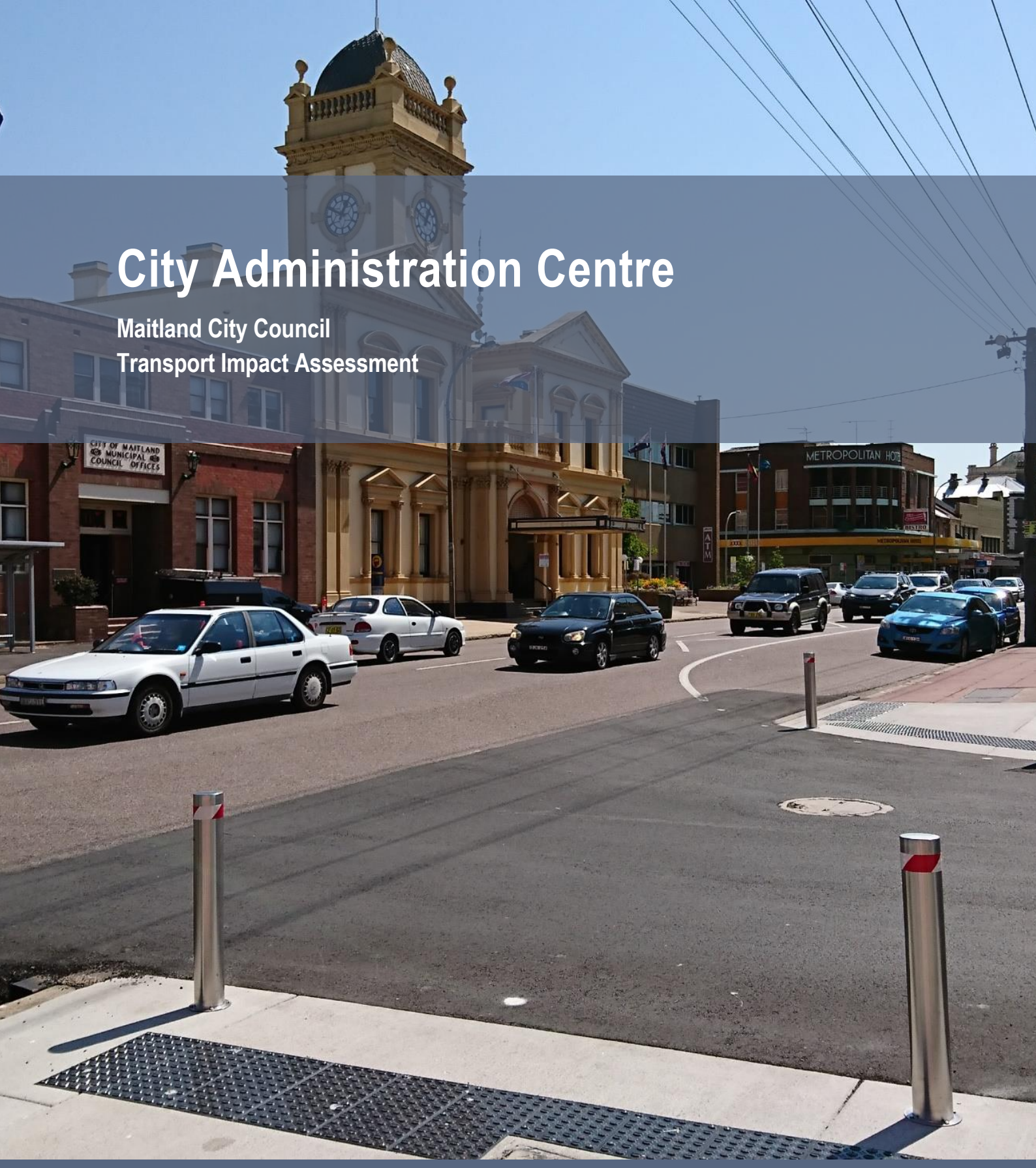
# City Administration Centre

## Maitland City Council
## Transport Impact Assessment




**Prepared by: GTA Consultants (NSW) Pty Ltd for Maitland City Council**
**on 29/03/19**
**Reference: N141581**
**Issue #: A**

GTAconsultants

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### Quality Record

| Issue | Date | Description | Prepared By | Checked By | Approved By | Signed |
|---|---|---|---|---|---|---|
| A | 28/03/19 | Final | Okka Maw | Volker Buhl | Volker Buhl | |
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# 1. INTRODUCTION

01

## 1.1. Background & Proposal

Located within the Central Maitland Area, the Maitland Civic Precinct Study Area forms a key stage in the revitalisation of Central Maitland. Within the Maitland Civic Precinct Study Area lies the Maitland Town Hall, an important landmark along High Street, as well as the current Maitland City Council Administration Building, Maitland Senior Citizen Centre, and the newly completed Maitland Regional Art Gallery (MRAG).

The Maitland Civic Precinct (purpose of this study) includes the Maitland Town Hall, Maitland City Council Administration Building and Maitland Senior Citizen Centre. The Maitland Civic Precinct is bound by High Street, Devonshire Street and Albert Street.

The Maitland Town Hall consists of a main hall, a Supper Room, the Council Chamber and a series of meeting rooms. The existing Maitland City Council Administration Building is located to the north of the Town Hall building and includes 2,162m$^2$ gross floor area of commercial/ office space.

As part of the proposed Maitland Civic Precinct, the Town Hall is proposed to be refurbished as well as a new Maitland City Council Administration Building to be built directly south of the Town Hall building. This new building will operate as the new Maitland City Council (Council) Administration office with the existing administration building to be released as commercial offices.

It is understood that the Development Application is to be lodged with Council for the proposed new Maitland City Council Administration Building within the Maitland Civic Precinct. The proposed development incorporates approximately 4,360m$^2$ GFA of office space (excluding the public lobby and plant and storage space) as well as new loading facilities to service the broader Maitland Civic Precinct. The development also incorporates the restoration of a two-storey heritage shop known as the Town Hall Café, which will be used as a public lobby ancillary to the Maitland Civic Precinct with an overall space of 250m$^2$ GFA.

Council has commissioned GTA Consultants (GTA) to prepare a Transport Impact Assessment (TIA) for the new Council Administration building as well as the refurbishment of the Town Hall auditorium.

## 1.2. Purpose of this Report

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

- existing transport conditions, including traffic and parking, surrounding the site
- suitability of the proposed parking in terms of supply (quantum) and layout
- service vehicle requirements
- pedestrian and bicycle requirements
- the traffic generating characteristics of the proposed development
- suitability of the proposed access arrangements for the site
- the transport impact of the development proposal on the surrounding road network.

## 1.3. References

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

- an inspection of the site and its surrounds
- Maitland City Council Development Control Plan (DCP) 2011

- Maitland Local Environmental Plan 2011
- Australia Standard/ New Zealand Standard, Parking Facilities, Part 1: Off—street Car Parking AS/NZS 2890.1:2004
- Australia Standard/ New Zealand Standard, Parking Facilities, Part 2: Off—street Commercial Vehicle Facilities AS/NZS 2890.2:2002
- Australia Standard/ New Zealand Standard, Parking Facilities, Part 3: Off—street Parking for People with Disabilities AS/NZS 2890.6:2009
- traffic surveys undertaken by Maitland City Council as referenced in the context of this report
- plans for the proposed development prepared by BVN Architects, Drawing Number AR-B-XX-00, Revision A, dated 08/03/2019
- other documents and data as referenced in this report.

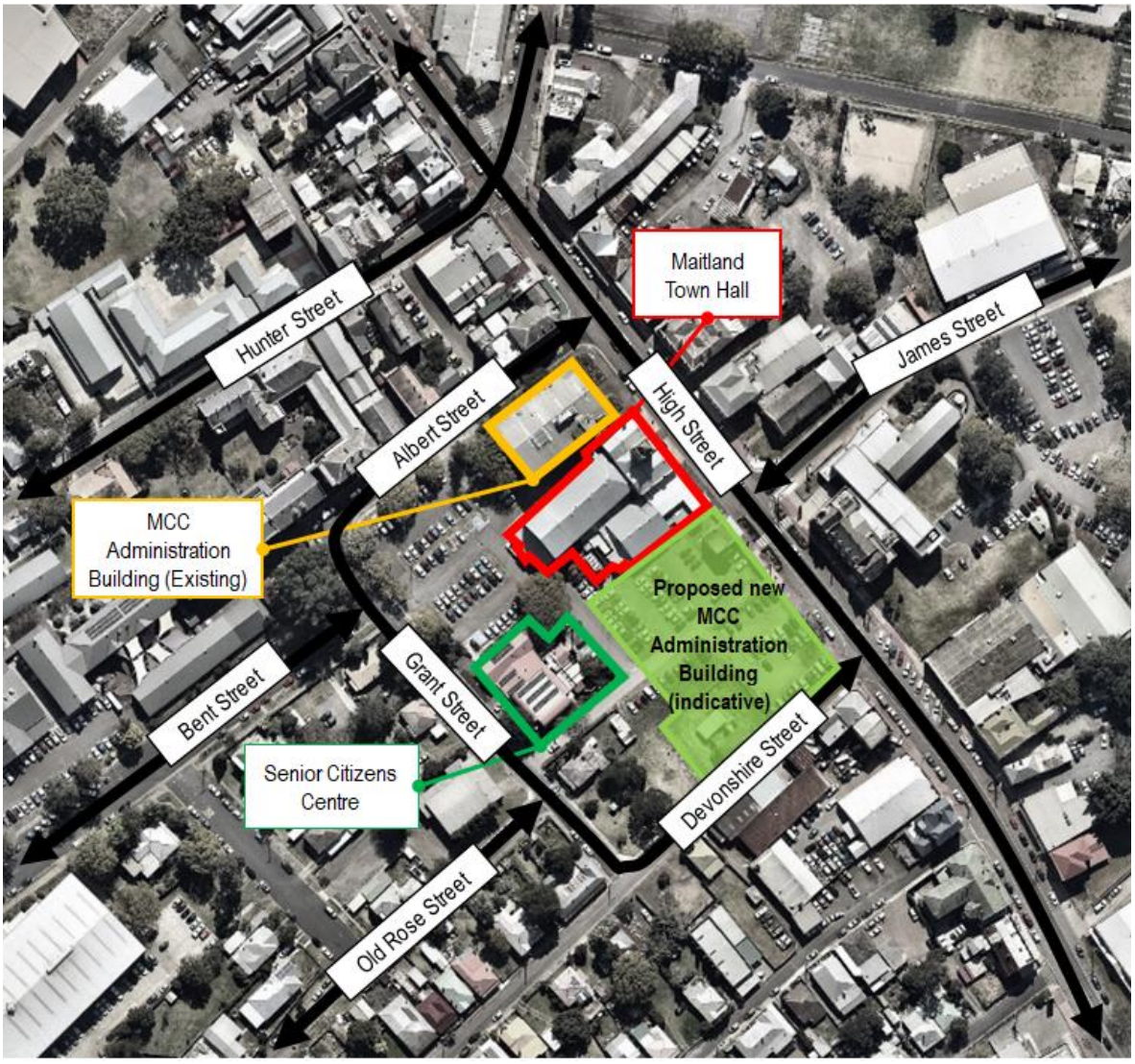
# 2. EXISTING CONDITIONS

02

## 2.1. Location

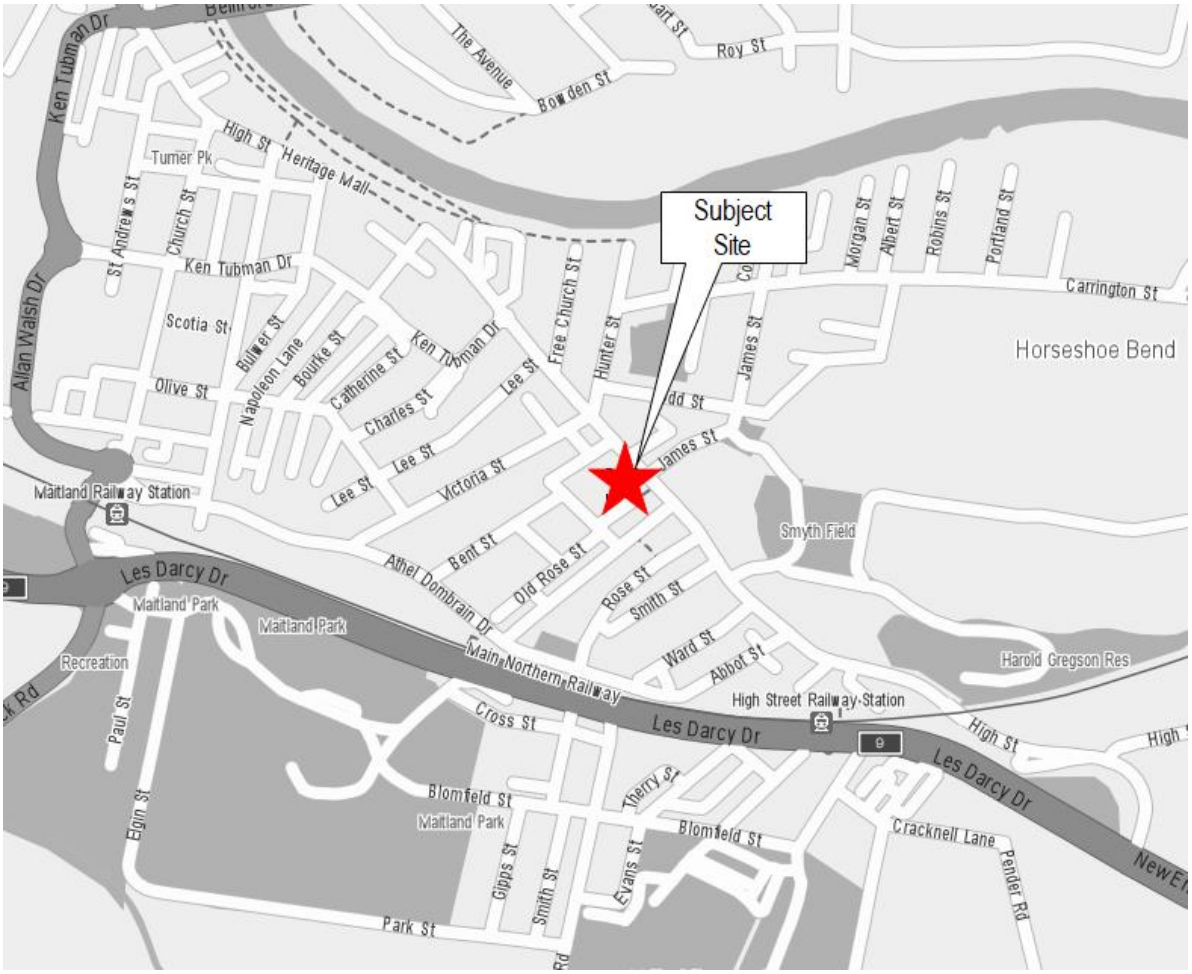
The Maitland Civic Precinct is located along High Street within Central Maitland, on a single block of land which also includes the Maitland Senior Citizens Centre. The block of land is bound by High Street to the north-east, Devonshire Street to the south-east, Grant Street on the south-west and Albert Street to the north-west. The overall Maitland Civic Precinct extends across High Street to the MRAG, which is located on the south-east corner of the intersection between James Street and High Street. The Maitland Civic Precinct is shown in Figure 2.1 with a broader indication of the site location shown in Figure 2.2.

**Figure 2.1: Proposed new MCC Administration Building and surrounds**




Basemap Source: Nearmap

**Figure 2.2: Subject site and broader context**




Basemap Source: http://www.street-directory.com.au/nsw (accessed 10/12/2018)

## 2.2. Public Transport Network

The existing public transport network within the vicinity of the site consists of bus services operating as either regular services or school services along High Street, and rail along the Hunter Line with High Street Station located approximately 600 metres south-west of the site.

The closest bus stop to the site is located directly in front of the existing Maitland Town Hall, with the corresponding stop located directly opposite, in front of the MRAG. Regular bus services for these stops include Green Hills and Greenhills Stockland, Thornton, Kurri Kurri, Rutherford and Cessnock. Bus frequencies and locations servicing stops directly in front of the site are summarised in Table 2.1.

**Table 2.1: Public transport services near subject site**

| Route | Destination | Frequency |
|---|---|---|
| 164 | Cessnock | Three times per day |
| | Green Hills | Three times per day |
| 166 | Kurri Kurri | Five times per day |
| | Green Hills | Five times per day |

| Route | Destination | Frequency |
|---|---|---|
| 179 | North Rothbury | Four times per day |
| | Greenhills Stockland | Five times per day |
| 180 | Singleton Heights | Four times per day |
| | Greenhills Stockland | Three times per day |
| 181 | Rutherford Shops | Hourly between 5am and 6pm<br>Every two hours after 6pm |
| | Woodberry | Hourly between 5am and 6pm<br>Every two hours after 6pm |
| 182 | Rutherford Shops | Approximately every hour |
| | Thornton | Approximately every hour |
| 183 | Rutherford Shops | Every 30 to 45 minutes between 5am an 8pm |
| | Tenambit | Every 30 to 45 minutes between 6am an 7pm |
| Hunter Line | Newcastle Interchange | Approximately every hour |
| | Tulerah | Approximately every hour |

## 2.3. Road Hierarchy

Roads are classified according to the functions they perform. The main purpose of defining a road's functional class is to provide a basis for establishing the policies which guide the management of the road according to their intended service or qualities.

In terms of functional road classification, State roads are strategically important as they form the primary network used for the movement of people and goods between regions, and throughout the State. Roads and Maritime Services (Roads and Maritime) responsible for funding, prioritising and carrying out works on State roads. State roads generally include roads classified as freeways, state highways, and main roads under the Roads Act 1993, and the regulation to manage the road system is stated in the Australian Road Rules, most recently amended on 19 March 2018.

Roads and Maritime defines four levels in a typical functional road hierarchy, ranking from high mobility and low accessibility, to high accessibility and low mobility. These road classes are:

**Arterial Roads** – Controlled by Roads and Maritime, typically no limit in flow and designed to carry vehicles long distance between regional centres.

**Sub-Arterial Roads** – Managed by either Council or Roads and Maritime under a joint agreement. Typically, their operating capacity ranges between 10,000 and 20,000 vehicles per day, and their aim is to carry through traffic between specific areas in a sub region or provide connectivity from arterial road routes (regional links).

**Collector Roads** – Provide connectivity between local sites and the sub-arterial road network, and typically carry between 2,000 and 10,000 vehicles per day.

**Local Roads** – Provide direct access to properties and the collector road system and typically carry between 500 and 4,000 vehicles per day.

### 2.3.1. Surrounding road network

#### High Street

High Street functions as a sub-arterial road and in the vicinity of the site is aligned in a north-west to south-east direction. High Street is a two-way road configured with one travel lane in each direction and kerbside parking permitted, either as

parallel parking or rear-to-kerb angled parking. High Street has a 23 metre-wide road reserve with a 14 metre-wide carriageway and footpaths on both sides. High Street connects the Central Maitland Area with the New England Highway and the broader regional road network and carries in the order of 10,300 vehicles per day. High Street is shown in Figure 2.3 and Figure 2.4

**Figure 2.3: High Street (looking north)**

**Figure 2.4: High Street (looking south)**

Of note along High Street is the pedestrian crossing located directly in front of the Maitland Regional Art Gallery. Site experiences note that vehicle queuing occurs along High Street when the pedestrian crossing is in use by large groups of pedestrians.

### Devonshire Street

Devonshire street is a local road and is aligned in south-west to north-east direction. Devonshire Street runs between High Street and Athel Dombrain Drive. Devonshire Street has a carriageway between 5.5 and 6.4 metres in width. Devonshire Street is a two-way road with kerbside parking permitted at select locations, subject to driveway accesses and intersection clear-zones. Devonshire Street carries in the order of 500 vehicles per day and is shown in Figure 2.5 and Figure 2.6.

**Figure 2.5: Devonshire Street (looking west)**

**Figure 2.6: Devonshire Street (looking east to High Street)**

Devonshire Street carries in the order of 150 vehicles per day.

### Grant Street

Grant Street is a local road in and is aligned in a north-west to south-east direction. Grant Street currently provides access to the Maitland Senior Citizens Centre as well as the Town Hall and existing Council Administration Building. Grant Street

consists of a seven-metre-wide carriageway with footpaths on both sides. Kerbside parking is permitted along Grant Street on the western side. Grant Street carries in the order of 320 vehicles per day and is shown in Figure 2.7 and Figure 2.8.

**Figure 2.7: Grant Street (looking south)**

**Figure 2.8: Grant Street (looking north)**

### Albert Street

Albert Street in the vicinity of the site is aligned in a south-west to north-east direction and is a two-way road. Albert Street contains a seven-metre-wide carriageway with footpaths on both sides and kerbside parking permitted along the western side. All Saints College is located along Albert Street and as such is subject to school zone restrictions. Albert Street carries in the order of 650 vehicles per day and is shown in Figure 2.9.

**Figure 2.9: Albert Street (looking west)**


## 2.4. Traffic Volumes

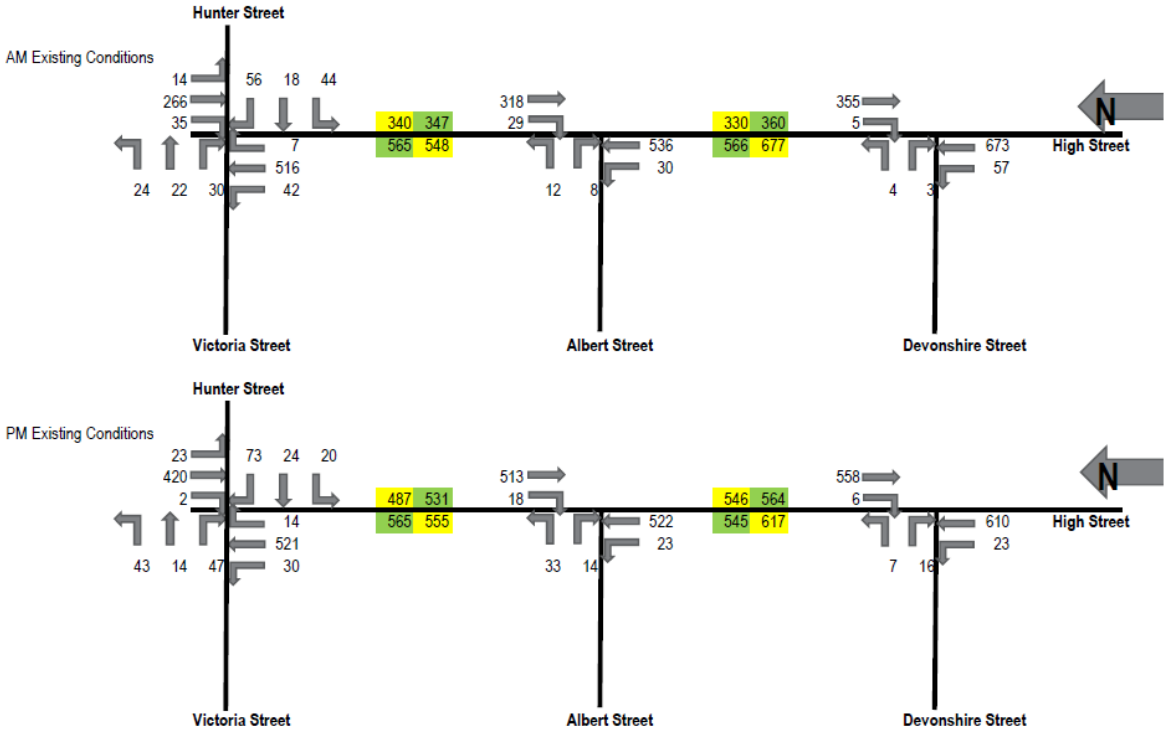
Two-way tube counts were undertaken by Maitland City Council along High Street as well as local roads surrounding the subject site for a two week period in mid-November 2018. It was found that for a typical weekday, peak hours occurred between 8:00am and 9:00am in the AM peak and 3:30pm to 4:30pm in the PM peak.

Traffic movement counts were undertaken on Tuesday 4 December 2018 at the following intersections along High Street by Maitland City Council:

- High Street/ Devonshire Street
- High Street/ Albert Street
- High Street/ Hunter Street/ Victoria Street.

The traffic volumes are summarised in Figure 2.10 with full survey results contained in Appendix A.

**Figure 2.10: Existing AM and PM peak hour traffic volumes**




## 2.5. Intersection Operation

The operation of the key intersections within the study area have been assessed using SIDRA INTERSECTION[1], a computer based modelling package which calculates intersection performance.

The commonly used measure of intersection performance, as defined by the Roads and Maritime, is vehicle delay. SIDRA INTERSECTION determines the average delay that vehicles encounter and provides a measure of the level of service.

Table 2.2 shows the criteria that SIDRA INTERSECTION adopts in assessing the level of service.

**Table 2.2: SIDRA INTERSECTION level of service criteria**

| Level of Service (LoS) | Average Delay per vehicle (secs/ veh) | Traffic Signals, Roundabout | Give Way & Stop Sign |
|---|---|---|---|
| A | Less than 14 | Good operation | Good operation |
| B | 15 to 28 | Good with acceptable delays and spare capacity | Acceptable delays and spare capacity |

[1] Program used under license from Akcelik & Associates Pty Ltd.

| Level of Service (LoS) | Average Delay per vehicle (secs/ veh) | Traffic Signals, Roundabout | Give Way & Stop Sign |
|---|---|---|---|
| C | 29 to 42 | Satisfactory | Satisfactory, but accident study required |
| D | 43 to 56 | Near capacity | Near capacity, accident study required |
| E | 57 to 70 | At capacity, at signals incidents will cause excessive delays | At capacity, requires other control mode |
| F | Greater than 70 | Extra capacity required | Extreme delay, major treatment required |

Table 2.3 presents a summary of the existing operation of the intersection, with full results presented in Appendix B of this report.

**Table 2.3: Existing operating conditions**

| Intersection | Peak | Leg | Approach Name | Degree of Saturation (DoS) | Average Delay (sec) | 95th Percentile Queue (m) | Level of Service (LoS)[1] |
|---|---|---|---|---|---|---|---|
| High Street/ Devonshire Street | AM | South | High Street | 0.41 | 1 | 0 | A |
| | | North | High Street | 0.21 | 1 | 1 | A |
| | | West | Devonshire Street | 0.02 | 11 | 1 | A |
| | | **Overall** | | **0.41** | **1** | **1** | **A** |
| | PM | South | High Street | 0.35 | 1 | 0 | A |
| | | North | High Street | 0.32 | 1 | 1 | A |
| | | West | Devonshire Street | 0.07 | 14 | 1 | B |
| | | **Overall** | | **0.35** | **1** | **1** | **B** |
| High Street/ Albert Street | AM | South | High Street | 0.32 | 1 | 0 | A |
| | | North | High Street | 0.21 | 1 | 1 | A |
| | | West | Albert Street | 0.04 | 9 | 1 | A |
| | | **Overall** | | **0.32** | **1** | **1** | **A** |
| | PM | South | High Street | 0.31 | 1 | 0 | A |
| | | North | High Street | 0.31 | 1 | 1 | A |
| | | West | Albert Street | 0.9 | 10 | 1 | A |
| | | **Overall** | | **0.31** | **1** | **1** | **A** |
| High Street/ Hunter Street/ Victoria Street | AM | South | High Street | 0.51 | 7 | 34 | A |
| | | North-East | Hunter Street | 0.21 | 22 | 8 | B |
| | | North | High Street | 0.31 | 7 | 17 | A |
| | | West | Victoria Street | 0.19 | 23 | 8 | B |
| | | **Overall** | | **0.51** | **10** | **34** | **A** |
| | PM | South | High Street | 0.52 | 7 | 34 | A |
| | | North-East | Hunter Street | 0.27 | 22 | 10 | B |
| | | North | High Street | 0.40 | 7 | 25 | A |
| | | West | Victoria Street | 0.26 | 23 | 11 | B |
| | | **Overall** | | **0.52** | **10** | **34** | **A** |

[1] LOS reported for worst movement for unsignalized intersections.

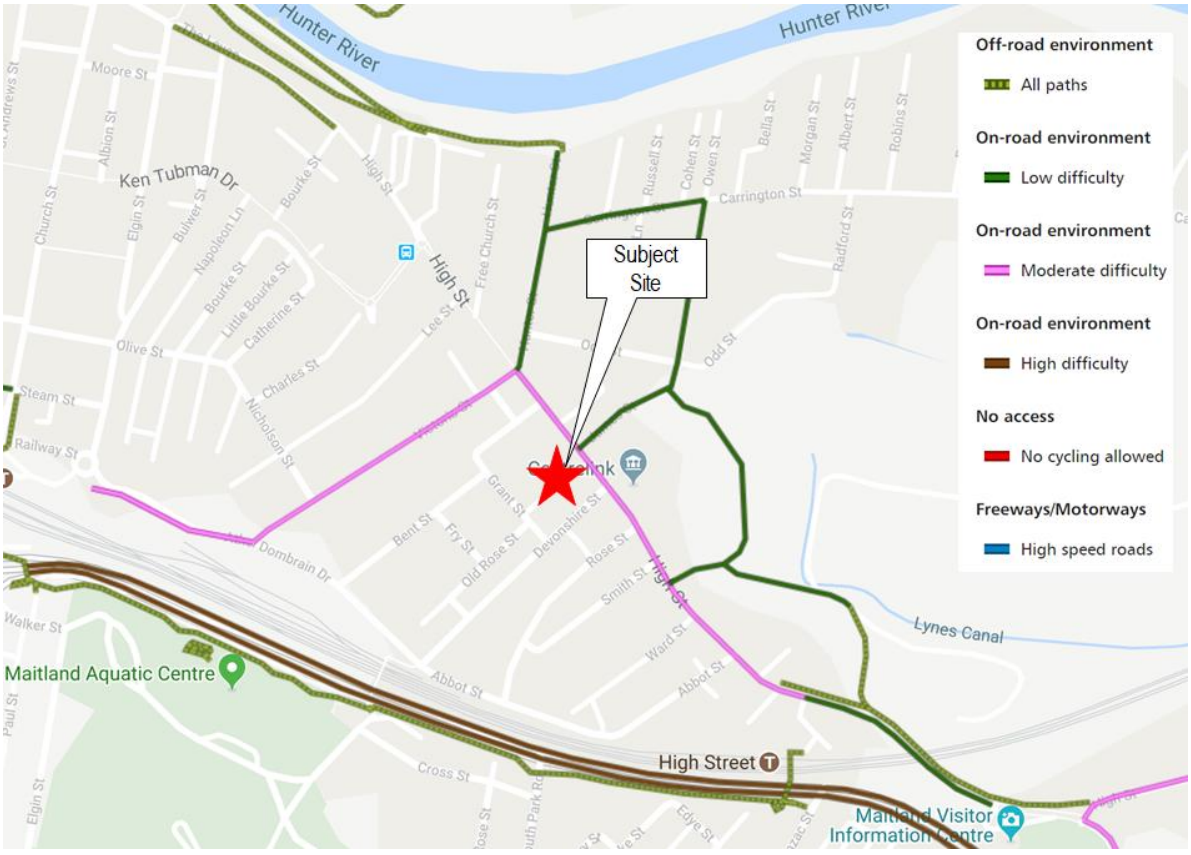
The above indicates that the subject intersections currently operate within acceptable levels of service for delay. This is representative of on-site observations where queuing is generally minimal and delays often not longer than one to two cycle lengths at the High Street/Hunter Street/Victoria Street intersection.

What is not represented above is the existence of the marked pedestrian crossing along High Street opposite the existing Town Hall and Maitland Regional Art Gallery. Observations note that the pedestrian crossing causes delays along High Street and associated feeder streets such as James Street and Devonshire Street. In some instances, queuing leading to the High Street/ Hunter Street/ Victoria Street intersection during strong pedestrian flows between the MRAG and Town Hall area, however this is not expected to occur frequently within an hour.

## 2.6. Walking and Cycling Infrastructure

Pedestrian paths are located along all roads surrounding the site and are as follows. Cycle infrastructure within the vicinity of the site mostly consists of on-road mixed traffic treatments ranging for low difficulty along local streets to moderate difficulty on High Street. This is based on the Roads and Maritime Services Cycleway Finder which takes into account vehicle volumes, gradients and speeds. Cycle infrastructure in the vicinity of the site is shown in Figure 2.11.

**Figure 2.11: Cycle infrastructure surrounding the site**



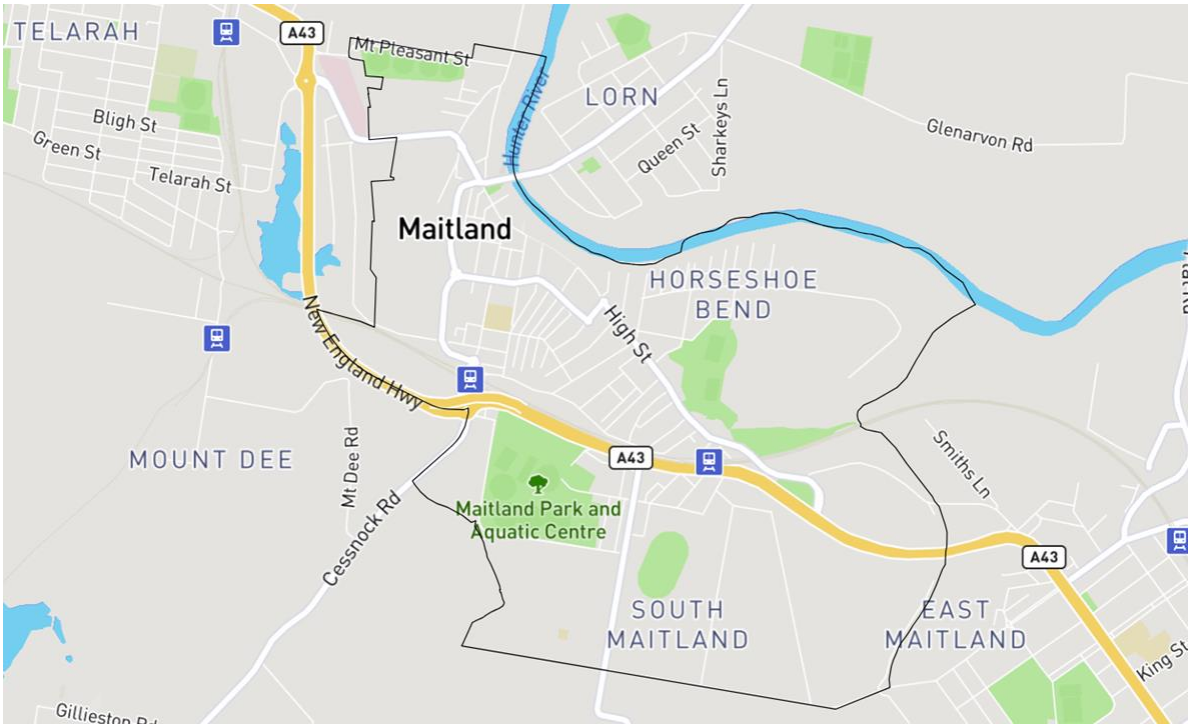

Source: Roads and Maritime Services Cyclefinder

## 2.7. Existing Travel Behaviour

Based on the Australia Bureau of Statistic's 2011 Census, the 2011 Journey to Work (JTW) provides a robust of how residents and employees within certain geographical areas, known as Travel Zones (TZ), travel to and from work. This

includes origin and destination TZs as well as mode shares. The subject site lies within TZ 6601 which also encompasses the broader Central Maitland as well as some sections of South Maitland. The subject TZ is shown in Figure 2.12.

**Figure 2.12: Travel Zone 6601**




Source: Transport for NSW Travel Zone Explorer

Analysis of the 2011 JTW indicates that there are approximately 4,185 persons employed within TZ 6601. The mode share for how employees within TZ6601 travel to and from work is summarised in Table 2.4.

**Table 2.4: Mode share for employees within TZ 6601**

| Travel Mode | Employees | Proportion |
|---|---|---|
| Bus | 44 | 1% |
| Mode not stated | 52 | 1% |
| Other mode | 37 | 1% |
| Train | 71 | 2% |
| Vehicle driver | 3165 | 76% |
| Vehicle passenger | 190 | 5% |
| Walked only | 88 | 2% |
| Worked at Home or Did not go to Work | 538 | 13% |

It can be seen that the vast majority of employees within the area travel to and from work via private vehicle either as a driver (76 per cent) or as a passenger (1 per cent). Public transport accounted for approximately three per cent of employees in the TZ with two per cent walking to work. Overall, the vast majority of employees use private vehicle as their main mode of travel to work which is expected within CBDs outside of major cities.

# 3. DEVELOPMENT PROPOSAL

03

## 3.1. Land Use

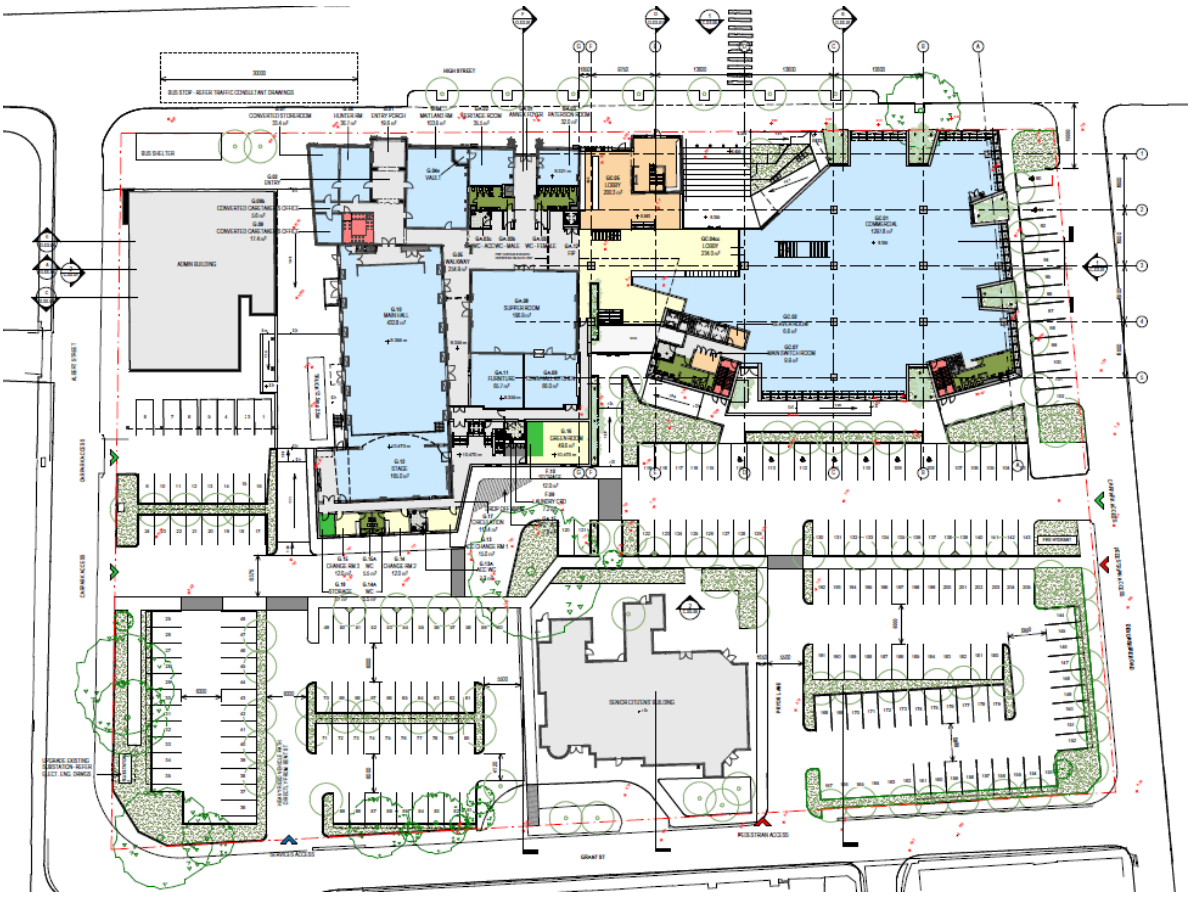
The proposal includes the construction of a new office building with a floor space of approximately 4,360m$^2$ GFA (excluding public lobby, plant and storage and Town Hall Café) on the currently vacant land south of the existing Maitland Town Hall as well as refurbishment of the Town Hall Auditorium. The new building will function as the Maitland City Council Administration Building with the current MCC Administration Building to be renovated and re-leased as commercial office space. The overall proposal is summarised in Table 3.1.

**Table 3.1: Development Proposal**

| Use | Description | Size/Number/Capacity |
|---|---|---|
| Office/ Commercial | Maitland City Council Administration Building (proposed) | 4,360 sqm GFA |
| | Maitland City Council Administration Building (existing) | 2,162 sqm GFA |
| | 'Town Hall Café' and Public Lobby | 250sqm GFA |
| Place of public gathering/ entertainment/ worship | Town Hall Auditorium (to be renovated) | 389 persons |
| | Town Hall Supper Room (existing) | 112 persons |
| | Senior Citizens Centre (existing) | 200 persons |
| | Paterson Room – meeting room (existing) | Meeting Rooms: 458 sqm GFA<br>Council Chambers: 132sqm GFA (includes 70 persons including 13 Councillors, 17 Staff and 30 public gallery seats) |
| | Heritage Room – meeting room (existing) | |
| | Maitland Room – meeting room (existing) | |
| | Council Chambers – meeting room (existing) | |

Overall, much of the existing features on the block of land will remain with only the proposed Maitland City Council Administration Building to be a new feature. It is noted that the existing residential flat building on Devonshire Street and single dwelling on Grant Street will be demolished. The site plan for the overall development can be seen in Figure 3.1.

**Figure 3.1: Maitland City Council Administration Building Development**



Source: BVN Architects

The proposed Maitland City Council Administration Building is expected to initially accommodate 210 staff with a potential to accommodate 350 staff in the future.

## 3.2. Vehicle Access

A number of vehicle driveway access points are proposed for the site at the following locations:

- High Street near the bus stop (exit only and restricted to larger, infrequent service vehicles for the Town Hall Auditorium)
- Devonshire Street
- Grant Street, opposite intersection with Bent Street and to the south-east of the Maitland Senior Citizens Centre
- Albert Street (existing access locations).

## 3.3. Car Parking

### 3.3.1. Car Parking Management

The proposed development will provide a total of 202 at-grade car parking space which will consist of a mixture of currently existing spaces and new spaces as part of the overall development. The breakdown of the proposed provision of car spaces is as follows:

- 193 regular car parking spaces (including 9 visitor spaces along Devonshire Street)
- 9 accessible car parking spaces.

No motorcycle/ scooter parking spaces are proposed for the development.

### 3.3.2. Car Parking Management

The following parking control strategy is proposed for the development:

- Five three-hour timed Council visitor parking spaces, line marked and sign posted, matching the existing condition, located in the parking aisle adjacent to the southern side of the New Administration Building.
- Mayor and senior staff (quantum to be confirmed), line marked and sign posted, located in the parking aisle adjacent to the southern side of the New Administration Building.
- Senior Citizens parking spaces, line marked, and sign posted, located adjacent to the Senior Citizens building
- All remaining car parking spaces to be sign posted as restricted parking spaces for use by Council staff and Town Hall patrons similar to the existing condition
- One service vehicle bay adjacent to the Town Hall back-of-house area to accommodate deliveries, including kitchen deliveries.

Parking control for restricted and timed spaces would be through the use of parking enforcement officers (which is currently used).

## 3.4. Pedestrian Facilities

Pedestrian access to the site is proposed via the main access located along High Street with secondary accesses from Devonshire Street, Grant Street and Albert Street. Internal pedestrian facilities include footpaths within the car park to separate vehicles and pedestrians.

## 3.5. Bicycle Facilities

The development plans proposed secure parking for 12 bicycles in Class 2 facilities located within the basement levels on the southern side of the Maitland Town Hall and the new Administration Building. Access to the bicycle storage area will be via a shared path along Devonshire Street and via the rear car park. The proposed development also shows the provision of five showers and change room facilities.

## 3.6. Loading Facilities

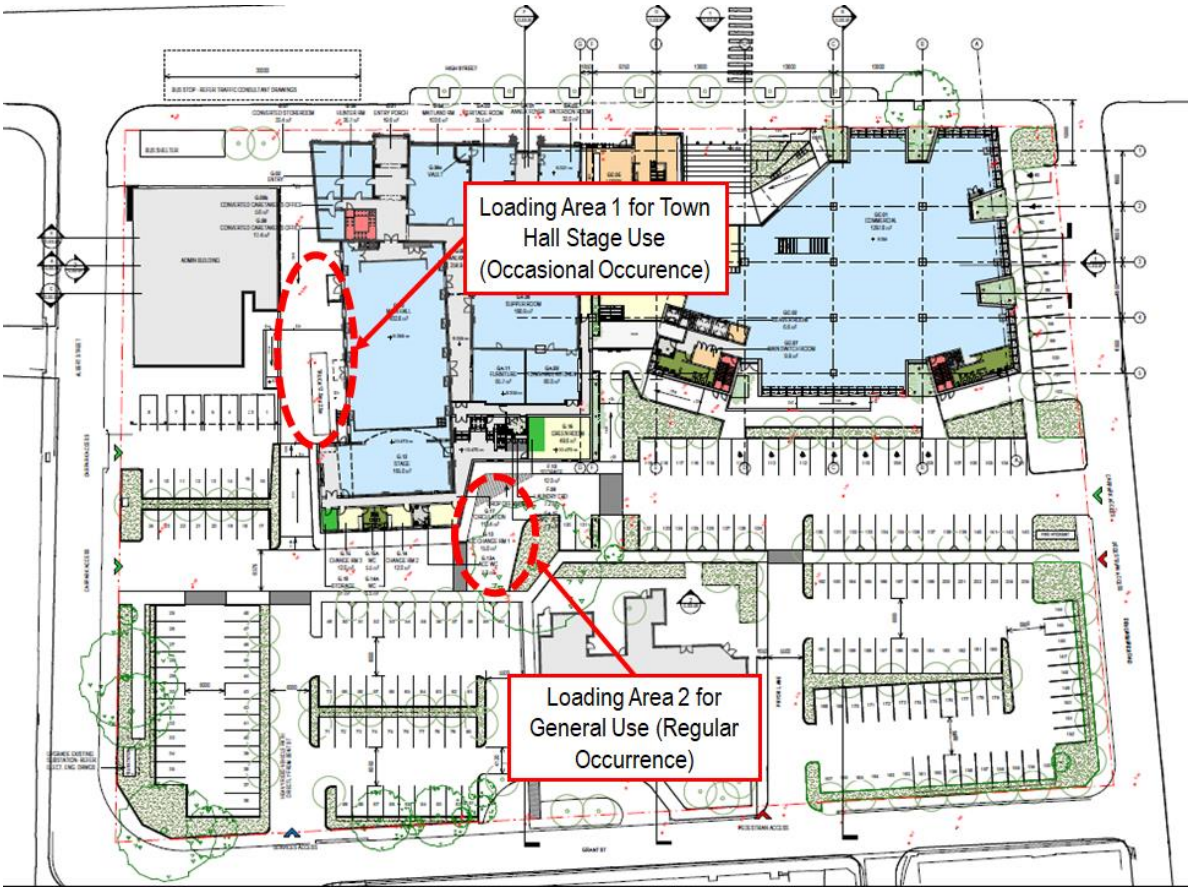
Two loading areas are currently proposed to facilitate the following uses:

1. Stage construction materials and props for larger Town Hall Auditorium uses such as shows and other entertainment purposes.
2. Regular servicing of the overall site including collection of waste.

The first loading area will be located directly adjacent to the Town Hall Auditorium back of house area, between the existing Administration Building and Town Hall. The location of this is largely at the same elevation as the Town Hall Auditorium back of house and thus will facilitate more efficient loading and unloading for large/bulky deliveries such as stage materials and props.

The second loading area will be located near the southern edge of the Town Hall building and new Administration Building which is where waste storage is proposed. The loading areas for the site are shown in Figure 3.2.

**Figure 3.2: Maitland City Council Administration Building Development**




Source: BVN Architects

The loading areas have been designed to accommodate up to and including the following vehicles:

1. Loading Area 1 – 12.5 metre large rigid vehicle (LRV)
2. Loading Area 2 – 9.8 metre refuse collection vehicle (RCV)

Service vehicle access is proposed via the following strategy:

1. Loading Area 1 – access via Bent Street and Grant Street northbound only and exiting onto High Street in a forward-in/forward-out direction.
2. Loading Area 2 – access via Devonshire Street in a westbound direction only and exiting onto Albert Street in a forward-in/forward-out direction.

# 4. PARKING ASSESSMENT

04

## 4.1. Car Parking

### 4.1.1. Car Parking Requirements

The car parking provision requirements for different development types are set out in the Maitland City Council Development Control Plan 2011. A review of the car parking requirement rates and the floor area schedule results in a DCP parking requirement for the proposed development as summarised in Table 4.1.

**Table 4.1:DCP Parking Requirement**

| Use | Description | Size/Number/ Capacity | DCP Parking Rate | Parking Requirement |
|---|---|---|---|---|
| Office/Commercial | Maitland City Council Administration Building (proposed) | 4,360 sqm GFA | 1 space per 45sq.m GFA | 97 |
| | Maitland City Council Administration Building (existing) | 2,162 sqm GFA | 1 space per 45sq.m GFA | 49 |
| | 'Town Hall Café' and Public Lobby | 250sqm GFA | 1 space per 45sq.m GFA | 6 |
| Place of public gathering/entertainment/ worship | Town Hall Auditorium (to be renovated) | 389 persons | 1 space per 10 patrons | 39 |
| | Town Hall Supper Room (existing) | 112 persons | 1 space per 10 patrons | 12 |
| | Senior Citizens Centre (existing) | 200 persons | 1 space per 10 patrons | 20 |
| | Meeting Rooms and Council Chambers | 590sqm GFA | 1 space per 45sq.m GFA | 14 |
| **Total parking requirement** | | | | **237** |

[1] derived on needs basis and not within Maitland DCP 2011

Based on the Maitland DCP 2011 requirements, the above indicates that 237 car parking spaces would be required for the overall development (which includes a mix of new proposed uses and existing uses). This includes accessible spaces at a rate of 3 per 100 spaces as part Maitland DCP 2011 resulting in a requirement for three accessible parking spaces.

### 4.1.2. Empirical Car Parking Requirements

The above car parking requirements typically assumes full use of the facilities above which includes concurrent use of the office/commercial component and large events occurring within the Town Hall Auditorium (i.e. fully booked out and attended). While it is understood that future aspirations for the Town Hall Auditorium following its refurbishment include higher use rates for larger events and show, it is still unlikely that these will occur at the same time as business hours. As such a likely parking demand during business hours and outside of business hours has been derived. This is summarised in Table 4.2.

**Table 4.2:Empirical Parking Requirement**

| Time Period | Description | Size/Number/ Capacity | Parking Requirement (based on DCP rates) |
|---|---|---|---|
| During Business Hours | Maitland City Council Administration Building (proposed) | 4,360 sqm GFA | 97 |
| | Maitland City Council Administration Building (existing) | 2,162 sqm GFA | 49 |
| | Town Hall Auditorium (rehearsal) | 50 persons | 5 |
| | Senior Citizens Centre (existing) | 200 persons | 20 |
| | Meeting Rooms and Council Chambers | 590 sqm GFA | 14 |
| | 'Town Hall Café' and Public Lobby | 250sqm GFA | 6 |
| | **Total** | | **191** |
| Outside of Business Hours | Town Hall Auditorium (event/show) | 389 persons | 39 |
| | Town Hall Supper Room (existing) | 112 persons | 12 |
| | Senior Citizens Centre (existing) | 200 persons | 20 |
| | Meeting Rooms | 458 sqm GFA | 11 |
| | Council Chambers | 70 patrons | 7 |
| | **Total** | | **89** |

Based on the parking demand, it is expected that the overall development would require between 89 spaces for out of business hour uses (such as shows and events in the Town Hall Auditorium and Council Chamber meetings) and 191 spaces for uses within business hours such as regular office uses.

### 4.1.3. Adequacy of Car Parking Supply

The development proposes a total of 202 car parking spaces. On the basis of the empirical assessment of the demand and being within a reasonable difference from the required 237 car parking spaces, the on-site car parking provision is expected to be capable of accommodating the car parking demands associated with the proposed developments. It is noted that in the event that the Town Hall Auditorium were to be used for a show or any large-scale event where it were to be fully utilised during Council business hours, an event traffic management plan should be developed and implemented prior.

### 4.1.4. Car Parking Layout Review

The car park layout has been reviewed against the requirements of the Maitland City Council DCP and the Australian Standard for Off Street Car Parking (AS/NZS2890.1:2004 and AS/NZS2890.6:2009). This assessment included a review of the following:

- bay and aisle width
- adjacent structures
- turnaround facilities
- internal queuing
- parking for persons with disabilities.

Details of this review are provided below. This review indicates that the proposed car parking layout is expected to operate satisfactorily, subject to the adoption of recommendations discussed shown graphically in Appendix C. It is noted a number of on-street car parking spaces will be affected by driveway accesses onto Grant Street. These are shown in Figure 4.1 and Figure 4.2.

Figure 4.1: Affected On-street Parking on Grant Street for new driveway access

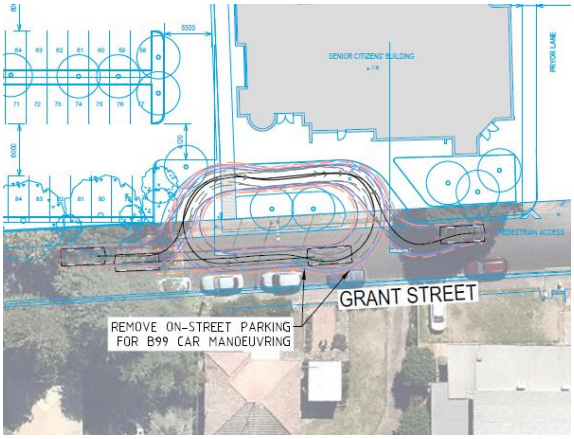
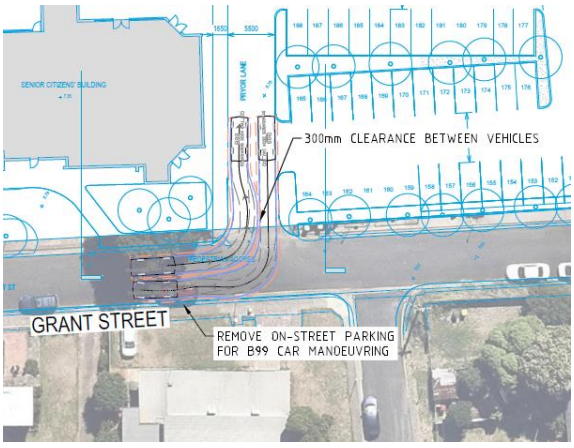



Figure 4.2: Affected On-street Parking on Grant Street for Senior Citizens Centre Porte-cochere




## 4.2. Bicycle Parking & Associated Facilities

### 4.2.1. Bicycle Parking Requirements

Bicycle parking provision requirements for the proposed development are not provided within Maitland DCP 2011. As such, bicycle parking requirements from the NSW Planning Guidelines for Walking and Cycling have been reviewed to provide a guidance on required This is summarised in Table 4.3.

**Table 4.3:Bicycle Parking Requirement**

| Scenario | Land Use | User type | Staff Numbers | Rate | Minimum Bicycle Parking | Maximum Bicycle Parking | End of Trip Facilities Required |
|---|---|---|---|---|---|---|---|
| 210 Staff | Office | Staff | 210 | 3%-5% of Staff | 7 | 11 | 4 lockers with 6 showers |
| | Office | Visitor | 210 | 5%-10% of Staff | 11 | 21 | Class 3 visitor parking |
| 350 Staff | Office | Staff | 350 | 3%-5% of Staff | 11 | 18 | 6 lockers with 8 showers and 2 change rooms |
| | Office | Visitor | 350 | 5%-10% of Staff | 18 | 35 | Class 3 visitor parking |

Based on the above and understanding that the current Maitland City Council workforce located in the existing Administration Building has a one per cent cycling mode share, the minimum bicycle parking for 350 staff is considered the most appropriate bicycle parking requirement.

### 4.2.2. Adequacy of Bicycle Provision

The development proposes 11 staff bicycle parking spaces within the basement level of the new Maitland City Council Administration Building as well as 2 showers for each gender and 1 accessible shower. Based on the above, the provision of staff bicycle parking and end of trip facilities are considered adequate for the proposed development. It is noted that the current designs allow for a range of locker combinations within each of the gender change rooms.

# 5. LOADING & WASTE COLLECTION FACILITIES

05

## 5.1. Loading

### 5.1.1. Proposed Loading Arrangements

As discussed previously, the proposed loading will occur via two separate loading areas:

- Loading Area 1 which will service the Town Hall Auditorium and be used occasionally to facilitate movement of large stage equipment, materials and props.
- Loading Area 2 which will be used on a day-to-day basis which will include servicing of the new and existing office building.

Both loading areas have been designed with their respective vehicles in mind. Loading Area 1 has been designed for a 12.5 metre large rigid vehicle (LRV). Loading Area 2 has been designed for a 9.8 metre-long refuse collection vehicle (RCV).

Swept path assessments for the loading areas indicate that forward-in/forward-out movements will be possible for the site for servicing. Loading Area 1 will be accessed via Grant Street with loading to occur adjacent to the of the Town Hall Auditorium and largely on the same level. The service vehicle will then exit from Loading Area 1 onto High Street with both left and right turns possible. Whilst there is a bus bay located nearby, the likelihood of service vehicle-bus conflicts is expected to be unlikely given the occasional use of Loading Area 1, as well as bus frequencies at the stop.

Loading Area 2 will be accessed via Devonshire Street with servicing to occur at the rear of the Town Hall and Administration Building. Service vehicles will then exit from Loading Area 2 in a forward direction onto Albert Street. A drop-off space has also been designed within Loading Area 2. Swept path assessments indicate that up to a 9.8 metre RCV will be able to manoeuvre around a stopped vehicle in the drop off zone.

Both Loading Areas 1 and 2 have been assessed for swept paths based on the largest design vehicles likely to access them. The swept path assessment indicates that loading movements will operate without conflicting buildings, landscaping and garden features, and car parking. Swept path assessments are presented in Appendix C.

## 5.2. Waste Collection

A centralised bins store room is required to serve both the New Administration Building and the Town Hall. The bin store will be located next to Loading Area 2. Council's Waste Services Team are planning to acquire a rear loading garbage truck prior to completion of the new administration centre. The bin store room should have mechanical ventilation, a hose cock for cleaning and a drainage point.

Council's Waste Services Team have calculated estimated waste volumes based on floor areas and have determined that the following bins and services will be required:

- general waste: five 660 litre bins (collected by Council waste services weekly)
- recycling: four 660 litre bins (collected by Council waste services weekly)
- paper recycling: one 1100 litre bin (collected by a contractor as required)
- IT Waste: one 660 litre bin (collected by a contractor as required).

Cleaning staff will collect waste from the Administration Building and Town Hall using a portable bin and will decant into the larger bins in the bin store room noting that a 240L lifter will be provided in the bin room. The bin room will be sized to allow for the storage of a minimum of two 240 litre bins.

Waste collection will occur via a rear-load RCV. As discussed in Section 5.1.1, swept path assessment for RCVs entering and exiting Loading Area 2 will function as required.

# 6. TRAFFIC RESPONSE ASSESSMENT

06

## 6.1. Traffic Generation

### 6.1.1. Design Rates

Traffic generation estimates for the proposed development have been sourced from the Roads and Maritime Guide to Traffic Generating Developments (Guide) 2002 and Technical Direction: Updated Traffic Surveys (TDT 2013/ 04a).

Based on the proposed uses for the development, it is expected that only the commercial/office uses are expected to generate traffic during the traffic peak hours in the day. Trip rates for the intended commercial/office uses have been based on an average of surveyed sites as part of TDT 2013/04a which includes a range of metropolitan and regional sites, and are as follows:

- AM Peak Hour: 1.6 trips/ 100m² GFA
- PM Peak Hour: 1.2 trips/ 100m² GFA.

Noting the regional nature of Central Maitland, the average trip rates for offices within TDT 2013/04a were utilised instead of the two surveyed regional as these were both lower than the average[2]. Based on this, the chosen trip rates present a more conservative estimate.

As such, Table 6.1 presents estimates of peak hour traffic volumes expected to be generated by the proposal.

**Table 6.1: Traffic generation estimates**

| Use | Size | Traffic generation rate (trips/ hour) | | Traffic generation estimates (trips/ hour) | |
|---|---|---|---|---|---|
| | | AM | PM | AM | PM |
| Existing Administration Building | 2270 | 1.6 trips/ 100m² GFA | 1.2 trips/ 100m² GFA | 37 | 28 |
| Future Administration Building | 4530 | 1.6 trips/ 100m² GFA | 1.2 trips/ 100m² GFA | 73 | 55 |
| | | | **Total** | **110** | **83** |

Table 6.1 indicates that the site could potentially generate 110 and 83 vehicle trips in the AM and PM peak hours respectively.

## 6.2. Traffic Distribution and Assignment

The directional distribution and assignment of traffic generated by the proposed development will be influenced by a number of factors, including the:

- configuration of the arterial road network in the immediate vicinity of the site
- existing operation of intersections providing access between the local and arterial road network
- likely distribution of employee's residences in relation to the site
- configuration of access points to the site.

Having consideration to the above, for the purposes of estimating vehicle movements, the inbound/outbound split has been assumed as follows:

- 90 per cent inbound and 10 per cent outbound for the AM peak.
- 20 per cent inbound and 80 per cent outbound for the PM peak.

[2] Trip rates for Newcastle were 1.03 trips/100m² GFA and 1.14 trips/100m² GFA and trip rates for Wollongong were 0.95 trips/100m² GFA and 0.77 trips/100m² GFA for AM and PM peak hours, respectively.

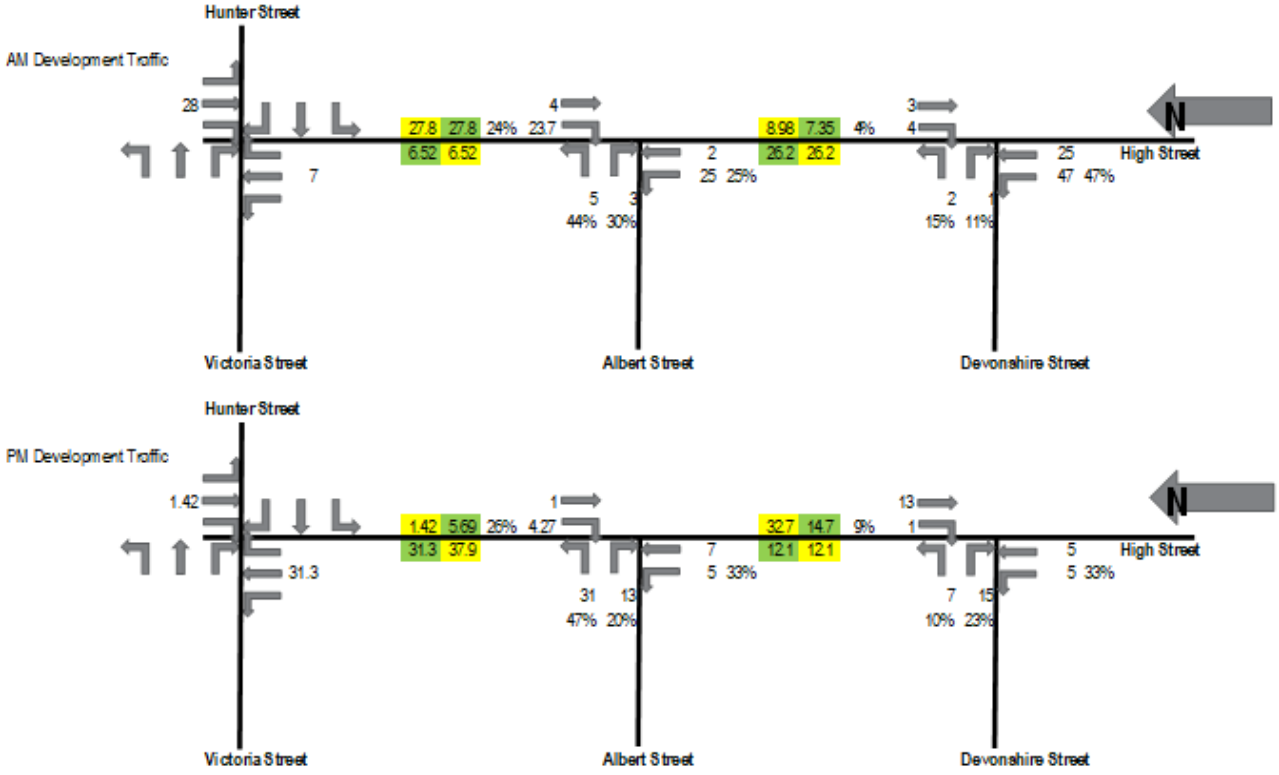
The direction distribution for the existing and proposed administration building have been based on existing turn proportions into and out of Devonshire Street and Albert Street as the existing uses would be similar to the post-development and, therefore, provides an adequate proxy. The directional distribution is summarised in Table 6.2.

**Table 6.2: Assumed direction distribution**

| Peak Period | Inbound | | Outbound | |
|---|---|---|---|---|
| | From North | From South | To North | To South |
| AM | 28% | 72% | 59% | 41% |
| PM | 34% | 66% | 57% | 43% |

Based on the above then, Figure 6.1 has been prepared to show estimated marginal increase in turning movements near the subject property following full site development.

**Figure 6.1: AM and PM peak hour site generated traffic volumes**




## 6.3. Traffic Impact

The expected post-development intersection operation for the nearby intersection were assessed in SIDRA Intersection based on existing traffic volumes. The results of this are summarised in Table 6.3 with full results presented in Appendix D.

**Table 6.3: Post-development intersection operating conditions**

| Intersection | Peak | Leg | Approach Name | Degree of Saturation (DoS) | Average Delay (sec) | 95th Percentile Queue (m) | Level of Service (LoS)[1] |
|---|---|---|---|---|---|---|---|
| | AM | South | High Street | 0.45 | 0.8 | 0 | A |
| | | North | High Street | 0.22 | 1 | 1 | A |

| Intersection | Peak | Leg | Approach Name | Degree of Saturation (DoS) | Average Delay (sec) | 95th Percentile Queue (m) | Level of Service (LoS)[1] |
|---|---|---|---|---|---|---|---|
| High Street/ Devonshire Street | | West | Devonshire Street | 0.02 | 12 | 1 | B |
| | | **Overall** | | **0.45** | **1** | **1** | **B** |
| | PM | South | High Street | 0.36 | 1 | 0 | A |
| | | North | High Street | 0.33 | 1 | 1 | A |
| | | West | Devonshire Street | 0.14 | 15 | 2 | B |
| | | **Overall** | | **0.36** | **1** | **2** | **B** |
| High Street/ Albert Street | AM | South | High Street | 0.33 | 1 | 0 | A |
| | | North | High Street | 0.24 | 2 | 2 | A |
| | | West | Albert Street | 0.06 | 10 | 1 | A |
| | | **Overall** | | **0.33** | **1** | **2** | **A** |
| | PM | South | High Street | 0.31 | 1 | 0 | A |
| | | North | High Street | 0.31 | 1 | 1 | A |
| | | West | Albert Street | 0.20 | 10 | 2 | A |
| | | **Overall** | | **0.31** | **1** | **2** | **A** |
| High Street/ Hunter Street/ Victoria Street | AM | South | High Street | 0.52 | 7 | 34 | A |
| | | North-East | Hunter Street | 0.21 | 22 | 8 | B |
| | | North | High Street | 0.34 | 8 | 20 | A |
| | | West | Victoria Street | 0.19 | 23 | 8 | B |
| | | **Overall** | | **0.52** | **10** | **34** | **A** |
| | PM | South | High Street | 0.56 | 8 | 37 | A |
| | | North-East | Hunter Street | 0.27 | 22 | 10 | B |
| | | North | High Street | 0.41 | 8 | 27 | A |
| | | West | Victoria Street | 0.26 | 23 | 11 | B |
| | | **Overall** | | **0.56** | **10** | **37** | **A** |

[1] LOS reported for worst movement for unsignalized intersections.

The expected post-development operation of the Hunter Street, Albert Street and Devonshire Street intersections with High Street will remain generally unchanged and at acceptable levels of service with minimal delay when compared to the existing conditions. It is noted that the intersection of High Street/ Albert Street will operate with slight increases in delays in the PM peak, largely as a result of increased vehicle volumes along the minor approach (Albert Street). However, it is only expected to increase delay on this approach by less than ten seconds, and with 95$^{th}$ percentile queuing increases to be less than one vehicle.

Finally, it should be noted that the pedestrian crossing currently existing along High Street between MRAG and the Town Hall is proposed to remain to provide pedestrian benefit. It is expected that the presence of the pedestrian crossing will continue to affect traffic flows along High Street as it currently does, however, this is only noted to occur when large groups of pedestrians use the crossing. Future upgrades along High Street for pedestrian amenity, including any alterations of the pedestrian crossing, are expected to form part of public domain works by Council. This would assumedly be suitably assessed as part of future development applications.

# 7. CONCLUSION

07

# CONCLUSION

The Maitland Civic Precinct is proposed to be redeveloped to include refurbishment of function spaces such as meeting rooms and the Maitland Town Hall as well as the construction of a new administration building for Council Staff. The existing administration will be retained and leased as office/commercial space.

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

1. The proposed development generates a statutory parking requirement of 237 spaces.
2. The proposed supply of 202 spaces is less than the Maitland DCP requirements, however, based on an empirical assessment of parking uses for the proposed development, will meet the needs of the development.
3. The proposed parking layout is consistent with the dimensional requirements as set out in the Australian/ New Zealand Standard for Off Street Car Parking (AS/NZS2890.1:2004 and AS/NZS2890.6:2009).
4. The provision for bicycle facilities will consist of 11 bicycle parking spaces for staff.
5. The provision of loading will consist of two loading areas to service occasional service requirements for the Town Hall Auditorium and day-to-day requirements of the broader office/ commercial/ meeting room needs.
6. Loading will occur for both loading areas without greatly impacting on other users.
7. The site is expected to generate up to 110 and 86 vehicle movements in the AM and PM peak hours respectively.
8. There is adequate capacity in the surrounding road network to cater for the traffic generated by the proposed development.

# A. SURVEY VOLUMES

A

# COUNT SHEET

| Time | Approach | Movement | Count | Total |
|---|---|---|---|---|
| 8:00-8:15 | High Street (South) | Left | | 1 |
| | | Through | | 75 |
| | | Right | | 14 |
| 8:15-8:30 | High Street (South) | Left | | 1 |
| | | Through | | 138 |
| | | Right | | 12 |

| | | | | |
|---|---|---|---|---|
| 8:30-8:45 | High Street (South) | Left | | 2 |
| | | Through | | 117 |
| | | Right | | 10 |
| 8:45-9:00 | High Street (South) | Left | | 3 |
| | | Through | | 186 |
| | | Right | | 6 |

| Time | Approach | Movement | Count | Total |
|---|---|---|---|---|
| 8:00-8:15 | High Street (North) | Left | | 4 |
| | | Through | | 49 |
| | | Right | | 7 |
| 8:15-8:30 | High Street (North) | Left | | 4 |
| | | Through | | 62 |
| | | Right | | 10 |

| | | | | |
|---|---|---|---|---|
| 8:30-8:45 | High Street (North) | Left | | 5 |
| | | Through | | 74 |
| | | Right | | 5 |
| 8:45-9:00 | High Street (North) | Left | | 1 |
| | | Through | | 81 |
| | | Right | | 13 |

| Time | Approach | Movement | Count | Total |
|---|---|---|---|---|
| 8:00-8:15 | Hunter Street (East) | Left | | 3 |
| | | Through | | 2 |
| | | Right | | 2 |
| 8:15-8:30 | Hunter Street (East) | Left | | 5 |
| | | Through | | 5 |
| | | Right | | 6 |

| | | | | |
|---|---|---|---|---|
| 8:30-8:45 | Hunter Street (East) | Left | | 9 |
| | | Through | | 8 |
| | | Right | | 10 |
| 8:45-9:00 | Hunter Street (East) | Left | | 7 |
| | | Through | | 7 |
| | | Right | | 12 |

| Time | Approach | Movement | Count | Total |
|---|---|---|---|---|
| 8:00-8:15 | Victoria Street (West) | Left | | 7 |
| | | Through | | 4 |
| | | Right | | 6 |
| 8:15-8:30 | Victoria Street (West) | Left | | 7 |
| | | Through | | 11 |
| | | Right | | 17 |

| | | | | |
|---|---|---|---|---|
| 8:30-8:45 | Victoria Street (West) | Left | | 13 |
| | | Through | | 0 |
| | | Right | | 14 |
| 8:45-9:00 | Victoria Street (West) | Left | | 17 |
| | | Through | | 3 |
| | | Right | | 19 |

| Time | Approach | Movement | Count | Total |
|---|---|---|---|---|
| 3:30-3:45 | High Street (South) | Left | | 6 |
| | | Through | | 120 |
| | | Right | | 2 |
| 3:45-4:00 | High Street (South) | Left | | 9 |
| | | Through | | 117 |
| | | Right | | 2 |

| | | | | |
|---|---|---|---|---|
| 4:00-4:15 | High Street (South) | Left | | 8 |
| | | Through | | 131 |
| | | Right | | 4 |
| 4:15-4:30 | High Street (South) | Left | | 7 |
| | | Through | | 153 |
| | | Right | | 6 |

| Time | Approach | Movement | Count | Total |
|---|---|---|---|---|
| 3:30-3:45 | High Street (North) | Left | | 4 |
| | | Through | | 101 |
| | | Right | | 1 |
| 3:45-4:00 | High Street (North) | Left | | 7 |
| | | Through | | 110 |
| | | Right | | 0 |

| | | | | |
|---|---|---|---|---|
| 4:00-4:15 | High Street (North) | Left | | 7 |
| | | Through | | 116 |
| | | Right | | 0 |
| 4:15-4:30 | High Street (North) | Left | | 5 |
| | | Through | | 93 |
| | | Right | | 1 |

| Time | Approach | Movement | Count | Total |
|---|---|---|---|---|
| 3:30-3:45 | Hunter Street (East) | Left | | 13 |
| | | Through | | 4 |
| | | Right | | 10 |
| 3:45-4:00 | Hunter Street (East) | Left | | 8 |
| | | Through | | 1 |
| | | Right | | 13 |

| | | | | |
|---|---|---|---|---|
| 4:00-4:15 | Hunter Street (East) | Left | | 13 |
| | | Through | | 4 |
| | | Right | | 13 |
| 4:15-4:30 | Hunter Street (East) | Left | | 9 |
| | | Through | | 5 |
| | | Right | | 11 |

| Time | Approach | Movement | Count | Total |
|---|---|---|---|---|
| 3:30-3:45 | Victoria Street (West) | Left | | 6 |
| | | Through | | 10 |
| | | Right | | 21 |
| 3:45-4:00 | Victoria Street (West) | Left | | 7 |
| | | Through | | 3 |
| | | Right | | 27 |

| | | | | |
|---|---|---|---|---|
| 4:00-4:15 | Victoria Street (West) | Left | | 3 |
| | | Through | | 7 |
| | | Right | | 9 |
| 4:15-4:30 | Victoria Street (West) | Left | | 4 |
| | | Through | | 4 |
| | | Right | | 16 |

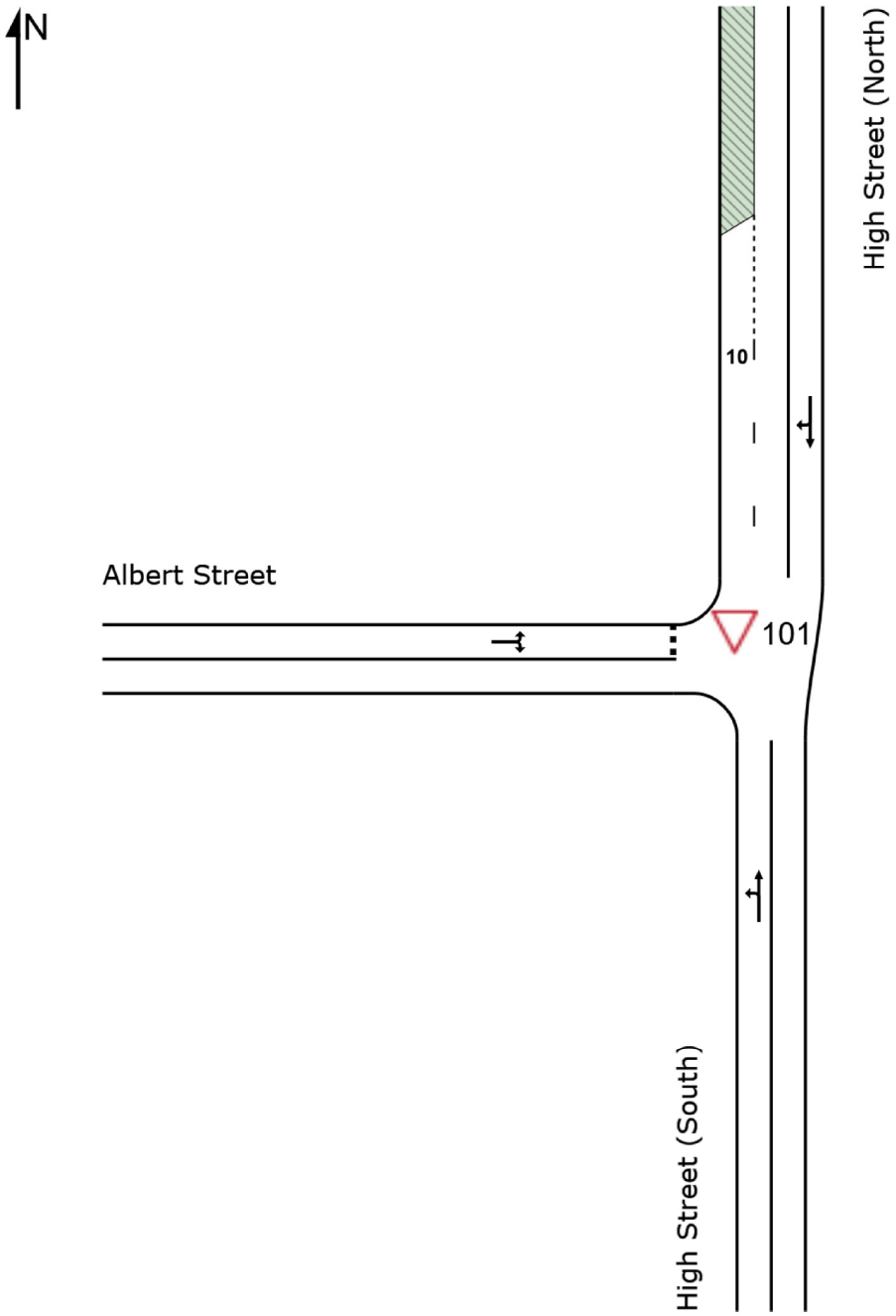
# B. EXISTING CONDITIONS SIDRA INTERSECTION RESULTS

B

# SITE LAYOUT

## Site: 101 [High St_Albert St_Ex_Weekday - AM]

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



# MOVEMENT SUMMARY

## Site: 101 [High St_Albert St_Ex_Weekday - AM]

## Network: N101 [Existing AM Network]

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

**Movement Performance - Vehicles**

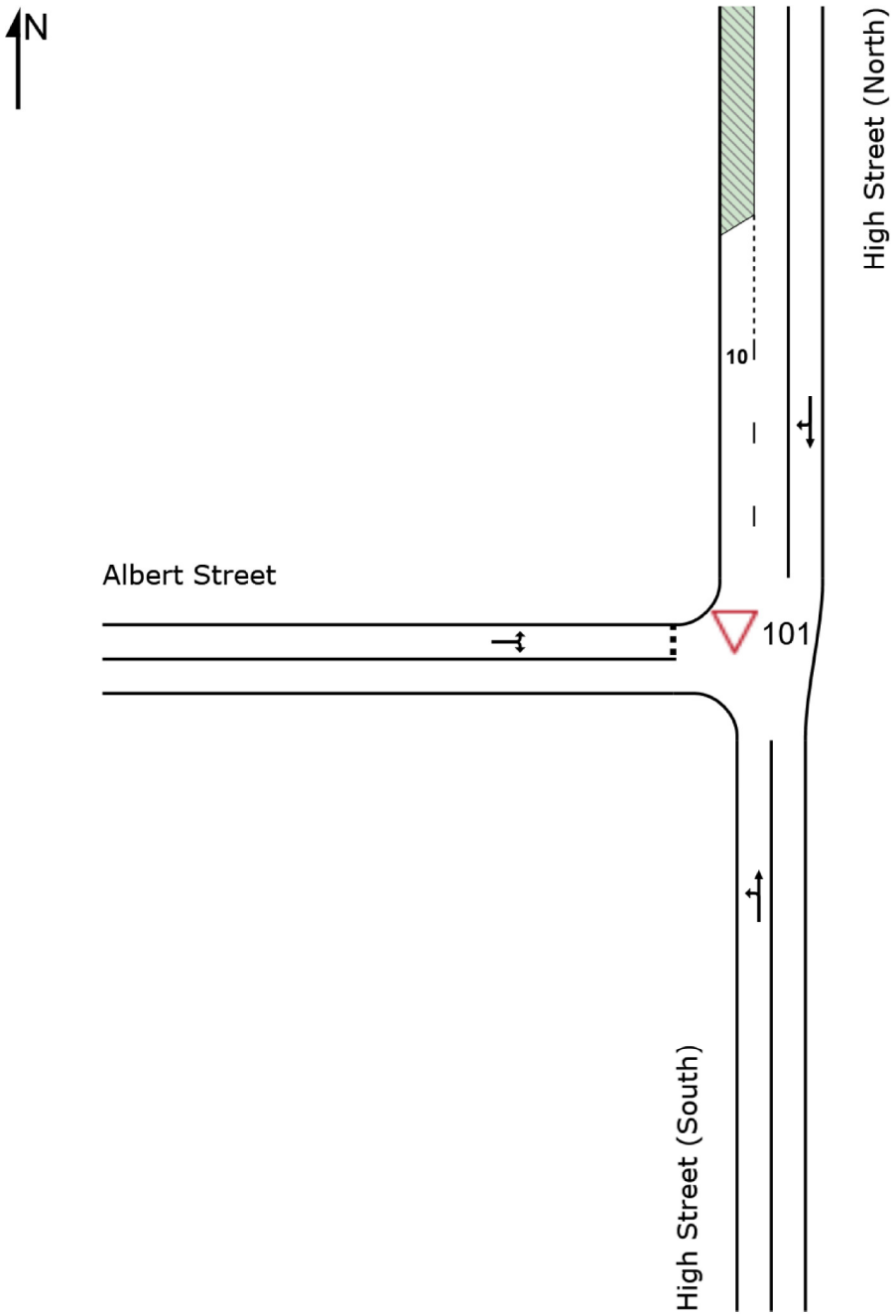
| Mov ID | Turn | Demand Flows Total | HV | Arrival Flows Total | HV | Deg. Satn | Average Delay | Level of Service | Aver. Back of Queue Vehicles | Distance | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | veh/h | % | veh/h | % | v/c | sec | | veh | m | | | | km/h |
| South: High Street (South) | | | | | | | | | | | | | | |
| 1 | L2 | 32 | 2.0 | 32 | 2.0 | 0.316 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.03 | 0.00 | 56.9 |
| 2 | T1 | 564 | 5.0 | 564 | 5.0 | 0.316 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.03 | 0.00 | 58.0 |
| Approach | | 596 | 4.8 | 596 | 4.8 | 0.316 | 0.3 | NA | 0.0 | 0.0 | 0.00 | 0.03 | 0.00 | 57.8 |
| North: High Street (North) | | | | | | | | | | | | | | |
| 8 | T1 | 335 | 5.0 | 335 | 5.0 | 0.211 | 0.5 | LOS A | 0.1 | 1.1 | 0.14 | 0.05 | 0.14 | 45.2 |
| 9 | R2 | 31 | 2.0 | 31 | 2.0 | 0.211 | 7.1 | LOS A | 0.1 | 1.1 | 0.14 | 0.05 | 0.14 | 54.7 |
| Approach | | 365 | 4.7 | 365 | 4.7 | 0.211 | 1.1 | NA | 0.1 | 1.1 | 0.14 | 0.05 | 0.14 | 49.3 |
| West: Albert Street | | | | | | | | | | | | | | |
| 10 | L2 | 13 | 2.0 | 13 | 2.0 | 0.038 | 7.9 | LOS A | 0.0 | 0.3 | 0.54 | 0.74 | 0.54 | 46.2 |
| 12 | R2 | 8 | 2.0 | 8 | 2.0 | 0.038 | 11.2 | LOS A | 0.0 | 0.3 | 0.54 | 0.74 | 0.54 | 46.2 |
| Approach | | 21 | 2.0 | 21 | 2.0 | 0.038 | 9.3 | LOS A | 0.0 | 0.3 | 0.54 | 0.74 | 0.54 | 46.2 |
| All Vehicles | | 982 | 4.7 | 982 | 4.7 | 0.316 | 0.8 | NA | 0.1 | 1.1 | 0.06 | 0.05 | 0.06 | 54.6 |

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# SITE LAYOUT

## Site: 101 [High St_Albert St_Ex_Weekday - PM]

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



# MOVEMENT SUMMARY

## Site: 101 [High St_Albert St_Ex_Weekday - PM]

## Network: N101 [Existing PM Network]

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

**Movement Performance - Vehicles**

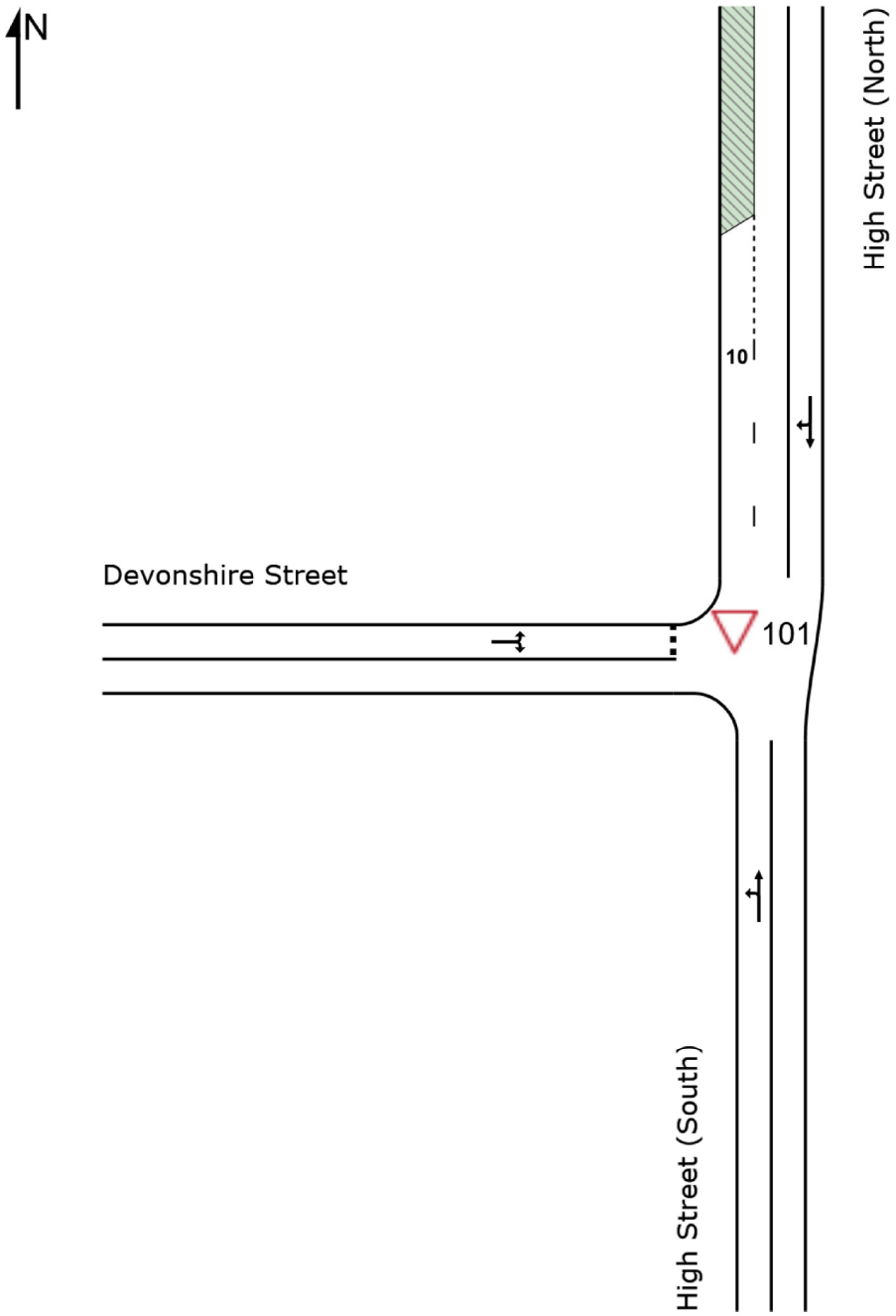
| Mov ID | Turn | Demand Flows Total | HV | Arrival Flows Total | HV | Deg. Satn | Average Delay | Level of Service | Aver. Back of Queue Vehicles | Distance | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | veh/h | % | veh/h | % | v/c | sec | | veh | m | | | | km/h |
| South: High Street (South) | | | | | | | | | | | | | | |
| 1 | L2 | 32 | 2.0 | 32 | 2.0 | 0.308 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.03 | 0.00 | 56.9 |
| 2 | T1 | 549 | 5.0 | 549 | 5.0 | 0.308 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.03 | 0.00 | 57.9 |
| Approach | | 581 | 4.8 | 581 | 4.8 | 0.308 | 0.3 | NA | 0.0 | 0.0 | 0.00 | 0.03 | 0.00 | 57.7 |
| North: High Street (North) | | | | | | | | | | | | | | |
| 8 | T1 | 540 | 5.0 | 540 | 5.0 | 0.306 | 0.3 | LOS A | 0.1 | 0.8 | 0.06 | 0.02 | 0.07 | 52.1 |
| 9 | R2 | 19 | 2.0 | 19 | 2.0 | 0.306 | 7.5 | LOS A | 0.1 | 0.8 | 0.06 | 0.02 | 0.07 | 55.6 |
| Approach | | 559 | 4.9 | 559 | 4.9 | 0.306 | 0.5 | NA | 0.1 | 0.8 | 0.06 | 0.02 | 0.07 | 53.0 |
| West: Albert Street | | | | | | | | | | | | | | |
| 10 | L2 | 35 | 2.0 | 35 | 2.0 | 0.093 | 7.9 | LOS A | 0.1 | 0.7 | 0.56 | 0.76 | 0.56 | 45.8 |
| 12 | R2 | 15 | 2.0 | 15 | 2.0 | 0.093 | 13.3 | LOS A | 0.1 | 0.7 | 0.56 | 0.76 | 0.56 | 45.8 |
| Approach | | 49 | 2.0 | 49 | 2.0 | 0.093 | 9.5 | LOS A | 0.1 | 0.7 | 0.56 | 0.76 | 0.56 | 45.8 |
| All Vehicles | | 1189 | 4.7 | 1189 | 4.7 | 0.308 | 0.8 | NA | 0.1 | 0.8 | 0.05 | 0.06 | 0.06 | 54.4 |

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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# SITE LAYOUT

## Site: 101 [High St_Devonshire St_Ex_Weekday - AM]

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



# MOVEMENT SUMMARY

## Site: 101 [High St_Devonshire St_Ex_Weekday - AM]

## Network: N101 [Existing AM Network]

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

**Movement Performance - Vehicles**

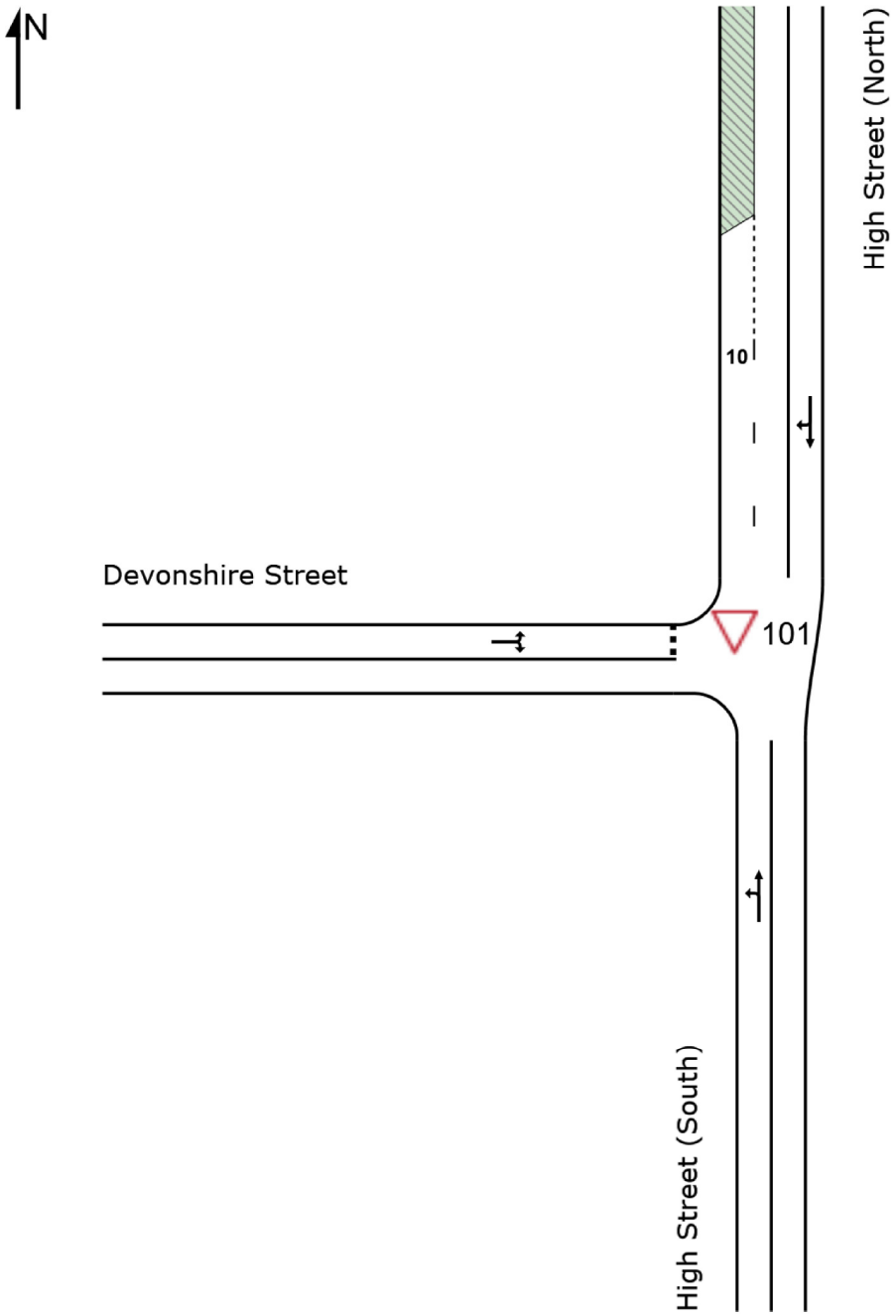
| Mov ID | Turn | Demand Flows Total | HV | Arrival Flows Total | HV | Deg. Satn | Average Delay | Level of Service | Aver. Back of Queue Vehicles | Distance | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | veh/h | % | veh/h | % | v/c | sec | | veh | m | | | | km/h |
| South: High Street (South) | | | | | | | | | | | | | | |
| 1 | L2 | 60 | 2.0 | 60 | 2.0 | 0.408 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.05 | 0.00 | 57.8 |
| 2 | T1 | 708 | 5.0 | 708 | 5.0 | 0.408 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.05 | 0.00 | 59.0 |
| Approach | | 768 | 4.8 | 768 | 4.8 | 0.408 | 0.5 | NA | 0.0 | 0.0 | 0.00 | 0.05 | 0.00 | 58.8 |
| North: High Street (North) | | | | | | | | | | | | | | |
| 8 | T1 | 374 | 5.0 | 374 | 5.0 | 0.205 | 0.2 | LOS A | 0.0 | 0.3 | 0.03 | 0.01 | 0.03 | 59.5 |
| 9 | R2 | 5 | 2.0 | 5 | 2.0 | 0.205 | 11.0 | LOS A | 0.0 | 0.3 | 0.03 | 0.01 | 0.03 | 56.5 |
| Approach | | 379 | 5.0 | 379 | 5.0 | 0.205 | 0.3 | NA | 0.0 | 0.3 | 0.03 | 0.01 | 0.03 | 59.5 |
| West: Devonshire Street | | | | | | | | | | | | | | |
| 10 | L2 | 4 | 2.0 | 4 | 2.0 | 0.016 | 9.0 | LOS A | 0.0 | 0.1 | 0.66 | 0.78 | 0.66 | 43.9 |
| 12 | R2 | 3 | 2.0 | 3 | 2.0 | 0.016 | 14.5 | LOS A | 0.0 | 0.1 | 0.66 | 0.78 | 0.66 | 48.9 |
| Approach | | 7 | 2.0 | 7 | 2.0 | 0.016 | 11.3 | LOS A | 0.0 | 0.1 | 0.66 | 0.78 | 0.66 | 46.7 |
| All Vehicles | | 1155 | 4.8 | 1155 | 4.8 | 0.408 | 0.5 | NA | 0.0 | 0.3 | 0.02 | 0.04 | 0.02 | 58.9 |

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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# SITE LAYOUT

## Site: 101 [High St_Devonshire St_Ex_Weekday - PM]

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



# MOVEMENT SUMMARY

## Site: 101 [High St_Devonshire St_Ex_Weekday - PM]

## Network: N101 [Existing PM Network]

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

**Movement Performance - Vehicles**

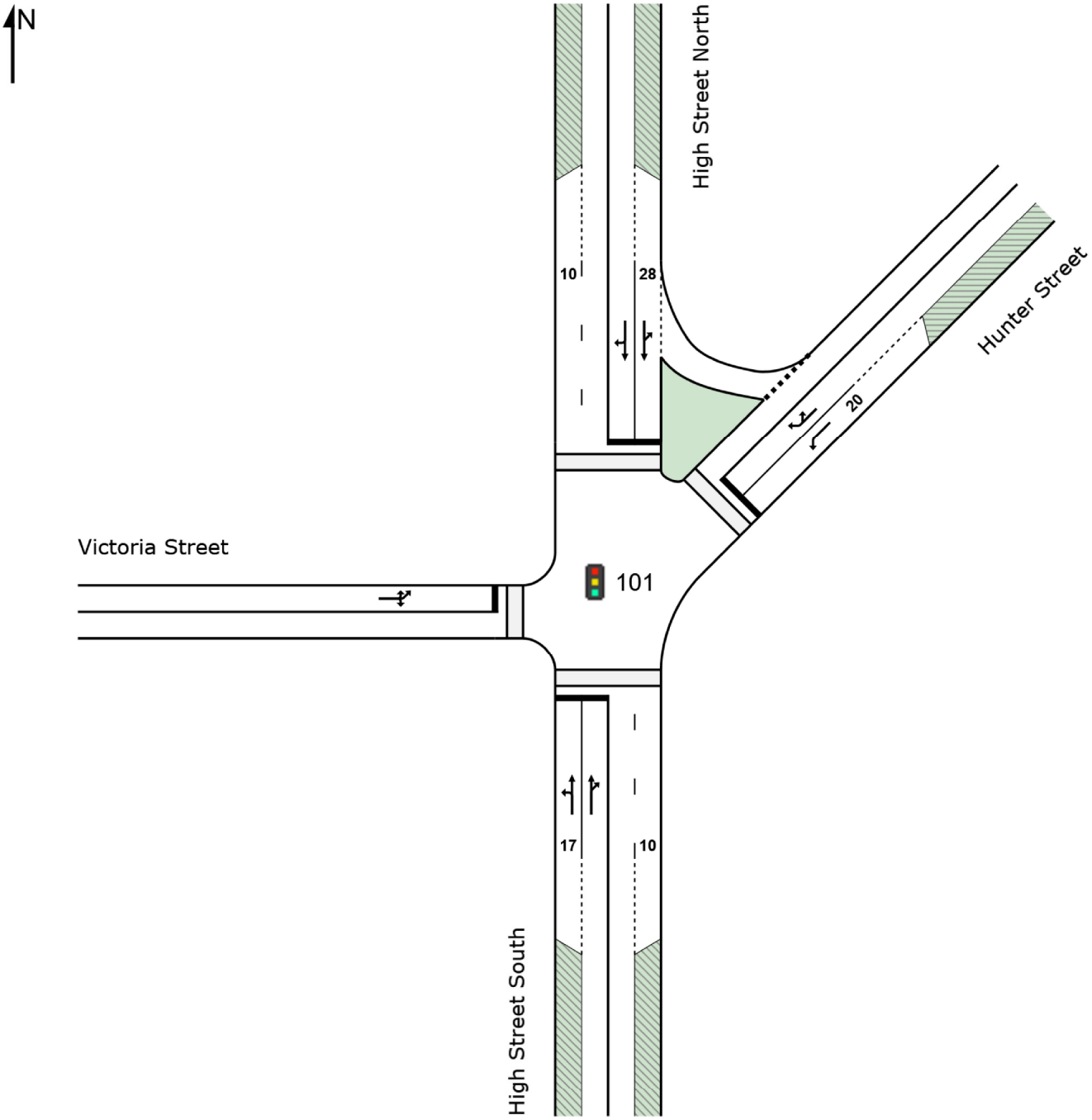
| Mov ID | Turn | Demand Flows Total | HV | Arrival Flows Total | HV | Deg. Satn | Average Delay | Level of Service | Aver. Back of Queue Vehicles | Distance | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | veh/h | % | veh/h | % | v/c | sec | | veh | m | | | | km/h |
| South: High Street (South) | | | | | | | | | | | | | | |
| 1 | L2 | 24 | 2.0 | 24 | 2.0 | 0.353 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.02 | 0.00 | 58.0 |
| 2 | T1 | 642 | 5.0 | 642 | 5.0 | 0.353 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.02 | 0.00 | 59.5 |
| Approach | | 666 | 4.9 | 666 | 4.9 | 0.353 | 0.2 | NA | 0.0 | 0.0 | 0.00 | 0.02 | 0.00 | 59.4 |
| North: High Street (North) | | | | | | | | | | | | | | |
| 8 | T1 | 587 | 5.0 | 587 | 5.0 | 0.319 | 0.1 | LOS A | 0.1 | 0.4 | 0.02 | 0.01 | 0.03 | 59.7 |
| 9 | R2 | 6 | 2.0 | 6 | 2.0 | 0.319 | 10.5 | LOS A | 0.1 | 0.4 | 0.02 | 0.01 | 0.03 | 56.6 |
| Approach | | 594 | 5.0 | 594 | 5.0 | 0.319 | 0.2 | NA | 0.1 | 0.4 | 0.02 | 0.01 | 0.03 | 59.6 |
| West: Devonshire Street | | | | | | | | | | | | | | |
| 10 | L2 | 7 | 2.0 | 7 | 2.0 | 0.070 | 8.5 | LOS A | 0.1 | 0.6 | 0.74 | 0.87 | 0.74 | 41.0 |
| 12 | R2 | 17 | 2.0 | 17 | 2.0 | 0.070 | 16.8 | LOS B | 0.1 | 0.6 | 0.74 | 0.87 | 0.74 | 47.0 |
| Approach | | 24 | 2.0 | 24 | 2.0 | 0.070 | 14.3 | LOS A | 0.1 | 0.6 | 0.74 | 0.87 | 0.74 | 45.8 |
| All Vehicles | | 1284 | 4.9 | 1284 | 4.9 | 0.353 | 0.5 | NA | 0.1 | 0.6 | 0.03 | 0.03 | 0.03 | 59.0 |

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# SITE LAYOUT

## Site: 101 [High St_Hunter St_Ex_Weekday - AM]

New Site
Site Category: (None)
Signals - Fixed Time Isolated



# MOVEMENT SUMMARY

## Site: 101 [High St_Hunter St_Ex_Weekday - AM]

## Network: N101 [Existing AM Network]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 53 seconds (Site User-Given Phase Times)

**Movement Performance - Vehicles**

| Mov ID | Turn | Demand Flows Total veh/h | HV % | Arrival Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | Aver. Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: High Street South | | | | | | | | | | | | | | |
| 1 | L2 | 44 | 2.0 | 44 | 2.0 | 0.102 | 9.3 | LOS A | 0.8 | 5.7 | 0.48 | 0.50 | 0.48 | 40.2 |
| 2 | T1 | 543 | 5.0 | 543 | 5.0 | 0.510 | 7.2 | LOS A | 4.6 | 33.5 | 0.61 | 0.55 | 0.61 | 35.7 |
| 3a | R1 | 7 | 2.0 | 7 | 2.0 | 0.510 | 9.9 | LOS A | 4.6 | 33.5 | 0.63 | 0.55 | 0.63 | 22.2 |
| Approach | | 595 | 4.7 | 595 | 4.7 | 0.510 | 7.4 | LOS A | 4.6 | 33.5 | 0.60 | 0.54 | 0.60 | 36.1 |
| NorthEast: Hunter Street | | | | | | | | | | | | | | |
| 24a | L1 | 46 | 2.0 | 46 | 2.0 | 0.108 | 20.6 | LOS B | 0.6 | 4.3 | 0.82 | 0.70 | 0.82 | 7.4 |
| 26a | R1 | 19 | 2.0 | 19 | 2.0 | 0.207 | 21.1 | LOS B | 1.0 | 7.5 | 0.85 | 0.74 | 0.85 | 29.6 |
| 26b | R3 | 59 | 2.0 | 59 | 2.0 | 0.207 | 22.8 | LOS B | 1.0 | 7.5 | 0.85 | 0.74 | 0.85 | 21.9 |
| Approach | | 124 | 2.0 | 124 | 2.0 | 0.207 | 21.7 | LOS B | 1.0 | 7.5 | 0.84 | 0.73 | 0.84 | 20.1 |
| North: High Street North | | | | | | | | | | | | | | |
| 7b | L3 | 15 | 2.0 | 15 | 2.0 | 0.062 | 8.7 | LOS A | 0.3 | 2.3 | 0.45 | 0.42 | 0.45 | 33.4 |
| 8 | T1 | 280 | 5.0 | 280 | 5.0 | 0.311 | 6.5 | LOS A | 2.4 | 17.1 | 0.56 | 0.51 | 0.56 | 33.9 |
| 9 | R2 | 37 | 2.0 | 37 | 2.0 | 0.311 | 11.8 | LOS A | 2.4 | 17.1 | 0.58 | 0.53 | 0.58 | 41.6 |
| Approach | | 332 | 4.5 | 332 | 4.5 | 0.311 | 7.2 | LOS A | 2.4 | 17.1 | 0.56 | 0.51 | 0.56 | 35.6 |
| West: Victoria Street | | | | | | | | | | | | | | |
| 10 | L2 | 25 | 2.0 | 25 | 2.0 | 0.192 | 23.1 | LOS B | 1.1 | 7.6 | 0.85 | 0.73 | 0.85 | 32.7 |
| 10a | L1 | 23 | 5.0 | 23 | 5.0 | 0.192 | 21.8 | LOS B | 1.1 | 7.6 | 0.85 | 0.73 | 0.85 | 29.0 |
| 12 | R2 | 32 | 2.0 | 32 | 2.0 | 0.192 | 23.1 | LOS B | 1.1 | 7.6 | 0.85 | 0.73 | 0.85 | 28.4 |
| Approach | | 80 | 2.9 | 80 | 2.9 | 0.192 | 22.7 | LOS B | 1.1 | 7.6 | 0.85 | 0.73 | 0.85 | 30.1 |
| All Vehicles | | 1131 | 4.2 | 1131 | 4.2 | 0.510 | 10.0 | LOS A | 4.6 | 33.5 | 0.63 | 0.57 | 0.63 | 33.0 |

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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

**Movement Performance - Pedestrians**

| Mov ID | Description | Demand Flow ped/h | Average Delay sec | Level of Service | Average Back of Queue Pedestrian ped | Distance m | Prop. Queued | Effective Stop Rate |
|---|---|---|---|---|---|---|---|---|
| P1 | South Full Crossing | 53 | 20.9 | LOS C | 0.1 | 0.1 | 0.89 | 0.89 |
| P6 | NorthEast Full Crossing | 53 | 8.5 | LOS A | 0.0 | 0.0 | 0.57 | 0.57 |
| P3 | North Full Crossing | 53 | 20.9 | LOS C | 0.1 | 0.1 | 0.89 | 0.89 |
| P4 | West Full Crossing | 53 | 7.4 | LOS A | 0.0 | 0.0 | 0.53 | 0.53 |
| All Pedestrians | | 211 | 14.4 | LOS B | | | 0.72 | 0.72 |

# PHASING SUMMARY

## Site: 101 [High St_Hunter St_Ex_Weekday - AM]

## Network: N101 [Existing AM Network]

New Site
Site Category: (None)
Signals - Fixed Time Isolated  Cycle Time = 53 seconds (Site User-Given Phase Times)

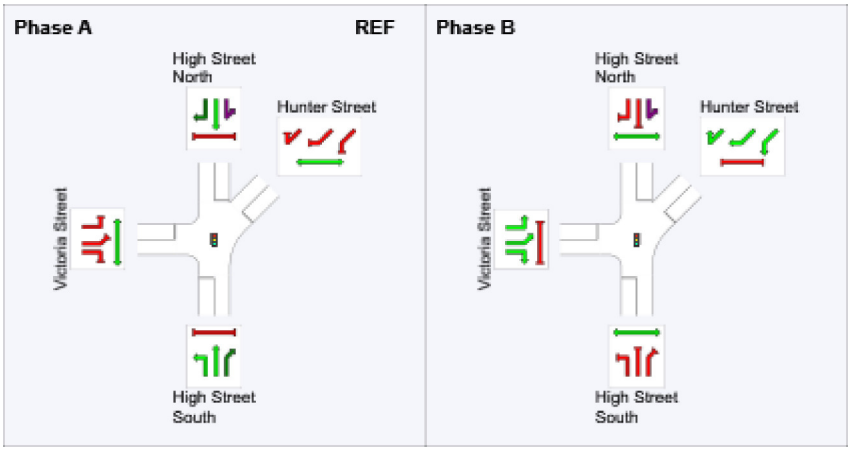
**Timings based on settings in the Site Phasing & Timing dialog**
**Phase Times specified by the user**
**Phase Sequence: Two-Phase**
**Reference Phase: Phase A**
**Input Phase Sequence: A, B**
**Output Phase Sequence: A, B**

### Phase Timing Summary

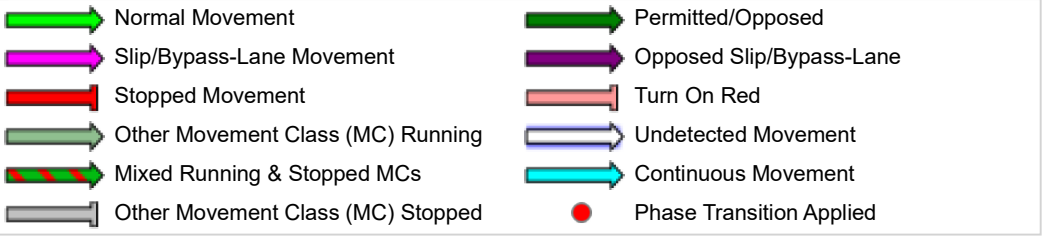
| Phase | A | B |
|---|---|---|
| Phase Change Time (sec) | 0 | 35 |
| Green Time (sec) | 30 | 12 |
| Phase Time (sec) | 36 | 17 |
| Phase Split | 68% | 32% |

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

### Output Phase Sequence



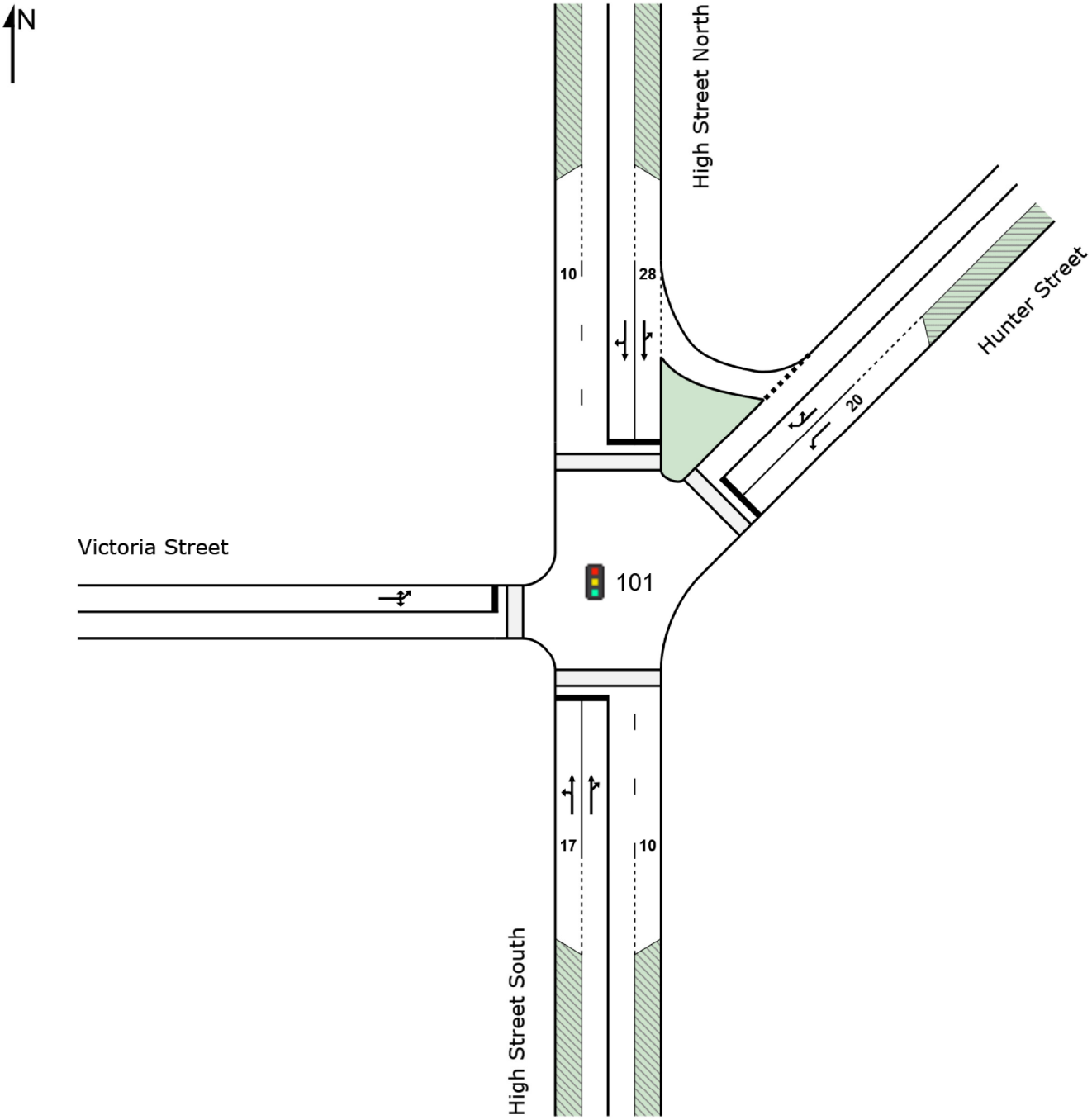

REF: Reference Phase
VAR: Variable Phase



# SITE LAYOUT

## Site: 101 [High St_Hunter St_Ex_Weekday - PM]

New Site
Site Category: (None)
Signals - Fixed Time Isolated



# MOVEMENT SUMMARY

## Site: 101 [High St_Hunter St_Ex_Weekday - PM]

## Network: N101 [Existing PM Network]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 53 seconds (Site User-Given Phase Times)

**Movement Performance - Vehicles**

| Mov ID | Turn | Demand Flows Total | HV | Arrival Flows Total | HV | Deg. Satn | Average Delay | Level of Service | Aver. Back of Queue Vehicles | Distance | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | veh/h | % | veh/h | % | v/c | sec | | veh | m | | | | km/h |
| South: High Street South | | | | | | | | | | | | | | |
| 1 | L2 | 32 | 2.0 | 32 | 2.0 | 0.104 | 9.3 | LOS A | 0.8 | 5.8 | 0.49 | 0.47 | 0.49 | 40.7 |
| 2 | T1 | 548 | 5.0 | 548 | 5.0 | 0.520 | 7.2 | LOS A | 4.6 | 33.6 | 0.61 | 0.55 | 0.61 | 35.7 |
| 3a | R1 | 15 | 2.0 | 15 | 2.0 | 0.520 | 10.0 | LOS A | 4.6 | 33.6 | 0.63 | 0.56 | 0.63 | 22.0 |
| Approach | | 595 | 4.8 | 595 | 4.8 | 0.520 | 7.4 | LOS A | 4.6 | 33.6 | 0.61 | 0.54 | 0.61 | 35.9 |
| NorthEast: Hunter Street | | | | | | | | | | | | | | |
| 24a | L1 | 21 | 2.0 | 21 | 2.0 | 0.049 | 20.2 | LOS B | 0.3 | 1.9 | 0.81 | 0.67 | 0.81 | 7.6 |
| 26a | R1 | 25 | 2.0 | 25 | 2.0 | 0.271 | 21.5 | LOS B | 1.4 | 10.0 | 0.86 | 0.76 | 0.86 | 29.4 |
| 26b | R3 | 77 | 2.0 | 77 | 2.0 | 0.271 | 23.1 | LOS B | 1.4 | 10.0 | 0.86 | 0.76 | 0.86 | 21.7 |
| Approach | | 123 | 2.0 | 123 | 2.0 | 0.271 | 22.3 | LOS B | 1.4 | 10.0 | 0.85 | 0.74 | 0.85 | 22.5 |
| North: High Street North | | | | | | | | | | | | | | |
| 7b | L3 | 2 | 2.0 | 2 | 2.0 | 0.080 | 11.1 | LOS A | 0.6 | 4.2 | 0.48 | 0.39 | 0.59 | 31.7 |
| 8 | T1 | 442 | 5.0 | 442 | 5.0 | 0.398 | 6.8 | LOS A | 3.5 | 25.2 | 0.58 | 0.51 | 0.60 | 34.1 |
| 9 | R2 | 24 | 2.0 | 24 | 2.0 | 0.398 | 11.6 | LOS A | 3.5 | 25.2 | 0.60 | 0.53 | 0.60 | 42.0 |
| Approach | | 468 | 4.8 | 468 | 4.8 | 0.398 | 7.0 | LOS A | 3.5 | 25.2 | 0.58 | 0.51 | 0.60 | 35.0 |
| West: Victoria Street | | | | | | | | | | | | | | |
| 10 | L2 | 45 | 2.0 | 45 | 2.0 | 0.264 | 23.5 | LOS B | 1.5 | 10.6 | 0.86 | 0.75 | 0.86 | 32.4 |
| 10a | L1 | 15 | 5.0 | 15 | 5.0 | 0.264 | 22.2 | LOS B | 1.5 | 10.6 | 0.86 | 0.75 | 0.86 | 28.7 |
| 12 | R2 | 49 | 2.0 | 49 | 2.0 | 0.264 | 23.5 | LOS B | 1.5 | 10.6 | 0.86 | 0.75 | 0.86 | 28.1 |
| Approach | | 109 | 2.4 | 109 | 2.4 | 0.264 | 23.3 | LOS B | 1.5 | 10.6 | 0.86 | 0.75 | 0.86 | 30.2 |
| All Vehicles | | 1296 | 4.3 | 1296 | 4.3 | 0.520 | 10.0 | LOS A | 4.6 | 33.6 | 0.64 | 0.57 | 0.65 | 32.9 |

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

**Movement Performance - Pedestrians**

| Mov ID | Description | Demand Flow ped/h | Average Delay sec | Level of Service | Average Back of Queue Pedestrian ped | Distance m | Prop. Queued | Effective Stop Rate |
|---|---|---|---|---|---|---|---|---|
| P1 | South Full Crossing | 53 | 20.9 | LOS C | 0.1 | 0.1 | 0.89 | 0.89 |
| P6 | NorthEast Full Crossing | 53 | 8.5 | LOS A | 0.0 | 0.0 | 0.57 | 0.57 |
| P3 | North Full Crossing | 53 | 20.9 | LOS C | 0.1 | 0.1 | 0.89 | 0.89 |
| P4 | West Full Crossing | 53 | 7.4 | LOS A | 0.0 | 0.0 | 0.53 | 0.53 |
| All Pedestrians | | 211 | 14.4 | LOS B | | | 0.72 | 0.72 |

# PHASING SUMMARY

## Site: 101 [High St_Hunter St_Ex_Weekday - PM]

## Network: N101 [Existing PM Network]

New Site
Site Category: (None)
Signals - Fixed Time Isolated  Cycle Time = 53 seconds (Site User-Given Phase Times)

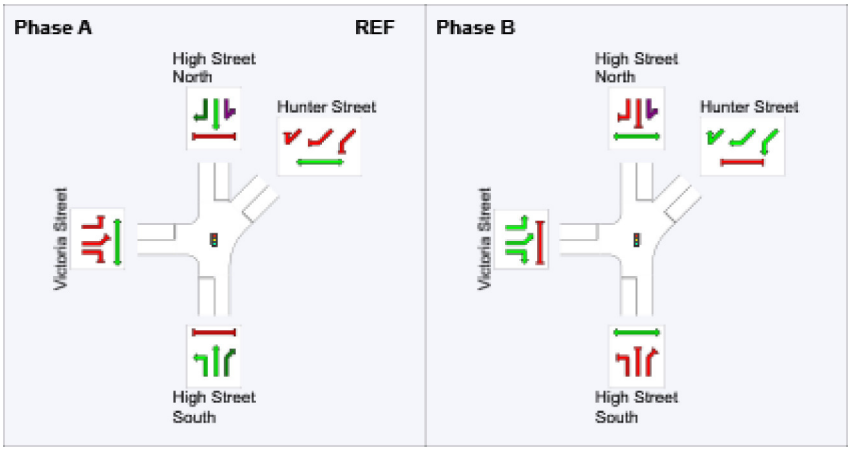
**Timings based on settings in the Site Phasing & Timing dialog**
**Phase Times specified by the user**
**Phase Sequence: Two-Phase**
**Reference Phase: Phase A**
**Input Phase Sequence: A, B**
**Output Phase Sequence: A, B**

### Phase Timing Summary

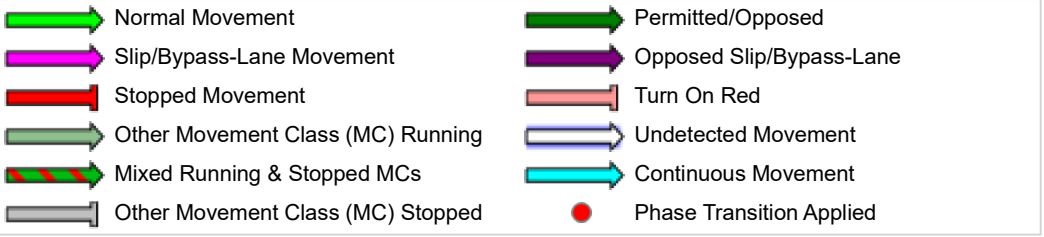
| Phase | A | B |
|---|---|---|
| Phase Change Time (sec) | 0 | 35 |
| Green Time (sec) | 30 | 12 |
| Phase Time (sec) | 36 | 17 |
| Phase Split | 68% | 32% |

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

### Output Phase Sequence

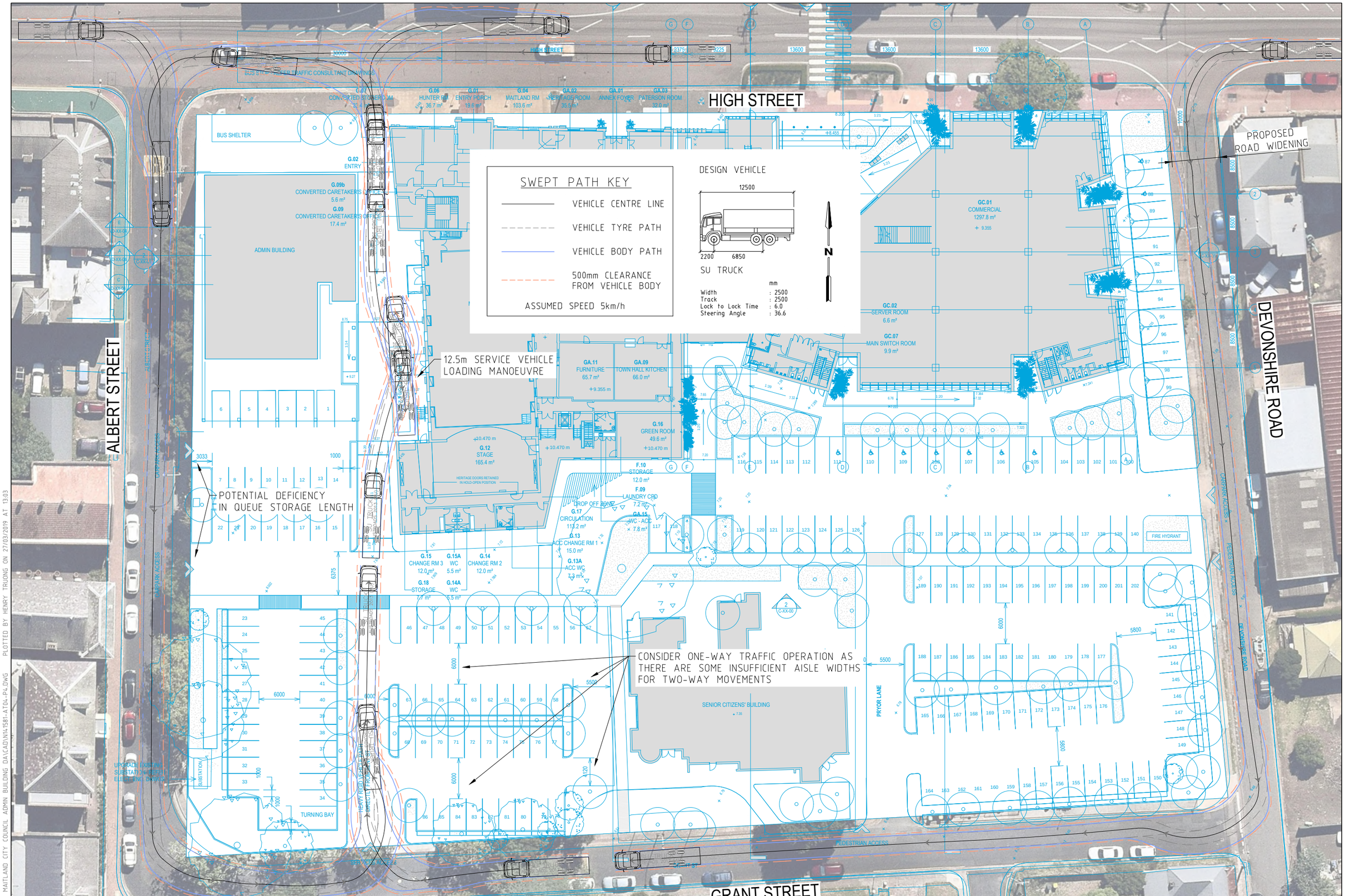



REF: Reference Phase
VAR: Variable Phase



# C. LOADING SWEPT PATH AND PARKING ASSESSMENT

C





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PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY
SUBJECT TO CHANGE WITHOUT NOTIFICATION

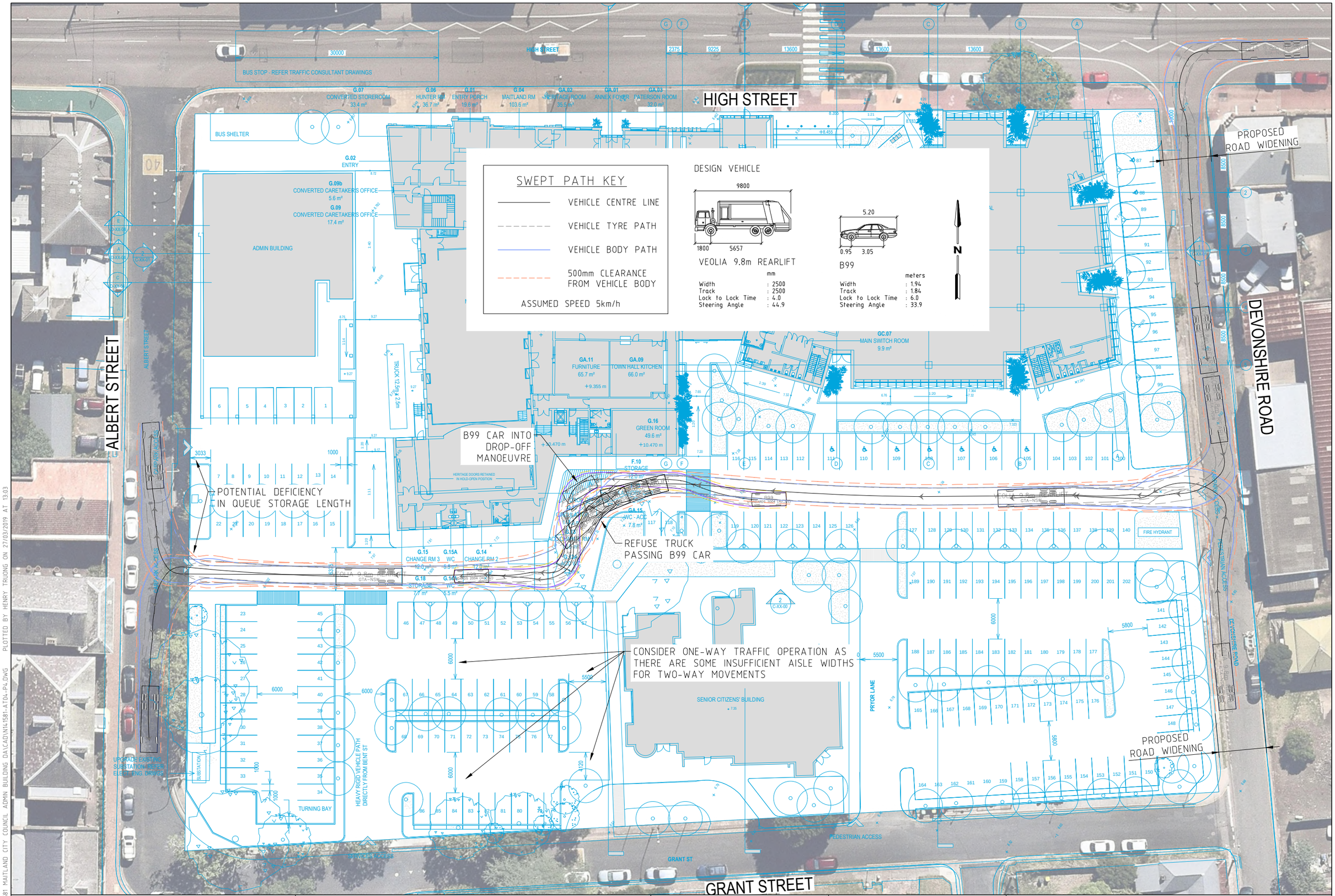
WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

| | |
|---|---|
| DESIGNED | H.TRUONG |
| DESIGN CHECK | O.MAW |
| APPROVED BY | D.CHOI |
| DATE ISSUED | 27 MARCH 2019 |
| CAD FILE NO. | N141581-AT04-P4.DWG |

SCALE A3 0 2.5 5 10 1:500

# MAITLAND CITY COUNCIL ADMIN BUILDING
## SITE WIDE
## SWEPT PATH ASSESSMENT
## 12.5m SINGLE UNIT TRUCK

DRAWING NO. N141581-AT04 SHEET 01 OF 03 ISSUE P4




X:\N14100-14199\N14581 MAITLAND CITY COUNCIL ADMIN BUILDING DA\CAD\N14581-AT04-P4.DWG PLOTTED BY HENRY TRUONG ON 27/03/2019 AT 13:03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Sydney 02 8448 1800
Brisbane 07 3113 5000
Adelaide 08 8334 3600
Perth 08 6169 1000


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PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY
SUBJECT TO CHANGE WITHOUT NOTIFICATION

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

| | |
|---|---|
| DESIGNED H.TRUONG | DESIGN CHECK O.MAW |
| APPROVED BY D.CHOI | DATE ISSUED 27 MARCH 2019 |

SCALE A3 0 2.5 5 10 1:500

CAD FILE NO. N141581-AT04-P4.DWG

# MAITLAND CITY COUNCIL ADMIN BUILDING
## SITE WIDE
## SWEPT PATH ASSESSMENT
## 9.8m REFUSE COLLECTION TRUCK

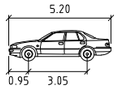
DRAWING NO. N141581-AT04 SHEET 02 OF 03 ISSUE P4

## SWEPT PATH KEY

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 500mm CLEARANCE FROM VEHICLE BODY

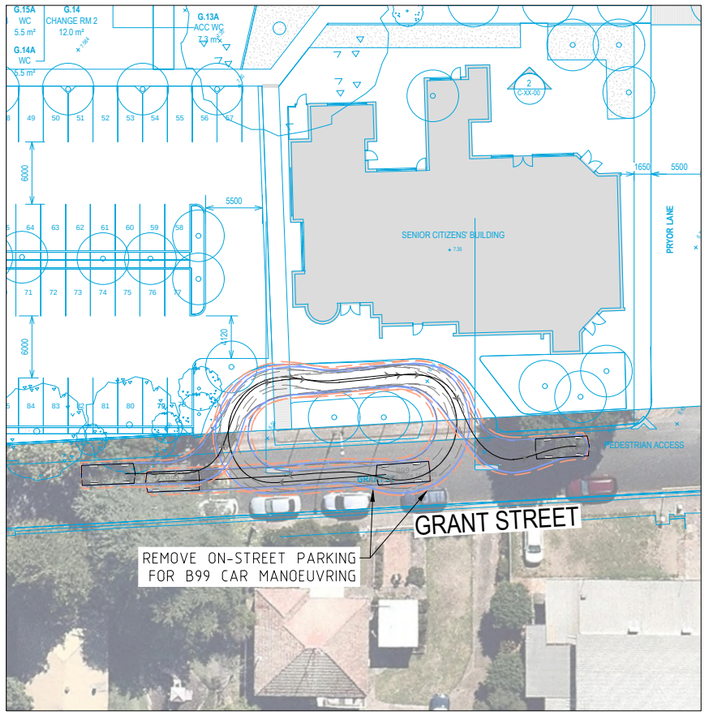
ASSUMED SPEED 5km/h

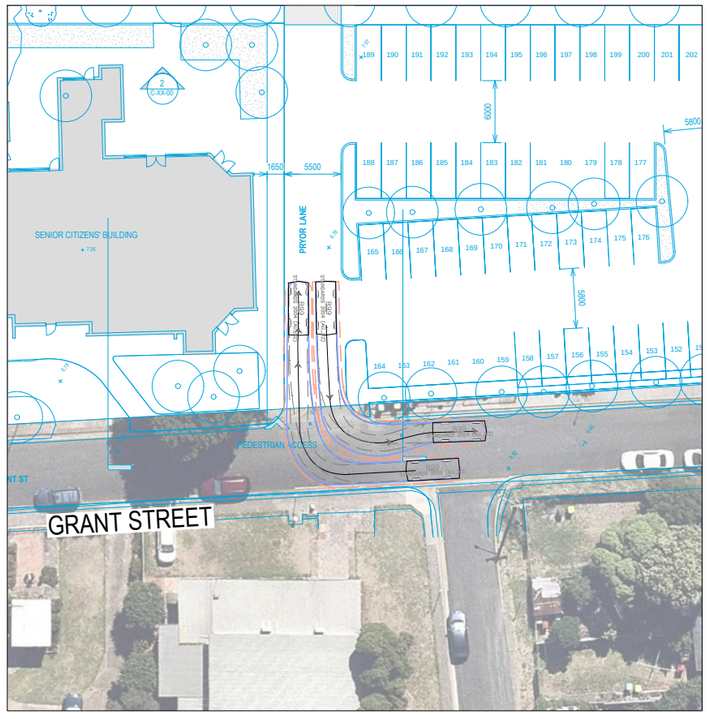
DESIGN VEHICLE

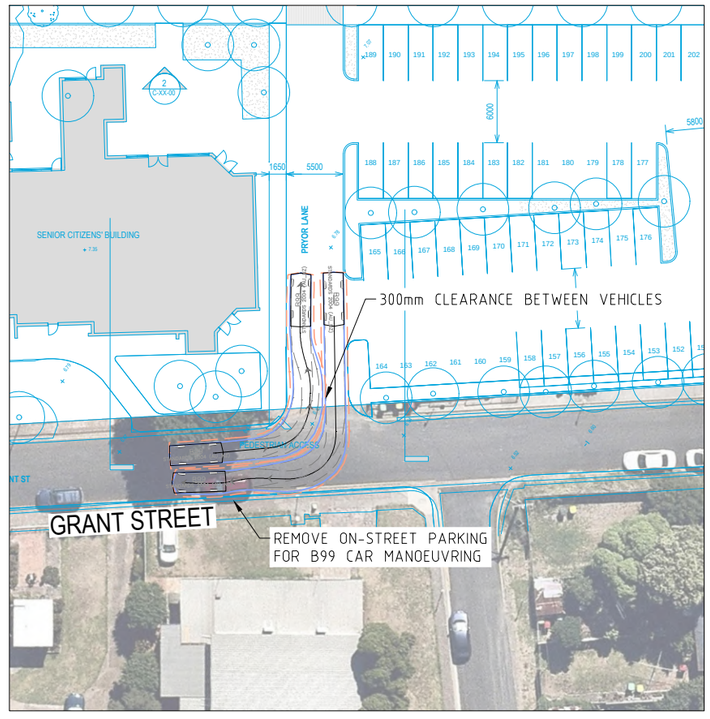



B99

| | meters |
|---|---|
| Width | : 1.94 |
| Track | : 1.84 |
| Lock to Lock Time | : 6.0 |
| Steering Angle | : 33.9 |




GTA consultants
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| | |
|---|---|
| Melbourne | 03 9851 9600 |
| Sydney | 02 8448 1800 |
| Brisbane | 07 3113 5000 |
| Adelaide | 08 8334 3600 |
| Perth | 08 6169 1000 |


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PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY
SUBJECT TO CHANGE WITHOUT NOTIFICATION

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

| | |
|---|---|
| DESIGNED | H.TRUONG |
| DESIGN CHECK | O.MAW |
| APPROVED BY | D.CHOI |
| DATE ISSUED | 27 MARCH 2019 |
| SCALE | A3 — 0 1.25 2.5 5 — 1:250 |
| CAD FILE NO. | N141581-AT04-P4.DWG |

MAITLAND CITY COUNCIL ADMIN BUILDING
SITE WIDE
SWEPT PATH ASSESSMENT
B99 LARGE CAR

DRAWING NO. N141581-AT04 SHEET 02 OF 03 ISSUE P4

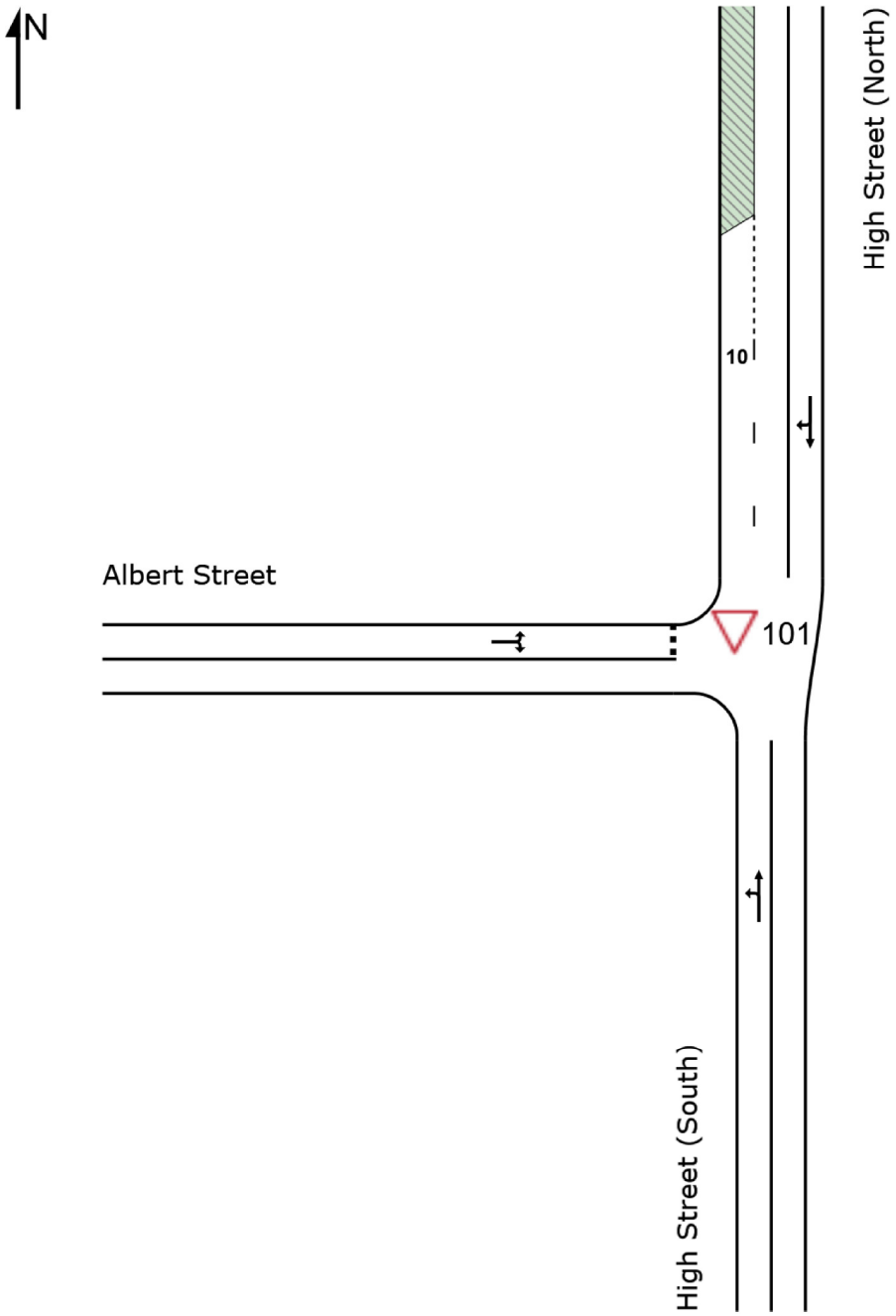
# D. POST-DEVELOPMENT SIDRA INTERSECTION RESULTS

D

# SITE LAYOUT

## Site: 101 [High St_Albert St_Post-dev_Weekday - AM - Import]

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



# MOVEMENT SUMMARY

## Site: 101 [High St_Albert St_Post-dev_Weekday - AM - Import]

## Network: N101 [Post-Dev Network AM Peak]

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

**Movement Performance - Vehicles**

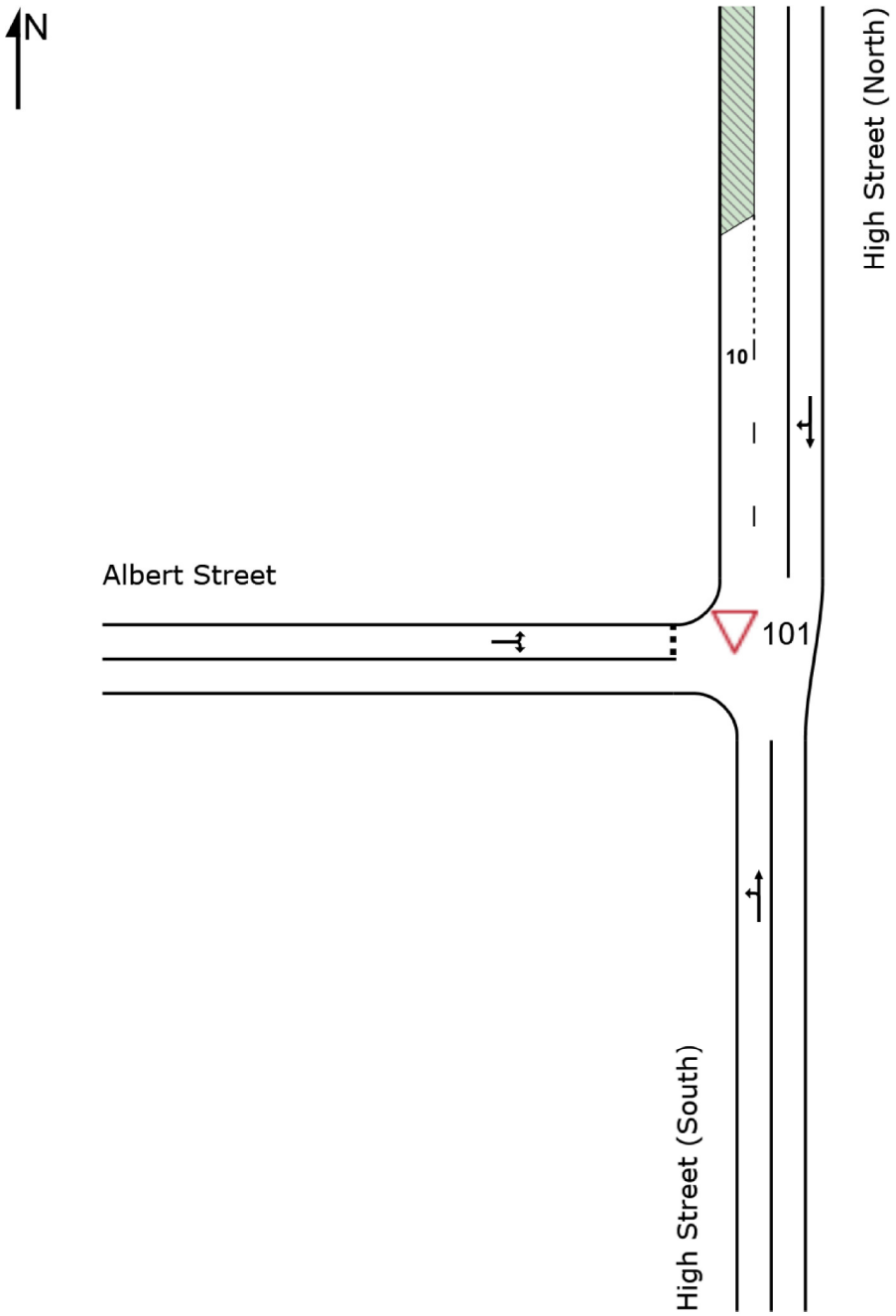
| Mov ID | Turn | Demand Flows Total | HV | Arrival Flows Total | HV | Deg. Satn | Average Delay | Level of Service | Aver. Back of Queue Vehicles | Distance | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | veh/h | % | veh/h | % | v/c | sec | | veh | m | | | | km/h |
| South: High Street (South) | | | | | | | | | | | | | | |
| 1 | L2 | 58 | 2.0 | 58 | 2.0 | 0.331 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.06 | 0.00 | 56.5 |
| 2 | T1 | 566 | 5.0 | 566 | 5.0 | 0.331 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.06 | 0.00 | 56.6 |
| Approach | | 624 | 4.7 | 624 | 4.7 | 0.331 | 0.5 | NA | 0.0 | 0.0 | 0.00 | 0.06 | 0.00 | 56.6 |
| North: High Street (North) | | | | | | | | | | | | | | |
| 8 | T1 | 339 | 5.0 | 339 | 5.0 | 0.244 | 1.0 | LOS A | 0.3 | 2.0 | 0.24 | 0.10 | 0.24 | 37.8 |
| 9 | R2 | 56 | 2.0 | 56 | 2.0 | 0.244 | 7.4 | LOS A | 0.3 | 2.0 | 0.24 | 0.10 | 0.24 | 53.5 |
| Approach | | 395 | 4.6 | 395 | 4.6 | 0.244 | 1.9 | NA | 0.3 | 2.0 | 0.24 | 0.10 | 0.24 | 46.2 |
| West: Albert Street | | | | | | | | | | | | | | |
| 10 | L2 | 18 | 2.0 | 18 | 2.0 | 0.056 | 8.0 | LOS A | 0.1 | 0.4 | 0.55 | 0.76 | 0.55 | 45.9 |
| 12 | R2 | 12 | 2.0 | 12 | 2.0 | 0.056 | 11.8 | LOS A | 0.1 | 0.4 | 0.55 | 0.76 | 0.55 | 45.9 |
| Approach | | 29 | 2.0 | 29 | 2.0 | 0.056 | 9.5 | LOS A | 0.1 | 0.4 | 0.55 | 0.76 | 0.55 | 45.9 |
| All Vehicles | | 1048 | 4.6 | 1048 | 4.6 | 0.331 | 1.3 | NA | 0.3 | 2.0 | 0.11 | 0.09 | 0.11 | 52.5 |

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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# SITE LAYOUT

## Site: 101 [High St_Albert St_Post-dev_Weekday - PM - Import]

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



# MOVEMENT SUMMARY

## Site: 101 [High St_Albert St_Post-dev_Weekday - PM - Import]

## Network: N101 [Post-Dev Network PM Peak]

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

**Movement Performance - Vehicles**

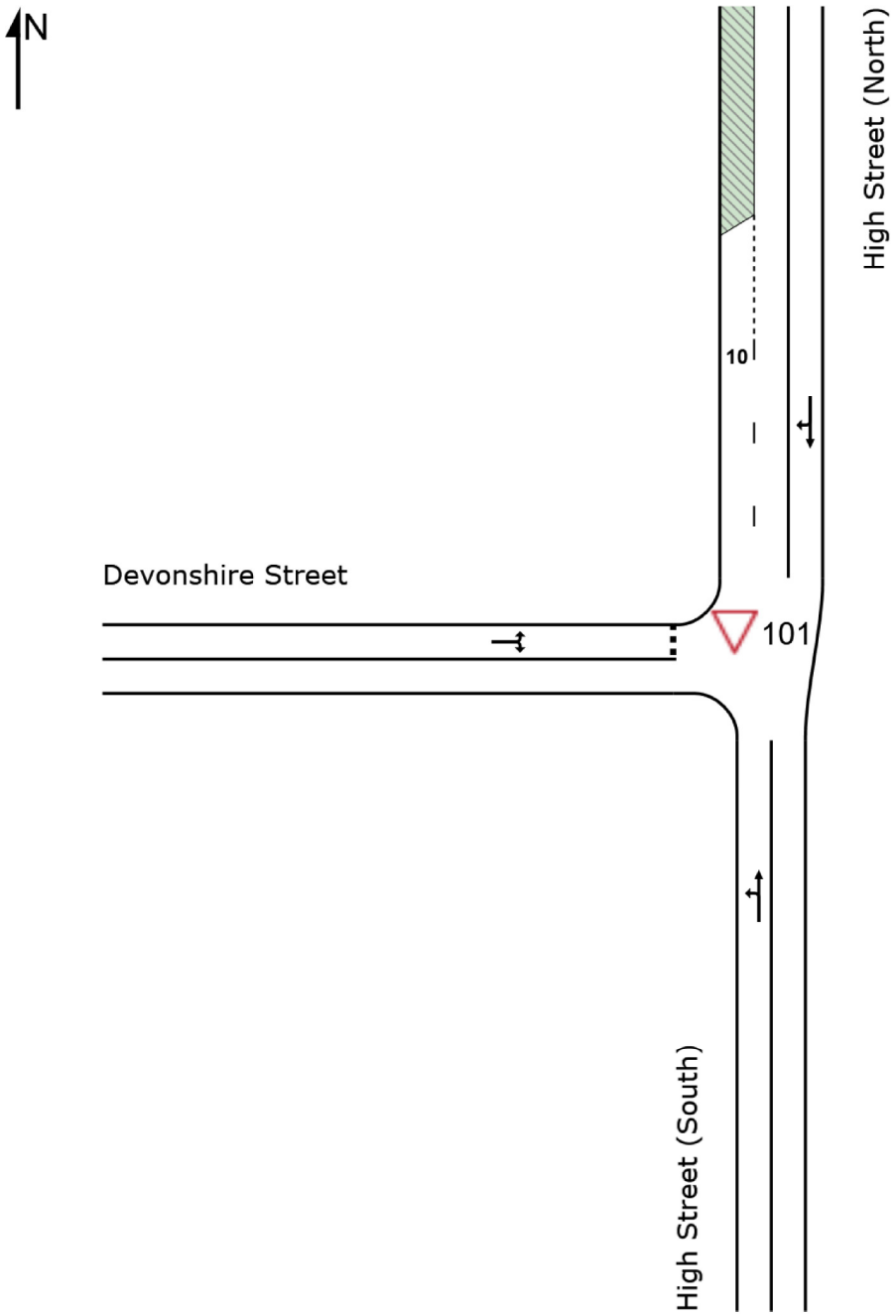
| Mov ID | Turn | Demand Flows Total | HV | Arrival Flows Total | HV | Deg. Satn | Average Delay | Level of Service | Aver. Back of Queue Vehicles | Distance | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | veh/h | % | veh/h | % | v/c | sec | | veh | m | | | | km/h |
| South: High Street (South) | | | | | | | | | | | | | | |
| 1 | L2 | 31 | 2.0 | 31 | 2.0 | 0.312 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.03 | 0.00 | 56.9 |
| 2 | T1 | 557 | 5.0 | 557 | 5.0 | 0.312 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.03 | 0.00 | 58.0 |
| Approach | | 587 | 4.8 | 587 | 4.8 | 0.312 | 0.3 | NA | 0.0 | 0.0 | 0.00 | 0.03 | 0.00 | 57.8 |
| North: High Street (North) | | | | | | | | | | | | | | |
| 8 | T1 | 541 | 5.0 | 541 | 5.0 | 0.312 | 0.3 | LOS A | 0.1 | 1.0 | 0.08 | 0.03 | 0.09 | 50.5 |
| 9 | R2 | 23 | 2.0 | 23 | 2.0 | 0.312 | 7.6 | LOS A | 0.1 | 1.0 | 0.08 | 0.03 | 0.09 | 55.4 |
| Approach | | 564 | 4.9 | 564 | 4.9 | 0.312 | 0.6 | NA | 0.1 | 1.0 | 0.08 | 0.03 | 0.09 | 51.9 |
| West: Albert Street | | | | | | | | | | | | | | |
| 10 | L2 | 67 | 2.0 | 67 | 2.0 | 0.198 | 8.1 | LOS A | 0.2 | 1.5 | 0.58 | 0.80 | 0.58 | 45.5 |
| 12 | R2 | 28 | 2.0 | 28 | 2.0 | 0.198 | 13.9 | LOS A | 0.2 | 1.5 | 0.58 | 0.80 | 0.58 | 45.5 |
| Approach | | 96 | 2.0 | 96 | 2.0 | 0.198 | 9.8 | LOS A | 0.2 | 1.5 | 0.58 | 0.80 | 0.58 | 45.5 |
| All Vehicles | | 1247 | 4.6 | 1247 | 4.6 | 0.312 | 1.2 | NA | 0.2 | 1.5 | 0.08 | 0.09 | 0.08 | 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# SITE LAYOUT

## Site: 101 [High St_Devonshire St_Post-dev_Weekday - AM - Import]

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





Organisation: GTA CONSULTANTS | Created: Wednesday, 27 March 2019 2:12:15 PM
Project: \\gta.com.au\projectfiles\ProjectFilesSyd\N14100-14199\N141581 Maitland City Council Admin Building DA\Modelling\190327sid-N141581-Maitland Admin Building DA-Post Dev.sip8

# MOVEMENT SUMMARY

## Site: 101 [High St_Devonshire St_Post-dev_Weekday - AM - Import]

## Network: N101 [Post-Dev Network AM Peak]

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

**Movement Performance - Vehicles**

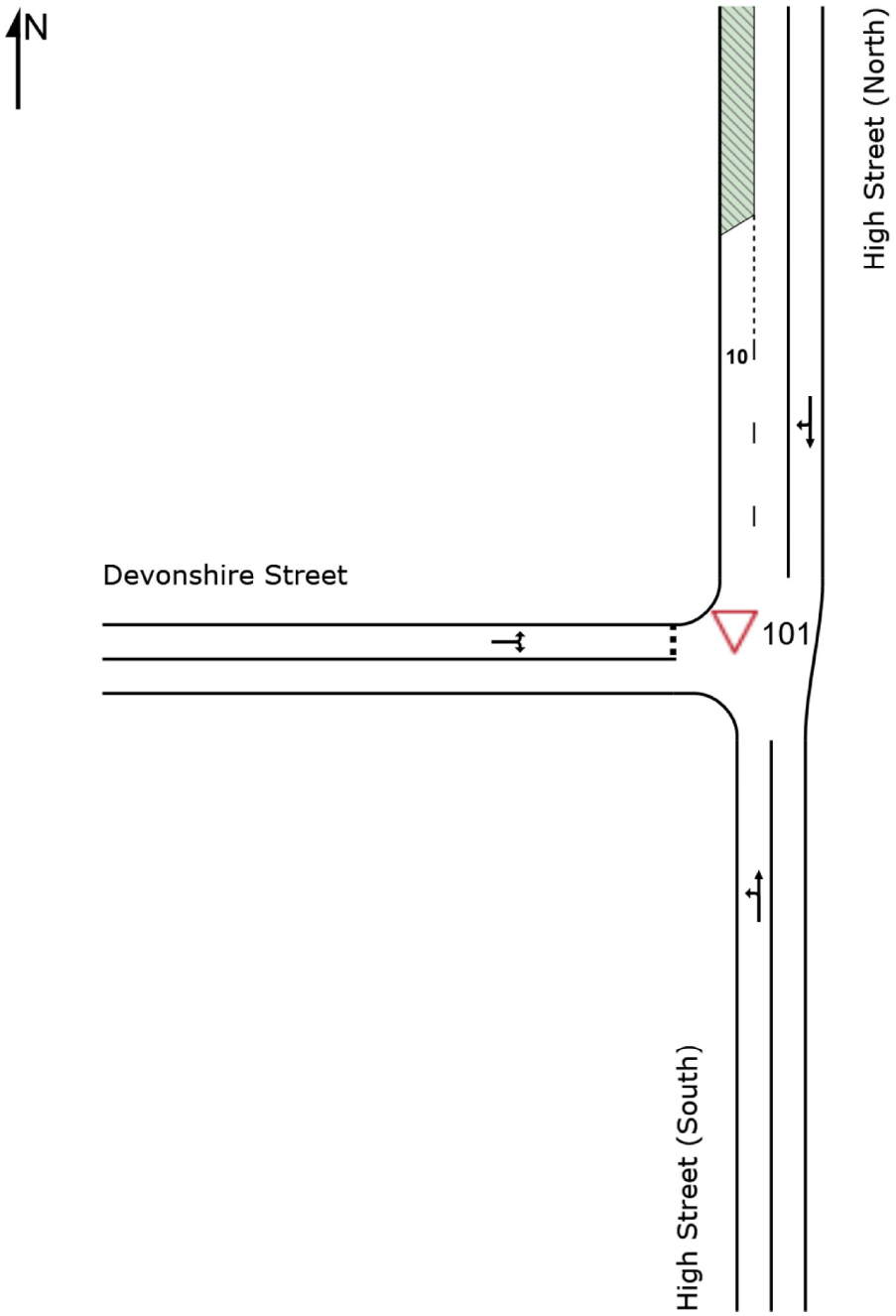
| Mov ID | Turn | Demand Flows Total | HV | Arrival Flows Total | HV | Deg. Satn | Average Delay | Level of Service | Aver. Back of Queue Vehicles | Distance | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | veh/h | % | veh/h | % | v/c | sec | | veh | m | | | | km/h |
| South: High Street (South) | | | | | | | | | | | | | | |
| 1 | L2 | 109 | 2.0 | 109 | 2.0 | 0.449 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.08 | 0.00 | 57.5 |
| 2 | T1 | 735 | 5.0 | 735 | 5.0 | 0.449 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.08 | 0.00 | 58.5 |
| Approach | | 844 | 4.6 | 844 | 4.6 | 0.449 | 0.8 | NA | 0.0 | 0.0 | 0.00 | 0.08 | 0.00 | 58.2 |
| North: High Street (North) | | | | | | | | | | | | | | |
| 8 | T1 | 377 | 5.0 | 377 | 5.0 | 0.217 | 0.4 | LOS A | 0.1 | 0.8 | 0.07 | 0.02 | 0.08 | 58.8 |
| 9 | R2 | 11 | 2.0 | 11 | 2.0 | 0.217 | 12.3 | LOS A | 0.1 | 0.8 | 0.07 | 0.02 | 0.08 | 55.9 |
| Approach | | 387 | 4.9 | 387 | 4.9 | 0.217 | 0.8 | NA | 0.1 | 0.8 | 0.07 | 0.02 | 0.08 | 58.8 |
| West: Devonshire Street | | | | | | | | | | | | | | |
| 10 | L2 | 6 | 2.0 | 6 | 2.0 | 0.024 | 9.3 | LOS A | 0.0 | 0.2 | 0.68 | 0.81 | 0.68 | 43.3 |
| 12 | R2 | 4 | 2.0 | 4 | 2.0 | 0.024 | 15.9 | LOS B | 0.0 | 0.2 | 0.68 | 0.81 | 0.68 | 48.5 |
| Approach | | 11 | 2.0 | 11 | 2.0 | 0.024 | 11.9 | LOS A | 0.0 | 0.2 | 0.68 | 0.81 | 0.68 | 46.1 |
| All Vehicles | | 1242 | 4.7 | 1242 | 4.7 | 0.449 | 0.9 | NA | 0.1 | 0.8 | 0.03 | 0.06 | 0.03 | 58.3 |

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# SITE LAYOUT

## Site: 101 [High St_Devonshire St_Post-dev_Weekday - PM - Import]

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



# MOVEMENT SUMMARY

## Site: 101 [High St_Devonshire St_Post-dev_Weekday - PM - Import]

## Network: N101 [Post-Dev Network PM Peak]

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

**Movement Performance - Vehicles**

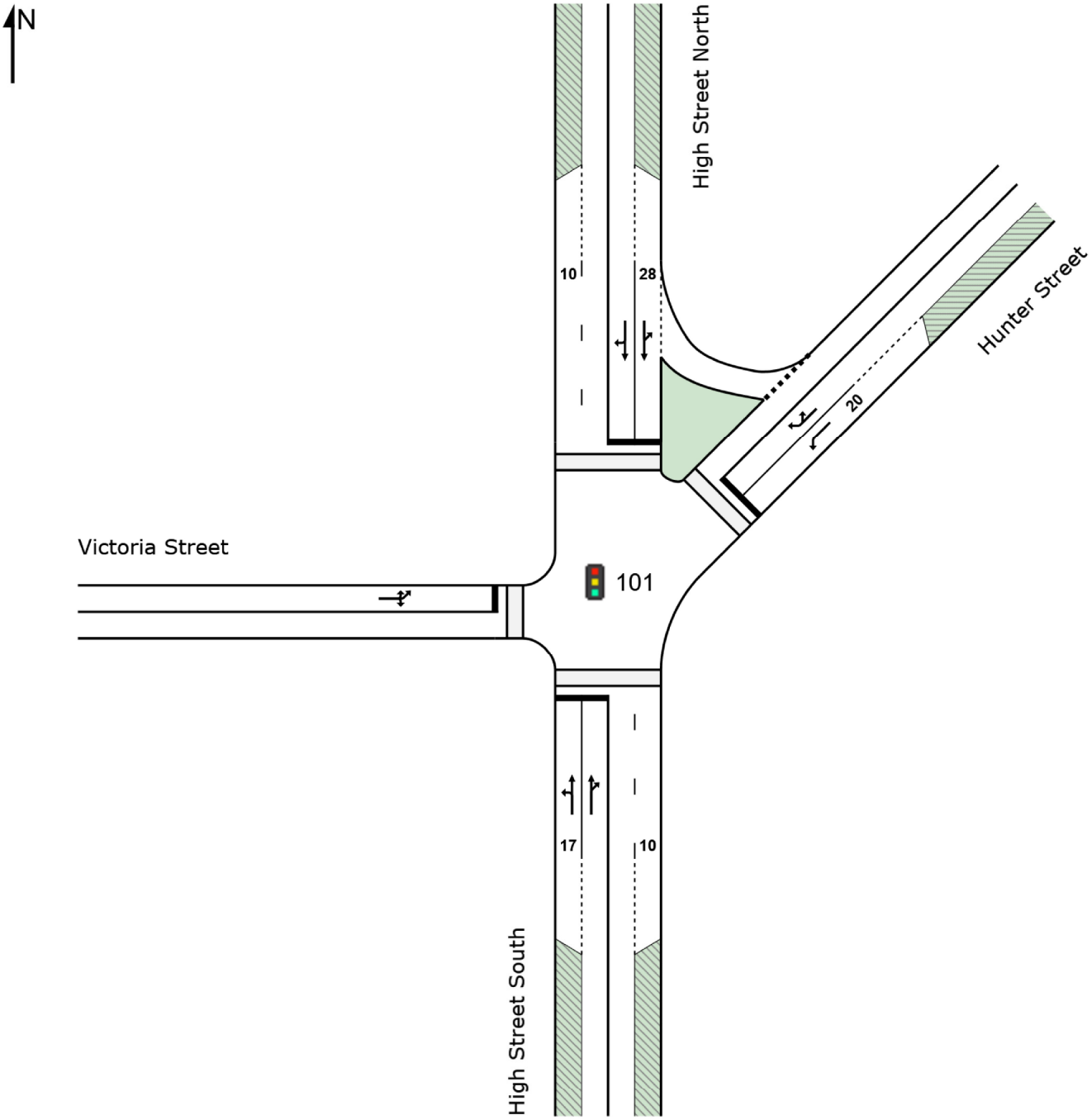
| Mov ID | Turn | Demand Flows Total | HV | Arrival Flows Total | HV | Deg. Satn | Average Delay | Level of Service | Aver. Back of Queue Vehicles | Distance | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | veh/h | % | veh/h | % | v/c | sec | | veh | m | | | | km/h |
| South: High Street (South) | | | | | | | | | | | | | | |
| 1 | L2 | 31 | 2.0 | 31 | 2.0 | 0.359 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.03 | 0.00 | 57.9 |
| 2 | T1 | 647 | 5.0 | 647 | 5.0 | 0.359 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.03 | 0.00 | 59.4 |
| Approach | | 678 | 4.9 | 678 | 4.9 | 0.359 | 0.3 | NA | 0.0 | 0.0 | 0.00 | 0.03 | 0.00 | 59.3 |
| North: High Street (North) | | | | | | | | | | | | | | |
| 8 | T1 | 601 | 5.0 | 601 | 5.0 | 0.329 | 0.2 | LOS A | 0.1 | 0.6 | 0.03 | 0.01 | 0.04 | 59.5 |
| 9 | R2 | 8 | 2.0 | 8 | 2.0 | 0.329 | 10.7 | LOS A | 0.1 | 0.6 | 0.03 | 0.01 | 0.04 | 56.5 |
| Approach | | 609 | 5.0 | 609 | 5.0 | 0.329 | 0.3 | NA | 0.1 | 0.6 | 0.03 | 0.01 | 0.04 | 59.5 |
| West: Devonshire Street | | | | | | | | | | | | | | |
| 10 | L2 | 15 | 2.0 | 15 | 2.0 | 0.142 | 8.7 | LOS A | 0.2 | 1.2 | 0.76 | 0.89 | 0.76 | 40.4 |
| 12 | R2 | 33 | 2.0 | 33 | 2.0 | 0.142 | 17.7 | LOS B | 0.2 | 1.2 | 0.76 | 0.89 | 0.76 | 46.7 |
| Approach | | 47 | 2.0 | 47 | 2.0 | 0.142 | 14.9 | LOS B | 0.2 | 1.2 | 0.76 | 0.89 | 0.76 | 45.4 |
| All Vehicles | | 1335 | 4.8 | 1335 | 4.8 | 0.359 | 0.8 | NA | 0.2 | 1.2 | 0.04 | 0.05 | 0.05 | 58.5 |

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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# SITE LAYOUT

## Site: 101 [High St_Hunter St_Post_Weekday - AM]

New Site
Site Category: (None)
Signals - Fixed Time Isolated



# MOVEMENT SUMMARY

## Site: 101 [High St_Hunter St_Post_Weekday - AM]

## Network: N101 [Post-Dev Network AM Peak]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 53 seconds (Site User-Given Phase Times)

**Movement Performance - Vehicles**

| Mov ID | Turn | Demand Flows Total | HV | Arrival Flows Total | HV | Deg. Satn | Average Delay | Level of Service | Aver. Back of Queue Vehicles | Distance | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | veh/h | % | veh/h | % | v/c | sec | | veh | m | | | | km/h |
| South: High Street South | | | | | | | | | | | | | | |
| 1 | L2 | 44 | 2.0 | 44 | 2.0 | 0.104 | 9.3 | LOS A | 0.8 | 5.8 | 0.49 | 0.50 | 0.49 | 40.3 |
| 2 | T1 | 551 | 5.0 | 551 | 5.0 | 0.518 | 7.2 | LOS A | 4.7 | 34.0 | 0.61 | 0.55 | 0.61 | 35.6 |
| 3a | R1 | 7 | 2.0 | 7 | 2.0 | 0.518 | 10.0 | LOS A | 4.7 | 34.0 | 0.63 | 0.56 | 0.63 | 22.1 |
| Approach | | 602 | 4.7 | 602 | 4.7 | 0.518 | 7.4 | LOS A | 4.7 | 34.0 | 0.61 | 0.55 | 0.61 | 36.1 |
| NorthEast: Hunter Street | | | | | | | | | | | | | | |
| 24a | L1 | 46 | 2.0 | 46 | 2.0 | 0.108 | 20.6 | LOS B | 0.6 | 4.3 | 0.82 | 0.70 | 0.82 | 7.4 |
| 26a | R1 | 19 | 2.0 | 19 | 2.0 | 0.207 | 21.1 | LOS B | 1.0 | 7.5 | 0.85 | 0.74 | 0.85 | 29.6 |
| 26b | R3 | 59 | 2.0 | 59 | 2.0 | 0.207 | 22.8 | LOS B | 1.0 | 7.5 | 0.85 | 0.74 | 0.85 | 21.9 |
| Approach | | 124 | 2.0 | 124 | 2.0 | 0.207 | 21.7 | LOS B | 1.0 | 7.5 | 0.84 | 0.73 | 0.84 | 20.1 |
| North: High Street North | | | | | | | | | | | | | | |
| 7b | L3 | 15 | 2.0 | 15 | 2.0 | 0.067 | 8.8 | LOS A | 0.3 | 2.5 | 0.46 | 0.42 | 0.46 | 33.4 |
| 8 | T1 | 309 | 5.0 | 309 | 5.0 | 0.336 | 7.0 | LOS A | 2.7 | 19.6 | 0.58 | 0.53 | 0.58 | 33.1 |
| 9 | R2 | 37 | 2.0 | 37 | 2.0 | 0.336 | 12.4 | LOS A | 2.7 | 19.6 | 0.61 | 0.55 | 0.61 | 41.1 |
| Approach | | 361 | 4.6 | 361 | 4.6 | 0.336 | 7.7 | LOS A | 2.7 | 19.6 | 0.58 | 0.52 | 0.58 | 34.8 |
| West: Victoria Street | | | | | | | | | | | | | | |
| 10 | L2 | 25 | 2.0 | 25 | 2.0 | 0.192 | 23.1 | LOS B | 1.1 | 7.6 | 0.85 | 0.73 | 0.85 | 32.7 |
| 10a | L1 | 23 | 5.0 | 23 | 5.0 | 0.192 | 21.8 | LOS B | 1.1 | 7.6 | 0.85 | 0.73 | 0.85 | 29.0 |
| 12 | R2 | 32 | 2.0 | 32 | 2.0 | 0.192 | 23.1 | LOS B | 1.1 | 7.6 | 0.85 | 0.73 | 0.85 | 28.4 |
| Approach | | 80 | 2.9 | 80 | 2.9 | 0.192 | 22.7 | LOS B | 1.1 | 7.6 | 0.85 | 0.73 | 0.85 | 30.1 |
| All Vehicles | | 1167 | 4.3 | 1167 | 4.3 | 0.518 | 10.0 | LOS A | 4.7 | 34.0 | 0.64 | 0.57 | 0.64 | 32.8 |

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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

**Movement Performance - Pedestrians**

| Mov ID | Description | Demand Flow ped/h | Average Delay sec | Level of Service | Average Back of Queue Pedestrian ped | Distance m | Prop. Queued | Effective Stop Rate |
|---|---|---|---|---|---|---|---|---|
| P1 | South Full Crossing | 53 | 20.9 | LOS C | 0.1 | 0.1 | 0.89 | 0.89 |
| P6 | NorthEast Full Crossing | 53 | 8.5 | LOS A | 0.0 | 0.0 | 0.57 | 0.57 |
| P3 | North Full Crossing | 53 | 20.9 | LOS C | 0.1 | 0.1 | 0.89 | 0.89 |
| P4 | West Full Crossing | 53 | 7.4 | LOS A | 0.0 | 0.0 | 0.53 | 0.53 |
| All Pedestrians | | 211 | 14.4 | LOS B | | | 0.72 | 0.72 |

# PHASING SUMMARY

## Site: 101 [High St_Hunter St_Post_Weekday - AM]

## Network: N101 [Post-Dev Network AM Peak]

New Site
Site Category: (None)
Signals - Fixed Time Isolated  Cycle Time = 53 seconds (Site User-Given Phase Times)

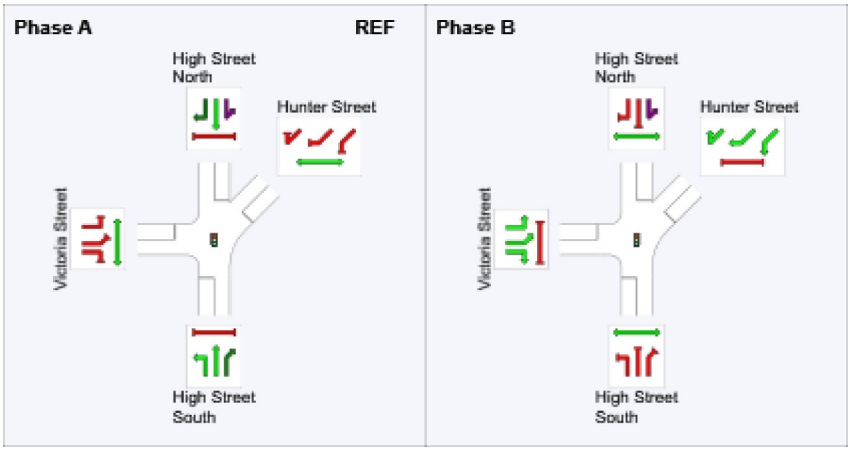
**Timings based on settings in the Site Phasing & Timing dialog**
**Phase Times specified by the user**
**Phase Sequence: Two-Phase**
**Reference Phase: Phase A**
**Input Phase Sequence: A, B**
**Output Phase Sequence: A, B**

### Phase Timing Summary

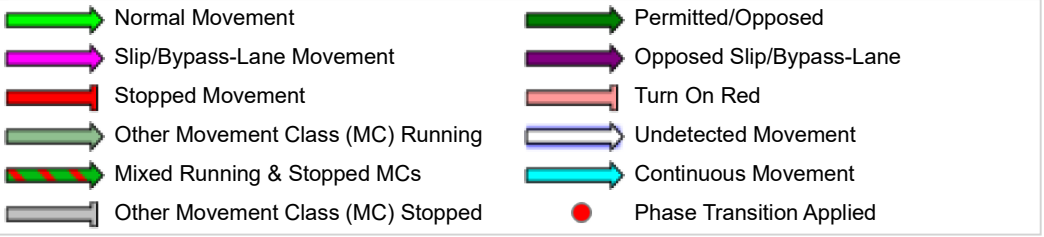
| Phase | A | B |
|---|---|---|
| Phase Change Time (sec) | 0 | 35 |
| Green Time (sec) | 30 | 12 |
| Phase Time (sec) | 36 | 17 |
| Phase Split | 68% | 32% |

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

### Output Phase Sequence



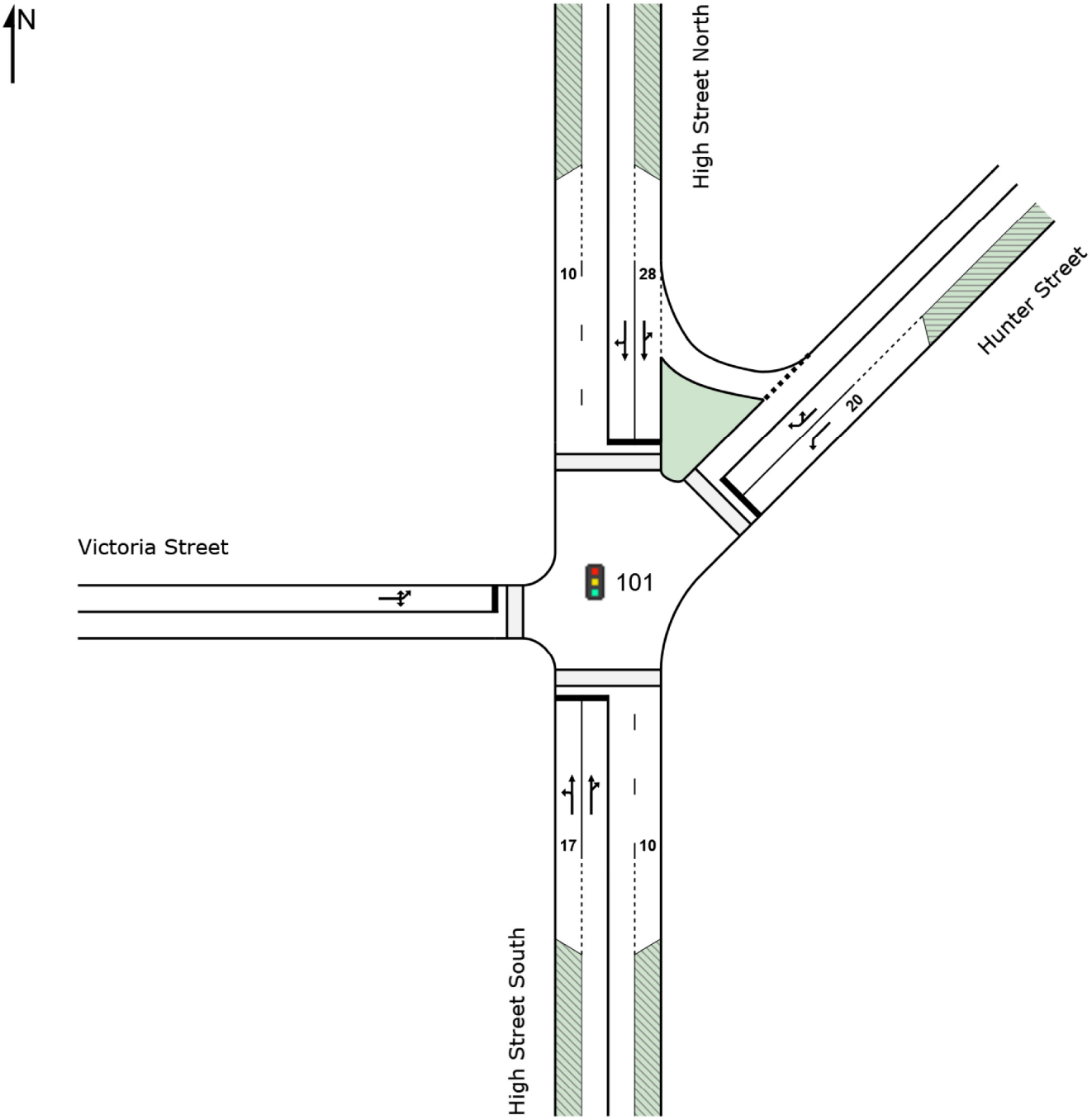

REF: Reference Phase
VAR: Variable Phase



# SITE LAYOUT

## Site: 101 [High St_Hunter St_Post_Weekday - PM]

New Site
Site Category: (None)
Signals - Fixed Time Isolated



# MOVEMENT SUMMARY

## Site: 101 [High St_Hunter St_Post_Weekday - PM]

## Network: N101 [Post-Dev Network PM Peak]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 53 seconds (Site User-Given Phase Times)

**Movement Performance - Vehicles**

| Mov ID | Turn | Demand Flows Total | HV | Arrival Flows Total | HV | Deg. Satn | Average Delay | Level of Service | Aver. Back of Queue Vehicles | Distance | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | veh/h | % | veh/h | % | v/c | sec | | veh | m | | | | km/h |
| South: High Street South | | | | | | | | | | | | | | |
| 1 | L2 | 32 | 2.0 | 32 | 2.0 | 0.112 | 9.4 | LOS A | 0.9 | 6.3 | 0.49 | 0.47 | 0.49 | 40.7 |
| 2 | T1 | 588 | 5.0 | 588 | 5.0 | 0.560 | 7.3 | LOS A | 5.0 | 36.6 | 0.63 | 0.56 | 0.63 | 35.5 |
| 3a | R1 | 15 | 2.0 | 15 | 2.0 | 0.560 | 10.2 | LOS A | 5.0 | 36.6 | 0.65 | 0.58 | 0.65 | 21.8 |
| Approach | | 635 | 4.8 | 635 | 4.8 | 0.560 | 7.5 | LOS A | 5.0 | 36.6 | 0.62 | 0.55 | 0.62 | 35.7 |
| NorthEast: Hunter Street | | | | | | | | | | | | | | |
| 24a | L1 | 21 | 2.0 | 21 | 2.0 | 0.049 | 20.2 | LOS B | 0.3 | 1.9 | 0.81 | 0.67 | 0.81 | 7.6 |
| 26a | R1 | 25 | 2.0 | 25 | 2.0 | 0.271 | 21.5 | LOS B | 1.4 | 10.0 | 0.86 | 0.76 | 0.86 | 29.4 |
| 26b | R3 | 77 | 2.0 | 77 | 2.0 | 0.271 | 23.1 | LOS B | 1.4 | 10.0 | 0.86 | 0.76 | 0.86 | 21.7 |
| Approach | | 123 | 2.0 | 123 | 2.0 | 0.271 | 22.3 | LOS B | 1.4 | 10.0 | 0.85 | 0.74 | 0.85 | 22.5 |
| North: High Street North | | | | | | | | | | | | | | |
| 7b | L3 | 2 | 2.0 | 2 | 2.0 | 0.081 | 11.1 | LOS A | 0.6 | 4.3 | 0.48 | 0.39 | 0.59 | 31.7 |
| 8 | T1 | 448 | 5.0 | 448 | 5.0 | 0.406 | 7.2 | LOS A | 3.6 | 26.5 | 0.59 | 0.52 | 0.62 | 33.4 |
| 9 | R2 | 24 | 2.0 | 24 | 2.0 | 0.406 | 12.2 | LOS A | 3.6 | 26.5 | 0.62 | 0.55 | 0.62 | 41.5 |
| Approach | | 475 | 4.8 | 475 | 4.8 | 0.406 | 7.5 | LOS A | 3.6 | 26.5 | 0.60 | 0.52 | 0.62 | 34.3 |
| West: Victoria Street | | | | | | | | | | | | | | |
| 10 | L2 | 45 | 2.0 | 45 | 2.0 | 0.264 | 23.5 | LOS B | 1.5 | 10.6 | 0.86 | 0.75 | 0.86 | 32.4 |
| 10a | L1 | 15 | 5.0 | 15 | 5.0 | 0.264 | 22.2 | LOS B | 1.5 | 10.6 | 0.86 | 0.75 | 0.86 | 28.7 |
| 12 | R2 | 49 | 2.0 | 49 | 2.0 | 0.264 | 23.5 | LOS B | 1.5 | 10.6 | 0.86 | 0.75 | 0.86 | 28.1 |
| Approach | | 109 | 2.4 | 109 | 2.4 | 0.264 | 23.3 | LOS B | 1.5 | 10.6 | 0.86 | 0.75 | 0.86 | 30.2 |
| All Vehicles | | 1342 | 4.4 | 1342 | 4.4 | 0.560 | 10.2 | LOS A | 5.0 | 36.6 | 0.65 | 0.58 | 0.66 | 32.7 |

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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

**Movement Performance - Pedestrians**

| Mov ID | Description | Demand Flow ped/h | Average Delay sec | Level of Service | Average Back of Queue Pedestrian ped | Distance m | Prop. Queued | Effective Stop Rate |
|---|---|---|---|---|---|---|---|---|
| P1 | South Full Crossing | 53 | 20.9 | LOS C | 0.1 | 0.1 | 0.89 | 0.89 |
| P6 | NorthEast Full Crossing | 53 | 8.5 | LOS A | 0.0 | 0.0 | 0.57 | 0.57 |
| P3 | North Full Crossing | 53 | 20.9 | LOS C | 0.1 | 0.1 | 0.89 | 0.89 |
| P4 | West Full Crossing | 53 | 7.4 | LOS A | 0.0 | 0.0 | 0.53 | 0.53 |
| All Pedestrians | | 211 | 14.4 | LOS B | | | 0.72 | 0.72 |

# PHASING SUMMARY

## Site: 101 [High St_Hunter St_Post_Weekday - PM]

## Network: N101 [Post-Dev Network PM Peak]

New Site
Site Category: (None)
Signals - Fixed Time Isolated  Cycle Time = 53 seconds (Site User-Given Phase Times)

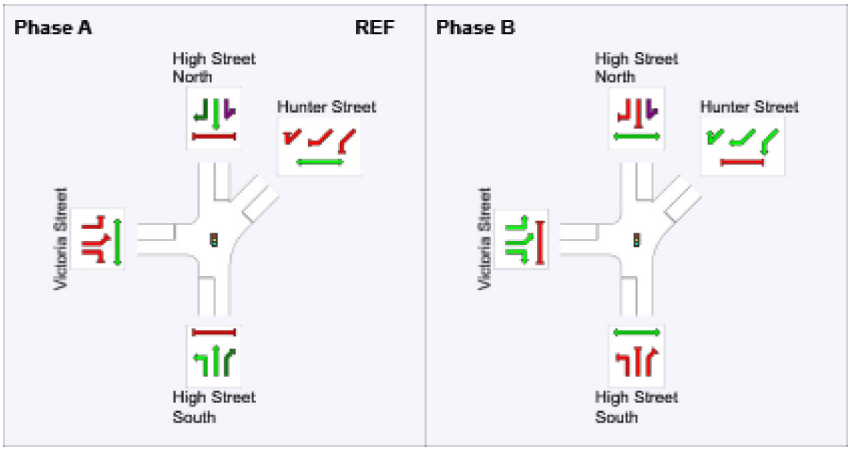
**Timings based on settings in the Site Phasing & Timing dialog**
**Phase Times specified by the user**
**Phase Sequence: Two-Phase**
**Reference Phase: Phase A**
**Input Phase Sequence: A, B**
**Output Phase Sequence: A, B**

### Phase Timing Summary

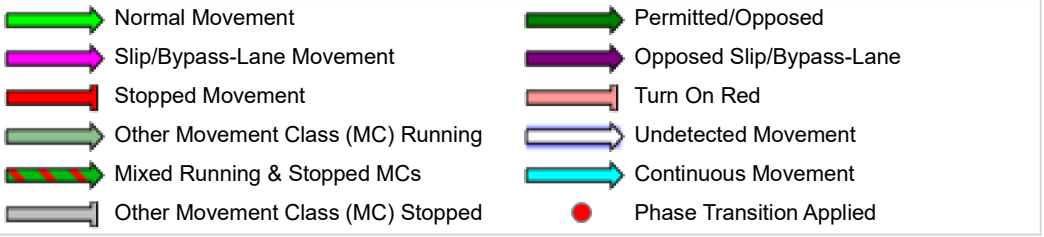
| Phase | A | B |
|---|---|---|
| Phase Change Time (sec) | 0 | 35 |
| Green Time (sec) | 30 | 12 |
| Phase Time (sec) | 36 | 17 |
| Phase Split | 68% | 32% |

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

### Output Phase Sequence




REF: Reference Phase
VAR: Variable Phase



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