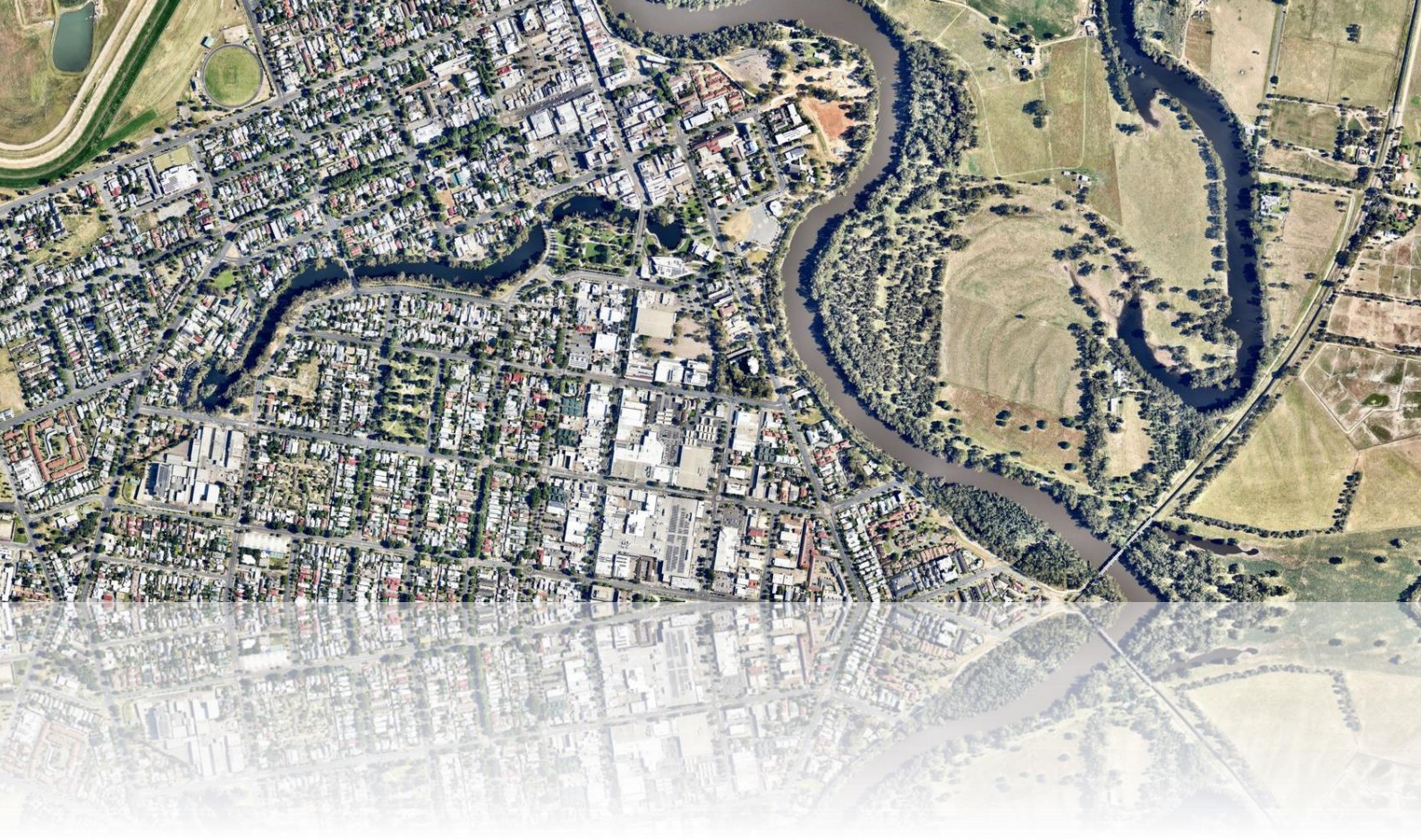

TRAFFIC AND PARKING IMPACT ASSESSMENT OF PROPOSED EXTENSION TO THE WAGGA WAGGA CIVIC THEATRE AT BURNS WAY OFF TARCUTTA STREET, WAGGA WAGGA

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

Development Type: **Extension to the Wagga Wagga Civic Theatre**

Site Address: **Burns Way off Tarcutta Street, Wagga Wagga**

Prepared for: **Wagga Wagga Civic Theatre**

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Status	Issue	Prepared By	Checked By	Date
Draft	A	MM	AT	31 March 2022
Final	A	MM	AT	21 April 2022

TABLE OF CONTENTS

1 INTRODUCTION

M^{C}Laren Traffic Engineering was commissioned by Wagga Wagga Civic Theatre to provide a Traffic and Parking Impact Assessment of the proposed extension to the Wagga Wagga Civic Theatre at Burns Way off Tarcutta Street, Wagga Wagga as depicted in **Annexure A** for reference.

1.1 Description and Scale of Development

The subject site is occupied by the existing Wagga Wagga Civic Theatre and is currently zoned *B3 – Commercial Core* under the *Wagga Wagga Local Environmental Plan 2010*. The site has frontages to Morrow Street to the south, Tarcutta Street to the east and Burns Way to the north.

The site is located within the Baylis Street Precinct of the Wagga Wagga city centre which has "*become the active retail core of the central business area*". As such, various retail and commercial premises are located north and south of the site along Fitzmaurice Street and Baylis Street to the site's west. A public recreation area (Victory Memorial Gardens) is also located directly to the west of the site, fronted by Baylis Street and Morrow Street. The site itself is located directly adjacent to the Wagga Wagga City Library and Art Gallery. The Visitor Information Centre and Charles Sturt University (CSU) Riverina Playhouse are also located a short distance to the east of the site on the opposite side of Tarcutta Street.

Additionally, the site is within 250m of Saint Joseph's Primary School to the north of the site and 1km of Wagga Wagga Primary School to the northwest. A motel and apartment block is located directly south of the site, within close proximity of key tourist attractions in the area including the Murrumbidgee River, Wollundry Lagoon, Wiradjuri Walking Track and Wagga Beach. Various public car parks surround the site including the Wagga Wagga Visitor Information Centre car park, CSU Riverina Playhouse car park and O'Reilly Street car park.

1.1.1 Proposed Scale

The Wagga Wagga Civic Theatre hosts a variety of public and community events every year, providing a community facility for small, medium and large events. The existing two-storey building accommodates one (1) theatre with 491 seats. However, the facility has experienced an increase in demand from the local community in recent years and is currently operating at capacity. To meet the increased demand of the growing population, the proposed expansion of the facility would increase the scale of the existing development to accommodate three (3) theatres with the capacity for 1,043 seats.

The notable changes to the Civic Theatre are outlined below:

- The existing theatre (Venue 1 including 491 seats), dressing rooms, bar area and foyer will remain unaltered; however, the entrance to the centre will be relocated and the existing bathrooms will be relocated to make space for offices and storage space;
- Two (2) new theatres will be installed with Venue 2 accommodating from 328 to 377 flexible seats and Venue 3 accommodating 119 to 175 flexible seats. When the seats are retracted, Venue 2 will have a capacity of 774 for standing concerts.

- Provision of two (2) new bars and a commercial kitchen;
- Additional foyer space and a new deck overlooking Wollundry Lagoon;
- Provision of new loading facilities accessible from Tarcutta Street;
- Removal of Burns Way inclusive of existing parking provided in Burns Way.

Typical peak operations for the Civic Theatre will vary depending on the types of event being held in each venue, be they either a standing event, or seated event. The anticipated Masterplan Schedule of Events for a typical week with and without children performances is shown in **Annexure B**. Generally, the peak events occur during various weekday and weekend periods as per the following:

  - Midday:
    - Performance in Venue 1 and a class or meeting in Venue 3 – anticipated patronage of 600 (not a children performance);
    - Performance in Venue 2 and a meeting in Venue 3 - anticipated patronage of 600 (children performance which typically occur four or five times a year).
  - Evening:
    - Performance in Venue 1, 2 & 3 – Anticipated patronage of 938 to 1043 seated (938 is much more likely and is expected to occur 90% of the time).

In addition to the typically expected peak use of the site, there may be special events such as the use of Venue 2 for rock concerts which are anticipated to occur a few times a year with a standing capacity up to 774 patrons. There is the possibility that such an event may overlap with the use of Venue 1 and Venue 3 resulting in the absolute peak event of 1,440 patrons (774 + 491 + 175).

The general use of the Civic Theatre is outlined below:

- General operating hours of 8am to 5pm, Monday to Friday:
  - Staff demand of 10 during normal business hours.
- Box office open from 10am to 4pm, Monday to Friday;
- Performances are generally in the evening between 7:00pm and 10:30pm and peak on Friday and Saturday nights;
- Midday performances can occur generally between 10am and 2pm and range from children's performances to other community performances;
- Most shows will take 3-4 hours to bump in and 1-2 hours to bump out;
- Loading vehicles will be restricted to the use of a 19m length Articulated Vehicle.

It should be noted that the proposed development provides bar and kitchen facilities, but it is expected that these areas are entirely ancillary to the development as a whole and are provided to serve the primary use of the site as a theatre.

1.2 State Environmental Planning Policy (Transport and Infrastructure) 2021

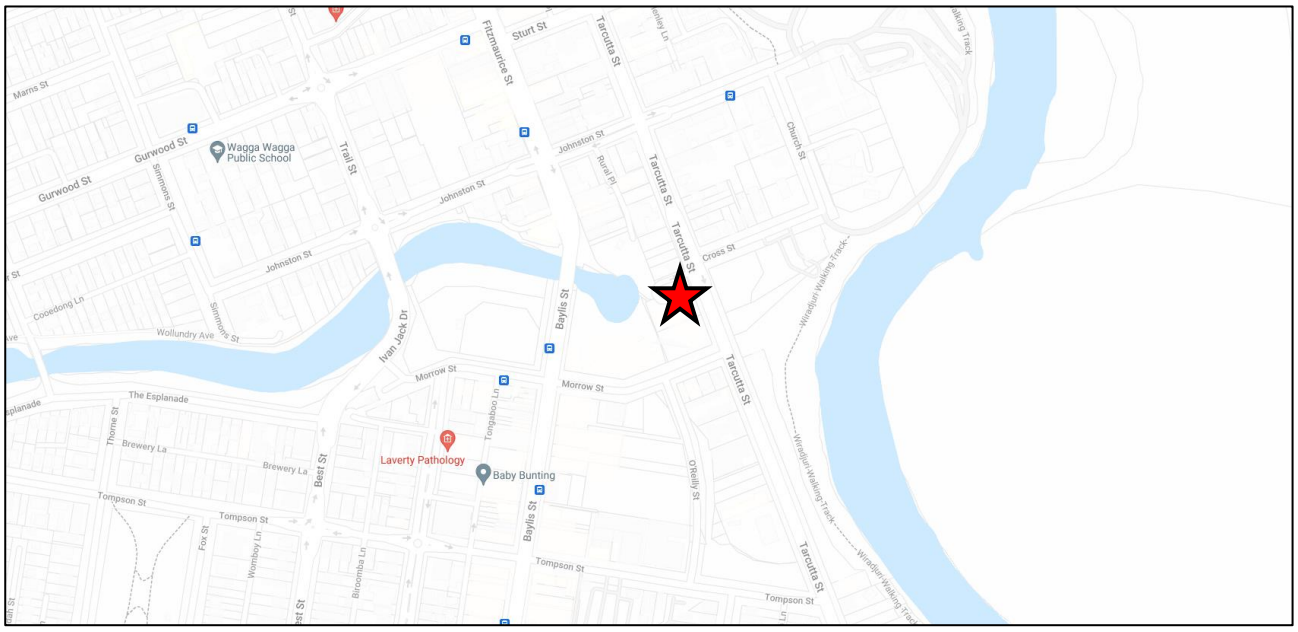
The proposed development does qualify as a traffic generating development with relevant size and/or capacity under *Clause 2.121* of the *SEPP (Transport & Infrastructure) 2021*, as the proposal does generate 200 or more motor vehicles per hour above the existing approval of the site as shown in **Table 6**, which occurs a few times a year during special events. Accordingly, formal referral to Transport NSW (TfNSW) is required under the TISEPP.

1.3 Site Context

The location of the site is shown on an aerial photo and a street map below in **Figure 1** and **Figure 2** respectively.

Site Location

FIGURE 1: SITE CONTEXT – AERIAL PHOTO



Site Location

FIGURE 2: SITE CONTEXT – STREET MAP

2 EXISTING TRAFFIC AND PARKING CONDITIONS

2.1 Road Hierarchy

The road network servicing the site has characteristics as described in the following sub-sections within close proximity to the site.

2.1.1 Tarcutta Street

- Unclassified COLLECTOR Road;
- Approximately 19m wide two-way carriageway facilitating two (2) lanes in each direction and kerbside parking;
- Signposted 50km/h speed limit;
- '*No Parking'* restrictions apply along the Tarcutta Street frontage of the site;
- Some unrestricted kerbside parking is available; however, within 300m of the site 3-hour kerbside parking restrictions apply between 8:30am and 6pm Monday to Saturday:
    - Between the time restricted Visitor Information Centre car park and Wagga Wagga Baptist Church on the eastern side of Tarcutta Street;
    - Between the Tarcutta Street / Burns Way and Tarcutta / Johnston Street intersections on the western side of Tarcutta Road;

2.1.2 Burns Way

- LOCAL one-way loop road facilitating a pick-up/drop-off zone in front of the Civic Centre;
- Approximately 7m wide carriageway facilitating one-way traffic flow and some kerbside parking along the straight stretches of the outer side of the loop;
- Default 50km/h speed limit;
- Accessible parking zone in front of the Centre with 15-minute kerbside parking permissible for the general public from 9AM-6PM Monday to Saturday;
- 1-hour parking restrictions apply along the northernmost straight stretch of road.

2.1.3 Morrow Street

- Unclassified LOCAL Road;
- Approximately 18m wide carriageway facilitating one (1) lane in each direction and parking on both sides of the road;
- Default 50km/h speed limit;
- Time restricted 1-hour kerbside parking along the southern side of the road and time restricted 1-hour 60° and unrestricted angle parking along the northern side of the road:
    - Four (4) accessible spaces are located on the northern side of Morrow Street near the Civic Theatre (2) and near the Museum of the Riverina and Library entrance (2).

2.1.4 Cross Street

- Unclassified LOCAL Road;
- Approximately 18m wide carriageway facilitating two-way flow and kerbside parking on both sides of the road;
- Default 50km/h speed limit;
- Angled 60° parking on both sides of the road.

2.2 Existing Traffic Management

- Priority controlled intersection of Tarcutta Street / Burns Way
- Priority controlled intersection of Tarcutta Street / Morrow Street;
- GIVE-WAY sign controlled intersection of Baylis Street / Morrow Street;
- Priority controlled intersection of Tarcutta Street / Cross Street.

2.3 Existing Parking Environment

Parking counts within 500m walking distance of the site were undertaken on Friday 11 March 2022 from 10:00am to 3:00pm and 5:00pm to 8:00pm, and Saturday 12 March 2022 from 12:00pm to 3:00pm and 5:00pm to 8:00pm to examine the availability of on-street parking during a typical weekend and weekday.

It should be noted that Wagga Wagga Mardi Gras was held on the 12 March 2022 within Wagga Wagga and a number of road closures occurred. These road closures may have impacted the parking counts, although upon investigation of the road closures, the road closures that affected parking were associated with parking areas restricted to 1-hour parking. Hence, the weekend period summarises only unrestricted and 2-hour parking areas, noting that the 2-hour parking restrictions do not apply on weekends, with the exception of the O'Reilly Street off-street car park.

In total there are 415 1hr, 499 2hr time restricted car parking spaces and 713 unrestricted car parking spaces within 500m of the subject site. Of the 713 unrestricted car parking spaces, 167 are located within the off-street car park located on Cross Street (CSU Riverina Playhouse car park).

The parking survey area is depicted in **Figure 3**, with a summary of the spare parking availability categorized by parking restrictions during the survey period presented in **Table 1** and **Table 2**. The detailed parking survey data is reproduced in **Annexure C**.

FIGURE 3: PARKING SURVEY AREA

TABLE 1: WEEKDAY SPARE PARKING CAPACITY

Time	Parking Restriction		
	1hr Parking[1]	2hr Parking[1]	Unrestricted
Weekday – Friday (On-Street Only) **11 March 2022**			
10:00	191	63	198
11:00	173	58	178
12:00	173	69	153
13:00	177	73	72
14:00	212	79	213
15:00	252	92	255
17:00	313	130	363
18:00	316	153	370
19:00	291	144	345
20:00	299	152	359
Weekday – Friday (On-Street & Off-Street)[2] **11 March 2022**			
10:00	191	235	387
11:00	173	233	361
12:00	173	246	302
13:00	177	260	247
14:00	212	284	401
15:00	252	322	452
17:00	313	404	590
18:00	316	430	604
19:00	291	423	576
20:00	299	432	589

Note: 1 – 1 hour and 2 hour parking restrictions are typically restricted between 8:30am to 6:00pm Monday to Friday and 8:30-12:30 Saturday.

2 – Includes off-street car parks including Visitors Centre, Baptist Church, CSU Playhouse, O'Reilly Street car park and Rural Place car park

TABLE 2: WEEKEND SPARE PARKING CAPACITY

Time	Parking Restriction	
	2hr Parking[1]	3hr & Unrestricted
Weekend – Saturday (On-Street Only) **12 March 2022**		
12:00	124	309
13:00	126	337
14:00	137	369
15:00	133	370
17:00	78	244
18:00	75	266
18:00	83	330
20:00	115	358
Weekday – Saturday (On-Street & Off-Street)[2] **12 March 2022**		
12:00	384	535
13:00	386	571
14:00	403	610
15:00	402	611
17:00	338	452
18:00	326	464
18:00	332	547
20:00	370	594

Note: 1 – 2 hour parking restrictions are typically restricted between 8:30am and 6:00pm Monday to Friday and 8:30-12:30 Saturday.

2 – Includes off-street car parks including Visitors Centre, Baptist Church, CSU Playhouse, O'Reilly Street car park and Rural Place car park

Based upon the above summary the following are relevant to note:

- An absolute minimum of 507 spaces are available on-street and off-street that are restricted to 2 hours or more during weekday midday periods (10am – 3pm), with the minimum occurring at 1:00pm;

- An absolute minimum of 994 spaces are available on-street and off-street that are restricted to 2 hours or more during weekday evening periods (5pm to 8pm), with the minimum occurring at 5pm;

- An absolute minimum of 790 spaces are available on-street and off-street that are unrestricted on weekend periods (12pm to 8pm) which occurred at 5pm.

Based upon the above, it is clear that there is remaining spare parking availability on-street and off-street within public car parks to accommodate parking demand generated by the proposed development. It is reiterated that Wagga Wagga Mardi Gras was held on the surveyed Saturday and while this is the case, it is evident that there was still spare capacity.

2.4 Existing Traffic Volumes

Intersection traffic surveys were conducted at the intersections of Baylis Street / Morrow Street, Morrow Street / Tarcutta Street, Cross Street / Tarcutta Street / Burns Way and Tarcutta Street / Johnston Street from 7am to 10am and 2:30pm to 6pm on Friday the 22nd of March 2022, representing a typical operating weekday. The full survey results are shown in **Annexure C** for reference.

2.4.1 Existing Road Performance

The performance of the surrounding intersections under the existing traffic conditions has been assessed using SIDRA INTERSECTION 9.0; **Table 3** below summarises the resultant intersection performance data, with full SIDRA results reproduced in **Annexure D** for reference.

TABLE 3: EXISTING INTERSECTION PERFORMANCES (SIDRA INTERSECTION 9.0)

Intersection	Peak Hour	Degree of Saturation(1)	Average Delay(2) (sec/vehicle)	Level of Service(3)(4)	Control Type	Worst Movement
EXISTING PERFORMANCE						
Baylis Street / Morrow Street	AM	0.24	N/A (Worst: 10.9)	N/A (Worst: A)	Give-way	RT From Morrow Street (E)
	PM	0.38	N/A (Worst: 14.9)	N/A (Worst: B)		RT From Morrow Street (E)
Tarcutta Street / Cross Street / Burns Way	AM	0.18	N/A (Worst: 27.4)	N/A (Worst: B)	Give-way	RT From Cross Street
	PM	0.23	N/A (Worst: 30.7)	N/A (Worst: C)		RT From Burns Way
Tarcutta Street / Morrow Street	AM	0.18	N/A (Worst: 18.2)	N/A (Worst: B)	Give-way	RT From Morrow Street
	PM	0.30	N/A (Worst: 22.6)	N/A (Worst: B)		RT From Morrow Street
Johnston Street / Tarcutta Street	AM	0.43	15.4	**B**	Signals	N/A
	PM	0.4	15.2	**B**		N/A

NOTES:

(1) Degree of Saturation is the ratio of demand to capacity for the most disadvantaged movement.

(2) Average delay is the delay experienced on average by all vehicles. The value in brackets represents the delay to the most disadvantaged movement.

(3) Level of Service (LOS) is a qualitative measure of performance describing operational conditions. There are six levels of service, designated from A to F, with A representing the best operational condition, and F the worst. The LOS of the intersection is shown in bold, and the LOS of the most disadvantaged movement is shown in brackets.

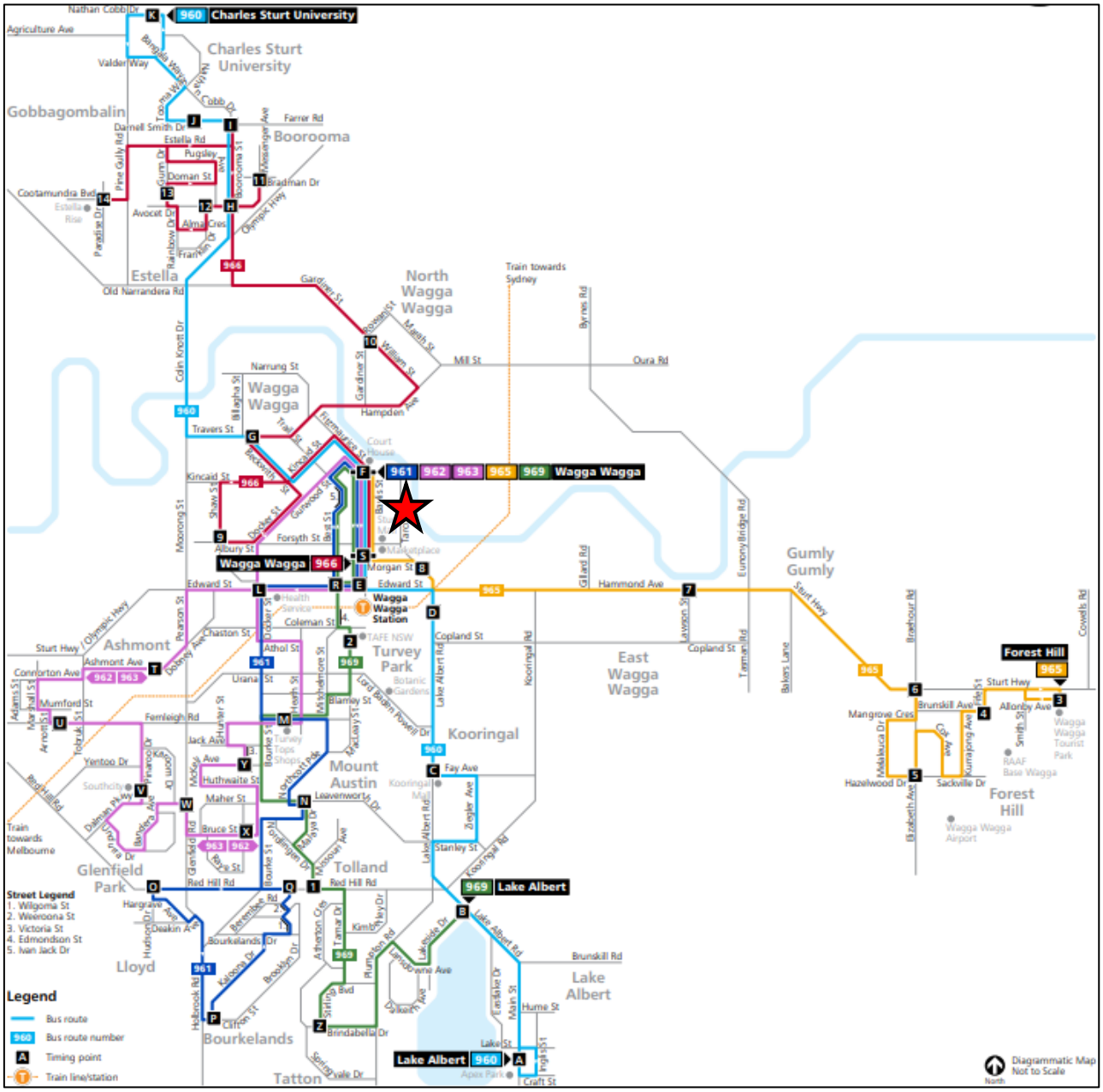
(4) Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movement.

As shown above, all assessed intersections are currently performing at a high level of efficiency, with a level of service “A”, “B” or “C” conditions in both the AM & PM peak hour periods. The level of service “A” and “B” performance is characterised by low approach delays and spare capacity.

2.5 Public Transport

The subject site has access to existing bus stop (ID: 265082) located approximately 300m (4 minutes) walking distance to the west of the site on the western side of Baylis Street at the corner of the Baylis and Morrow Street intersection. The bus stop services existing bus routes 921 (Junee to Wagga Wagga via Harefield & Wallacetown), 922 (Junee to Wagga Wagga via Yathella & Wallacetown), 923 (Junee to Wagga Wagga via Byrnes Rd), 924 (Junee to Wagga Wagga via Wallacetown & Hampden Ave), 930 (Ganmain to Wagga Wagga via Coolamon), 931 (Coolamon to Wagga Wagga), 960 (Lake Albert to Wagga Wagga, Estella & University), 965 (Forest Hill to Wagga Wagga) and 969 (Tatton to Wagga Wagga), provided by Junee Buses, Allen's Coaches and Busabout Wagga Wagga bus services.

In addition to bus facilities, the subject site has access to Wagga Wagga Train Station located within 1.4km from the subject site. The Wagga Wagga Train Station provides access to the Southern NSW line, providing access between Melbourne and Sydney (Central Station). The location of the site subject to the surrounding public transport network is shown in **Figure 4** below.



Site Location

FIGURE 4: PUBLIC TRANSPORT NETWORK MAP

As part of the proposed development, provision for drop-off and pick-up bus facilities will be provided along the site frontage to Tarcutta Street. This will accommodate buses for school and community performances, which require direct access to the site.

Separate to the loading area, there will be approximately 50m of kerbside length available along the site frontage as a result of the removal of Burns Way and the building located at 190 Tarcutta Street, Wagga Wagga. This is sufficient room to accommodate pick-up and drop-off facilities for buses. This is further detailed in **Section 3**.

2.6 Future Road and Infrastructure Upgrades

From the NSW Planning Portal Major Project tracker and Wagga Wagga City Council Development Application website, it appears that there are no future planned road or public transport changes that will affect traffic conditions within the immediate vicinity of the subject site.

3 PARKING ASSESSMENT

Reference is made to the *Wagga Wagga Council Development Control Plan 2010 Part B: Section 2 Controls* that apply to all developments, which outlines the following parking requirements for Function Centres and Places of Assembly, which are the most applicable parking rate for the subject development:

> *Restaurants, cafes, pubs, clubs and function rooms*
>
> *Within the Wagga Wagga city centre: 1 space/ 25m^2 GFA*
>
> *All other areas: 1 space / 10m^2 GFA or 1 space / 3 seats whichever is greater*
>
> *Churches, places of worship/ assembly*
>
> *1 space/ 4 seats or 1 space/ 10m^2 GFA whichever is greater*

Whilst the site is located within the City Centre, to determine the car parking demand of the site, a superior approach to assess the demand of the proposed development would be to assess parking demand based upon a first principles assessment. Given typical vehicle occupancy rates of theatres and event centres, car parking demand is estimated to be between a rate of 1 space per 3 people and 1 space per 4 people, similar to Function Centres and Places of Assembly. It should be noted that these rates apply to operations which do not provide alternative transport modes such as public transport facilities (bus and rail facilities)

Based upon the above and the various peak operations outlined in **Section 1.1**, the expected car parking demand for the various event types is summarised in **Table 4** below.

TABLE 4: ESTIMATED CAR PARKING DEMAND REQUIREMENTS

Event Type	Scale	Rate	Parking Demand
Weekday Midday Peak	600 patrons	1 space per 3 patrons	200
		1 space per 4 patrons	150
Weekday Evening Peak	1,043 patrons	1 space per 3 patrons	348
		1 space per 4 patrons	261
Weekend Midday Peak	600 patrons	1 space per 3 patrons	200
		1 space per 4 patrons	150
Weekend Evening Peak	1,043 patrons	1 space per 3 patrons	348
		1 space per 4 patrons	261
Special Event	1,440 patrons	1 space per 3 patrons	480
		1 space per 4 patrons	360

Based upon the above, the proposed development is anticipated to demand between 150 and 200 car parking spaces during midday peak events, 261 to 348 for evening peak events and 360 to 480 spaces during special events.

It is relevant to note that the existing site operates with 491 peak patrons, which would demand between 123 and 164 car parking spaces. Hence, under the proposed development, the increase in car parking demand is between 27 and 36 spaces during midday peak events and 138 to 184 spaces during evening peak events.

Based upon the existing parking demand presented in **Section 2.3**, **Table 5** summarises the peak parking demand generated by the site during various time periods and the available on-street and off-street spare car parking during the same period, both before and after the subject development.

TABLE 5: SUMMARY OF PARKING DEMAND AND ON-STREET / OFF-STREET SPARE PARKING AVAILABILITY

Event Type	Scale	Rate	Parking Demand[4]	Existing Spare on-street and off-street parking (2hr or more)	Future (Post-Development) Spare Availability
Weekday Midday Peak	600 patrons	1 space per 3 patrons	200	507	307
		1 space per 4 patrons	150		357
Weekday Evening Peak	1,043 patrons	1 space per 3 patrons	348	994	646
		1 space per 4 patrons	261		733
Weekend Midday Peak	600 patrons	1 space per 3 patrons	200	919	719
		1 space per 4 patrons	150		769
Weekend Evening Peak	1,043 patrons	1 space per 3 patrons	348	790	442
		1 space per 4 patrons	261		529

As shown above, there is ample remaining availability on-street and off-street during the peak operation of the site during all peak event periods.

It should be noted that special events held during weekday midday periods would result in a remaining availability of only 27 spaces within 500m walking distance of the site. This is unacceptable, and hence special events during midday weekday periods should be avoided, unless alternative transport modes are promoted, such as bus facilities. During weekday evening and weekend periods, special events are capable of operation at any time from midday onwards.

3.1 Accessible Parking

Reference is made to the *Building Code of Australia's* (BCA's) *Table D3.5* which classifies an assembly building as a Class 9b building and, as such, requires the provision of accessible parking at the rates of:

> ***Class 9b***
>
> *(i) up to 1000 carparking spaces*
>
> *1 space for every 50 carparking spaces or part thereof*
>
> *and*
>
> *(ii) for each additional 100 carparking spaces or part thereof in excess of 1000 carparking spaces.*
>
> *1 space*

Based upon the peak parking demand of 348 spaces, the site would demand seven (7) accessible parking spaces. As a result of the proposed development, accessible parking along Burns Way will be removed, as will Burns Way. As mentioned in **Section 2.5**, there will be approximately 50m of kerbside length available as a result of the closure of Burns Way. It is recommended that this kerbside length be modified to be restricted to a combination of accessible car parking, bus facilities and pick-up and drop-off facilities. Further discussions should be held in consultation with Council in relation to the implementation of accessible parking, bus facilities and pick-up and drop-off facilities along the frontage of the site. If additional accessible parking is required, this can be facilitated on the western side of Tarcutta Street north of 190 Tarcutta Street through the modification of existing kerbside parking.

The design of the accessible car parking spaces is to comply with *Figure 4.2 of AS2890.5:2020*, inclusive of associated kerb ramps, road widening where applicable and signage.

Within the surveyed area, there are approximately 50 accessible car parking spaces. Considering this, it is not uncommon for the subject site to rely upon some accessible on-street parking spaces. There are four (4) existing accessible car parking spaces along Morrow Street, outside the Wagga Wagga City Library that should also be considered in the quantum of accessible parking for the site, as these locations do not require users to cross any road to access the site.

It should be noted that, strictly, the site does not require the provision of any accessible car parking spaces, as the site does not propose any on-site parking facilities.

3.2 Bicycle & Motorcycle Parking Requirements

The Wagga Wagga DCP 2010 does not outline any requirements for bicycle and motorcycle parking for developments within the B3 - Commercial Core zone.

It is not anticipated that audiences will regularly cycle to the Civic Theatre considering the type of events held and evening performances. If audience members or Civic Theatre staff rode a bicycle they would be able to store it across the road next to the Visitor's Centre at the 'End of Trip' 24 bicycle storage.

3.3 Servicing & Loading & Compliance

The existing Civic Theatre is serviced directly from Tarcutta Street and provides an existing loading dock capable of providing access by a 19m length Articulated Vehicle (AV). During the 2019 season delivery vehicles consisted of the following vehicle types:

- Courier Van;
- Small Rigid Vehicle;
- Large Rigid Vehicle;
- Semi-Trailer.

Hence, based upon the historical use of the site, the largest vehicle anticipated to travel to the site is a 19m length Articulated Vehicle (semi-trailer). The existing operation to accommodate 19m length Articulated Vehicles consists of removing the container and storing it within the loading zone wholly within the site, with the Articulated Vehicle parking off-site so as not to overhang the property boundary. This operation is not expected to change as a result of the proposal, with the number of historical deliveries by 19m length Articulated Vehicle being four to five times a year.

The proposed plans detail the provision of two (2) 12.5m length heavy rigid vehicle loading spaces. The swept paths for the reverse entry of heavy rigid vehicles into the loading dock are shown in **Annexure E** for reference.

Furthermore, swept path testing for a 19m length AV has been undertaken and is reproduced in **Annexure E**. As per the existing operation, the container will be dropped off and the AV will park elsewhere, which is consistent with the previous operation of the site.

It should be noted that *AS2890.2:2018* permits loading to occur on a maximum gradient of 4%, hence the area in which vehicles load / unload shall be restricted to a maximum gradient of 4%.

All loading / unloading for the site is recommended to occur outside of peak events and peak commuter traffic periods. This should be managed by the operator via a loading dock management plan if necessary.

4 TRAFFIC ASSESSMENT

The impact of the expected traffic generation levels associated with the subject proposal is discussed in the following sub-sections.

4.1 Traffic Generation

The *RTA (now TfNSW) Guide to Traffic Generating Developments (2002)* and recent supplements do not provide specific rates for a Place of Assembly or similar. Therefore, the traffic generation is to be based upon a first principles assessment taking into account the proposed patronage numbers of the development.

The estimated traffic generation of the peak operation of the site will be based upon the following assumptions:

- A net change from the existing approved maximum patronage of 491;
- A maximum of 600 patrons for a midday weekday and weekend event;
- A maximum of 1,043 patrons for a weekday and weekend evening event;
- A maximum of 1,440 patrons for a special event.

The estimated traffic generation of the various peak events is outlined in **Figure 5** below.

TABLE 6: ESTIMATED TRAFFIC GENERATION

Event Type	Scale	Rate	Traffic Generation	Arrival	Departure
EXISTING APPROVAL					
All Peaks	491 patrons	1 space per 3 patrons	164	164	164
		1 space per 4 patrons	123	123	123
PROPOSED DEVELOPMENT					
Weekday & Weekend Midday Peak	600 patrons	1 space per 3 patrons	200	200	200
		1 space per 4 patrons	150	150	150
Weekday & Weekend Evening Peak	1,043 patrons	1 space per 3 patrons	348	348	348
		1 space per 4 patrons	261	261	261
Special Event	1,440 patrons	1 space per 3 patrons	480	480	480
		1 space per 4 patrons	360	360	360
NET INCREASE IN TRAFFIC GENERATION					
Weekday & Weekend Midday Peak	600 patrons	1 space per 3 patrons	36	36	36
		1 space per 4 patrons	27	27	27
Weekday & Weekend Evening Peak	1,043 patrons	1 space per 3 patrons	184	184	184
		1 space per 4 patrons	138	138	138
Special Event	1,440 patrons	1 space per 3 patrons	316	316	316
		1 space per 4 patrons	237	237	237

Based upon the above, the site is expected to generate a range of 150 to 480 vehicle trips depending on the peak event. This is expected to result in a net increase of 27 to 316 vehicle trips compared to the existing approval and operation of the site.

It should be noted that the larger peak operations being special events with patrons of 1,440 are expected to occur only a few times a year. Hence, this is not a typical peak event.

For ease of assessment and as a worst case, the special event will be modelled with the assumption that during the AM network peak hour period all trips will be inbound to the site with a traffic generation of 480 vehicle trips, and during the PM network peak hour period all trips will also be inbound to the site and assessed as 480 inbound vehicle trips.

There is no one area that visitors will be travelling to and from the site considering the parking conditions during peak commuter periods. Rather the traffic generated from the proposed development will be spread throughout the town centre. The trip distribution that will be assessed for inbound traffic is expected to be as follows:

- 40% to / from the site via the intersection of Lake Albert Road / Tarcutta Street;
- 40% to / from the site via the intersection of Baylis Street / Edward Street & Best Street / Sturt Highway;
- 20% to / from the site via Tarcutta Street / Johnston Street.

Whilst it is more than likely that vehicles travelling to the site will find parking within the town centre and generally be dispersed throughout multiple travel route options, for a conservative assessment, the assessment will assume all traffic generated will travel past the site frontage at the intersection of Morrow Street / Tarcutta Street.

Figure 5 below shows the assessed trip distributions.

FIGURE 5: ASSESSED TRIP DISTRIBUTION

It is expected that the existing pedestrian facilities (i.e. footpaths and pedestrian crossing facilities) from on-street car parking spaces are more than adequate to service the pedestrian demand generated from parked vehicles.

4.2 Traffic Impact

The traffic generation outlined in **Section 4.1** above has been added to the existing traffic volumes recorded. SIDRA INTERSECTION 9.0 was used to assess the intersections performance. The purpose of this assessment is to compare the existing intersection operations to the future scenario under the increased traffic load. The results of this assessment are shown in **Table 7**, with detailed SIDRA outputs reproduced in **Annexure D**.

TABLE 7: INTERSECTION PERFORMANCE (SIDRA INTERSECTION 9.0)

Intersection	Peak Hour	Degree of Saturation[1]	Average Delay[2] (sec/vehicle)	Level of Service[3][4]	Control Type	Worst Movement
EXISTING PERFORMANCE						
Baylis Street / Morrow Street	AM	0.24	N/A (Worst: 10.9)	N/A (Worst: A)	Give-way	RT From Morrow Street (E)
	PM	0.38	N/A (Worst: 14.9)	N/A (Worst: B)		RT From Morrow Street (E)
Tarcutta Street / Cross Street / Burns Way	AM	0.18	N/A (Worst: 27.4)	N/A (Worst: B)	Give-way	RT From Cross Street
	PM	0.23	N/A (Worst: 30.7)	N/A (Worst: C)		RT From Burns Way
Tarcutta Street / Morrow Street	AM	0.18	N/A (Worst: 18.2)	N/A (Worst: B)	Give-way	RT From Morrow Street
	PM	0.30	N/A (Worst: 22.6)	N/A (Worst: B)		RT From Morrow Street
Johnston Street / Tarcutta Street	AM	0.43	15.4	**B**	Signals	N/A
	PM	0.4	15.2	**B**		N/A
FUTURE (POST DEVELOPMENT) PERFORMANCE - WORST CASE SPECIAL EVENT						
Baylis Street / Morrow Street	AM	0.44	N/A (Worst: 14.7)	N/A (Worst: B)	Give-way	RT From Morrow Street (E)
	PM	0.53	N/A (Worst: 22.2)	N/A (Worst: B)		RT From Morrow Street (E)
Tarcutta Street / Cross Street	AM	0.21	N/A (Worst: 25.4)	N/A (Worst: B)	Give-way	RT From Cross Street
	PM	0.23	N/A (Worst: 27.1)	N/A (Worst: B)		RT From Cross Street
Tarcutta Street / Morrow Street	AM	0.49	N/A (Worst: 37.1)	N/A (Worst: C)	Give-way	RT From Morrow Street
	PM	0.69	N/A (Worst: 50.9)	N/A (Worst: D)		RT From Morrow Street
Johnston Street / Tarcutta Street	AM	0.50	14.6	**B**	Signals	N/A
	PM	0.47	14.2	**A**		N/A

NOTES:

(1) Degree of Saturation is the ratio of demand to capacity for the most disadvantaged movement.

(2) Average delay is the delay experienced on average by all vehicles. The value in brackets represents the delay to the most disadvantaged movement.

(3) Level of Service (LOS) is a qualitative measure of performance describing operational conditions. There are six levels of service, designated from A to F, with A representing the best operational condition and F the worst. The LOS of the intersection is shown in bold, and the LOS of the most disadvantaged movement is shown in brackets.

(4) Intersection LOS and Major Road Approach LOS 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 movement

As shown above, under future worse-case scenarios assessed for arrival vehicles, the signalised intersection of Johnston Street / Tarcutta Street is forecast to operate at Level of Service (LoS) “A” & “B”, indicating little change to the overall operation of the intersection. This indicates acceptable delays and additional spare capacity maintained.

The intersections of Baylis Street / Morrow Street, Tarcutta Street / Cross Street, Tarcutta Street / Morrow Street are forecast to operate with worst turning movements of LoS “B” to LoS “D” condition. The LoS “D” condition indicates that the right turn movement from Morrow Street onto Tarcutta Street is satisfactory but is operating near capacity. LoS “B” to “C” conditions indicate satisfactory operation with additional spare capacity maintained.

Considering the assessed period is for a special event, with the highest anticipated traffic generation of the site, which is anticipated to occur only a few times a year, the assessed intersections perform at an acceptable LoS and hence the proposed development is fully supportable on traffic flow efficiency grounds.

5 CONCLUSION

In view of the foregoing, the subject extension to the Wagga Wagga Civic Theatre at Burns Way off Tarcutta Street, Wagga Wagga (as depicted in **Annexure A**) is fully supportable in terms of its traffic and parking impacts. The following outcomes of this traffic impact assessment are relevant to note:

- The redevelopment of the centre is anticipated to demand between 150 and 200 car parking spaces during midday peak events, 261 to 348 for evening peak events and 360 to 480 spaces during special events.

- The existing site operates with 491 peak patrons, which would demand between 123 to 164 car parking spaces. Hence, under the proposed development, the increase in car parking demand is between 27 to 36 spaces during midday peak events and 138 to 184 spaces during evening peak events.

- The proposed development is solely reliant upon on-street and public off-street car parking areas within close proximity to the site. Parking surveys have been undertaken and there is ample remaining availability on-street and off-street during the peak operation of the site during all peak event periods. It should be noted that only parking areas that have 2 hours or more time restrictions have been relied upon within the assessment. The minimum resultant spare parking availability during various peak events is outlined below:

    - A minimum of 307 to 357 spaces available during weekday midday peak events;

    - A minimum of 646 to 722 spaces available during weekday evening peak events;

    - A minimum of 719 to 769 spaces available during weekend midday peak events;

    - A minimum of 442 to 529 spaces available during weekend evening peak events.

- Special events held during weekday midday periods would result in a remaining availability of only 27 spaces within 500m walking distance of the site. This is unacceptable, and hence special events during midday weekday periods should be avoided, unless alternative transport modes are promoted, such as bus facilities. During weekday evening and weekend periods, special events are capable of operating at any time from midday onwards.

- The historical use of the site requires a 19m length Articulated Vehicle (semi-trailer), which does not park on-site; rather the container is unloaded and the Articulated Vehicle parks elsewhere so as not to overhang the property boundary. This operation is not expected to change as a result of the proposal, with the number of historical deliveries by 19m length Articulated Vehicle being four to five times a year.

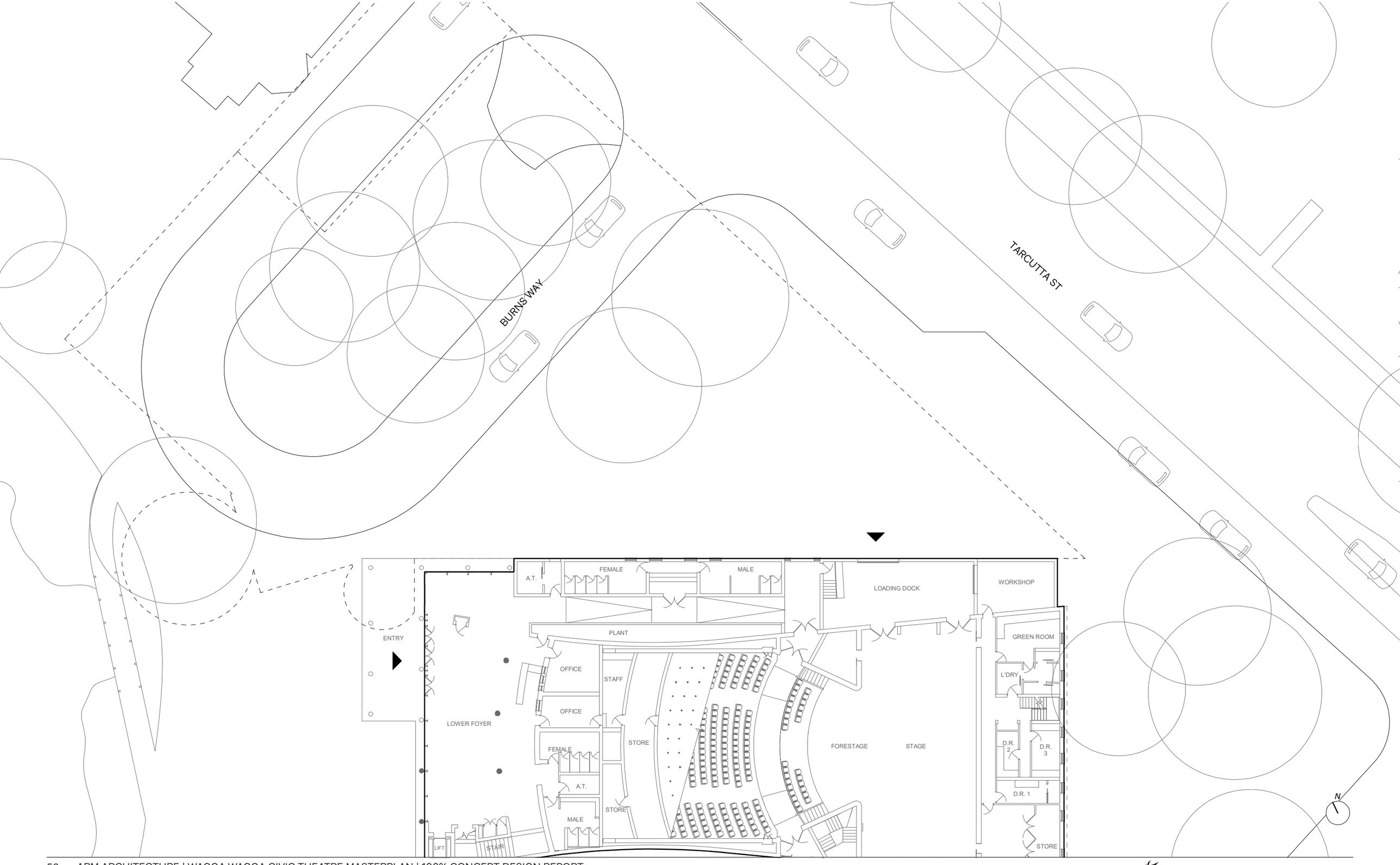
- The site is expected to generate a range of 150 to 480 vehicle trips depending on the peak event. This is expected to result in a net increase of 27 to 316 vehicle trips compared to the existing approval and operation of the site.
- As a worst case, the special event has been modelled with the assumption that during the AM network peak hour period all trips will be inbound to the site with a traffic generation of 480 vehicle trips, and during the PM network peak hour period all trips will also be inbound to the site and assessed as 480 inbound vehicle trips.

- Based upon the special event assessment, the assessed intersections perform at an acceptable LoS and hence the proposed development is fully supportable on traffic flow efficiency grounds.

- The site does not require the provision of any accessible parking spaces, as the site does not propose any on-site parking facilities. If the BCA requirements were applied to the car parking demand of the site, the site would demand seven (7) accessible car parking spaces. There will be approximately 50m of kerbside length available as a result of the closure of Burns Way. It is recommended that this kerbside length be modified to be restricted to a combination of accessible car parking, bus facilities and pick-up and drop-off facilities. Further discussions should be held in consultation with Council in relation to the implementation of accessible parking, bus facilities and pick-up and drop-off facilities along the frontage of the site. If additional accessible parking is required, this can be facilitated on the western side of Tarcutta Street north of 190 Tarcutta Street through the modification of existing kerbside parking.

ANNEXURE A: PROPOSED PLANS
(11 SHEETS)

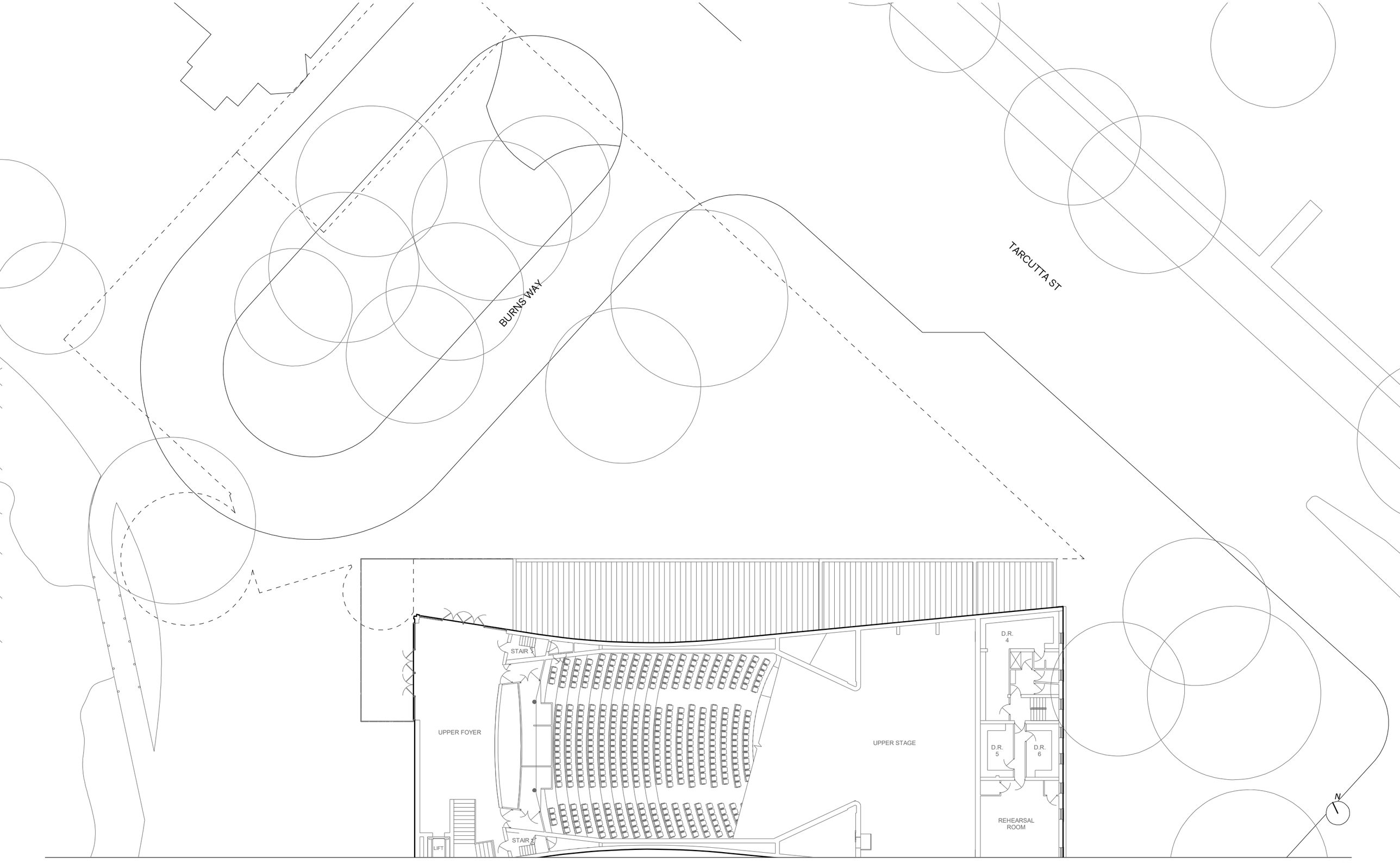
EXISTING GROUND FLOOR PLAN



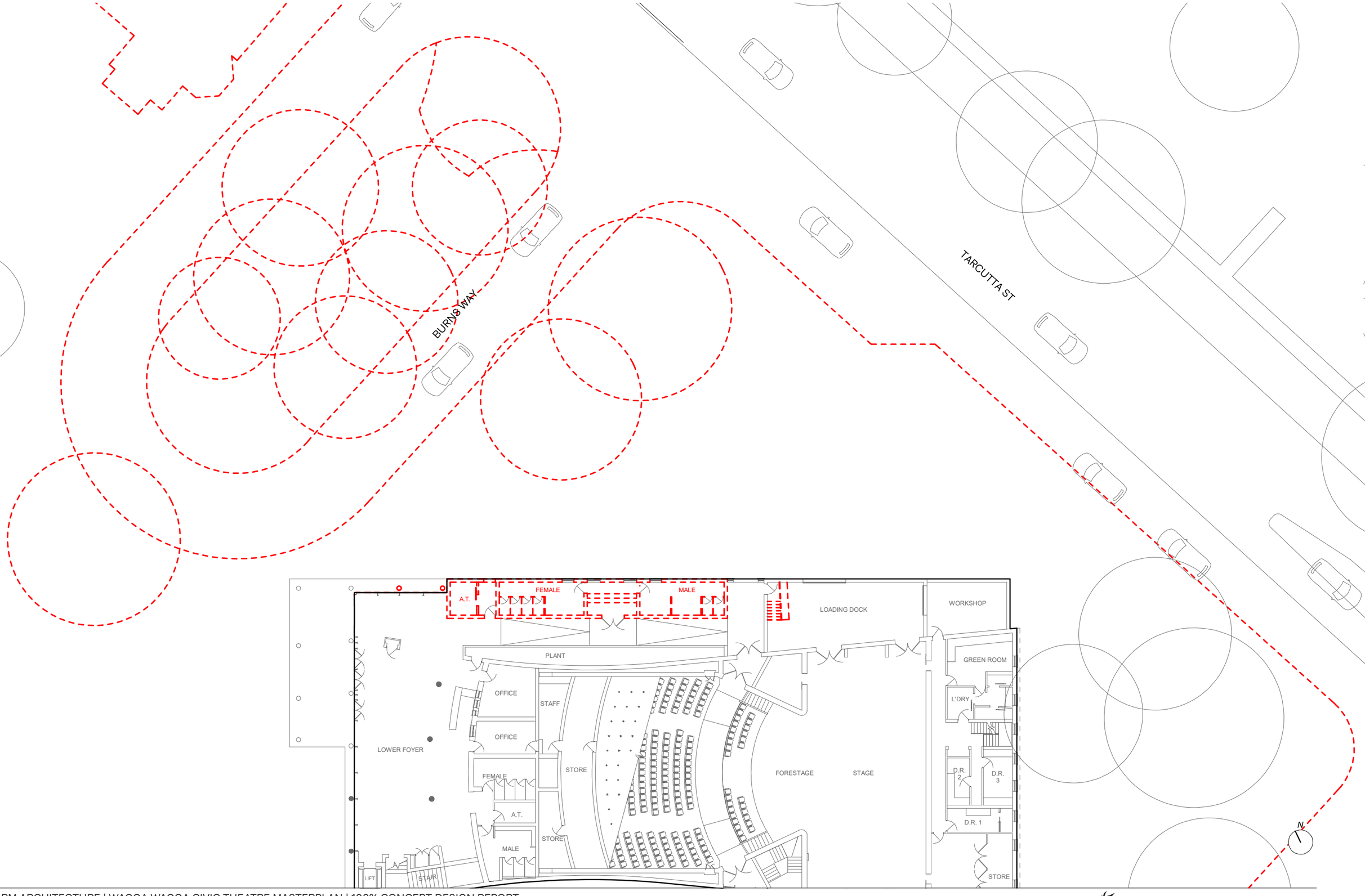
City of Wagga Wagga

WAGGA WAGGA CIVIC THEATRE

EXISTING FIRST FLOOR PLAN



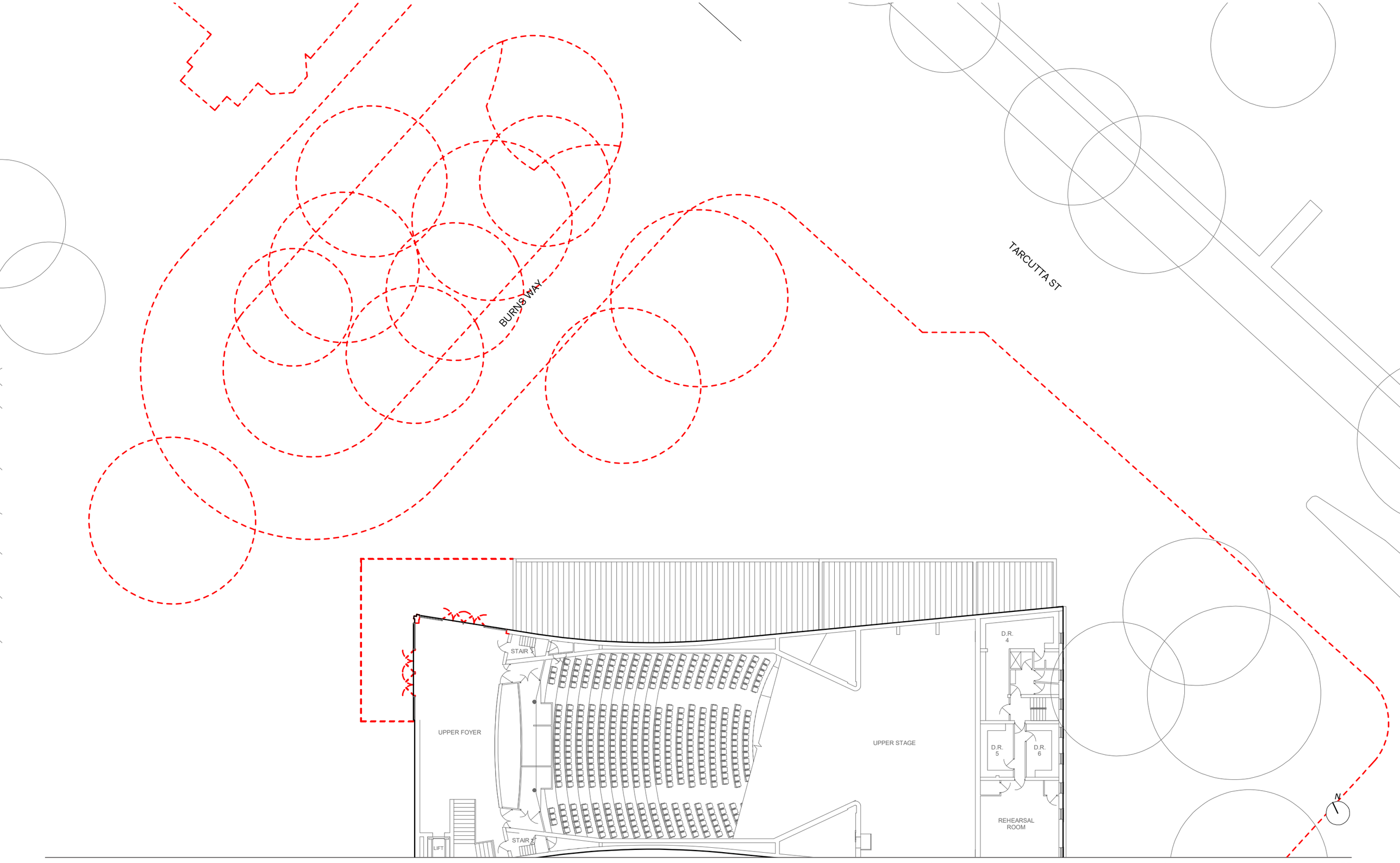
DEMOLITION GROUND FLOOR PLAN



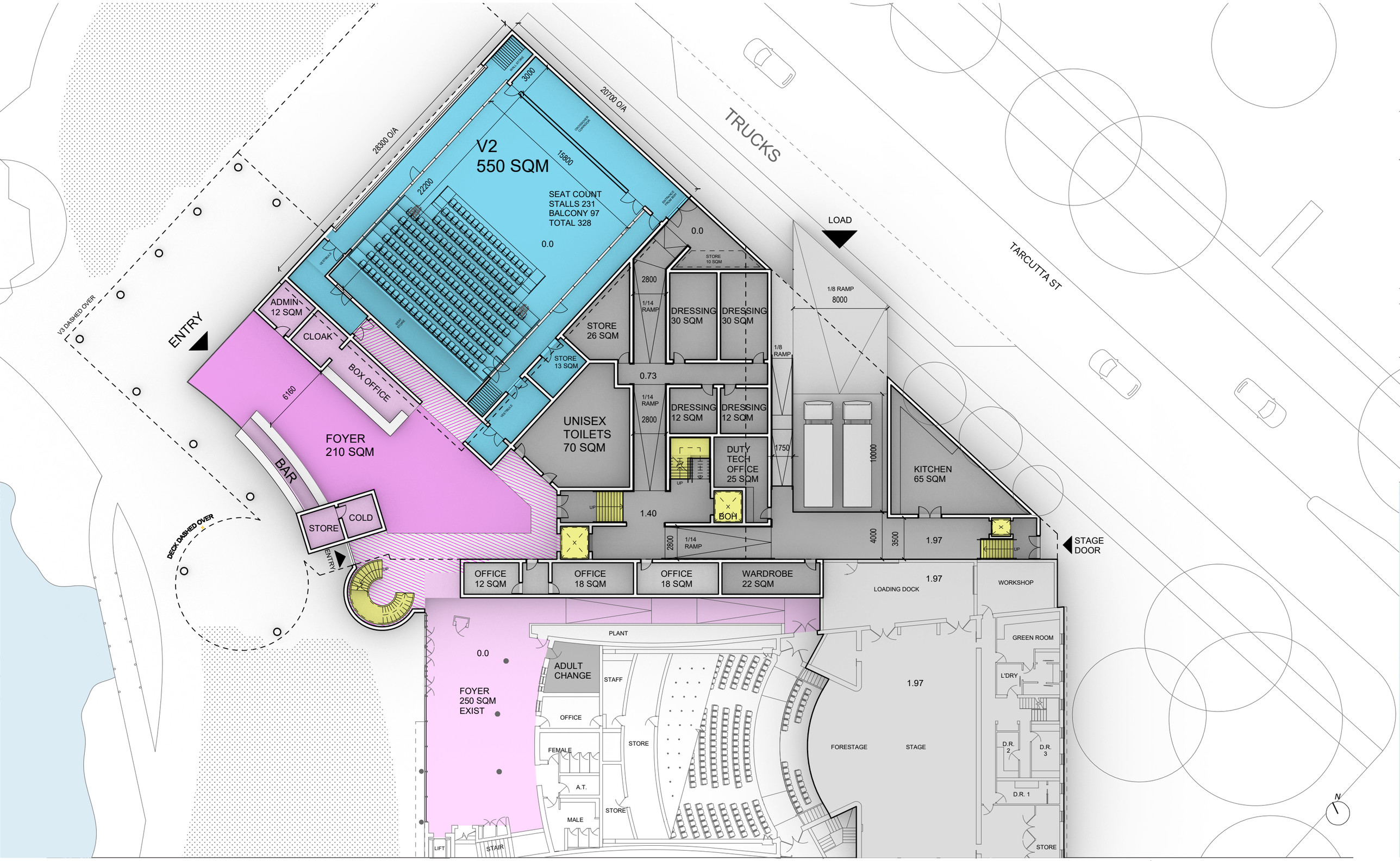
City of Wagga Wagga

WAGGA WAGGA CIVIC THEATRE

DEMOLITION FIRST FLOOR PLAN



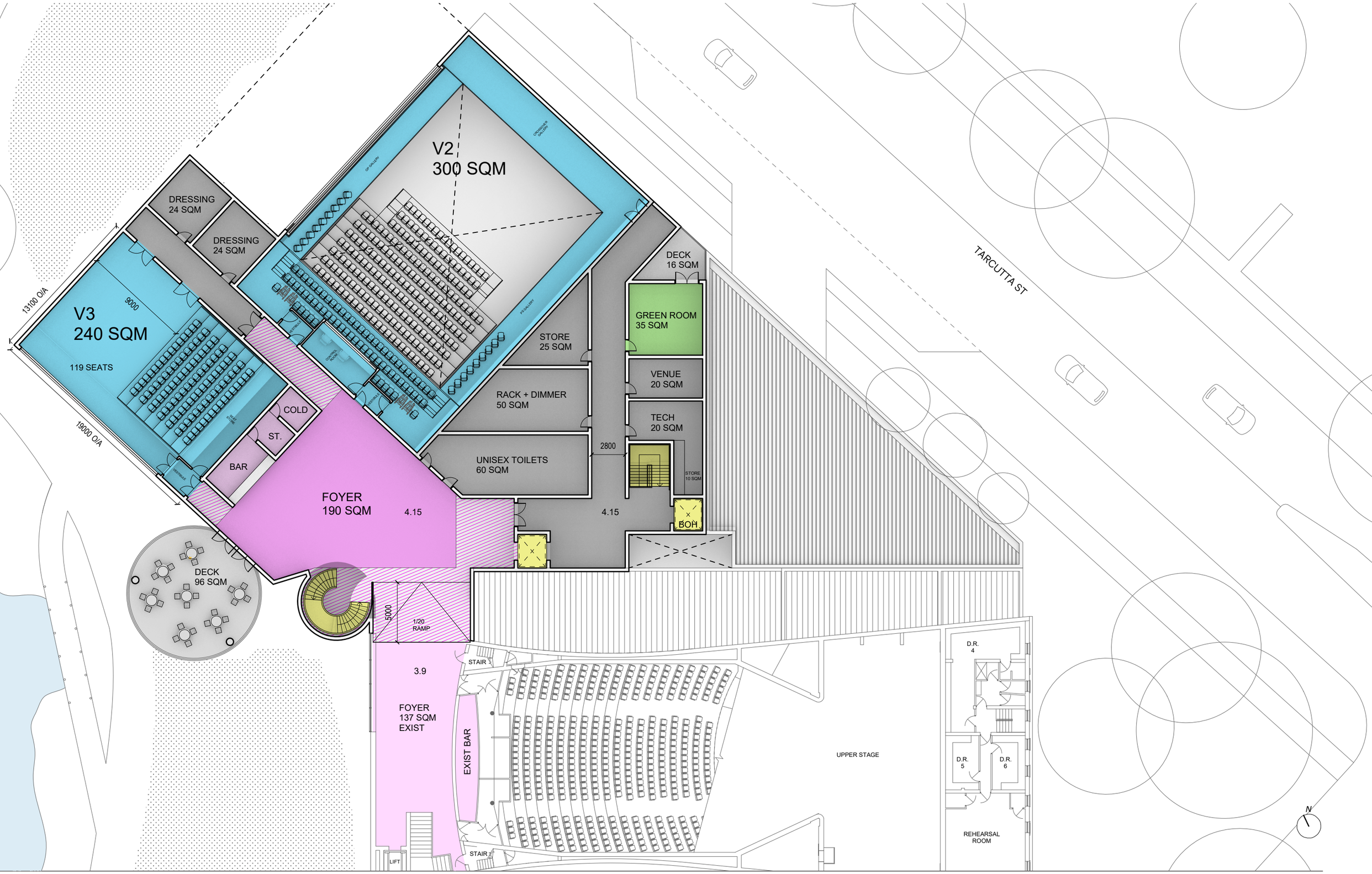
PROPOSED GROUND FLOOR [APRIL 2021]



City of Wagga Wagga

WAGGA WAGGA CIVIC THEATRE

PROPOSED FIRST FLOOR [APRIL 2021]

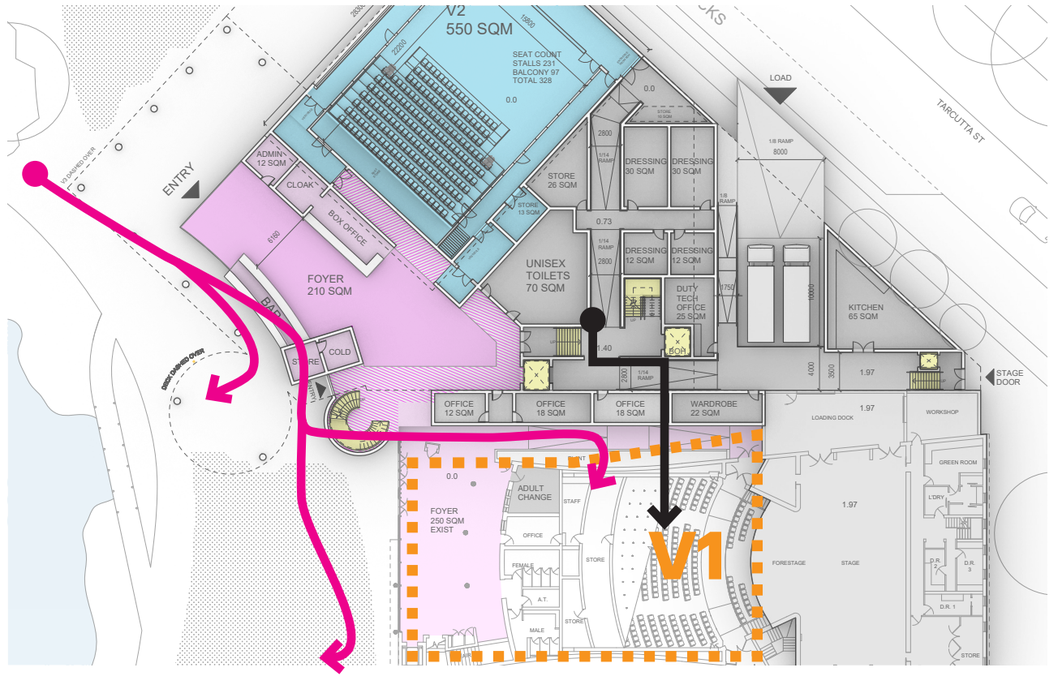


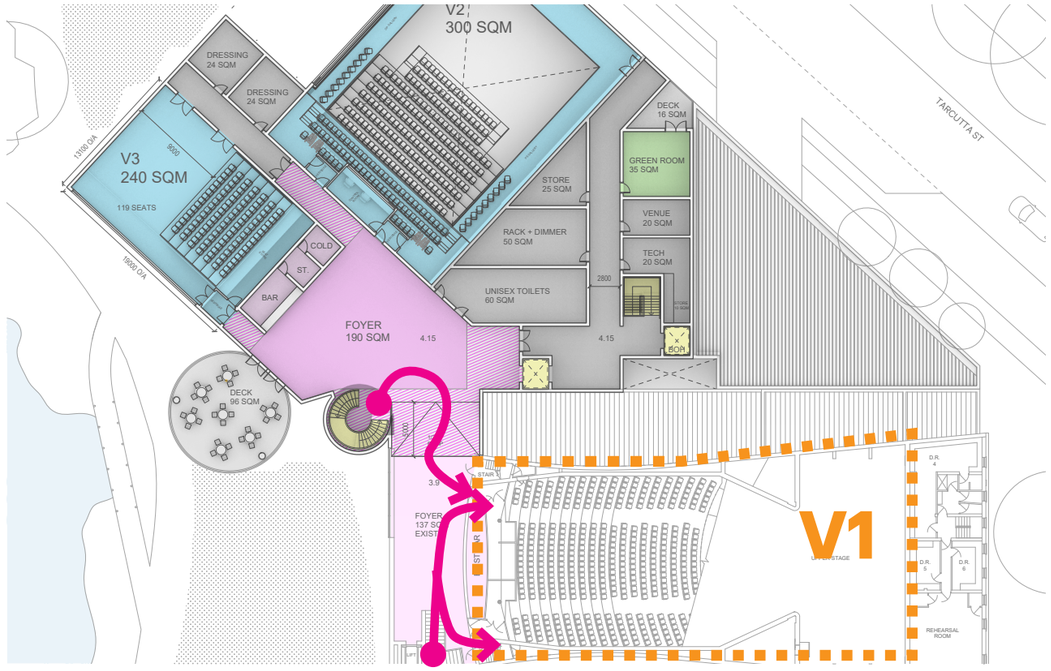
LOADING + ACCESS

The following diagrams illustrate the paths of visiting patrons (Pink) and how equipment will be loaded into the Venues post redevelopment (Black).

The proposed loading dock is flat with the current dock and existing Venue 1 stage. There are many ramps for access from the dock down into Venue 2 and a BOH lift to load Venue 3.

VENUE 1 ACCESS

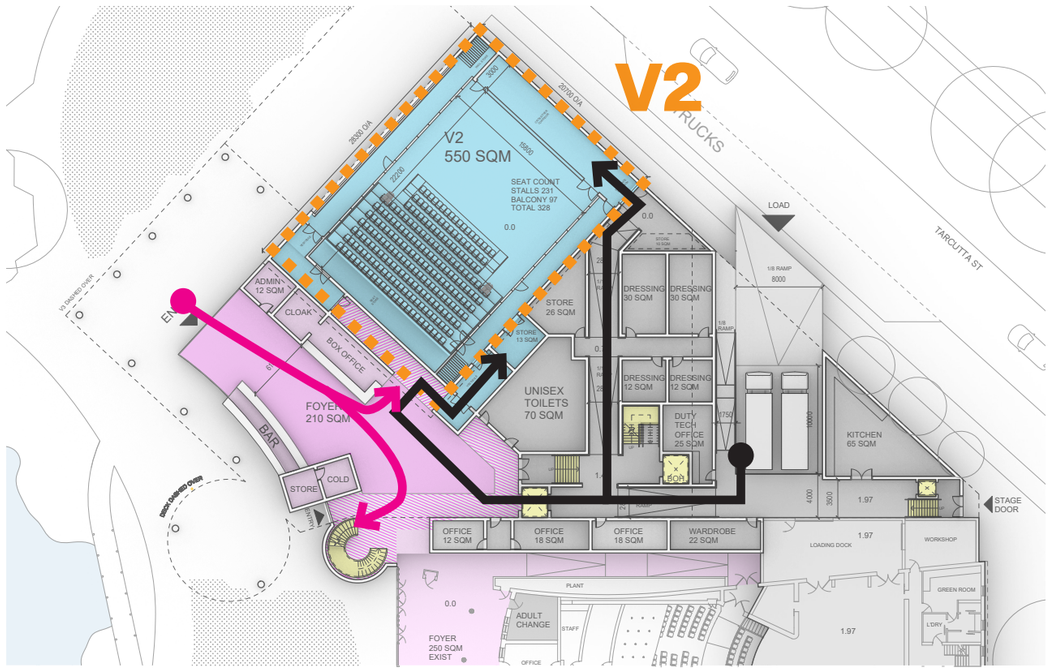


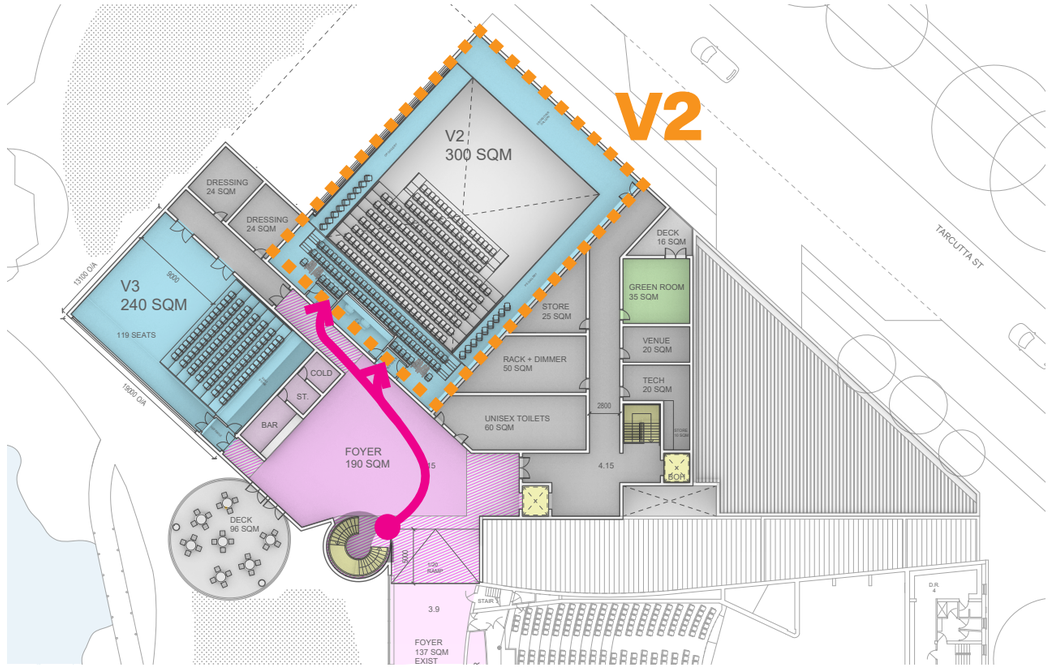


City of Wagga Wagga

WAGGA WAGGA CIVIC THEATRE

VENUE 2 ACCESS

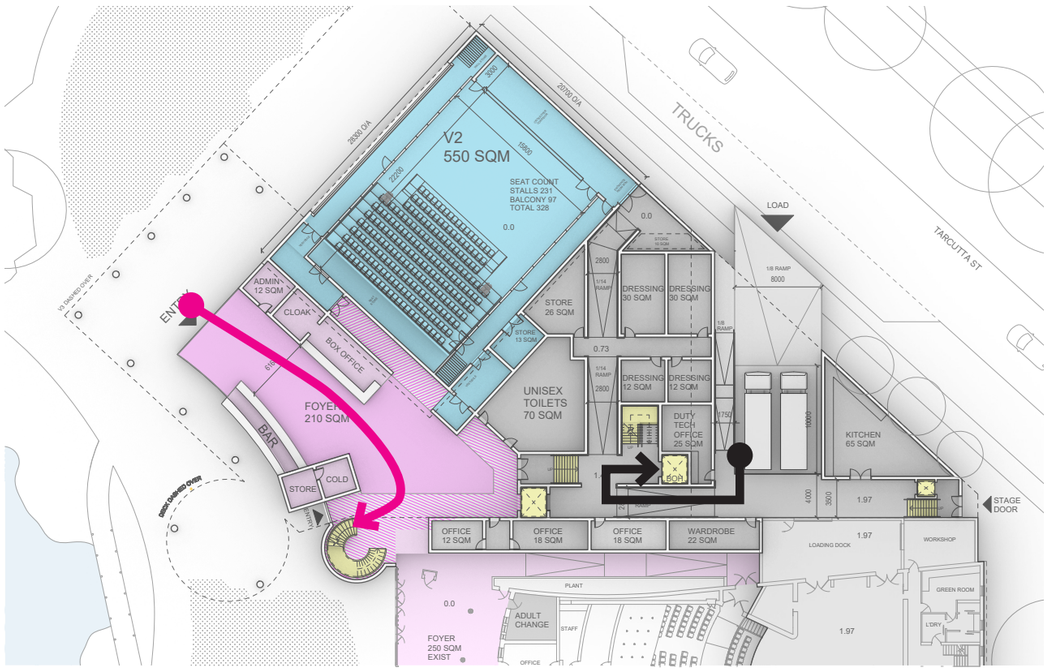


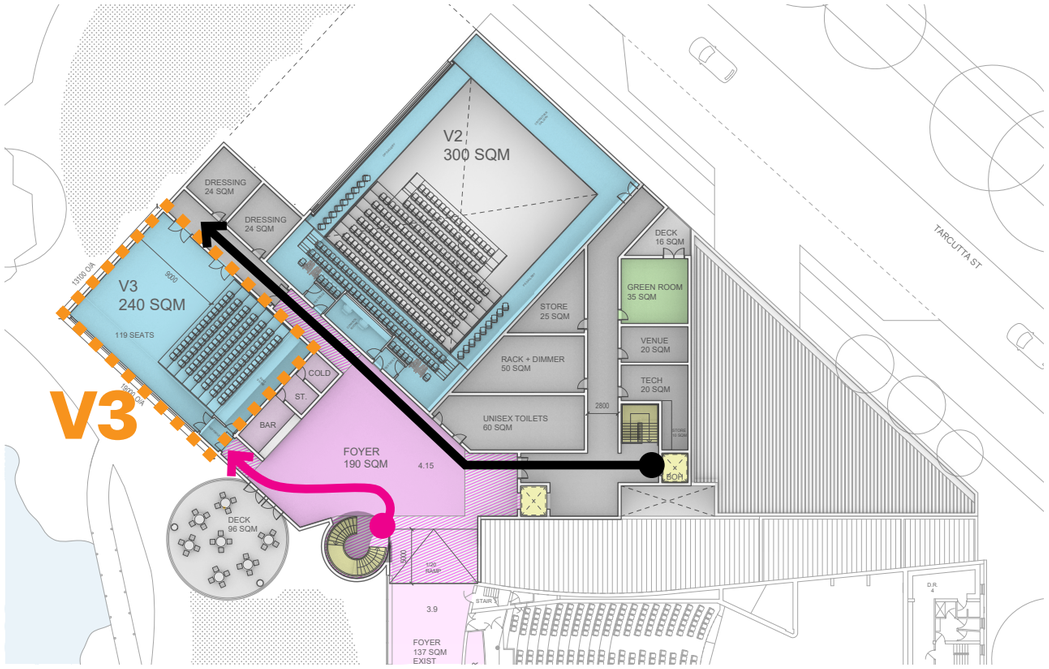


VENUE 3 ACCESS

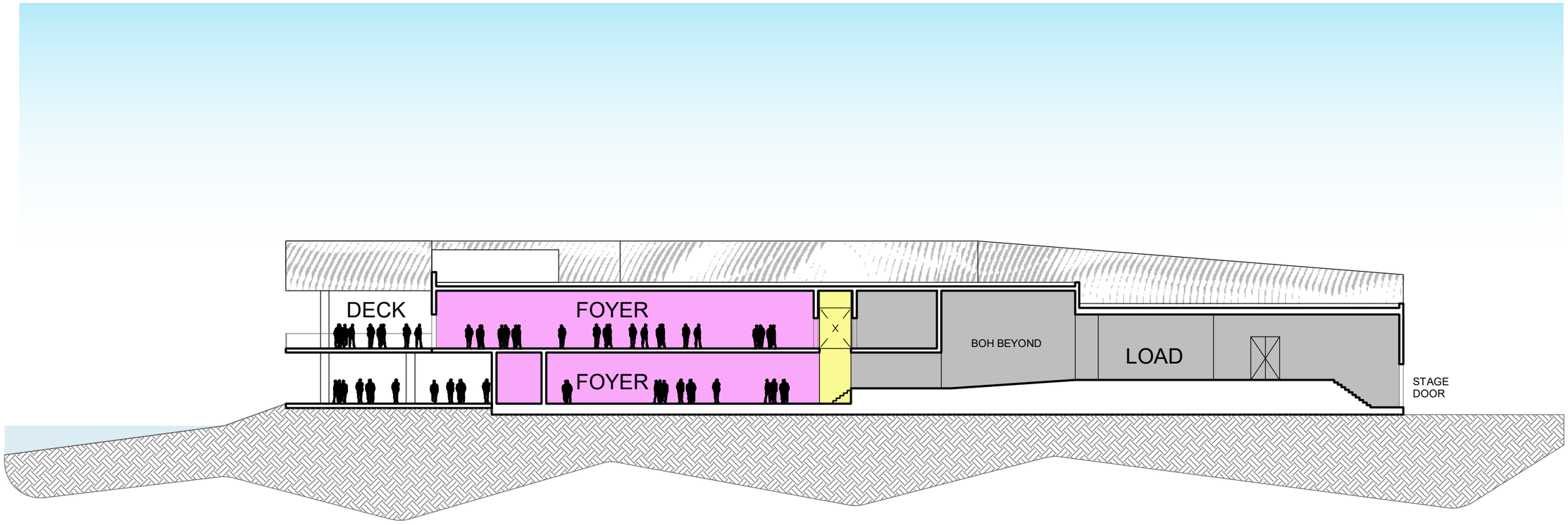
BOH

PATRONS

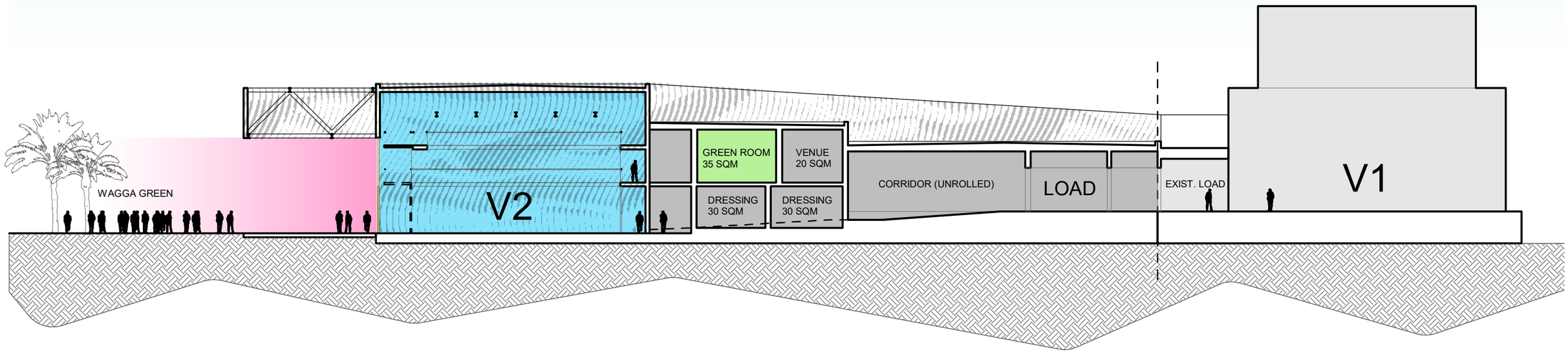




DIAGRAMMATIC SECTIONS



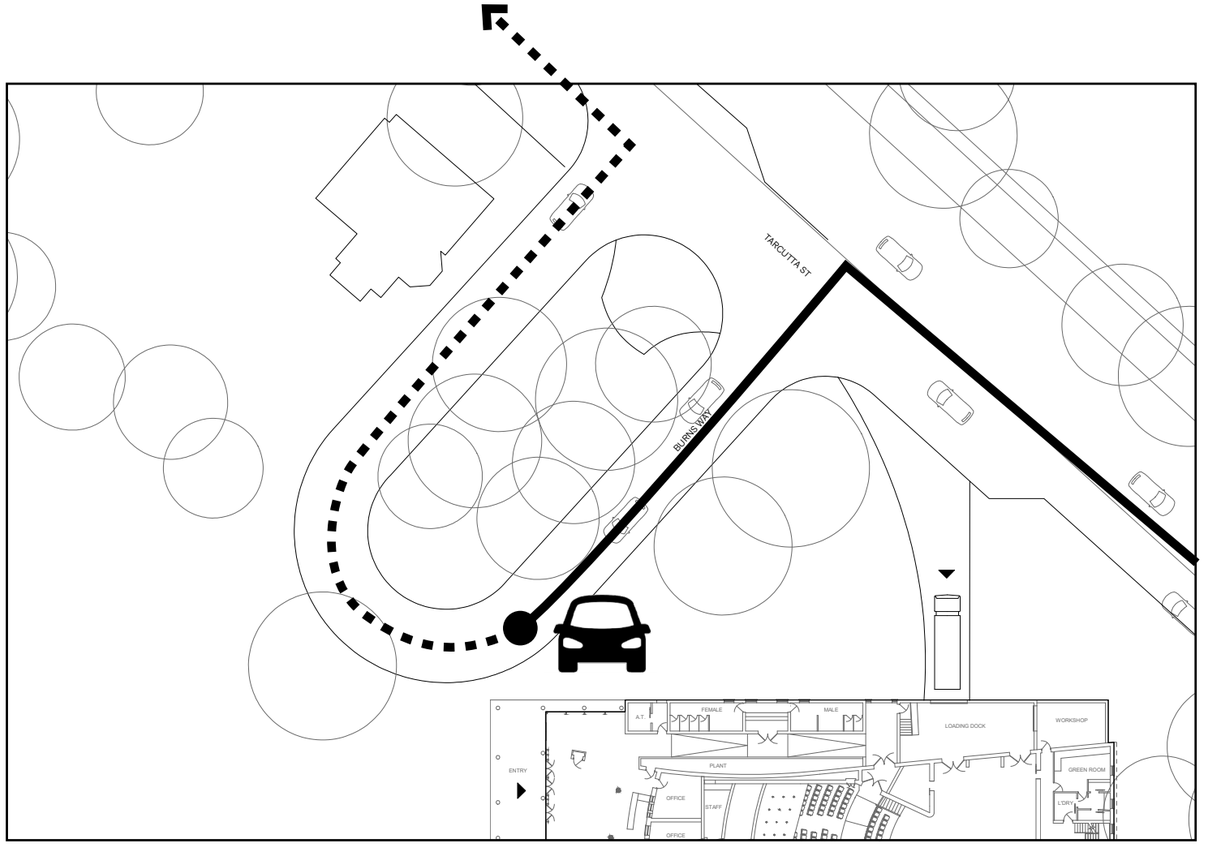
LAGOON THROUGH TO TARCUTTA ST



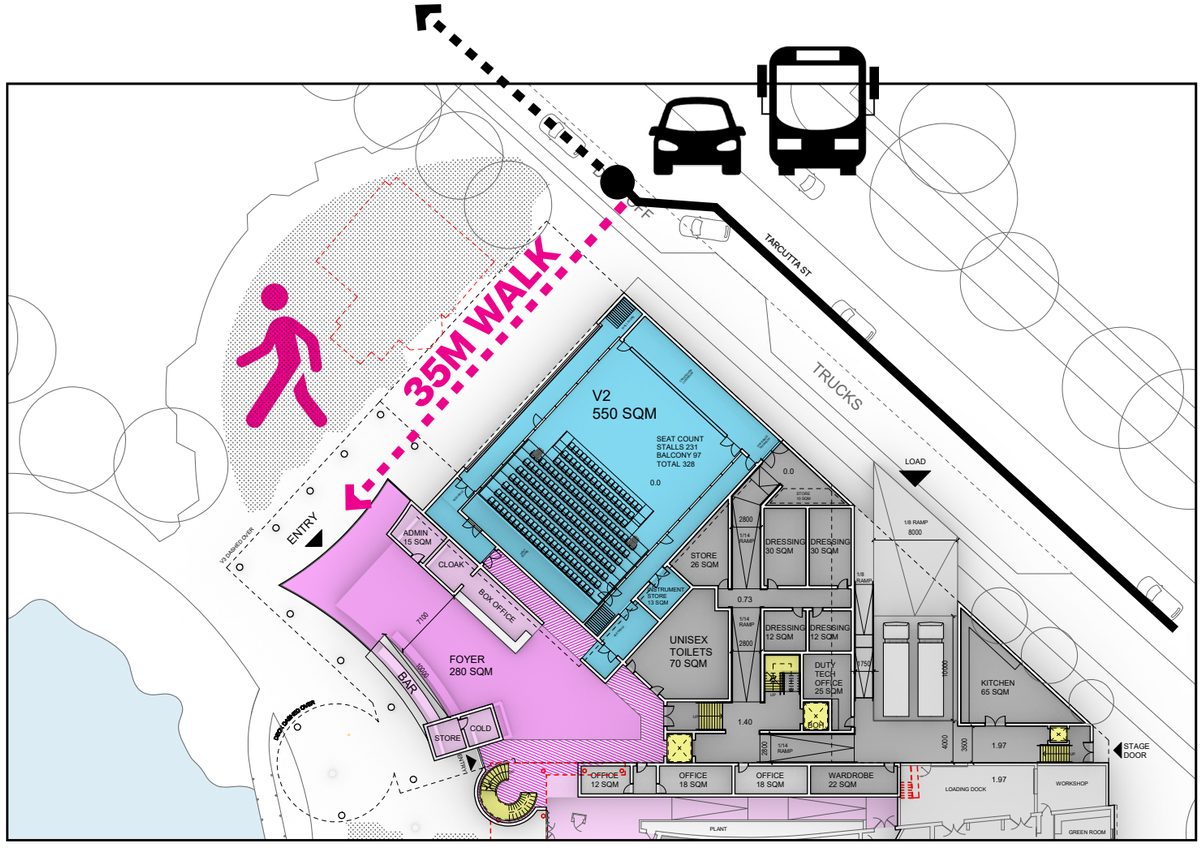
WAGGA GREEN THROUGH TO VENUE 1

THEATRE ARRIVAL

DROP OFF
EXISTING BURNS WAY



DROP OFF
PROPOSED TARCUTTA ST



N

ANNEXURE B: ANTICIAPTED OPERATION
(1 SHEET)

ANNEXURE B: ANTICIAPTED OPERATION

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
CT Day			Performance 12-1pm				
CT Evening					Performance 8-10.30pm	Performance 8-10.30pm	
V2 Day		Workshop 10-12pm					
V2 Evening				Performance 7.30-10pm	Performance 7.30-10pm	Performance 7.30-10pm	
V3 Day			Meeting 10-2pm				
V3 Evening	Class 4-6pm	Class 4-6pm			Performance 7-9pm	Performance 7-9pm	

With kids performances during the week.

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
CT Day							
CT Evening				Performance 7.30-10pm	Performance 8-10.30pm	Performance 8-10.30pm	
V2 Day		Performances 10-12 and 1-2	Performances 10-12 and 1-2	Performances 10-12 and 1-2			
V2 Evening					Performance 7.30-10pm	Performance 7.30-10pm	
V3 Day			Meeting 10-2pm				
V3 Evening	Class 4-6pm	Class 4-6pm			Performance 7-9pm	Performance 7-9pm	

ANNEXURE C: TRAFFIC AND PARKING SURVEY RESULTS

(7 SHEETS)

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

Intersection of Johnston St and Tarcutta St, Wagga Wagga

GPS -35.106857,147.371779

Date:	Tue 22/03/22	***North:***	Tarcutta St	***Survey Period***	AM:	7:00 AM-10:00 AM
Weather:	Fine	***East:***	Johnston St		PM:	2:30 PM-5:30 PM
Suburban:	Wagga Wagga	***South:***	Tarcutta St	***Traffic Peak***	AM:	8:15 AM-9:15 AM
Customer:	McLaren	***West:***	Johnston St		PM:	4:00 PM-5:00 PM

All Vehicles

Time		North Approach Tarcutta St				East Approach Johnston St				South Approach Tarcutta St				West Approach Johnston St				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
7:00	7:15	0	7	39	4	0	0	2	0	0	1	1	32	0	6	5	0	494	
7:15	7:30	0	0	26	4	0	0	1	2	0	1	3	43	0	9	2	1	535	
7:30	7:45	0	4	44	3	0	2	6	5	0	1	9	64	0	8	3	1	696	
7:45	8:00	0	2	48	5	0	0	7	0	0	3	3	60	0	18	5	4	827	
8:00	8:15	0	6	53	10	0	0	2	1	0	1	2	43	0	17	2	1	969	
8:15	8:30	0	7	86	12	0	2	18	8	0	0	4	79	0	22	13	2	1070	Peak
8:30	8:45	0	4	62	18	0	2	33	11	0	2	7	88	0	42	11	1	977	
8:45	9:00	0	10	71	16	0	2	25	16	0	3	7	95	0	44	7	1	853	
9:00	9:15	0	9	65	12	0	0	5	3	0	2	9	88	0	34	10	2	720	
9:15	9:30	0	3	43	6	0	0	2	1	0	2	6	64	0	28	4	1		
9:30	9:45	0	5	46	0	0	1	3	2	0	1	5	67	0	25	1	1		
9:45	10:00	0	4	48	5	0	0	5	2	0	2	9	65	0	21	1	2		
14:30	14:45	0	10	86	6	0	0	6	6	0	3	9	79	0	33	5	0	965	
14:45	15:00	0	3	77	4	0	0	40	14	0	0	8	75	0	40	6	0	960	
15:00	15:15	0	7	57	7	0	0	22	4	0	2	5	100	0	36	7	2	931	
15:15	15:30	0	5	60	3	0	0	13	3	0	2	6	82	0	23	8	1	881	
15:30	15:45	0	5	52	1	0	0	15	4	0	2	8	113	0	35	3	0	894	
15:45	16:00	0	7	73	2	0	0	8	7	0	1	4	100	0	25	6	5	940	
16:00	16:15	0	8	50	5	0	0	8	4	0	1	5	83	0	35	0	0	921	
16:15	16:30	0	6	54	3	0	1	12	2	0	7	10	80	0	35	6	3	1006	
16:30	16:45	0	10	85	3	0	0	14	4	0	2	9	97	0	54	3	3	1078	Peak
16:45	17:00	0	6	54	3	0	1	12	2	0	7	10	80	0	35	6	3	1005	
17:00	17:15	0	10	85	3	0	0	14	4	0	2	9	97	0	54	3	3	973	
17:15	17:30	0	10	85	5	0	1	22	3	0	2	11	106	0	41	5	0		
17:30	17:45	0	6	54	0	0	0	7	1	0	4	6	95	0	30	5	3		
17:45	18:00	0	4	44	5	0	0	9	3	0	1	7	76	0	29	2	7		

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

Intersection of Morrow St and Tarcutta St, Wagga Wa

GPS	*-35.109519,147.373017*						
Date:	Tue 22/03/22	***North:***	Tarcutta St	***Survey Period***	AM:	7:00 AM-10:00 AM
Weather:	Fine	***East:***	N/A		PM:	2:30 PM-5:30 PM
Suburban:	Wagga Wagga	***South:***	Tarcutta St	***Traffic Peak***	AM:	8:15 AM-9:15 AM
Customer:	McLaren	***West:***	Morrow St		PM:	4:15 PM-5:15 PM

All Vehicles

Time		North Approach Tarcutta S			South Approach Tarcutta S			West Approach Morrow St			Hourly Total	
Period Start	Period End	U	R	SB	U	NB	L	U	R	L	Hour	Peak
7:00	7:15	0	1	44	0	33	5	0	2	1	469	
7:15	7:30	0	2	33	0	49	2	0	2	3	531	
7:30	7:45	0	3	52	0	74	3	0	4	3	708	
7:45	8:00	0	1	59	0	75	9	0	5	4	840	
8:00	8:15	0	2	63	0	69	7	0	3	4	963	
8:15	8:30	0	0	112	0	121	16	0	5	14	1005	Peak
8:30	8:45	0	2	103	0	126	11	0	9	20	937	
8:45	9:00	0	9	110	0	131	9	0	7	10	868	
9:00	9:15	0	7	54	0	96	7	0	12	14	797	
9:15	9:30	1	11	64	0	90	6	0	7	21		
9:30	9:45	0	4	63	0	98	17	1	7	12		
9:45	10:00	1	5	71	0	95	12	0	8	13		
14:30	14:45	0	6	128	0	100	9	0	12	10	1003	
14:45	15:00	0	4	145	0	84	11	0	10	8	1035	
15:00	15:15	0	6	100	0	112	16	0	8	8	999	
15:15	15:30	0	4	86	0	113	5	0	13	5	1046	
15:30	15:45	0	6	153	0	98	6	0	18	16	1096	
15:45	16:00	0	4	86	0	113	5	0	13	5	1028	
16:00	16:15	0	6	153	0	98	6	0	18	16	1057	
16:15	16:30	0	6	132	0	104	9	0	14	11	1108	
16:30	16:45	0	8	105	1	80	8	0	11	16	1140	
16:45	17:00	0	5	104	0	107	15	0	16	8	1154	Peak
17:00	17:15	0	11	158	0	133	15	1	16	14	1103	
17:15	17:30	0	8	132	0	132	13	0	10	13		
17:30	17:45	0	4	97	0	106	5	0	17	14		
17:45	18:00	0	3	86	0	91	5	0	11	8		

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

Intersection of Cross St and Tarcutta St, Wagga Wagga

GPS	-35.108494,147.372516

Date:	Tue 22/03/22	North:	Tarcutta St	Survey Period	AM:	7:00 AM-10:00 AM
Weather:	Fine	East:	Cross St		PM:	2:30 PM-5:30 PM
Suburban:	Wagga Wagga	South:	Tarcutta St	Traffic Peak	AM:	8:15 AM-9:15 AM
Customer:	McLaren	West:	Burns Way		PM:	4:00 PM-5:00 PM

All Vehicles

Time		North Approach Tarcutta St				East Approach Cross St				South Approach Tarcutta St				West Approach Burns Way				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
7:00	7:15	0	0	44	0	0	1	0	1	0	1	33	0	0	0	0	0	445	
7:15	7:30	0	0	33	2	0	1	0	2	0	3	49	0	0	0	0	0	510	
7:30	7:45	0	0	51	1	0	1	0	4	0	5	72	0	0	0	0	0	684	
7:45	8:00	0	0	57	2	0	0	0	3	0	10	69	0	0	0	0	0	822	
8:00	8:15	0	0	55	8	0	0	0	9	1	18	54	0	0	0	0	0	965	
8:15	8:30	0	0	98	17	0	1	0	9	2	39	89	5	0	3	1	0	1016	Peak
8:30	8:45	0	1	90	18	0	1	0	13	0	46	99	1	0	2	0	1	951	
8:45	9:00	0	0	106	22	0	2	0	13	0	32	108	1	0	0	0	0	879	
9:00	9:15	0	1	51	18	0	2	0	10	0	35	73	2	0	0	2	2	791	
9:15	9:30	0	1	61	8	0	2	0	14	0	27	82	2	0	1	1	0		
9:30	9:45	0	1	56	17	0	2	0	10	1	36	71	2	0	0	2	2		
9:45	10:00	0	0	62	8	0	2	0	14	0	26	79	3	0	1	1	0		
14:30	14:45	0	0	113	12	0	4	0	20	0	17	93	0	0	1	1	0	956	
14:45	15:00	0	0	124	8	0	2	0	25	0	10	82	0	0	0	0	1	974	
15:00	15:15	0	0	93	2	0	1	0	13	0	9	110	1	0	0	0	2	988	
15:15	15:30	0	0	78	2	0	2	0	12	0	8	108	2	0	0	0	0	973	
15:30	15:45	0	0	99	1	0	2	0	60	0	6	108	0	0	0	0	3	996	
15:45	16:00	0	0	95	2	0	8	0	42	0	11	102	2	0	1	0	3	1050	
16:00	16:15	0	3	82	2	0	2	0	28	0	10	85	1	0	3	0	0	1019	
16:15	16:30	0	0	88	4	0	6	0	20	1	12	101	1	0	0	0	2	1136	
16:30	16:45	0	0	132	9	0	7	0	37	0	24	119	4	0	0	0	1	1203	Peak
16:45	17:00	0	0	88	4	0	6	0	20	1	12	101	1	0	0	0	2	1101	
17:00	17:15	0	0	132	9	0	7	0	37	0	24	119	4	0	0	0	1	1057	
17:15	17:30	0	1	115	11	0	5	0	23	1	21	119	4	0	1	0	1		
17:30	17:45	0	1	79	1	0	4	0	22	0	10	107	3	0	0	2	2		
17:45	18:00	0	0	70	1	0	2	0	17	0	11	87	1	0	2	0	0		

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

Intersection of Morrow St and Baylis St, Wagga Wagga

GPS -35.109864,147.370526

Date:	Tue 22/03/22	***North:***	Baylis St	***Survey Period***	AM:	7:00 AM-10:00 AM
Weather:	Fine	***East:***	Morrow St		PM:	2:30 PM-5:30 PM
Suburban:	Wagga Wagga	***South:***	Baylis St	***Traffic Peak***	AM:	9:00 AM-10:00 AM
Customer:	McLaren	***West:***	Morrow St		PM:	3:45 PM-4:45 PM

All Vehicles

Time		North Approach Baylis St				East Approach Morrow St				South Approach Baylis St				West Approach Morrow St				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
7:00	7:15	0	2	10	3	0	4	4	0	0	0	8	0	0	0	4	1	223	
7:15	7:30	0	2	12	3	0	2	2	2	0	1	10	1	0	0	7	5	289	
7:30	7:45	0	0	17	9	0	2	3	2	0	3	10	1	0	0	13	6	364	
7:45	8:00	0	1	13	7	0	1	8	0	0	2	8	2	0	2	22	8	445	
8:00	8:15	0	1	19	13	0	2	6	3	0	1	17	3	0	2	27	8	506	
8:15	8:30	0	7	25	19	0	7	13	0	0	1	12	2	0	2	26	8	570	
8:30	8:45	0	9	24	26	0	6	8	1	0	3	12	4	0	6	39	9	587	
8:45	9:00	0	4	45	21	0	3	7	2	0	3	17	3	0	0	24	6	582	
9:00	9:15	0	5	37	21	0	4	14	2	0	4	20	4	0	6	35	14	599	Peak
9:15	9:30	0	3	39	15	0	6	9	2	0	6	22	3	1	2	21	10		
9:30	9:45	0	2	41	15	0	2	11	2	0	6	17	5	0	6	30	5		
9:45	10:00	0	5	48	14	0	3	8	3	0	6	21	11	0	7	20	6		
14:30	14:45	1	7	36	15	0	6	15	6	0	5	27	10	0	3	33	10	733	
14:45	15:00	0	6	47	16	0	7	16	2	0	7	18	6	0	7	28	12	738	
15:00	15:15	0	9	64	25	0	10	19	2	0	6	42	7	0	6	11	6	718	
15:15	15:30	0	7	52	18	0	10	16	6	0	4	33	6	0	5	19	4	729	
15:30	15:45	0	5	38	14	0	8	24	9	0	5	33	7	0	5	21	10	738	
15:45	16:00	0	7	39	13	0	7	15	10	0	1	24	5	0	4	19	8	765	
16:00	16:15	0	7	53	13	0	7	34	10	1	5	37	10	0	5	24	12	816	
16:15	16:30	0	1	31	7	0	16	33	8	0	10	39	9	0	1	22	12	825	Peak
16:30	16:45	0	4	48	11	0	10	26	9	0	9	47	8	0	2	26	6	821	
16:45	17:00	0	3	44	23	0	16	25	5	1	7	42	4	0	4	25	4	783	
17:00	17:15	0	7	47	14	0	16	32	6	0	5	36	9	0	11	35	9	726	
17:15	17:30	0	5	34	13	0	15	23	4	0	6	40	10	0	1	24	10		
17:30	17:45	0	3	36	18	0	12	28	0	0	3	34	7	0	4	18	5		
17:45	18:00	0	2	34	9	1	9	10	1	0	5	44	0	0	6	21	4		

Curtis Traffic Surveys

Job: 220305mcl (21_0423)
Client: McLaren Traffic Engineering
Day, dati 12/03/22
Location Wagga Wagga
Weather Fine
Surveyor MC

Parking round commencing…

Zone	Street	From	To	Side of street	Capacity	Restriction	12:00	13:00	14:00	15:00	17:00	18:00	19:00	20:00
a	Tarcutta St	Cross St	300m	east	46	30uM+16	5	2	2	0	0	5	5	4
b	Tarcutta St	Burns Wy	Morrow St	west	10	uM	0	0	0	0	0	0	0	0
c	Visitors Centre	off street			23	21*2p+2c	6	5	4	3	11	16	17	10
d	Tarcutta St	Morrow St	300m	west	22	uM	4	3	3	3	5	6	7	2
e	Baptist church	off street			61	49u+3dis	13	13	11	10	15	25	27	10
f	Tarcutta St	300m	500m	east	23	uM	1	0	0	0	0	1	1	1
g	Tarcutta St	300m	Tompson St	west	5	u	0	0	0	0	0	0	0	0
h	Tarcutta St	Tompson St	500m	west	15	uM	3	2	2	2	2	2	2	2
I	Tompson St	Tarcutta St	Berry St	south	9	2*1p(std)	5	6	5	4	4	3	3	2
j	Berry St	Tompson St	500m	east	14	1p(std)M	7	4	3	3	0	1	1	1
k	Berry St	500m	Tompson St	west	13	9uM+4*1	11	6	4	3	0	4	2	0
L	Tompson St	Tarcutta St	O'Reilly St	north	20	uM	8	4	4	3	9	6	4	3
m	O'Reilly St	Tompson St	300m	west	5	1p(std)M	1	1	1	1	4	0	0	0
n	O'Reilly St	300m	Tompson St	east	5	uM	3	2	2	1	5	1	1	1
o	Tompson St	Berry St	Bayliss St	south	26	16uM+10	19	21	19	17	24	7	5	2
p	Tompson St	O'Reilly St	Bayliss St	north	24	1p(std)M	7	8	8	7	16	12	8	3
q	Bayliss St	Tompson St	500m	east	12	2*1z3+10	8	10	8	x	x		9	8	7
r	Bayliss St	500m	Tompson St	west	7	3*bz4+4*	4	6	4	0	x		4	5	5
s	Bayliss St	Tompson St	300m	west	10	1p(std)	8	8	5	2	x	x	x	x	
t	Bayliss St	300m	Tompson St	east	4	3*1p(std)	4	3	3	1	x	x	x	x	
u	Tompson St	Bayliss St	Peter St	south	9	1p(std)M	8	5	5	7	9	10	5	2
v	Tompson St	Bayliss St	Peter St	north	10	8*1p(std)	6	5	5	4	9	6	5	4
w	Peter St	Tompson St	500m	east	6	2p(std)M	2	1	1	3	6	4	2	0
x	Peter St	500m	Tompson St	west	5	2p(std)M	1	1	1	2	5	5	2	0
y	Peter St	Tompson St	Sheppard St	west	15	13*2p(std	2	5	5	10	14	9	10	10
z	Sheppard St	Peter St	end	south	10	u	3	2	1	1	10	7	6	5
aa	Sheppard St	end	Peter St	north	10	u	3	3	3	2	0	7	5	4
ab	Peter St	Sheppard St	Morrow St	west	3	2p(std)M	4	3	3	3	4	3	3	2
ac	Peter St	Morrow St	Tompson St	east	24	2p(std)M	9	7	6	8	25	25	17	12
ad	Tompson St	Peter St	Best St	south	7	uM	2	2	2	2	8	7	5	2
ae	Tompson St	Peter St	Best St	north	7	uM	5	4	4	4	7	8	7	5
af	Best St	Tompson St	Esplanade	west	8	2p(std)M	0	0	0	0	7	6	5	3
ag	Best St	Tompson St	Morrow St	east	10	uM	1	2	2	2	10	8	7	6
ah	Esplanade	Best St	500m	south	4	u	4	4	4	5	5	5	5	4
ai	Esplanade	500m	1 Jack Dr	north	5	2p(std)	2	1	1	1	5	5	5	4
aj	Ivan Jack Dr	Esplanade	Johnston St	west		ns	0	0	0	0	0	0	0	0
ak	Ivan Jack Dr	Morrow St	Johnston St	east		ns	0	0	0	0	0	0	0	0
aL	Johnston St	1 Jack Dr	500m	south	6	u 60 degr	5	4	3	3	5	2	2	2
am	Johnston St	500m	Trail St	north	3	2p(std) 60	0	0	0	0	3	2	2	3
an	Johnston St	Trail St	300m	north	9	1p(std)M	3	5	6	6	9	9	7	3
ao	Johnston St	300m	Fitzmaurice	north	6	1p(std)M	3	4	4	3	5	5	3	2
ap	Johnston St	Fitzmaurice !	300m	south	5	4*1p(std)	4	3	8	2	12	8	7	6
aq	Johnston St	300m	1 Jack Dr	south	3	1p(std)M	8	8	8	8	4	4	3	1
ar	Trail St	Johnston St	Gurwood St	west	10	1p(std)M	1	1	2	2	3	3	3	1
as	Trail St	Johnston St	Gurwood St	east	12	1p(std)M	0	0	0	0	4	3	2	0
at	Gurwood St	Trail St	Fitzmaurice	north	45	6u+38*2p	23	22	11	12	16	19	21	13
au	Gurwood St	Trail St	Fitzmaurice	south	31	1*1pDis+	19	18	12	15	14	16	13	10
av	Fitzmaurice St	Gurwood St	500m	west	9	2p(std)M	9	9	9	4	2	7	9	7
aw	Fitzmaurice St	500m	Sturt St	east	7	5*2p(std)	6	5	4	3	3	4	6	5
ax	Fitzmaurice St	Gurwood St	Johnston St	west	20	2*1pDis+	6	5	2	2	4	6	8	5
ay	Fitzmaurice St	Sturt St	Johnston St	east	15	10*bz4+5	13	13	14	15	19	20	22	8
az	Sturt St	Fitzmaurice !	end	north	25	16*1p(std	8	8	5	5	15	17	19	20
ba	Sturt St	Fitzmaurice !	Tarcutta St	south	20	1dis+7*1z	1	1	1	1	4	5	5	3
bb	Sturt St	Henley Ln	Tarcutta St	south	3	1z11	1	1	0	0	1	3	3	2
bc	Tarcutta St	Sturt St	Johnston St	east	22	9u+12*2p	14	15	15	16	17	18	20	18
bd	Tarcutta St	Sturt St	Johnston St	west	18	5u+12*2p	5	5	6	5	8	13	13	10
be	Johnston St	Tarcutta St	300m	north	16	u 60 degr	14	16	20	20	23	22	11	9
bf	Johnston St	Tarcutta St	300m	south	19	15u+1dis	10	11	11	12	21	18	15	12
bg	Johnston St	300m	Church St	north	23	u 60 degr	4	3	0	0	16	16	10	8
bh	Johnston St	300m	Church St	south	9	3*bz6+1*	6	3	0	1	10	10	0	0
bi	Church St	Johnston St	300m	east	26	7u+12*2p	6	6	7	7	12	10	7	3
bj	Church St	Johnston St	300m	west	10	1dis+9u	4	6	6	6	6	3	3	3
bk	Church St	300m	Cross St	east	8	u	1	0	0	0	0	0	1	1
bL	Church St	300m	Cross St	west	27	24u+3dis	0	0	0	0	14	9	0	0
bm	Cross St	Church St	Tarcutta St	south	42	u 60 degr	13	9	3	3	10	9	4	3
bn	Cross St	Church St	Tarcutta St	north	31	2np1+29u	12	10	5	4	16	14	5	5
bo	CSU playhous				167	161+4dis	9	3	2	3	28	28	9	7
bp	Morrow St	Tarcutta St	O'Reilly St	south	6	1p(std)M	6	5	3	2	6	6	4	4
bq	O'Reilly St	Morrow St	300m	east	29	uM	17	12	8	7	19	19	10	8
br	O'Reilly St	300m	Morrow St	west	23	uM	13	10	7	11	14	10	5	5
bs	Public off streets	O'Reilly St			344	256*2p+*	23	24	19	17	18	22	23	24
bt	Morrow St	O'Reilly St	Bayliss St	south	15	1p(std)M	11	9	6	6	4	4	3	3
bu	Morrow St	Tarcutta St	Bayliss St	north	38	17u+2dis	26	24	22	19	17	15	14	12
bv	Bayliss St	Morrow St	300m	east	19	3*1z3+12	12	11	10	8	1	1	1	1
bw	Bayliss St	300m	Morrow St	west	27	25*1p(std	8	8	9	10	4	4	3	3
bx	Morrow St	Bayliss St	Peter St	south	12	1p(std)M	x	x	x	x	x	x	x	x
by	Morrow St	Peter St	Best St	south	19	7*1p(std)	16	9	7	9	19	16	14	12
bz	Morrow St	1 Jack Dr	300m	north	6	2p(std)M	3	4	4	3	5	5	5	5
ca	Morrow St	300m	Bayliss St	north	8	2p(std)M	x	x	x	x	x	x	x	x
cb	Bayliss/Fitzma	Morrow St	Johnston St	west	15	3*bz4+4*	1x	2x	1x	3x	3x	3x	2x	2x
cc	Bayliss/Fitzma	Morrow St	Johnston St	east	18	6*1p(std)	3x	3x	0x	0x	9x	8x	6x	5x
cd	Johnston St	Fitzmaurice !	Tarcutta St	north	9	1p(std)M	1	1	0	0	8	5	3	2
ce	Johnston St	Fitzmaurice !	Tarcutta St	south	6	1p(std)M	0	1	1	1	4	3	0	0
cf	Tarcutta St	Johnston St	Cross St	east	18	uM	6	5	0	0	3	3	1	1
cg	Off St east	Rural Pl			26	23*3p+3c	6	4	0	0	3	3	1	1
ch	Tarcutta St	Johnston St	Burns Wy	west	15	3p2M	11	8	0	0	9	7	9	7
ci	Burns Wy			both	9	1dis+3*1/	2	5	0	0	5	4	3	2

Curtis Traffic Surveys

Job: 220305mcl (21_0423)
Client: McLaren Traffic Engineering
Day, dati 11/03/22
Location Wagga Wagga
Weather Fine
Surveyor MC

Parking round commencing…

Zone	Street	From	To	Side of street	Capacity	Restriction	10:00	11:00	12:00	13:00	14:00	15:00	17:00	18:00	19:00	20:00
a	Tarcutta St	Cross St	300m	east	46	30uM+16	9	8	9	7	5	4	2	0	10	11
b	Tarcutta St	Burns Wy	Morrow St	west	10	uM	0	0	0	0	0	0	0	0	2	2
c	Visitors Centre	off street			23	21*2p+2d	6	5	8	5	4	3	2	2	2	2
d	Tarcutta St	Morrow St	300m	west	22	uM	0	12	12	11	7	5	3	4	3	2
e	Baptist church	off street			61	49u+3dis	25	25	27	27	26	21	15	7	9	10
f	Tarcutta St	300m	500m	east	23	uM	2	2	2	2	1	0	0	0	0	0
g	Tarcutta St	300m	Tompson St	west	5	u	3	3	3	3	3	3	1	0	0	0
h	Tarcutta St	Tompson St	500m	west	15	uM	7	5	4	4	6	4	3	3	3	2
I	Tompson St	Tarcutta St	Berry St	south	9	2*1p(std)	4	8	8	8	6	4	0	0	0	0
j	Berry St	Tompson St	500m	east	14	1p(std)M	8	9	11	10	6	2	4	1	2	2
k	Berry St	500m	Tompson St	west	13	9uM+4*1	10	7	4	8	9	5	2	1	1	0
L	Tompson St	Tarcutta St	O'Reilly St	north	20	uM	20	19	18	18	18	15	5	0	0	0
m	O'Reilly St	Tompson St	300m	west	5	1p(std)M	1	1	0	0	0	0	1	1	1	1
n	O'Reilly St	300m	Tompson St	east	5	uM	5	5	5	5	5	3	1	0	0	0
o	Tompson St	Berry St	Bayliss St	south	26	16uM+10	23	22	22	22	21	15	4	3	3	3
p	Tompson St	O'Reilly St	Bayliss St	north	24	1p(std)M	13	10	7	9	9	8	3	0	0	0
q	Bayliss St	Tompson St	500m	east	12	2*1z3+10	9	9	9	10	10	10	10	5	6	6
r	Bayliss St	500m	Tompson St	west	7	3*bz4+4*	4	4	4	3	3	3	4	3	4	3
s	Bayliss St	Tompson St	300m	west	10	1p(std)	9	10	9	8	10	5	4	1	2	3
t	Bayliss St	300m	Tompson St	east	4	3*1p(std)	3	3	2	3	4	4	0	0	0	0
u	Tompson St	Bayliss St	Peter St	south	9	1p(std)M	9	9	10	10	5	4	2	3	3	3
v	Tompson St	Bayliss St	Peter St	north	10	8*1p(std)	6	7	9	7	5	5	3	3	3	4
w	Peter St	Tompson St	500m	east	6	2p(std)M	4	4	4	4	3	3	0	0	0	0
x	Peter St	500m	Tompson St	west	5	2p(std)M	3	4	5	4	4	4	1	1	1	1
y	Peter St	Tompson St	Sheppard St	west	15	13*2p(std	11	10	7	9	10	8	3	4	3	2
z	Sheppard St	Peter St	end	south	10	u	6	7	7	6	5	4	4	3	4	4
aa	Sheppard St	end	Peter St	north	10	u	6	5	5	5	4	2	0	0	0	0
ab	Peter St	Sheppard St	Morrow St	west	3	2p(std)M	2	2	2	2	2	1	0	0	0	0
ac	Peter St	Morrow St	Tompson St	east	24	2p(std)M	18	18	12	15	14	11	3	0	0	1
ad	Tompson St	Peter St	Best St	south	7	uM	6	7	7	7	7	7	2	1	1	1
ae	Tompson St	Peter St	Best St	north	7	uM	6	7	7	7	7	5	2	3	2	2
af	Best St	Tompson St	Esplanade	west	8	2p(std)M	2	2	2	3	4	2	0	0	0	0
ag	Best St	Tompson St	Morrow St	east	10	uM	5	5	3	4	6	4	2	2	2	2
ah	Esplanade	Best St	500m	south	4	u	3	2	2	2	1	1	2	3	2	2
ai	Esplanade	500m	1 Jack Dr	north	5	2p(std)	0	0	0	0	0	0	1	0	0	0
aj	Ivan Jack Dr	Esplanade	Johnston St	west		ns	0	0	0	0	0	0	0	0	0	0
ak	Ivan Jack Dr	Morrow St	Johnston St	east		ns	0	0	0	0	0	0	0	0	0	0
aL	Johnston St	1 Jack Dr	500m	south	6	u 60 degr	7	7	6	5	4	4	2	2	2	2
am	Johnston St	500m	Trail St	north	3	2p(std) 60	3	3	3	2	3	3	0	0	0	0
an	Johnston St	Trail St	300m	north	9	1p(std)M	2	3	4	5	5	6	1	0	0	0
ao	Johnston St	300m	Fitzmaurice	north	6	1p(std)M	4	4	4	4	4	4	4	2	1	0
ap	Johnston St	Fitzmaurice !	300m	south	5	4*1p(std)	8	10	11	10	8	7	3	2	2	1
aq	Johnston St	300m	1 Jack Dr	south	3	1p(std)M	5	4	5	6	6	6	2	2	1	1
ar	Trail St	Johnston St	Gurwood St	west	10	1p(std)M	0	0	0	1	1	1	0	1	1	1
as	Trail St	Johnston St	Gurwood St	east	12	1p(std)M	3	3	2	2	1	1	0	0	1	0
at	Gurwood St	Trail St	Fitzmaurice	north	45	6u+38*2p	36	34	34	36	36	34	20	11	8	7
au	Gurwood St	Trail St	Fitzmaurice	south	31	1*1pDis+	22	22	22	21	19	17	21	14	10	6
av	Fitzmaurice S	Gurwood St	500m	west	9	2p(std)M	9	8	9	8	8	6	6	8	8	7
aw	Fitzmaurice S	500m	Sturt St	east	7	5*2p(std)	5	5	6	5	3	2	4	5	2	4
ax	Fitzmaurice S	Gurwood St	Johnston St	west	20	2*1pDis+	8	8	4	5	4	4	5	6	7	3
ay	Fitzmaurice S	Sturt St	Johnston St	east	15	10*bz4+5	11	21	23	22	17	14	16	19	21	22
az	Sturt St	Fitzmaurice !	end	north	25	16*1p(std	7	16	18	15	11	9	10	15	21	17
ba	Sturt St	Fitzmaurice !	Tarcutta St	south	20	1dis+7*1p	1	1	2	1	2	0	0	2	2	2
bb	Sturt St	Henley Ln	Tarcutta St	south	3	1z11	3	3	3	3	2	2	3	3	2	2
bc	Tarcutta St	Sturt St	Johnston St	east	22	9u+12*2p	21	20	17	16	15	14	10	2	16	14
bd	Tarcutta St	Sturt St	Johnston St	west	18	5u+12*2p	11	15	14	14	13	12	10	7	13	12
be	Johnston St	Tarcutta St	300m	north	16	u 60 degr	16	15	16	14	15	15	15	15	15	14
bf	Johnston St	Tarcutta St	300m	south	19	15u+1dis	18	18	18	17	16	15	13	12	8	8
bg	Johnston St	300m	Church St	north	23	u 60 degr	16	17	18	17	16	15	6	5	4	3
bh	Johnston St	300m	Church St	south	9	3*bz6+1*	0	3	7	6	2	0	2	1	0	0
bi	Church St	Johnston St	300m	east	26	7u+12*2p	10	14	14	10	7	8	10	9	6	5
bj	Church St	Johnston St	300m	west	10	1dis+9u	9	9	9	9	8	5	7	6	4	3
bk	Church St	300m	Cross St	east	8	u	5	10	18	110	1	0	13	11	10	8
bL	Church St	300m	Cross St	west	27	24u+3dis	13	15	22	14	12	10	1	1	13	7
bm	Cross St	Church St	Tarcutta St	south	42	u 60 degr	18	20	28	29	17	11	2	2	9	7
bn	Cross St	Church St	Tarcutta St	north	31	2np1+29u	23	23	23	29	27	22	4	5	8	7
bo	CSU playhou				167	161+4dis	30	32	66	43	31	27	6	5	5	5
bp	Morrow St	Tarcutta St	O'Reilly St	south	6	1p(std)M	4	4	4	4	3	2	0	1	6	6
bq	O'Reilly St	Morrow St	300m	east	29	uM	25	26	27	26	25	22	3	4	4	4
br	O'Reilly St	300m	Morrow St	west	23	uM	15	15	17	18	17	19	3	3	3	3
bs	Public off streets	O'Reilly St				256*2p+1	111	109	104	97	80	56	13	10	8	7
bt	Morrow St	O'Reilly St	Bayliss St	south	15	1p(std)M	7	7	7	6	5	4	3	3	3	3
bu	Morrow St	Tarcutta St	Bayliss St	north	38	17u+2dis	24	28	30	29	23	16	11	17	28	32
bv	Bayliss St	Morrow St	300m	east	19	3*1z3+12	7	5	5	6	6	5	6	7	8	8
bw	Bayliss St	300m	Morrow St	west	27	25*1p(std	8	9	10	8	10	12	13	13	12	13
bx	Morrow St	Bayliss St	Peter St	south	12	1p(std)M	11	11	11	10	7	6	3	6	11	11
by	Morrow St	Peter St	Best St	south	19	7*1p(std)	11	11	13	14	11	11	3	0	0	1
bz	Morrow St	1 Jack Dr	300m	north	6	2p(std)M	4	4	4	3	3	3	4	3	2	0
ca	Morrow St	300m	Bayliss St	north	8	2p(std)M	8	9	8	6	6	7	8	7	7	5
cb	Bayliss/Fitzm	Morrow St	Johnston St	west	15	3*bz4+4*	5	5	7	8	6	5	0	2	3	3
cc	Bayliss/Fitzm	Morrow St	Johnston St	east	18	6*1p(std)	10	12	10	8	7	5	0	2	3	3
cd	Johnston St	Fitzmaurice !	Tarcutta St	north	9	1p(std)M	2	2	2	3	0	0	0	0	0	0
ce	Johnston St	Fitzmaurice !	Tarcutta St	south	6	1p(std)M	1	1	1	1	1	0	0	0	0	0
cf	Tarcutta St	Johnston St	Cross St	east	18	uM	15	17	16	14	10	7	0	0	0	0
cg	Off St east R				26	23*3p+3d	10	14	12	9	9	9	6	8	9	9
ch	Tarcutta St	Johnston St	Burns Wy	west	15	3p2M	3	2	4	4	3	2	0	4	5	6
ci	Burns Wy			both	9	1dis+3*1	3	2	2	1	1	1	0	0	6	6

Curtis Traffic Surveys

Job: 220305mcl (21_0423)
Client: McLaren Traffic Engineering
Date 11/03/22
Locatic Wagga Wagga
Weath Fine
Survey MC

	Start	Finish	Interval	Size			
	10:00	20:00	##				

Zone	Street	From	To	Side of str	Capacit	Restriction
a	Tarcutta St	Cross St	300m	east	46	30uM+16*3pM2
b	Tarcutta St	Burns Wy	Morrow S	west	10	uM
c	Visitors Centre	off street			23	21*2p+2dis
d	Tarcutta St	Morrow S	300m	west	22	uM
e	Baptist church	off street			61	49u+3dis+9res
f	Tarcutta St	300m	500m	east	23	uM
g	Tarcutta St	300m	Tompson	west	5	u
h	Tarcutta St	Tompson	500m	west	15	uM
I	Tompson St	Tarcutta S	Berry St	south	9	ns
j	Berry St	Tompson	500m	east	14	1p(std)
k	Berry St	500m	Tompson	west	13	jM
L	Tompson St	Tarcutta S	O'Reilly St	north	20	uM
m	O'Reilly St	Tompson	300m	west	5	1p(std)M
n	O'Reilly St	300m	Tompson	east	5	uM
o	Tompson St	Berry St	Bayliss St	south	26	16uM+10*1p(std)M
p	Tompson St	O'Reilly St	Bayliss St	north	24	1p(std)M
q	Bayliss St	Tompson	500m	east	12	2*lz3+10*1p(std)M
r	Bayliss St	500m	Tompson	west	7	3*bz4+4*1p(std)M
s	Bayliss St	Tompson	300m	west	10	1p(std)
t	Bayliss St	300m	Tompson	east	4	3*1p(std)M+1*2pDis
u	Tompson St	Bayliss St	Peter St	south	9	1p(std)M
v	Tompson St	Bayliss St	Peter St	north	10	8*1p(std)M+2*2pDis
w	Peter St	Tompson	500m	east	6	2p(std)M
x	Peter St	500m	Tompson	west	5	2p(std)M
y	Peter St	Tompson	Sheppard	west	15	13*2p(std)M+2*3pDis
z	Sheppard St	Peter St	end	south	10	u
aa	Sheppard St	end	Peter St	north	10	u
ab	Peter St	Sheppard	Morrow S	west	3	2p(std)M
ac	Peter St	Morrow S	Tompson	east	24	2p(std)M
ad	Tompson St	Peter St	Best St	south	7	uM
ae	Tompson St	Peter St	Best St	north	7	uM
af	Best St	Tompson	Esplanade	west	8	2p(std)M
ag	Best St	Tompson	Morrow S	east	10	uM
ah	Esplanade	Best St	500m	south	4	u
ai	Esplanade	500m	I Jack Dr	north	5	2p(std)
aj	Ivan Jack Dr	Esplanade	Johnston S	west	0	ns
ak	Ivan Jack Dr	Morrow S	Johnston S	east	0	ns
aL	Johnston St	I Jack Dr	500m	south	6	u 60 degree
am	Johnston St	500m	Trail St	north	3	2p(std) 60 deg
an	Johnston St	Trail St	300m	north	9	1p(std)M
ao	Johnston St	300m	Fitzmauric	north	6	1p(std)M
ap	Johnston St	Fitzmauric	300m	south	5	4*1p(std)M+1uM
aq	Johnston St	300m	I Jack Dr	south	3	1p(std)M
ar	Trail St	Johnston S	Gurwood	west	10	1p(std)M
as	Trail St	Johnston S	Gurwood	east	12	1p(std)M
at	Gurwood St	Trail St	Fitzmauric	north	45	6u+38*2p(std)+1*2dis all 60 deg
au	Gurwood St	Trail St	Fitzmauric	south	31	1*1pDis+4*1p(std)M+24*1p(std)+2dis all 60 deg
av	Fitzmaurice St	Gurwood	500m	west	9	2p(std)M
aw	Fitzmaurice St	500m	Sturt St	east	7	5*2p(std)M+2dis
ax	Fitzmaurice St	Gurwood	Johnston S	west	20	2*1pDis+12*1/2p(std)M+6*bz4
ay	Fitzmaurice St	Sturt St	Johnston S	east	15	10*bz4+5*1/2p(std)M
az	Sturt St	Fitzmauric	end	north	25	16*1p(std)+9u all 60 deg
ba	Sturt St	Fitzmauric	Tarcutta S	south	20	1dis+7*1p(std)+12*2p(std) all 60deg
bb	Sturt St	Henley Ln	Tarcutta S	south	3	lz11
bc	Tarcutta St	Sturt St	Johnston S	east	22	9u+12*2p(std)+1dis all 60deg
bd	Tarcutta St	Sturt St	Johnston S	west	18	5u+12*2p(std)+1dis all 60 deg
be	Johnston St	Tarcutta S	300m	north	16	u 60 degree
bf	Johnston St	Tarcutta S	300m	south	19	15u+1dis+3*bz7
bg	Johnston St	300m	Church St	north	23	u 60 degree not marked
bh	Johnston St	300m	Church St	south	9	3*bz6+1*ns6+5*np5
bi	Church St	Johnston S	300m	east	26	7u+12*2p9+7*2p(std)
bj	Church St	Johnston S	300m	west	10	1dis+9u
bk	Church St	300m	Cross St	east	8	u
bL	Church St	300m	Cross St	west	27	24u+3dis
bm	Cross St	Church St	Tarcutta S	south	42	u 60 degree
bn	Cross St	Church St	Tarcutta S	north	31	2np1+29u 60 deg
bo	CSU playhouse	off street			167	161+4dis+2e
bp	Morrow St	Tarcutta S	O'Reilly St	south	6	1p(std)M
bq	O'Reilly St	Morrow S	300m	east	29	uM
br	O'Reilly St	300m	Morrow S	west	23	uM
bs	Public off streets	O'Reilly St			344	256*2p+10dis+78res
bt	Morrow St	O'Reilly St	Bayliss St	south	15	1p(std)M
bu	Morrow St	Tarcutta S	Bayliss St	north	38	17u+2dis+13*1p(std)+4*1/4p(std)+2dis 60 & 45 deg
bv	Bayliss St	Morrow S	300m	east	19	3*lz3+12*1p(std)+4*bz4
bw	Bayliss St	300m	Morrow S	west	27	25*1p(std)+2dis
bx	Morrow St	Bayliss St	Peter St	south	12	1p(std)M
by	Morrow St	Peter St	Best St	south	19	7*1p(std)+2dis+10uM
bz	Morrow St	I Jack Dr	300m	north	6	2p(std)M
ca	Morrow St	300m	Bayliss St	north	8	2p(std)M
cb	Bayliss/Fitzmau	Morrow S	Johnston S	west	15	3*bz4+4*1p(std)M+2dis+3*2p13+3*2p(std)
cc	Bayliss/Fitzmau	Morrow S	Johnston S	east	18	6*1p(std)M+3dis+9*2p(std)M
cd	Johnston St	Fitzmauric	Tarcutta S	north	9	1p(std)M
ce	Johnston St	Fitzmauric	Tarcutta S	south	6	1p(std)M
cf	Tarcutta St	Johnston S	Cross St	east	18	uM
cg	Off St east	Rural Pl			26	23*3p+3dis
ch	Tarcutta St	Johnston S	Burns Wy	west	15	3p2M
ci	Burns Wy			both	9	1dis+3*1/4p10+5*1p

Restriction	Table
u	unrestricted
np	no parking
p	hour parking
ns	no stopping
dis	disabled
r	authorised residents or other permit holders excepted
bz	bus zone
tz	taxi zone
res	reserved parking
M	marked parallel spaces
np1	Funeral & wedding exc
3p2	3p 8am-6pm M-Sat
(std)	8:30-6pm M-F, 8:30-12:30 Sat
lz3	Loading zone 6am-7pm M-F, 6am-12:30 Sat
bz4	bus zone 7am-7pm Sun-W, 7am-10pm Thu-Sat
np5	np 8am-9:30am, 2:30-4pm school days
ns6	ns 8am-4pm school days
bz6	bz 8am-4pm school days
bz7	bz 8am-9:30,2:30-4pm school days
np8	np police exc
2p9	2p 8:30-6pm
1/4p10	1/4p 9am-6pm M-Sat, dis other times
lz11	lz 5am-7am Wed-Fri
bz12	np tourist bus ex
2p13	2p 10-6pm M-F, lz 6-10am M-F
e	electric cars when charging

Myers C.P.			C.P.North of Myers		
2p	27	6dis	2p	6	res 4dis
	3			7	10
	27			12	8
	28			17	20
	4			42	19
	6				21
	19				78
	6				
	9				
	27				
	4				
	18				
	17				
	7				
	5				
	20				
	6				
	8				
	12				
	12				
	7				
	20				
	16				
	6				
	314				

ANNEXURE D: SIDRA RESULTS
(16 SHEETS)

MOVEMENT SUMMARY

Site: 101 [Baylis Street / Morrow Street Ex AM (Site Folder: General)]

Baylis Street / Morrow Street
Existing
AM Peak
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Baylis Street (S)														
1	L2	23	0	24	0.0	0.013	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	53.6
2	T1	80	6	84	7.5	0.066	0.4	LOS A	0.2	1.4	0.17	0.13	0.17	58.1
3	R2	22	0	23	0.0	0.066	6.5	LOS A	0.2	1.4	0.17	0.13	0.17	56.0
Approach		125	6	132	4.8	0.066	2.4	NA	0.2	1.4	0.14	0.22	0.14	56.9
East: Morrow Street (E)														
4	L2	9	0	9	0.0	0.105	6.3	LOS A	0.4	2.9	0.48	0.67	0.48	51.7
5	T1	42	0	44	0.0	0.105	7.4	LOS A	0.4	2.9	0.48	0.67	0.48	52.0
6	R2	15	0	16	0.0	0.105	10.9	LOS A	0.4	2.9	0.48	0.67	0.48	51.5
Approach		66	0	69	0.0	0.105	8.1	LOS A	0.4	2.9	0.48	0.67	0.48	51.8
North: Baylis Street (N)														
7	L2	65	0	68	0.0	0.037	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	53.6
8	T1	165	10	174	6.1	0.105	0.1	LOS A	0.1	0.9	0.04	0.05	0.04	59.3
9	R2	15	0	16	0.0	0.105	5.9	LOS A	0.1	0.9	0.04	0.05	0.04	57.1
Approach		245	10	258	4.1	0.105	1.9	NA	0.1	0.9	0.03	0.19	0.03	57.6
West: Morrow Street (W)														
10	L2	35	1	37	2.9	0.237	6.0	LOS A	1.0	7.4	0.40	0.65	0.40	51.7
11	T1	106	0	112	0.0	0.237	8.1	LOS A	1.0	7.4	0.40	0.65	0.40	52.1
12	R2	21	1	22	4.8	0.237	10.0	LOS A	1.0	7.4	0.40	0.65	0.40	51.4
Approach		162	2	171	1.2	0.237	7.9	LOS A	1.0	7.4	0.40	0.65	0.40	52.0
All Vehicles		598	18	629	3.0	0.237	4.3	NA	1.0	7.4	0.20	0.37	0.20	55.1

MOVEMENT SUMMARY

Site: 101 [Baylis Street / Morrow Street Ex PM (Site Folder: General)]

Baylis Street / Morrow Street
Existing
PM Peak
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Baylis Street (S)														
1	L2	30	0	32	0.0	0.017	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	53.6
2	T1	164	3	173	1.8	0.119	0.3	LOS A	0.3	2.0	0.13	0.10	0.13	58.6
3	R2	31	0	33	0.0	0.119	6.5	LOS A	0.3	2.0	0.13	0.10	0.13	56.4
Approach		225	3	237	1.3	0.119	1.8	NA	0.3	2.0	0.12	0.16	0.12	57.6
East: Morrow Street (E)														
4	L2	28	0	29	0.0	0.378	7.5	LOS A	2.1	14.5	0.60	0.85	0.77	49.4
5	T1	116	0	122	0.0	0.378	10.5	LOS A	2.1	14.5	0.60	0.85	0.77	49.7
6	R2	58	0	61	0.0	0.378	14.9	LOS B	2.1	14.5	0.60	0.85	0.77	49.2
Approach		202	0	213	0.0	0.378	11.4	LOS A	2.1	14.5	0.60	0.85	0.77	49.5
North: Baylis Street (N)														
7	L2	55	0	58	0.0	0.031	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	53.6
8	T1	170	8	179	4.7	0.108	0.1	LOS A	0.1	1.0	0.06	0.05	0.06	59.3
9	R2	15	0	16	0.0	0.108	6.3	LOS A	0.1	1.0	0.06	0.05	0.06	57.1
Approach		240	8	253	3.3	0.108	1.7	NA	0.1	1.0	0.05	0.17	0.05	57.7
West: Morrow Street (W)														
10	L2	31	0	33	0.0	0.274	6.5	LOS A	1.2	8.7	0.54	0.75	0.57	50.7
11	T1	108	1	114	0.9	0.274	9.6	LOS A	1.2	8.7	0.54	0.75	0.57	50.9
12	R2	19	1	20	5.3	0.274	13.9	LOS A	1.2	8.7	0.54	0.75	0.57	50.3
Approach		158	2	166	1.3	0.274	9.5	LOS A	1.2	8.7	0.54	0.75	0.57	50.8
All Vehicles		825	13	868	1.6	0.378	5.6	NA	2.1	14.5	0.30	0.45	0.34	54.1

MOVEMENT SUMMARY

Site: 101 [Tarcutta Street / Cross Street / Burns Way EX AM (Site Folder: General)]

Tarcutta Street / Cross Street / Burns Way
Existing
AM Peak
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Tarcutta Street (S)														
1	L2	9	0	9	0.0	0.104	5.6	LOS A	0.0	0.0	0.00	0.03	0.00	58.1
2	T1	369	7	388	1.9	0.104	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
3	R2	152	3	160	2.0	0.181	8.0	LOS A	0.7	5.3	0.51	0.73	0.51	51.5
Approach		530	10	558	1.9	0.181	2.4	NA	0.7	5.3	0.15	0.22	0.15	57.1
East: Cross Street														
4	L2	45	1	47	2.2	0.080	6.1	LOS A	0.3	1.9	0.32	0.58	0.32	51.2
6	R2	6	0	6	0.0	0.080	27.4	LOS B	0.3	1.9	0.32	0.58	0.32	51.1
Approach		51	1	54	2.0	0.080	8.6	LOS A	0.3	1.9	0.32	0.58	0.32	51.2
North: Tarcutta Street (N)														
7	L2	75	11	79	14.7	0.123	5.7	LOS A	0.0	0.0	0.00	0.21	0.00	55.9
8	T1	345	30	363	8.7	0.123	0.0	LOS A	0.0	0.2	0.01	0.09	0.01	59.2
9	R2	2	0	2	0.0	0.123	7.5	LOS A	0.0	0.2	0.01	0.01	0.01	58.0
Approach		422	41	444	9.7	0.123	1.1	NA	0.0	0.2	0.01	0.11	0.01	58.6
West: Burns Way														
10	L2	3	0	3	0.0	0.052	6.3	LOS A	0.2	1.2	0.67	0.77	0.67	44.3
11	T1	3	0	3	0.0	0.052	22.9	LOS B	0.2	1.2	0.67	0.77	0.67	44.8
12	R2	5	0	5	0.0	0.052	26.2	LOS B	0.2	1.2	0.67	0.77	0.67	44.4
Approach		11	0	12	0.0	0.052	19.9	LOS B	0.2	1.2	0.67	0.77	0.67	44.5
All Vehicles		1014	52	1067	5.1	0.181	2.4	NA	0.7	5.3	0.10	0.20	0.10	57.2

MOVEMENT SUMMARY

Site: 101 [Tarcutta Street / Cross Street / Burns Way EX PM (Site Folder: General)]

Tarcutta Street / Cross Street / Burns Way
Existing
PM Peak
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Tarcutta Street (S)														
1	L2	10	0	11	0.0	0.119	5.6	LOS A	0.0	0.0	0.00	0.03	0.00	58.1
2	T1	424	3	446	0.7	0.119	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
3	R2	67	0	71	0.0	0.079	7.7	LOS A	0.3	2.1	0.48	0.69	0.48	51.7
Approach		501	3	527	0.6	0.119	1.2	NA	0.3	2.1	0.06	0.10	0.06	58.6
East: Cross Street														
4	L2	108	1	114	0.9	0.234	6.5	LOS A	0.8	5.9	0.44	0.65	0.44	50.3
6	R2	20	0	21	0.0	0.234	29.3	LOS C	0.8	5.9	0.44	0.65	0.44	50.1
Approach		128	1	135	0.8	0.234	10.1	LOS A	0.8	5.9	0.44	0.65	0.44	50.2
North: Tarcutta Street (N)														
7	L2	26	0	27	0.0	0.124	5.6	LOS A	0.0	0.0	0.00	0.07	0.00	57.7
8	T1	417	7	439	1.7	0.124	0.1	LOS A	0.1	0.4	0.01	0.04	0.01	59.6
9	R2	4	0	4	0.0	0.124	7.9	LOS A	0.1	0.4	0.03	0.01	0.03	57.9
Approach		447	7	471	1.6	0.124	0.4	NA	0.1	0.4	0.01	0.04	0.01	59.4
West: Burns Way														
10	L2	4	0	4	0.0	0.036	6.4	LOS A	0.1	0.8	0.60	0.70	0.60	45.0
12	R2	4	0	4	0.0	0.036	30.7	LOS C	0.1	0.8	0.60	0.70	0.60	45.1
Approach		8	0	8	0.0	0.036	18.6	LOS B	0.1	0.8	0.60	0.70	0.60	45.1
All Vehicles		1084	11	1141	1.0	0.234	2.0	NA	0.8	5.9	0.09	0.15	0.09	57.7

MOVEMENT SUMMARY

Site: 101 [Tarcutta Street / Morrow Street Ex AM (Site Folder: General)]

Tarcutta Street / Morrow Street
Existing
AM Peak
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Tarcutta Street (S)														
1	L2	43	0	45	0.0	0.142	5.6	LOS A	0.0	0.0	0.00	0.10	0.00	57.4
2	T1	474	9	499	1.9	0.142	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	59.5
Approach		517	9	544	1.7	0.142	0.5	NA	0.0	0.0	0.00	0.05	0.00	59.3
North: Tarcutta Street (N)														
8	T1	379	31	399	8.2	0.119	0.3	LOS A	0.3	1.9	0.06	0.03	0.06	59.4
9	R2	18	0	19	0.0	0.119	8.5	LOS A	0.3	1.9	0.14	0.06	0.14	56.8
Approach		397	31	418	7.8	0.119	0.6	NA	0.3	1.9	0.07	0.03	0.07	59.3
West: Morrow Street														
10	L2	58	1	61	1.7	0.180	6.6	LOS A	0.6	4.6	0.48	0.69	0.48	49.7
12	R2	33	0	35	0.0	0.180	18.2	LOS B	0.6	4.6	0.48	0.69	0.48	49.6
Approach		91	1	96	1.1	0.180	10.8	LOS A	0.6	4.6	0.48	0.69	0.48	49.7
All Vehicles		1005	41	1058	4.1	0.180	1.5	NA	0.6	4.6	0.07	0.10	0.07	58.3

MOVEMENT SUMMARY

Site: 101 [Tarcutta Street / Morrow Street Ex PM (Site Folder: General)]

Tarcutta Street / Morrow Street
Existing
PM Peak
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Tarcutta Street (S)														
1	L2	47	1	49	2.1	0.129	5.6	LOS A	0.0	0.0	0.00	0.12	0.00	57.2
2	T1	424	5	446	1.2	0.129	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	59.5
Approach		471	6	496	1.3	0.129	0.6	NA	0.0	0.0	0.00	0.06	0.00	59.2
North: Tarcutta Street (N)														
8	T1	499	9	525	1.8	0.154	0.3	LOS A	0.4	2.9	0.08	0.03	0.08	59.3
9	R2	30	0	32	0.0	0.154	8.2	LOS A	0.4	2.9	0.17	0.08	0.17	56.7
Approach		529	9	557	1.7	0.154	0.7	NA	0.4	2.9	0.08	0.04	0.08	59.2
West: Morrow Street														
10	L2	49	0	52	0.0	0.297	7.4	LOS A	1.2	8.6	0.55	0.76	0.65	46.8
12	R2	57	2	60	3.5	0.297	22.6	LOS B	1.2	8.6	0.55	0.76	0.65	46.5
Approach		106	2	112	1.9	0.297	15.6	LOS B	1.2	8.6	0.55	0.76	0.65	46.6
All Vehicles		1106	17	1164	1.5	0.297	2.1	NA	1.2	8.6	0.09	0.12	0.10	57.7

MOVEMENT SUMMARY

Site: 101 [Johnston Street / Tarcutta Street EX AM (Site Folder: General)]

Johnston Street / Tarcutta Street
Existing
AM Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Tarcutta Street (S)															
1	L2	350	9	368	2.6		0.196	14.0	LOS A	2.9	20.8	0.57	0.72	0.57	47.6
2	T1	27	1	28	3.7		0.046	8.8	LOS A	0.6	4.0	0.55	0.47	0.55	51.6
3	R2	7	0	7	0.0		0.046	14.4	LOS A	0.6	4.0	0.55	0.47	0.55	50.3
Approach		384	10	404	2.6		0.196	13.6	LOS A	2.9	20.8	0.57	0.70	0.57	47.9
East: Johnston Street (E)															
4	L2	38	9	40	23.7		0.133	23.5	LOS B	1.4	11.3	0.78	0.68	0.78	43.1
5	T1	81	4	85	4.9		0.133	17.6	LOS B	1.5	11.0	0.78	0.63	0.78	45.8
6	R2	6	0	6	0.0		0.133	23.0	LOS B	1.5	11.0	0.78	0.61	0.78	44.9
Approach		125	13	132	10.4		0.133	19.6	LOS B	1.5	11.3	0.78	0.65	0.78	44.9
North: Tarcutta Street (N)															
7	L2	58	0	61	0.0		0.429	15.3	LOS B	7.2	51.1	0.66	0.62	0.66	49.6
8	T1	284	6	299	2.1		0.429	9.8	LOS A	7.2	51.1	0.66	0.62	0.66	50.7
9	R2	30	0	32	0.0	*	0.429	15.3	LOS B	7.2	51.1	0.66	0.62	0.66	49.4
Approach		372	6	392	1.6		0.429	11.1	LOS A	7.2	51.1	0.66	0.62	0.66	50.4
West: Johnston Street (W)															
10	L2	9	0	9	0.0		0.097	22.9	LOS B	1.2	8.2	0.77	0.61	0.77	45.2
11	T1	41	1	43	2.4		0.097	17.3	LOS B	1.2	8.2	0.77	0.61	0.77	46.2
12	R2	142	23	149	16.2	*	0.420	26.3	LOS B	3.8	30.3	0.87	0.78	0.87	41.0
Approach		192	24	202	12.5		0.420	24.2	LOS B	3.8	30.3	0.84	0.74	0.84	42.2
All Vehicles		1073	53	1129	4.9		0.429	15.4	LOS B	7.2	51.1	0.67	0.67	0.67	47.2

MOVEMENT SUMMARY

Site: 101 [Johnston Street / Tarcutta Street EX PM (Site Folder: General)]

Johnston Street / Tarcutta Street
Existing
PM Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Tarcutta Street (S)															
1	L2	366	7	385	1.9		0.210	14.6	LOS B	3.2	22.5	0.59	0.73	0.59	47.3
2	T1	35	0	37	0.0		0.065	9.5	LOS A	0.8	5.6	0.57	0.51	0.57	50.9
3	R2	12	0	13	0.0		0.065	15.0	LOS B	0.8	5.6	0.57	0.51	0.57	49.7
Approach		413	7	435	1.7		0.210	14.2	LOS A	3.2	22.5	0.59	0.70	0.59	47.6
East: Johnston Street (E)															
4	L2	2	0	2	0.0		0.069	21.9	LOS B	0.8	5.9	0.74	0.56	0.74	46.2
5	T1	56	0	59	0.0		0.069	16.3	LOS B	0.8	5.9	0.74	0.58	0.74	46.8
6	R2	13	0	14	0.0		0.069	21.9	LOS B	0.7	5.2	0.74	0.62	0.74	44.7
Approach		71	0	75	0.0		0.069	17.5	LOS B	0.8	5.9	0.74	0.59	0.74	46.3
North: Tarcutta Street (N)															
7	L2	16	0	17	0.0		0.393	15.7	LOS B	6.3	44.2	0.66	0.60	0.66	49.6
8	T1	274	2	288	0.7		0.393	10.2	LOS A	6.3	44.2	0.66	0.60	0.66	50.8
9	R2	34	0	36	0.0	*	0.393	15.7	LOS B	6.3	44.2	0.66	0.60	0.66	49.4
Approach		324	2	341	0.6		0.393	11.0	LOS A	6.3	44.2	0.66	0.60	0.66	50.6
West: Johnston Street (W)															
10	L2	6	0	6	0.0		0.037	21.6	LOS B	0.4	3.1	0.73	0.57	0.73	45.5
11	T1	14	0	15	0.0		0.037	16.1	LOS B	0.4	3.1	0.73	0.57	0.73	46.5
12	R2	165	5	174	3.0	*	0.400	24.3	LOS B	4.2	30.2	0.84	0.78	0.84	42.2
Approach		185	5	195	2.7		0.400	23.6	LOS B	4.2	30.2	0.83	0.76	0.83	42.6
All Vehicles		993	14	1045	1.4		0.400	15.2	LOS B	6.3	44.2	0.67	0.67	0.67	47.4

MOVEMENT SUMMARY

Site: 101 [Baylis Street / Morrow Street Fu AM (Site Folder: Post Development)]

Baylis Street / Morrow Street
Future
AM Peak
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Baylis Street (S)														
1	L2	23	0	24	0.0	0.013	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	53.6
2	T1	80	6	84	7.5	0.155	1.0	LOS A	0.7	5.4	0.35	0.38	0.35	55.7
3	R2	118	0	124	0.0	0.155	6.6	LOS A	0.7	5.4	0.35	0.38	0.35	53.7
Approach		221	6	233	2.7	0.155	4.4	NA	0.7	5.4	0.31	0.40	0.31	54.4
East: Morrow Street (E)														
4	L2	9	0	9	0.0	0.128	6.3	LOS A	0.5	3.5	0.53	0.72	0.53	50.5
5	T1	42	0	44	0.0	0.128	8.6	LOS A	0.5	3.5	0.53	0.72	0.53	50.8
6	R2	15	0	16	0.0	0.128	14.7	LOS B	0.5	3.5	0.53	0.72	0.53	50.3
Approach		66	0	69	0.0	0.128	9.7	LOS A	0.5	3.5	0.53	0.72	0.53	50.7
North: Baylis Street (N)														
7	L2	65	0	68	0.0	0.037	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	53.6
8	T1	165	10	174	6.1	0.105	0.1	LOS A	0.1	0.9	0.04	0.05	0.04	59.3
9	R2	15	0	16	0.0	0.105	5.9	LOS A	0.1	0.9	0.04	0.05	0.04	57.1
Approach		245	10	258	4.1	0.105	1.9	NA	0.1	0.9	0.03	0.19	0.03	57.6
West: Morrow Street (W)														
10	L2	35	1	37	2.9	0.444	7.5	LOS A	2.9	20.2	0.54	0.82	0.75	49.4
11	T1	202	0	213	0.0	0.444	11.6	LOS A	2.9	20.2	0.54	0.82	0.75	49.7
12	R2	21	1	22	4.8	0.444	14.1	LOS A	2.9	20.2	0.54	0.82	0.75	49.1
Approach		258	2	272	0.8	0.444	11.2	LOS A	2.9	20.2	0.54	0.82	0.75	49.6
All Vehicles		790	18	832	2.3	0.444	6.3	NA	2.9	20.2	0.32	0.50	0.39	53.3

MOVEMENT SUMMARY

Site: 101 [Baylis Street / Morrow Street Fu PM (Site Folder: Post Development)]

Baylis Street / Morrow Street
Future
PM Peak
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Baylis Street (S)														
1	L2	30	0	32	0.0	0.017	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	53.6
2	T1	164	3	173	1.8	0.208	0.8	LOS A	1.0	7.1	0.32	0.28	0.32	56.6
3	R2	127	0	134	0.0	0.208	6.6	LOS A	1.0	7.1	0.32	0.28	0.32	54.5
Approach		321	3	338	0.9	0.208	3.6	NA	1.0	7.1	0.29	0.31	0.29	55.5
East: Morrow Street (E)														
4	L2	28	0	29	0.0	0.478	9.1	LOS A	2.8	19.6	0.66	0.93	1.01	46.7
5	T1	116	0	122	0.0	0.478	14.0	LOS A	2.8	19.6	0.66	0.93	1.01	46.9
6	R2	58	0	61	0.0	0.478	22.2	LOS B	2.8	19.6	0.66	0.93	1.01	46.5
Approach		202	0	213	0.0	0.478	15.6	LOS B	2.8	19.6	0.66	0.93	1.01	46.8
North: Baylis Street (N)														
7	L2	55	0	58	0.0	0.031	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	53.6
8	T1	170	8	179	4.7	0.108	0.1	LOS A	0.1	1.0	0.06	0.05	0.06	59.3
9	R2	15	0	16	0.0	0.108	6.3	LOS A	0.1	1.0	0.06	0.05	0.06	57.1
Approach		240	8	253	3.3	0.108	1.7	NA	0.1	1.0	0.05	0.17	0.05	57.7
West: Morrow Street (W)														
10	L2	31	0	33	0.0	0.525	9.2	LOS A	3.5	24.9	0.67	0.96	1.09	47.3
11	T1	204	1	215	0.5	0.525	14.8	LOS B	3.5	24.9	0.67	0.96	1.09	47.6
12	R2	19	1	20	5.3	0.525	20.8	LOS B	3.5	24.9	0.67	0.96	1.09	47.0
Approach		254	2	267	0.8	0.525	14.6	LOS B	3.5	24.9	0.67	0.96	1.09	47.5
All Vehicles		1017	13	1071	1.3	0.525	8.3	NA	3.5	24.9	0.40	0.56	0.57	51.8

MOVEMENT SUMMARY

Site: 101 [Tarcutta Street / Cross Street Fu AM (Site Folder: Post Development)]

Tarcutta Street / Cross Street
Future
AM Peak
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Tarcutta Street (S)														
2	T1	369	7	388	1.9	0.102	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
3	R2	152	3	160	2.0	0.204	8.7	LOS A	0.8	5.9	0.56	0.78	0.56	50.9
Approach		521	10	548	1.9	0.204	2.6	NA	0.8	5.9	0.16	0.23	0.16	57.0
East: Cross Street														
4	L2	45	1	47	2.2	0.079	6.4	LOS A	0.3	1.9	0.36	0.60	0.36	51.3
6	R2	6	0	6	0.0	0.079	25.4	LOS B	0.3	1.9	0.36	0.60	0.36	51.1
Approach		51	1	54	2.0	0.079	8.6	LOS A	0.3	1.9	0.36	0.60	0.36	51.2
North: Tarcutta Street (N)														
7	L2	75	11	79	14.7	0.148	5.7	LOS A	0.0	0.0	0.00	0.17	0.00	56.2
8	T1	441	30	464	6.8	0.148	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	59.3
Approach		516	41	543	7.9	0.148	0.9	NA	0.0	0.0	0.00	0.09	0.00	58.8
All Vehicles		1088	52	1145	4.8	0.204	2.0	NA	0.8	5.9	0.09	0.18	0.09	57.6

MOVEMENT SUMMARY

Site: 101 [Tarcutta Street / Cross Street Fu PM (Site Folder: Post Development)]

Tarcutta Street / Cross Street
Future
PM Peak
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Tarcutta Street (S)														
2	T1	424	3	446	0.7	0.116	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	67	0	71	0.0	0.089	8.4	LOS A	0.3	2.4	0.53	0.73	0.53	51.2
Approach		491	3	517	0.6	0.116	1.2	NA	0.3	2.4	0.07	0.10	0.07	58.6
East: Cross Street														
4	L2	108	1	114	0.9	0.227	6.7	LOS A	0.8	5.7	0.47	0.67	0.47	50.4
6	R2	20	0	21	0.0	0.227	27.1	LOS B	0.8	5.7	0.47	0.67	0.47	50.2
Approach		128	1	135	0.8	0.227	9.9	LOS A	0.8	5.7	0.47	0.67	0.47	50.3
North: Tarcutta Street (N)														
7	L2	26	0	27	0.0	0.147	5.6	LOS A	0.0	0.0	0.00	0.06	0.00	57.8
8	T1	513	7	540	1.4	0.147	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	59.7
Approach		539	7	567	1.3	0.147	0.3	NA	0.0	0.0	0.00	0.03	0.00	59.6
All Vehicles		1158	11	1219	0.9	0.227	1.7	NA	0.8	5.7	0.08	0.13	0.08	58.0

MOVEMENT SUMMARY

Site: 101 [Tarcutta Street / Morrow Street Fu AM (Site Folder: Post Development)]

Tarcutta Street / Morrow Street
Future
AM Peak
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Tarcutta Street (S)														
1	L2	43	0	45	0.0	0.194	5.6	LOS A	0.0	0.0	0.00	0.07	0.00	57.7
2	T1	666	9	701	1.4	0.194	0.1	LOS A	0.0	0.0	0.00	0.03	0.00	59.6
Approach		709	9	746	1.3	0.194	0.4	NA	0.0	0.0	0.00	0.04	0.00	59.5
North: Tarcutta Street (N)														
8	T1	475	31	500	6.5	0.148	0.4	LOS A	0.4	2.7	0.07	0.02	0.07	59.3
9	R2	18	0	19	0.0	0.148	10.5	LOS A	0.4	2.7	0.16	0.05	0.16	56.6
Approach		493	31	519	6.3	0.148	0.8	NA	0.4	2.7	0.07	0.02	0.07	59.2
West: Morrow Street														
10	L2	250	1	263	0.4	0.486	9.5	LOS A	3.0	21.2	0.58	0.88	0.89	48.5
12	R2	33	0	35	0.0	0.486	37.1	LOS C	3.0	21.2	0.58	0.88	0.89	48.3
Approach		283	1	298	0.4	0.486	12.7	LOS A	3.0	21.2	0.58	0.88	0.89	48.5
All Vehicles		1485	41	1563	2.8	0.486	2.9	NA	3.0	21.2	0.13	0.19	0.19	56.9

MOVEMENT SUMMARY

Site: 101 [Tarcutta Street / Morrow Street Fu PM (Site Folder: Post Development)]

Tarcutta Street / Morrow Street
Future
PM Peak
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Tarcutta Street (S)														
1	L2	47	1	49	2.1	0.181	5.6	LOS A	0.0	0.0	0.00	0.08	0.00	57.5
2	T1	616	5	648	0.8	0.181	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	59.6
Approach		663	6	698	0.9	0.181	0.4	NA	0.0	0.0	0.00	0.04	0.00	59.4
North: Tarcutta Street (N)														
8	T1	595	9	626	1.5	0.185	0.5	LOS A	0.6	4.1	0.09	0.03	0.09	59.1
9	R2	30	0	32	0.0	0.185	10.2	LOS A	0.6	4.1	0.20	0.07	0.20	56.2
Approach		625	9	658	1.4	0.185	1.0	NA	0.6	4.1	0.09	0.03	0.09	59.0
West: Morrow Street														
10	L2	241	0	254	0.0	0.688	16.2	LOS B	6.2	43.3	0.65	1.12	1.55	42.8
12	R2	57	2	60	3.5	0.688	50.9	LOS D	6.2	43.3	0.65	1.12	1.55	42.5
Approach		298	2	314	0.7	0.688	22.8	LOS B	6.2	43.3	0.65	1.12	1.55	42.7
All Vehicles		1586	17	1669	1.1	0.688	4.9	NA	6.2	43.3	0.16	0.24	0.33	55.2

MOVEMENT SUMMARY

Site: 101 [Johnston Street / Tarcutta Street Fu AM (Site Folder: Post Development)]

Johnston Street / Tarcutta Street
Future
AM Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Tarcutta Street (S)															
1	L2	350	9	368	2.6		0.178	12.3	LOS A	2.6	18.6	0.51	0.71	0.51	48.7
2	T1	27	1	28	3.7		0.044	7.7	LOS A	0.5	3.7	0.52	0.45	0.52	52.4
3	R2	7	0	7	0.0		0.044	13.2	LOS A	0.5	3.7	0.52	0.45	0.52	51.1
Approach		384	10	404	2.6		0.178	12.0	LOS A	2.6	18.6	0.51	0.68	0.51	49.0
East: Johnston Street (E)															
4	L2	38	9	40	23.7		0.161	26.2	LOS B	1.5	12.3	0.83	0.70	0.83	41.8
5	T1	81	4	85	4.9		0.161	20.3	LOS B	1.6	11.9	0.83	0.66	0.83	44.3
6	R2	6	0	6	0.0		0.161	25.8	LOS B	1.6	11.9	0.83	0.65	0.83	43.5
Approach		125	13	132	10.4		0.161	22.4	LOS B	1.6	12.3	0.83	0.67	0.83	43.5
North: Tarcutta Street (N)															
7	L2	58	0	61	0.0		0.483	14.0	LOS A	8.7	61.4	0.64	0.60	0.64	50.7
8	T1	380	6	400	1.6		0.483	8.4	LOS A	8.7	61.4	0.64	0.60	0.64	51.9
9	R2	30	0	32	0.0	*	0.483	13.9	LOS A	8.7	61.4	0.64	0.60	0.64	50.5
Approach		468	6	493	1.3		0.483	9.5	LOS A	8.7	61.4	0.64	0.60	0.64	51.7
West: Johnston Street (W)															
10	L2	9	0	9	0.0		0.118	25.5	LOS B	1.2	8.9	0.82	0.64	0.82	43.7
11	T1	41	1	43	2.4		0.118	20.0	LOS B	1.2	8.9	0.82	0.64	0.82	44.7
12	R2	142	23	149	16.2	*	0.503	29.4	LOS C	4.1	32.6	0.93	0.79	0.93	39.6
Approach		192	24	202	12.5		0.503	27.2	LOS B	4.1	32.6	0.90	0.75	0.90	40.8
All Vehicles		1169	53	1231	4.5		0.503	14.6	LOS B	8.7	61.4	0.66	0.66	0.66	47.8

MOVEMENT SUMMARY

Site: 101 [Johnston Street / Tarcutta Street Fu PM (Site Folder: Post Development)]

Johnston Street / Tarcutta Street
Future
PM Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Tarcutta Street (S)															
1	L2	366	7	385	1.9		0.191	12.9	LOS A	2.8	20.2	0.53	0.71	0.53	48.4
2	T1	35	0	37	0.0		0.063	8.3	LOS A	0.7	5.2	0.54	0.49	0.54	51.7
3	R2	12	0	13	0.0		0.063	13.9	LOS A	0.7	5.2	0.54	0.49	0.54	50.5
Approach		413	7	435	1.7		0.191	12.5	LOS A	2.8	20.2	0.53	0.69	0.53	48.7
East: Johnston Street (E)															
4	L2	2	0	2	0.0		0.082	24.4	LOS B	0.9	6.4	0.80	0.60	0.80	44.7
5	T1	56	0	59	0.0		0.082	18.9	LOS B	0.9	6.4	0.80	0.61	0.80	45.3
6	R2	13	0	14	0.0		0.082	24.4	LOS B	0.8	5.6	0.80	0.64	0.80	43.3
Approach		71	0	75	0.0		0.082	20.1	LOS B	0.9	6.4	0.80	0.62	0.80	44.9
North: Tarcutta Street (N)															
7	L2	16	0	17	0.0		0.451	14.3	LOS A	7.8	54.9	0.64	0.59	0.64	50.7
8	T1	370	2	389	0.5		0.451	8.8	LOS A	7.8	54.9	0.64	0.59	0.64	52.0
9	R2	34	0	36	0.0	*	0.451	14.3	LOS A	7.8	54.9	0.64	0.59	0.64	50.5
Approach		420	2	442	0.5		0.451	9.4	LOS A	7.8	54.9	0.64	0.59	0.64	51.8
West: Johnston Street (W)															
10	L2	6	0	6	0.0		0.044	24.1	LOS B	0.5	3.3	0.78	0.60	0.78	44.1
11	T1	14	0	15	0.0		0.044	18.6	LOS B	0.5	3.3	0.78	0.60	0.78	45.1
12	R2	165	5	174	3.0	*	0.472	27.2	LOS B	4.5	32.6	0.90	0.79	0.90	40.8
Approach		185	5	195	2.7		0.472	26.5	LOS B	4.5	32.6	0.88	0.77	0.88	41.2
All Vehicles		1089	14	1146	1.3		0.472	14.2	LOS A	7.8	54.9	0.65	0.66	0.65	48.0

ANNEXURE E: SWEPT PATH TESTING
(2 SHEETS)

12.5m length HRV reverse entry into loading dock
Successful

Blue – Vehicle Tyres
Green – Vehicle Body
Red – 300mm Clearance

19m length AV reverse entry into site
Tested @ 5km/h
Unsuccessful – vehicle body overhangs the public verge

Blue – Vehicle Tyres
Green – Vehicle Body
Red – 300mm Clearance