APPENDIX B – SWEEP PATHS

