STANBURY
TRAFFIC PLANNING
TRAFFIC, PARKING & TRANSPORT CONSULTANTS

PARKING & TRAFFIC STUDY FOR STAGE 2 COMMUNITY CONSULTATION

OLYMPIC PARK DRAFT MASTERPLAN
504 VICTORIA ROAD
RYDE

PREPARED FOR THE CITY OF RYDE
OUR REF: 20-197-5

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302/166 glebe point road
glebe nsw 2037
morgan@stanburytraffic.com.au
www.stanburytraffic.com.au
ph : 0410 561 848
abn : 23 613 111 916

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EXECUTIVE SUMMARY

Stanbury Traffic Planning has been commissioned by the City of Ryde to undertake a Parking & Traffic Study associated with the existing Olympic Park located in Ryde and the draft Masterplan that has been prepared for Olympic Park. The purpose of this study is to investigate the redevelopment potential of Olympic Park and in particular, the Ryde Aquatic Leisure Centre facility situated within the Park. This study focuses on the parking and traffic impacts associated with the current facility and the proposed draft Masterplan.

The following provides a summary of the assessment methodology and findings:

Section 1

Section 1 of this report presents the locational details of the Olympic Park facility and describes the various uses, features and buildings comprising Olympic Park including the following:

- Ryde Aquatic Leisure Centre;
- Next Generation Ryde;
- Ryde Tennis Centre and associated Tennis Courts;
- Public off-street car park; and
- Other uses including an off-leash dog area and a neighbourhood level child playground.

Section 2

Section 2 presents the findings of a previously Council-commissioned parking and traffic study of the Olympic Park facility completed by Bitzios Consulting in 2017. The Bitzios study analysed the existing conditions of Olympic Park and the surrounding precinct including the operational characteristics of the Ryde Aquatic Leisure Centre. The traffic and parking surveys performed by Bitzios and presented within their report is referenced and utilised for the purposes of this Study, in combination with attendance data of Ryde Aquatic Leisure Centre over the years 2017, 2018 and 2019 supplied by the Ryde Aquatic Leisure Centre staff. Analysis of the Ryde Aquatic Leisure Centre data revealed the following:

- The maximum daily attendance of the Ryde Aquatic Leisure Centre occurred on Sunday the 5th of February 2017, where 7,005 visitors attended the centre;
- On average, Sundays in February are the most attended days for the centre; and
- The maximum average daily attendance has been identified as 5,683 visitors (being the average attendance on Sundays in 2017).

Section 3

A summary of the existing traffic volumes collected in August 2017 by Bitzios Consulting is reported within Section 3. The surveyed junctions include the following:

- Victoria Road and Frank Street;
- Weaver Street and Searle Street;
- Weaver Street and the Olympic Park access driveways / roadways; and
- Margaret Street and the Olympic Park access roadway.

However, the greatest visitor-generating period associated with Olympic Park occurs in February; therefore, the Bitzios traffic survey results do not provide a sufficient representation of the peak traffic generation associated with Olympic Park. In order to ascertain appropriate base peak operational demands, a linear relationship between the inbound / outbound peak hour movement volumes associated with Olympic Park provided by Bitzios, and the corresponding daily attendance of the Ryde Aquatic Leisure Centre (the primarily visitor-generator of Olympic Park) has been generated.

After the base peak inbound and outbound movements associated with Olympic Park was derived, the previously presented additional vehicle movements to and from Olympic Park were assigned to the surrounding road network by adopting existing public road network distributions.

The 2017 Bitzios traffic volumes and the derived base peak traffic volumes were then modelled utilising SIDRA and the results indicate the following:

- The junction of Frank Street and Victoria Road operates with a level of service 'B' during the surveyed and derived weekend morning and the weekday evening peak periods, representing minimal delays and spare capacity; and
- All other junctions operate with a level of service 'A' during the surveyed and derived weekend morning and the weekday even peak periods, representing good operation.

Notwithstanding the abovementioned satisfactory public road intersection design, the limited pavement width of a number of surrounding local roads result in two-way traffic flow being required to occur under courtesy conditions, when on-street kerb-side parking occurs, notably reducing the safety and efficiency of the adjoining road network.

Section 3 further provides a description of the surrounding sustainable transport options and infrastructure available within the immediate precinct. This includes the closest bus stops and their associated bus routes, the pedestrian walking routes and footpaths and the bicycle-friendly routes.

Section 4

A description of the precinct limitations associated with Olympic Park and the surrounding road network is provided. The identified precinct limitations that currently impact the operation of the Olympic Park facility have been categorised in the following manner:

- Vehicular access: undesirable number of location of access driveways connecting with Weaver Street;
- Pedestrian access / circulation: inefficient, incomplete and / or unsafe pedestrian desire lines provided to and throughout the Park;
- Passenger vehicle circulation: existing public car parking area design is not compliant with various established Australian Standard specifications, particularly relating to car park grades and aisle / circulation widths;
- Parking provision: the prevailing extent of off-street car parking provision is not capable of accommodating peak operational demands of the Park; and
- Heavy vehicle servicing: undesirable combination of passenger and heavy vehicle movements contained within the off-street public parking area.

Section 5

Section 5 provides details of the proposed Olympic Park draft Masterplan and describes the major additions and alterations associated with each stage of the draft Masterplan.

The draft Masterplan additions and alterations include, but are not limited to, the addition of a new program pool, two new sports courts and adjoining spectator seating and a staged implementation of additional off-street public parking within two levels of parking and an additional temporary car park.

Section 6

Section 6 provides an analysis of the draft Masterplan parking considerations including the existing and proposed parking demand and the capacity of the off-street parking provision at each stage. The parking demand of Olympic Park was determined by utilising the Bitzios parking demand surveys, and developing a relationship between the survey results and the associated Ryde Aquatic Leisure Centre attendance, similar to the methods used to determine the associated traffic generation of the centre as described above.

The following parking considerations associated with the Olympic Park facility have been determined:

- Olympic Park currently provides a capacity of 199 off-street public parking spaces. The average peak parking demand currently exceeds the off-street parking capacity during 75% of the year by up to 318 parking spaces;

- Stage 5 of the draft Masterplan will result in an off-street parking capacity of 489 parking spaces. The projected average peak parking demand is expected to exceed the off-street parking capacity during 4.5% of the year by up to 117 parking spaces; and

- Following Stage 6 of the draft Masterplan, the final off-street parking capacity of 391 spaces will be provided at Olympic Park. The projected average peak parking demand is expected to exceed the off-street parking capacity during 31% of the year by up to 215 parking spaces.

When demand for off-street parking exceeds supply, this parking demand is accommodated within the surrounding public roads. The limited pavement width of the surrounding public roads is such that the occurrence of on-street parking results in two-way traffic flow occurring under courtesy conditions, notably reducing the safety and efficiency of the adjoining road network.

Whilst the analysis indicates a significant reduction in the extent and regularity of on-street parking being demanded, the following recommendations are made:

- Stage 3 and Stage 4 of the draft Masterplan is to be delivered concurrently or rearranged in order to provide all proposed parking before constructing the additional traffic-generating elements of the draft Masterplan;

- Conduct future traffic and parking analysis prior to implementing Stage 6 to ascertain whether sufficient off-street parking is being provided and/or alternative design options need to be pursued;

- Implement a schedule management plan in order to limit the visitors within the Olympic Park facility, especially during peak periods; and

- Give consideration to altering the 4-hour parking restriction within the public off-street car park to include weekends and/or implement 2 or 3 hour parking in order to increase parking turnover.

Implementation of the recommendations provided in Section 6 is anticipated to result in the ultimate parking demand exceeding the capacity of the off-street parking during 4.5% of the year by up to 117 parking spaces, which is considered acceptable.

Section 7

Through adoption of the same methodology as described above in Section 3, the combined inbound / outbound movements associated with Stage 3 and Stage 5 of the draft Masterplan was extrapolated. The associated traffic generation was then assigned throughout the surrounding road network by adopting existing public road network distributions.

The following results have been obtained through the above described analysis and a SIDRA-generated model of each surrounding intersection:

- Stage 3 of the draft Masterplan is projected to generate an additional 60 and 86 combined inbound / outbound peak hour vehicle movements to and from the Park during weekend morning and weekday evening periods, respectively;

- Stage 5 of the draft Masterplan is projected to further generate an additional 68 and 96 combined inbound / outbound peak hour vehicle movements to and from the Park during weekend morning and weekday evening periods, respectively;

- The surrounding public road intersections are projected to be readily capable of accommodating the additional traffic projected to be generated by the draft Masterplan; and

- It has been identified that the presence of on-street parking within the surrounding local roads causes a reduction in the operational efficiency and the level of service of the traffic flow within Searle Street and Weaver Street, specifically.

On the basis of the above, it is recommended that consideration be given to the removal of kerb-side parking along one kerb alignment of Searle Street and Weaver Street in order to mitigate the congestive effects of the on-street parking provision and the traffic generation of Olympic park in combination.

Section 8

Section 8 of this report provides an analysis of the draft Masterplan design and provides corresponding recommendations in order to improve the safety and efficiency of the design, while reducing the impacts of the Olympic Park facility on the surrounding road network. The following recommendations are provided with respect to the design of the draft Masterplan:

- Undertake network SIDRA modelling prior to the implementation of Stage 3 to ascertain and mitigate any impacts associated with car park entries, Weaver Street and Seale Street;

- Rationalise the Olympic Park access driveways connecting with Weaver Street into one access point situated opposite from Searle Street, with the intersection operating under roundabout control;

- Adjust the grades of the internal circulation aisle to accord with AS2890.1:2004;

- Provide an internal roadway access link between the central car park and the open south-eastern car park to minimise unnecessary Park access / egress movements;

- Reconfigure the central car park layout in order to utilise the space in a more efficient manner and to improve the pedestrian circulation and connectivity;

- Undertake an assessment of the coach / bus parking demand associated with Olympic Park in order to ensure appropriate accommodation for coaches / buses;

- Investigate the feasibility of relocating the Next Generation loading dock away from the public car park passenger vehicle internal circulation aisle;

- Provide greater connectivity between the pedestrian footpath bisecting the Olympic Park parkland and Potts Street; and

- Include bicycle and motorcycle parking in an accessible and safe location.

1. INTRODUCTION

1.1 Scope of Assessment

Stanbury Traffic Planning has been commissioned by the City of Ryde to undertake a Parking & Traffic Study associated with the existing Olympic Park located in Ryde and the draft Masterplan that has been prepared for Olympic Park. The site is located on the south-western side of Victoria Road and bounded by Weaver Street, Potts Street and Margaret Street, Ryde.

The aim of this Study is to inform the draft Masterplan, which is to investigate the redevelopment potential of Olympic Park and in particular, the Ryde Aquatic Leisure Centre facility situated within the Park, including assessment of the parking and traffic impacts associated with the implementation of the draft Masterplan. To this end, this Study accordingly undertakes the following:

- Section 1 provides a summary of the Olympic Park location, details, existing and surrounding land-uses;
- Section 2 describes the background of the previous assessments undertaken of the Olympic Park and in particular, the Ryde Aquatic Leisure Centre with respect to parking and traffic generation and the operational characteristics and daily visitor data of the Ryde Aquatic Leisure Centre;
- Section 3 assesses the existing traffic and transport conditions surrounding and servicing the site including a description of the surrounding road network, existing traffic demands, operational performance and available sustainable transport infrastructure;
- Section 4 investigates the existing limitations of the Park with respect to access, internal circulation, parking provision and heavy vehicle servicing;
- Section 5 provides a description of the Olympic Park draft Masterplan and the associated staging evolution;
- Section 6 assesses the parking considerations and provides a parking demand assessment during each Stage of the draft Masterplan;
- Section 7 investigates the external road network considerations, providing a description of the projected traffic generation capability of the Park during each Stage of the draft Masterplan; and
- Section 8 provides design considerations and recommendations to improve the safety and efficiency of the draft Masterplan access, internal circulation, heavy vehicle servicing and disabled parking provision.

The report has been prepared pursuant to State Environmental Planning Policy (Infrastructure) 2007.

1.2 Reference Documents

Reference is made to the following documents throughout this Study:

- Transport for New South Wales' (TfNSW, formerly Roads and Maritime Services) *Guide to Traffic Generating Developments*;
- The City of Ryde *Development Control Plan* 2014; and
- The Australian Standard for *Parking Facilities* (AS2890 series).

A draft Masterplan for Olympic Park and specifically, the Ryde Aquatic Leisure Centre has been prepared by Michael Davis Architecture and should be read in conjunction with this Study, a reduced copy of which is included as **Appendix 1** for reference.

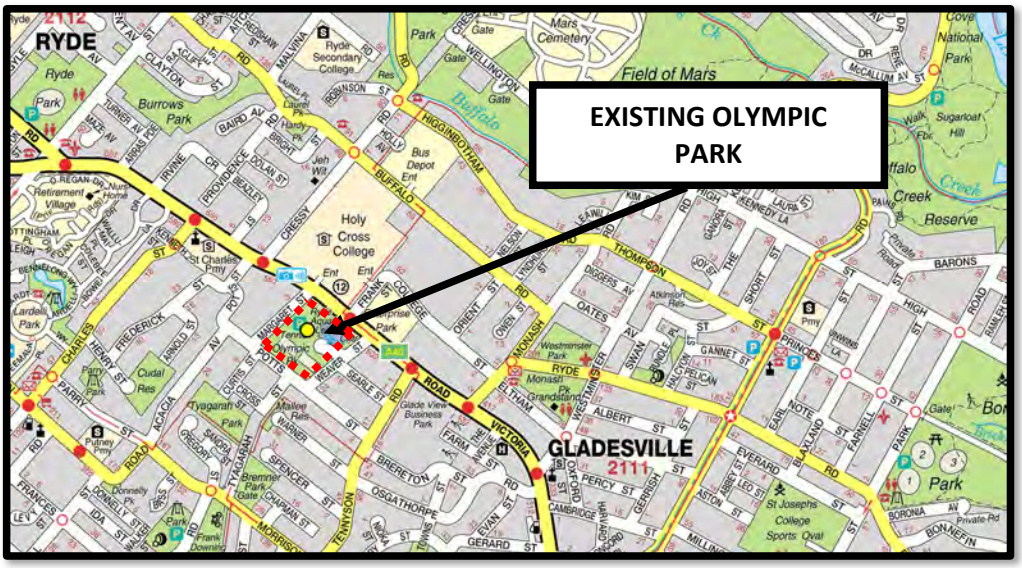
1.3 Park Details

1.3.1 Park Location

Olympic Park currently occupies a rectangular parcel of land located on the south-western side of Victoria Road, adjacent to its junction with Frank Street, Ryde to the north-east, also being bounded to the south-east, north-west and south-west by Weaver Street, Margaret Street and Potts Street, respectively.

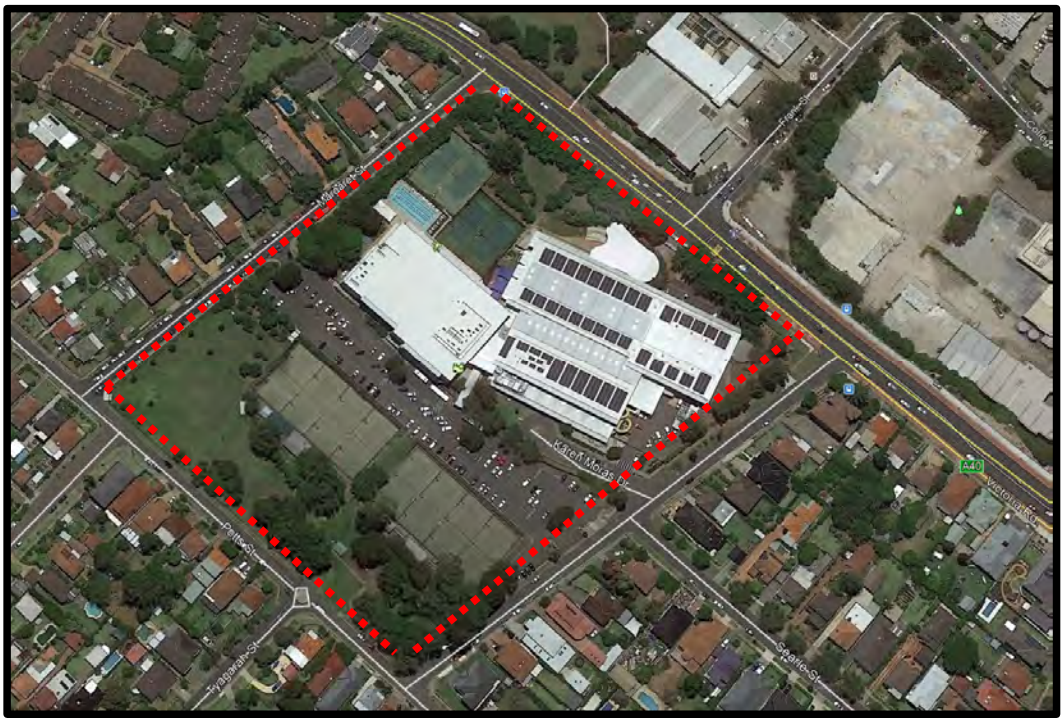
Olympic Park is illustrated below and overleaf within a local and aerial context by **Figure 1** and **Figure 2**, respectively.

FIGURE 1
RYDE OLYMPIC PARK LOCATION WITHIN A LOCAL CONTEXT



Source: UBD's Australian City Streets – Version 8

FIGURE 2
RYDE OLYMPIC PARK WITHIN AN AERIAL CONTEXT



Source: Google Earth (accessed 20/10/2020)

1.3.2 Existing Park Uses

1.3.2.1 Ryde Aquatic Leisure Centre

The existing Ryde Aquatic Leisure Centre building is situated within the north-eastern portion of the Park and provides facilities for swimming and various sporting activities, including but not limited to, a program pool for swim school use, a 50m lap pool for casual and hire use, a 25m wave pool for casual recreational use, two sports courts for casual and hire use and a small central cafe within the pool area, among other ancillary amenities.

The Ryde Aquatic Leisure Centre provides a small off-street staff parking area containing 12 passenger vehicle parking spaces situated within a loading bay adjacent to the south-eastern corner of the building, being accessed via Karen Moras Drive, which in turn connects with Weaver Street. The Centre also provides a further small off-street staff car parking are containing 10 passenger vehicle spaces located adjacent to the north-eastern corner of the building, connecting separately with Weaver Street to the north.

The Ryde Aquatic Leisure Centre will comprise the majority of the focus of this report as the proposed draft Masterplan involves alterations and additions to the Ryde Aquatic Leisure Centre facility and Olympic Park car park.

1.3.2.2 Next Generation Ryde

Next Generation Ryde is situated within the north-western corner of the Park, directly to the west of Ryde Aquatic Leisure Centre. Next Generation is a separately owned and operated gym and exercise facility that includes a separate outdoor swimming pool and four tennis courts. Next Generation provides a private car parking area containing 59 passenger vehicle spaces, situated at basement level, connecting with the public open car parking area situated approximately central to the Park (see Section 1.3.2.5 of this report).

For the purposes of this assessment, Next Generation will be regarded as an entirely self-sufficient entity, whereas parking demand associated with the facility is to be wholly contained within the abovementioned private car parking area.

1.3.2.3 Ryde Tennis Centre

Olympic Park currently provides eight outdoor public tennis courts that service Ryde Tennis Centre, located within the central south portion of the site.

1.3.2.4 Other Uses

Olympic Park provides open parkland comprising an off-leash dog area in the south-western most corner and a children's playground (neighbourhood level) situated within the south-eastern corner.

1.3.2.5 Car Park

An open car park, containing 194 passenger vehicle parking spaces, is situated within the central portion of Olympic Park. The parking spaces within the open public car park are currently restricted to four-hour parking from 8:00am – 6:00pm Monday to Friday, excluding weekends and public holidays.

1.3.3 Surrounding Uses

Olympic Park is surrounded by the following uses:

- A Bunnings Warehouse is situated to the east on the opposite side of Victoria Road;
- Kennards Self Storage Centre is located to the north-east fronting and being serviced by Frank Street;
- Holy Cross College (secondary school) is located to the north on the opposite side of Victoria Road;
- St Charles' Primary School is located one block to the west on Victoria Road; and

- Low-density residential dwellings are located to the south-east, south and west on the opposite sides of Weaver Street, Potts Street and Margaret Street, respectively.

2. BACKGROUND

2.1 Previous Assessments

Bitzios Consulting was commissioned by the City of Ryde to prepare the November 2017 *Ryde Olympic Park Strategic Plan and Masterplan: Current Transport Access and Facilities* report. The Bitzios report analysed the existing conditions of Olympic Park and the surrounding precinct including the operational characteristics of the Ryde Aquatic Leisure Centre. Traffic and parking demand data of the surrounding precinct was collected via parking and traffic surveys completed by Bitzios Consulting, the findings of which are referenced and utilised for the purposes of this Study.

The Bitzios report identified the following considerations for the Olympic Park draft Masterplan relevant to the current conditions of the draft Masterplan in 2017:

- Visitors to the precinct from the north-west along Victoria Road are required to travel via the somewhat circuitous transit route of Tennyson Road and Searle Street;

- Similarly, visitors exiting the precinct and wishing to travel to the south-east are required to travel via Searle Street and thence Tennyson Street to access the south-eastbound Victoria Road travel lanes;

- Consideration should be given to the provision of direct vehicular access between Victoria Road and Olympic Park via the creation of a new fourth public road approach to the existing signalised junction of Victoria Road and Frank Street, in order to minimise the intrusion of Park access / egress vehicle movements on surrounding local streets;

- Consideration should be given to the implementation of one-way directional operation of the local streets fronting Olympic Park (Weaver Street, Potts Street and Margaret Street) in order to retain on street parking while improving the level of service of traffic flow should be given;

- Greater connectivity should be provided to pedestrians and cyclists across Victoria Road and throughout the precinct with the draft Masterplan promoting and improving this connectivity;

- Consideration should be given to the provision of additional off-street parking within Olympic Park to ensure that Park uses do not undesirably rely upon surrounding on-street parking supply to accommodate demand and further allow greater flexibility to accommodate additional demands associated with future development; and

- An objective of the draft Masterplan should be to meet the average peak parking demand and not the overall peak demand.

2.2 Ryde Aquatic Leisure Centre Operational Characteristics

In order to undertake an assessment of the existing conditions of Ryde Aquatic Leisure Centre and accordingly Olympic Park as a whole, and to successfully assess the parking and traffic impacts associated with the proposed draft Masterplan, operational characteristics and daily patronage data has been obtained from staff of Ryde Aquatic Leisure Centre. The following data has been provided and utilised throughout this Study:

- Daily visitor data of the Ryde Aquatic Leisure Centre for the years 2017, 2018 and 2019 reports that the overall maximum daily attendance over the three years was 7,005 people, occurring on Sunday the 5th of February 2017;

- An assessment of the above data revealed that on average, Sundays in February are the most attended days for the centre;

- The maximum average daily attendance over the three survey years has been identified as 5,683 visitors (being the average attendance on Sundays in 2017);

- Ryde Aquatic Leisure Centre daily visitors have been assigned to the following categories:

  - Causal Entry;
  - Swim School;
  - Parties;
  - Programs & Facility Hire; and
  - Non-Paying Visitors and Staff.

- Based on the visitor data provided, the average percentage of daily visitor types and the amount of daily visitors based on a total centre attendance of 5,683 visitors, has been determined and are allocated as shown in **Table 1** below.

TABLE 1
VISTOR TYPE ATTENDANCE ALLOCATION
RYDE AQUATIC LEISURE CENTRE

Visitor Type	Percentage	Daily Visitors
Casual Entry	25.95%	1,475
Swim School	26.97%	1,532
Parties	0.45%	25
Programs & Facility Hire	18.23%	1,036
Staff / Non-Paying Visitors	28.48%	1,619

3. EXISTING TRANSPORT CONDITIONS

3.1 Surrounding Road Network

The following provides a description of the local road network surrounding the subject site:

- **Victoria Road** performs a State Road function under the care and control of Transport for New South Wales (TfNSW). In a regional context, Victoria Road forms part of the A40 route providing an east-west arterial connection between Parramatta in the west and the Inner West suburbs of the Sydney metropolitan area in the east, forming a T-junction with City West Link Road at Rozelle. In a local context, Victoria Road provides a connection between Gladesville town centre in the east to Ryde town centre in the west. Traffic flow is governed by a sign posted speed limit of 60km/h; however, in the vicinity of Olympic Park, Victoria Road is governed by a 40km/h school zone speed limit beginning at the junction of Victoria Road and Frank Street and extending approximately 670m to the west.

  In the vicinity of the site, Victoria Road provides a pavement width of approximately 20m facilitating a dual carriageway separated by a raised concrete median, proving three through lanes of traffic in each direction. The eastbound and westbound kerb-side lanes provide dedicated bus only lanes during the weekday morning and evening peak periods, respectively. The westbound kerb-side lane forms a dedicated left turn lane servicing Margaret Street to the west of Frank Street.

  Adjacent to Olympic Park, Victoria Road forms a T-junction with Frank Street operating under traffic signal control. A dedicated right turn lane is provided within the westbound carriageway accommodating turning movements to Frank Street.

  Victoria Road forms T-junctions with multiple lower order roads in the vicinity of the site including Weaver Street, Margaret Street, and Potts Street operating under priority major / minor control with Victoria Road forming the major route. The prevailing raised concrete median within Victoria Road restricts turning movements to and from these lower order roads to left turn movements only.

  Victoria Road forms signalised intersections with Tennyson Road to the east and Cressy Road and thence Charles Street to the west, with all turning movements being facilitated.

- **Weaver Street** performs a local access function under the care and control of The City of Ryde Council, providing connectivity between Victoria Road in the north and Potts Street in the south and servicing abutting residential development to the east and Olympic Park to the west. Traffic flow is governed by a speed limit of 50km/h.

Weaver Street provides a 9m wide pavement facilitating one lane of through traffic in each direction. Two-hour marked kerb-side parallel parking between 8:00am - 6:00pm on weekdays (unrestricted on weekends) is located on the eastern kerb alignment of Weaver Street between Victoria Road and Searle Street, and along both kerb alignments between the southern-most Olympic Park access driveway and Potts Street. However, a section of the western kerb-alignment on the southern end of Weaver Street, comprising four parking spaces, is four-hour restricted parking between 8:00am – 6:00pm on weekdays (unrestricted on weekends). Permit-holding vehicles are excepted from the parking restrictions within Weaver Street.

The limited pavement width requires two-way traffic flow to occur under courtesy conditions when kerb-side parking is accommodated on both sides of the road.

Weaver Street forms a T-junction with the Victoria Road westbound carriageway to the north, operating under major / minor priority control with Victoria Road forming the priority route.

Weaver Street forms a T-junction with Searle Street approximately midway between Victoria Road and Pott Street, operating under major / minor priority control with Weaver Street forming the priority route.

Weaver Street also forms a T-junction with Karen Moras Drive immediately to the north of Searle Street, operating under major / minor priority control with Weaver Street forming the priority route.

Weaver Street forms a T-junction with Potts Street to the south under major / minor priority control with Potts Street forming the priority route.

The primary off-street Olympic Park car park connects to Weaver Street via a driveway, providing separate ingress and egress lanes, situated immediately to the south of Searle Street.

- **Karen Moras Drive** performs a minor local function under the care and control of the City of Ryde, extending some 60m into Olympic Park prior to terminating via a cul-de-sac adjacent to Ryde Aquatic Leisure Centre. Karen Moras Drive provides a pavement width of approximately 9m providing one through lane of traffic in each direction, in conjunction with four marked accessible parking spaces along the northern kerb alignment and an additional accessible parking space located near the staff parking/loading bay entry.

- **Potts Street** is a local road under the care and control of The City of Ryde providing connectivity in an east-west alignment between Tennyson Road in the east and Victoria Road in the west. Traffic control within Potts Street is governed by a speed limit of 50km/h, with the exception of the 40km/h school zone speed limit applicable during prescribed school start and finish periods within the western portion of the route associated with St Charles Catholic Primary School.

Potts Street provides a 7m wide pavement with one lane of through traffic in each direction in conjunction with unrestricted marked kerb-side parallel parking along both kerb alignments. Due to the limited pavement width, one direction of traffic flow is permitted at any one time requiring opposing traffic flow to occur under courtesy conditions whereby a vehicle will utilise a break in kerb side parking, generally associated with a driveway, to stop and allow a vehicle travelling in the opposite direction to pass.

The south-eastern end of Potts Street forms a T-junction with Tennyson Road under 'Stop' signage control, requiring traffic travelling on Potts Street to stop for traffic within Tennyson Road.

Potts Street forms a T-junction with Tyagrah Street directly to the south of Olympic Park, operating under roundabout control.

Potts Street forms T-junctions with Margaret Street, Curtis Street and Acacia Street under major / minor priority control with Potts Street forming the major route.

- **Searle Street** is a local road under the care and control of the City of Ryde Council, primarily servicing the abutting residential developments in an east-west alignment between Tennyson Road in the east and Weaver Street in the west. Traffic flow is governed by a speed limit of 50km/h and a load limit of 3 tonnes.

  Searle Street provides an 9m wide pavement facilitating on lane of through traffic in each direction. Due to the limited pavement width, one direction of traffic flow is permitted at any one time requiring opposing traffic flow to occur under courtesy conditions whereby a vehicle will utilise a break in kerb side parking, generally associated with a driveway, to stop and allow a vehicle travelling in the opposite direction to pass. Two-hour kerb-side marked parallel parking from the hours of 8:00am – 6:00pm on weekdays (unrestricted on weekends) is situated along both kerb alignments. Permit-holding vehicles are excepted from the parking restrictions within Weaver Street.

  Searle Street forms a T-junction at its eastern end with Tennyson Road under roundabout control.

- **Margaret Street** is a local access road providing connectivity between Victoria Road in the north and Potts Street in the south, primarily servicing the abutting residential developments to the west and Olympic Park to the east. Traffic flow within Margaret Street is governed by a 50km/h speed limit.

  Margaret Street provides a 9m wide pavement providing one lane of through traffic in each direction in conjunction to marked unrestricted kerb-side parallel parking along both kerb alignments (with the exception of a bus zone applying along the eastern kerb alignment to the south of Victoria Road – see below). Due to the limited pavement width, one direction of traffic flow is permitted at any one time requiring opposing traffic flow to occur under courtesy conditions whereby a vehicle will utilise a break in kerb side parking,

generally associated with a driveway, to stop and allow a vehicle travelling in the opposite direction to pass.

During the hours between 9:00am and 3:00pm on school days, the eastern kerb alignment of Margaret Street between Victoria Road and the Olympic Park access roadway is signposted as a Bus Zone, primarily providing parking accommodation for buses and coaches servicing the facilities within Olympic Park.

Margaret Street forms a T-junction with the Victoria Road westbound carriageway to the north, operating under major / minor priority control with Victoria Road forming the priority route.

Margaret Street forms a T-junction with an Olympic Park access roadway approximately midway between Victoria Road and Potts Street. This junction operates under 'Stop' signage control requiring traffic exiting Olympic Park to stop and yield to traffic travelling on Margaret Street. The Olympic Park access roadway provide connectivity to the internal circulation parking aisle within the open Olympic Park car park and provides direct access to the Next Generation Ryde enclosed ground floor car park.

- **Frank Street** is a local access road under the care and control of The City of Ryde Council. Frank Street forms a north-south non-arterial route servicing the abutting developments between the northern side of Victoria Road and College Street. Traffic is governed by a speed limit of 50km/h.

  Frank Street provides a 15m wide pavement facilitating one northbound travel lane and three southbound travel lanes on approach to its signalised intersection with Victoria Road. A dedicated right turn lane is also provided servicing a Bunnings Warehouse driveway to the north of Victoria Road. Further to the north, the Frank Street pavement width reduces to approximately 9m to provide a single lane of traffic in each direction, prior to curving to the east to form College Street.

3.2 Existing Traffic Volumes

3.2.1 August 2017 Traffic Volumes

As previously presented, this Study refers to the traffic survey enclosed within the Bitzios traffic assessment of Olympic Park and its surrounding precinct. The traffic survey assessed the traffic volumes experienced by the junctions surrounding Olympic Park and the inbound and outbound movements of each Olympic Park access driveway during weekday afternoon and weekend morning peak hours.

For the purposes of this study, the Olympic Park access roadways / driveways connecting with Weaver Street have been rationalised and reported as a single access point for outbound and inbound movements.

The following intersections were surveyed and reported upon by the Bitzios Study:

- The junction of Victoria Road and Frank Street;
- The junction of Weaver Street and Searle Street;
- The junction of Weaver Street and the Olympic Park access roadway; and
- The junction of the Margaret Street and the Olympic Park access roadway.

Surveys were undertaken between 3:00pm – 7:00pm and 8:00am – 12:00pm on Thursday the 10th of August, 2017 and Saturday the 12th of August, 2017, respectively.

A figure illustrating a summary of the 2017 Bitzios surveyed peak hour traffic volumes has been created, a copy of which is included within **Appendix 2**.

The Bitzios traffic survey indicates the following peak hour traffic demands in August of 2017:

- Directional traffic flows within Victoria Road during the weekday afternoon and weekend morning peak hours was determined to be between approximately 1,700 – 2,100 and 1,500 – 1,800 vehicles, respectively;
- Weaver Street, on approach to Victoria Road and Potts Street, accommodates low directional traffic demands, being less than 100 vehicles during both the weekday afternoon peak hour and the weekend morning peak hour;
- Searle Street accommodates approximate directional traffic demands between approximately 50 and 150 vehicles during both the weekday afternoon peak hour and the weekend morning peak hour; and
- Margaret Street accommodates approximate directional traffic demands of between 50 and 150 vehicles during both the weekday afternoon peak hour and the weekend morning peak hour.

3.2.2 Adopted Existing Base Peak Methodology

As stated above, the Bitzios traffic survey was performed on a Thursday and Saturday in August 2017. However, it has been discovered as presented in Section 2.1 of this Study, that the average maximum daily attendance of the Ryde Aquatic Leisure Centre occurs on Sundays in February. Therefore, the Bitzios traffic survey is not representative of the peak traffic generating potential of the Ryde Aquatic Leisure Centre and does not provide a satisfactory existing base survey for the purposes of this assessment.

Therefore, in order to extrapolate an approximate representation of the existing peak traffic generation of Olympic Park, a relationship has been derived based on the August 2017 Bitzios surveyed traffic volumes and the corresponding attendance of the Ryde Aquatic Leisure Centre.

In order to derive this relationship, the following attendance data and survey results have been utilised:

- 3,060 people attended Ryde Aquatic Leisure Centre on Saturday the 12th of August 2017; and

- 2,018 people attended Ryde Aquatic Leisure Centre on Thursday the 10th of August 2017;
- The total inbound and outbound movements associated with Olympic Park during the surveyed Saturday morning peak was 400 movements; and

- The total inbound and outbound movements associated with Olympic Park during the surveyed Thursday afternoon peak was 375 movements.

Accordingly, the following relationships between daily Ryde Aquatic Leisure Centre attendance and the total inbound and outbound peak hour movements to the centre has been derived:

- 1 vehicle movement per 7.8 Saturday visitors (3060/400); and

- 1 vehicle movement per 5.4 Thursday visitors (2018/375).

Following the derivation of this relationship, the average attendance of the Ryde Aquatic Leisure Centre on Saturdays and Thursdays in February 2017 was identified. Once identified, the relationship was applied in order to provide theoretical traffic volumes that would ensue during the month of February, being Ryde Aquatic Leisure Centre's highest visitor-generating month.

Therefore, the following has been determined:

- The average Saturday attendance during the month of February 2017 was 5,271, providing 2,211 visitors over and above that of the attendance that occurred on the traffic survey date;

- The average Thursday attendance during the month of February was 3,460, providing 1,442 visitors over and above that of the attendance that occurred on the traffic survey date;

- Applying the abovementioned derived Saturday relationship results in an additional 287 morning peak hour inbound and outbound movements (to and from Olympic Park) to that of the Bitzios survey results; and

- Applying the abovementioned derived Thursday relationship results in an additional 267 afternoon peak hour inbound and outbound movements (to and from Olympic Park) to that of the Bitzios survey results.

3.2.3 Adopted Existing Base Peak Volumes

Utilising the abovementioned method, a figure including a summary of the existing base peak traffic flows at the surveyed junctions has been created, a copy of which has been included within **Appendix 3**. The previously presented

additional vehicle movements to and from Olympic Park have been assigned to the surrounding road network by adopting existing public road network distributions.

3.3 Existing Road Network Operation

The surveyed August 2017 and derived peak base traffic volumes experienced by the surrounding junctions have been analysed utilising the SIDRA computer intersection analysis program in order to objectively assess the operation of the nearby public road network.

SIDRA is a computerised traffic arrangement program which, when volume and geometrical configurations of an intersection are imputed, provides an objective assessment of the operation efficiency under varying types of control (i.e. signs, signals and roundabouts). Key indicators of SIDRA include level of service where results are placed on a continuum from A to F, with A providing the greatest intersection efficiency and therefore being the most desirable by TfNSW.

SIDRA uses detailed analytical traffic models coupled with an iterative approximation method to provide estimates of the abovementioned key indicators of capacity and performance statistics. Other key indicators provided by SIDRA are average vehicle delay, the number of stops per hour and the degree of saturation. Degree of saturation is the ratio of the arrival rate of vehicles to the capacity of the approach. Degree of saturation is a useful and professionally accepted measure of intersection performance.

SIDRA provides analysis of the operating conditions that can be compared to the performance criteria set out in **Table 2** (being TfNSW's method of calculation of Level of Service).

TABLE 2
LEVEL OF SERVICE CRITERIA FOR INTERSECTIONS

Level of Service	Average Delay per Vehicle (secs/veh)	Expected Delay
SIGNALISED INTERSECTIONS AND ROUNDABOUTS		
A	Less than 14	Little or no delay
B	15 to 28	Minimal delay and spare capacity
C	29 to 42	Satisfactory delays with spare capacity
D	43 to 56	Satisfactory but near capacity
E	57 to 70	At capacity, incidents will cause excessive delays
F	> 70	Extreme delay, unsatisfactory
PRIORITY CONTROLLED INTERSECTIONS		
A	Less than 14	Good
B	15 to 28	Acceptable delays and spare capacity
C	29 to 42	Satisfactory
D	43 to 56	Near capacity
E	57 to 70	At capacity and requires other control mode
F	> 70	Unsatisfactory and requires other control mode

3.3.1 Intersection Performance

The existing conditions have been modelled utilising the peak hour traffic volumes presented within **Appendix 3**.

Table 3 below provides a summary of the SIDRA output data for each of the surveyed junctions for the weekend morning and weekday afternoon peak periods, including the Bitzios survey volumes and the extrapolated volumes representing base peak conditions. More detailed summaries are provided within **Appendix 4**, whilst full details are available upon request.

TABLE 3
SIDRA OUTPUT
WEEKEND AM AND WEEKDAY PM PEAK HOUR JUNCTION PERFORMANCE

	2017 Bitzios August Survey		Derived Peak Base	
	Week end AM	Week day PM	Week end AM	Week day PM
Victoria Rd & Frank St				
Delay (seconds)	17.5	20.5	17.0	20.7
Degree of Saturation	0.61	0.70	0.61	0.72
Level of Service	B	B	B	B
Weaver St & Olympic Park Car Park Access				
Delay (seconds)	8.5	8.4	9.3	9.0
Degree of Saturation	0.10	0.09	0.15	0.16
Level of Service	A	A	A	A
Weaver St & Searle St				
Delay (seconds)	6.1	6.2	6.8	6.7
Degree of Saturation	0.09	0.07	0.13	0.12
Level of Service	A	A	A	A
Margaret St & Olympic Park Car Park Access				
Delay (seconds)	8.2	8.3	8.4	8.4
Degree of Saturation	0.08	0.05	0.14	0.10
Level of Service	A	A	A	A

Table 3 indicates the following:

- The junction of Frank Street and Victoria Road operates with a level of service 'B' during the surveyed and derived weekend morning and the weekday evening peak periods, representing minimal delays and spare capacity;

- The junction of Weaver Street and the Olympic Park access roadway operates with a level of service 'A' during the surveyed and derived weekend morning and the weekday evening peak periods, representing good operation;

- The junction of Weaver Street and Searle Street operates with a level of service 'A' during the surveyed and derived weekend morning and the weekday evening peak periods, representing good operation; and

- The junction of Margaret Street and the Olympic Park roadway operates with a level of service 'A' during the surveyed and derived weekend morning and the weekday evening peak periods, representing good operation.

3.3.2 Approach Route Performance

Reference is made to TfNSW's *Guide to Traffic Generating Developments* in order to undertake an assessment of the operational performance of the approach routes servicing the site. On the basis of the current traffic demands and the existing parking restrictions, the following levels of service are provided:

- Victoria Road provides eastbound and westbound motorists with a level of service of 'C', respectively, during the morning and afternoon peak periods, representing stable flow; and

- Searle Street, Weaver Street and Margaret Street provide directional motorists with levels of service 'A' during both the morning and evening peak period representing free flow.

A level of service 'A', as assigned to Margaret Street, Weaver Street, Searle Street, represents free flow conditions whereby motorists are virtually unaffected by others in the traffic stream. Notwithstanding this, the presence of on-street parking along both kerb alignments of Searle Street, Weaver Street and Margaret Street, in conjunction with sections of inconsistent vertical alignment and limited pavement width, noticeably impedes the level of service provided to motorists.

3.3.3 Olympic Park Access Performance

As presented in Section 3.3.1, the junctions of the Olympic Park access roadways with Weaver Street and Margaret Street provide a level of service 'A' during the 2017 August period and the derived base peak period. Traffic movements are accordingly able to access and exit the Park with a good level of service, with spare capacity to accommodate increased traffic demand.

3.4 Sustainable Transport

3.4.1 Buses

The following bus routes operate along Victoria Road, with the closest stops being located in the immediate vicinity to Weaver Street and Margaret Street:

- Route 501 West Ryde to Central Pitt Street via Pyrmont and Ultimo;

- Route 515 Eastwood to City Circular Quay;

- Route 518 Macquarie University to City Circular Quay;

- Route 520 Parramatta to City Circular Quay via West Ryde;

- Route X15 City Town Hall to Eastwood (Express Service); and

- Route X18 City Town Hall to Denistone East (Express Service).

3.4.2 Pedestrians

Pedestrians are provided with the following access and mobility infrastructure within the immediate vicinity of the subject site:

- A pedestrian footpath is provided on both sides of Victoria Road, with pedestrian crossings provided over each approach of the junction of Victoria Road and Frank Street;
- A pedestrian footpath is provided along both sides of Weaver Street to the north of Searle Street;
- A pedestrian footpath is provided along the eastern side of Weaver Street to the south of Searle Street;
- A pedestrian footpath is provided on the southern side of Potts Street;
- A pedestrian footpath is provided on both sides of Margaret Street; and
- A pedestrian access footpath is provided through Olympic Park between Potts Street to the east of Tyagarah Street, and Weaver Street, to south of Searle Street.

It is also noted that the Parramatta River Walk passes through the immediate precinct providing a walking route along the western side of Tyagarah Street, the western boundary of Olympic Park, along Victoria Road and along Cressy Road.

3.4.3 Cyclists

The following roads provide an on-road bicycle-friendly route for cyclists within the immediate vicinity of the subject site:

- Monash Road;
- Frank Street;
- Cressy Road;
- College Street; and
- Ryde Road.

4. PRECINCT LIMITATIONS

4.1 Vehicular Access

Vehicular access to Olympic Park and the Ryde Aquatic Leisure Centre is provided via five combined ingress / egress driveways / roadways. Three access driveways and Karen Moras Drive connect with Weaver Street, with the southern-most driveway connecting directly to the open public car parking area. Karen Moras Drive links with a pick-up / drop-off area and loading dock, whilst the other two driveways are for staff access only. One combined access roadway intersects with Margaret Street, providing direct connectivity to the open public car parking area.

The southern-most driveway and Karen Moras Drive provide poor access to Olympic Park due to their proximity to the junction of Weaver Street and Searle Street creating off-set junctions for motorists to negotiate, resulting in a decreased level of safety. In this regard, the southern-most driveway connection to Weaver Street does not comply with AS2890.1:2004 as it is situated within 6m of the of the junction of Weaver Street and Searle Street, which as emphasised within the standard, is prohibited.

In addition to the above, due to the restrictive nature of turning movements between Victoria Road and Margaret Street as well as Weaver Street, vehicles travelling from the west to the precinct and vehicles wishing to travel to the east from the precinct, must do so via Tennyson Road (and thence Searle Street). This greatly increases traffic volumes on the local road network and particularly, the number of back to back turning movements between Searle Street and Olympic Park, via Weaver Street.

4.2 Pedestrian Access / Circulation

Whilst safe and efficient pedestrian connectivity between Victoria Road, Weaver Street and Margaret Street is facilitated by pedestrian paths along both kerb alignments of each road, connectivity between the opposite side of Weaver Street and Margaret Street and the existing infrastructure within Olympic Park is poor as no formal pedestrian crossing infrastructure is provided.

Pedestrian access and circulation within Olympic Park is also poor as pedestrian paths throughout the car park are inconsistent and discontinuous. Further, from within the car park, pedestrian access to the main lobbies of Ryde Aquatic Leisure Centre and Next Generation is via a significant staircase with no lift option available. This staircase provides a challenge for parents with children / prams wishing to access the building (it is noted that limited disabled parking is provided within Karen Moras Drive, situated at the lobby level).

4.3 Passenger Vehicle Circulation

The passenger vehicle circulation within the open public car parking area within Olympic Park has generally been observed to operate in a satisfactory matter.

However, a measurable grade is present throughout the car park, which exceeds AS2890.1:2004 specifications.

Further, the southern internal circulation aisle that connects directly with standard 90 degree and 45 degree angled parking rows is approximately 5m wide, being notably less than the minimum 5.8m required by AS2890.1:2004.

4.4 Parking Provision

The existing open public Olympic Park car park provides 194 visitor parking spaces. A further five publicly accessible disabled parking spaces are provided within Karen Moras Drive. Further, a total of 19 off-street parking spaces are situated within two separate parking areas servicing staff of Ryde Aquatic Leisure Centre. The parking spaces within the open public car park are currently restricted to four-hour parking from 8:00am – 6:00pm Monday to Friday, excluding weekends and public holidays.

It has been observed that the abovementioned off-street car parking areas experience high parking demand, whereby visitors are often required to utilise the on-street parking capacity within the surrounding road network. This parking demand has been observed to occur within Searle Street, Weaver Street, Potts Street and Margaret Street. The limited pavement width of these streets is such that the prevalence of kerb-side parking on both sides requires two-way traffic flow to occur under courtesy conditions, thereby notably limiting public road traffic efficiency and safety.

For the purposes of this study, it is noted that Next Generation has 58 parking spaces for exclusive use of their members within the ground-floor covered parking area; however, it has been observed that many Next Generation members utilise the Olympic Park car park due to immediate availability and convenience, resulting in an increased parking demand to be met by the public Olympic Park car park as well as the surrounding public roads.

4.5 Heavy Vehicle Servicing

4.5.1 Coaches / Buses

Olympic Park facilitates the access and accommodation of coaches and buses within the open public car park. The existing off-street parking area provides a coach / bus drop off area at the northern side of the car park on either side of the pedestrian access staircase. This coach / bus pick-up and drop-off arrangement requires exiting pedestrians to depart the coach / bus in close proximity to the northern car park boundary wall where there is no pedestrian footpath present, providing poor accessibility and level of safety to pedestrians accessing the site via a coach / bus.

The coach / bus drop-off and pick-up area is accessed via the internal circulation parking aisle also servicing passenger vehicles accessing parking spaces. This arrangement provides for the undesirable interaction of passenger and heavy vehicles in a high pedestrian activity area.

4.5.2 Delivery Vehicles

Olympic Park requires the occasional servicing of delivery vehicles in the form of regularly scheduled chlorine delivery in conjunction to other minor delivery and servicing activities. The servicing requirements associated with Ryde Aquatic Leisure Centre are currently performed via the dedicated off-street loading area connecting with Karen Moras Drive with a reasonable level of safety and efficiency. The servicing arrangements with the Next Generation facility however, occur via a loading area accessed via the open public car parking area within Olympic Park. The combining of heavy service vehicle movements with passenger vehicle and pedestrian movements within the public car parking area has the potential to result in undesirable impacts on general safety and efficiency.

5. DESCRIPTION OF DRAFT MASTERPLAN

5.1 Built Form

A draft Masterplan for Olympic Park has been prepared by Michael Davies Architecture, a copy of which is attached as **Appendix 1**. This draft Masterplan involves staged alterations and additions to the Park, primarily associated with Ryde Aquatic Leisure Centre and the public car parking area, the primary components of which are summarised within the following sub-sections of this report.

5.1.1 Stage 1

A temporary car park comprising 98 parking spaces is to be situated in the south-eastern corner of Olympic Park, in place of four existing tennis courts. Vehicular access to the temporary car park is proposed to be provided via a new combined ingress / egress driveway connecting to Weaver Street situated approximately 50m south of the southern-most existing Park access driveway connecting to Weaver Street.

This Stage results in the public Olympic Park off-street car parking areas providing a total yield of 297 spaces, an increase of 98 parking spaces from the existing car park.

5.1.2 Stage 2

An expanded two-level car park comprising 75 parking spaces on the lower level and 69 spaces on the upper level for a total of 144 parking spaces is to be situated in place of the western half of the existing open public car park.

Vehicular access to the parking added during this stage is to be provided via the existing combined ingress / egress access roadway connecting with Margaret Street on the western boundary of the site.

This Stage results in the public Olympic Park off-street car parking areas providing a total yield of 344 spaces, an increase of 145 parking spaces from the existing car park.

5.1.3 Stage 3

The ground floor of the Ryde Aquatic Leisure Centre facility is to be expanded to include an additional program pool, a new lobby, an additional new splash pad, a new café and seating area and other ancillary amenities.

5.1.4 Stage 4

An additional car park expansion is proposed to replace the remaining eastern side of the existing open public car park. The eastern car park expansion is to

provide a total of 247 parking spaces across two levels of parking comprising 113 parking spaces on the lower level and 134 parking spaces on the upper level.

Two additional separated ingress and egress vehicular access driveways are to be provided on the eastern boundary of the Park, connecting with Weaver Street in place of the existing southern-most access driveway.

This Stage results in the public Olympic Park off-street car parking areas providing a total yield of 489 spaces, an increase of 290 parking spaces from the existing car park.

5.1.5 Stage 5

The second floor of the Ryde Aquatic Leisure Centre facility is to be expanded to include two new additional sports courts and adjoining spectator seating.

5.1.6 Stage 6

The abovementioned temporary car park added during Stage 1 is to be removed during this Stage and returned to community use.

This Stage will remove 98 off-street public parking spaces from the Park resulting in a final total of 391 off-street spaces, an increase of 192 parking spaces from the existing car park.

6. PARKING CONSIDERATIONS

6.1 Parking Demand Methodology

An analysis of the existing and proposed parking provision at each stage of the draft Masterplan, and its ability or otherwise to satisfy the existing and projected parking demand, has been completed. It should be noted that the analysis utilises the *average peak* parking demand, which as stated in Section 2.2 of this Study, has been determined to occur on Sundays in February. Therefore, this analysis provides an assessment of the ability of the existing and proposed parking provision to satisfy the average peak parking demand and not the absolute peak parking demand.

In order to determine the associated average peak parking demand of the Olympic Park facility, which is generated in majority by the Ryde Aquatic Leisure Centre, an analysis of the daily patronage data provided by the Ryde Aquatic Leisure Centre staff has been completed. The Bitzios parking demand survey completed on Thursday August 10th and Saturday August 12th 2017 has also been utilised to extrapolate a parking demand and daily Ryde Aquatic Leisure Centre attendance relationship.

The following operational characteristics of the existing Ryde Aquatic Leisure Centre has been determined and utilised for the purpose of the parking assessment:

- The absolute maximum daily centre attendance over the years 2017, 2018 and 2019 has been identified as 7,005 visitors. Accordingly, 85 percent of the maximum daily attendance has been identified as 5,954 visitors;
- For each month of the three years recorded, an average daily attendance has been calculated. The maximum average daily attendance over the three years is determined to range between 4,886 – 5,683 visitors, with the maximum average daily attendance of 5,683 occurring on Sundays during February 2017;
- For the purposes of this assessment, 5,683 visitors has been adopted as the appropriate maximum average daily attendance on which to calculate peak parking demand as it is comparable to 85 percent of the absolute maximum attendance;
- A relationship between daily visitors and the instantaneous parking demand has been determined by utilising the Bitzios parking demand survey completed on Thursday August 19th and Saturday August 12th of 2017, and the corresponding daily visitors at the centre during both days. The peak instantaneous parking demand of one space per 11 daily visitors has been determined.
- The existing average peak instantaneous parking demand of the Park, occurring on Sundays during February, is accordingly calculated to be 517 parking spaces (5,683 / 11).

6.2 Parking Demand Assessment

The abovementioned methodology has been applied to each stage of the draft Masterplan and its corresponding parking provision and anticipated average daily attendance. The following subsections provide a measure of the capacity of each stage to accommodate its associated parking demand.

6.2.1 Stage 1

Stage 1 provides a total off-street public parking provision of 297 spaces comprising:

- 194 existing parking spaces situated in the open car park;
- 5 spaces within Karen Moras Drive; and
- 98 parking spaces within the temporary car park.

Stage 1 does not include additional expansion of the facility amenities; therefore, no additional visitors are anticipated to be generated. Accordingly, the maximum average attendance during this Stage remains at 5,683 visitors.

Applying the abovementioned parking demand relationship, a peak parking demand of 517 parking spaces is projected to be associated with this stage, being the same as the existing development.

Therefore, up to **220** on-street parking spaces will need to be utilised to accommodate the exceeded Olympic Park peak parking capacity; however, with the implementation of off-street parking supplied during Stage 1, the parking demand associated with Olympic Park is anticipated to be met **228 days** out of the year.

6.2.2 Stage 2

Stage 2 provides a total off-street public parking provision of 344 spaces comprising:

- 144 newly added parking spaces;
- 97 remaining existing parking spaces situated in the eastern section of the open car park;
- 5 spaces within Karen Moras Drive; and
- 98 parking spaces within the temporary car park.

Stage 2 does not include additional expansion of the facility amenities; therefore, no additional visitors are anticipated to be generated. Accordingly, the maximum average patronage for this stage remains at 5,683 visitors.

Applying the abovementioned parking demand relationship, a peak parking demand of 517 parking spaces is associated with this stage, being the same as Stage 1 and the existing development.

Therefore, up to **173** on-street parking spaces will need to be utilised to accommodate the exceeded Olympic Park peak parking capacity; however, with the implementation of off-street parking supplied during Stage 2, the parking demand associated with Olympic Park is anticipated to be met **296 days** out of the year.

6.2.3 Stage 3

Stage 3 provides a total off-street public parking provision of 339 parking spaces, being 5 less than Stage 2 associated with the removal of the disabled parking spaces within Karen Moras Drive.

Stage 3 includes the major addition of a new program pool that is anticipated to generate new visitors. The following existing and projected operational characteristics of the Ryde Aquatic Leisure Centre have been utilised:

- **Table 1** displays that currently, 1,532 daily visitors are generated by the swim school, users of which primarily utilise the program pool;
- Information obtained by staff of the Ryde Aquatic Leisure Centre suggests that 30% of swim school visitors utilise the program pool; therefore, 460 visitors currently utilise the existing program pool;
- The new program pool is approximately twice the size of the existing program pool;
- The new program pool is projected to generate an additional 460 daily visitors, resulting in 6,143 (5,683+460) projected average maximum daily visitors during this stage.

Applying the abovementioned parking demand relationship, a peak parking demand of 558 parking spaces is associated with this stage.

Therefore, up to **219** on-street parking spaces will need to be utilised to accommodate the exceeded Olympic Park peak parking capacity; however, with the implementation of off-street parking supplied during Stage 3, the parking demand associated with Olympic Park is anticipated to be met **248 days** out of the year.

6.2.4 Stage 4

Stage 4 provides a total off-street public parking provision of 489 spaces comprising:

- 247 newly added parking spaces;
- 144 parking spaces added during Stage 2; and

- 98 parking spaces within the temporary car park.

Stage 4 does not include additional expansion of the facility amenities; therefore, no additional visitors are anticipated to be generated. Accordingly, the maximum average patronage for this stage remains at 6,143 visitors.

Applying the abovementioned parking demand relationship, a peak parking demand of 558 parking spaces is associated with this stage.

Therefore, up to **69** on-street parking spaces will need to be utilised to accommodate the exceeded Olympic Park peak parking capacity; however, with the implementation of off-street parking supplied during Stage 4, the parking demand associated with Olympic Park is anticipated to be met **357 days** out of the year.

6.2.5 Stage 5

Stage 5 provides a total off-street public parking provision of 489 parking spaces, the same as provided during Stage 4.

Stage 5 includes the major addition of two new sports courts that are anticipated to generate new visitors. The following existing and projected operational characteristics of the Ryde Aquatic Leisure Centre have been utilised:

- Table above displays that currently, 1,036 daily visitors to the centre are generated by the programs and facility hire activities;

- Information obtained by staff of the Ryde Aquatic Leisure Centre suggests that 50% of the programs and facility hire visitors utilise the sports courts; therefore, 518 visitors currently utilise the two existing sports courts;

- The addition of two more sports courts is anticipated to double the sports court visitors attending the Ryde Aquatic Leisure Centre;

- The new sports courts are projected to generate an additional 518 daily visitors, resulting in 6,661 (6,143+518) projected average maximum daily visitors during this stage.

Applying the abovementioned parking demand relationship, a peak parking demand of 606 parking spaces is associated with this stage.

Therefore, up to **117** on-street parking spaces will need to be utilised to accommodate the exceeded Olympic Park peak parking capacity; however, with the implementation of off-street parking supplied during Stage 5, the parking demand associated with Olympic Park is anticipated to be met **349 days** out of the year.

6.2.6 Stage 6

Stage 6 involves the removal of the temporary car park and its 98 parking spaces for its transition back to community use, providing a total off-street public parking provision of 391 spaces.

For the purposes of this assessment, Stage 6 does not include additional expansion of the facility amenities; therefore, no additional visitors are anticipated to be generated. Accordingly, the maximum average patronage for This Stage remains at 6,661 visitors.

Applying the abovementioned parking demand relationship, a peak parking demand of 606 parking spaces is associated with this stage, the same as the existing development.

Therefore, up to **215** on-street parking spaces will need to be utilised to accommodate the exceeded Olympic Park peak parking capacity; however, with the implementation of off-street parking supplied during Stage 6, the parking demand associated with Olympic Park is anticipated to be met **224 days** out of the year.

6.3 Parking Demand Discussion

Table 4 below provides a summary of the abovementioned parking provision, demand and shortfall associated with the average peak daily visitors to the centre at each stage including the existing conditions.

TABLE 4
SUMMARY OF THE PARKING CONDITIONS OF THE EXISTING CONDITIONS AND EACH STAGE OF THE DRAFT MASTERPLAN

	Average Maximum Daily Visitors*	Average Peak Parking Demand	Parking Space Provision	Parking Shortfall
Existing	5,683	517	199	318
Stage 1	5,683	517	297	220
Stage 2	5,683	517	344	173
Stage 3	6,143	558	339	219
Stage 4	6,143	558	489	69
Stage 5	6,661	606	489	117
Stage 6	6,661	606	391	215

* Note: Ryde Aquatic Leisure Centre visitors only.

Table 4 indicates the following:

- The existing conditions provide the greatest parking shortfall in comparison to all of the stages of the draft Masterplan;
- Stage 4 of the draft Masterplan provides the least parking shortfall of 70 parking spaces in comparison to the existing conditions and all other stages of the draft Masterplan; and

- The removal of the temporary parking in Stage 6 results in a shortfall of 215 parking spaces at the finalisation of the draft Masterplan.

The above parking analysis has identified that during the average peak period (Sundays in February), the draft Masterplan improves the current parking conditions; however, still results in the occasional need for Olympic Park visitors to utilise the surrounding on-street parking network to satisfy peak parking demands.

In order to provide a more indicative assessment of the days of the year that the existing and proposed off-street public parking capacity is expected to be exceeded by the demand generated by Olympic Park, an analysis of the maximum daily attendance that can be accommodated within the off-street public parking provision has been completed for the existing conditions and each stage of the draft Masterplan. This maximum daily attendance has been calculated by applying the following equation:

*Acceptable Daily Visitors = (Parking provision/Parking demand) * The maximum average daily visitors*

After applying the abovementioned equation, the following has been determined:

- The existing conditions can suitably accommodate a parking demand generated by 2,187 daily visitors within the Ryde Aquatic Leisure Centre;

- Stage 3 of the draft Masterplan can suitably accommodate a parking demand generated by 4,787 daily visitors within the Ryde Aquatic Leisure Centre;

- Stage 5 can suitably accommodate a parking demand generated by 5,375 daily visitors within the Ryde Aquatic Leisure Centre; and

- Stage 6 can suitably accommodate a parking demand generated by 4,298 daily visitors within the Ryde Aquatic Leisure Centre.

Tables 5, 6, 7 and 8 provided below and within the subsequent pages, provide the average daily attendance of the Ryde Aquatic Leisure Centre for each day of the week in each month of the year for the existing conditions, Stage 3, Stage 5 and Stage 6 of the draft Masterplan. The average daily attendances indicated in red represent the days of the week in each month that exceed the suitable attendance that can be accommodated within the off-street public parking provision.

TABLE 5 RYDE AQUATIC LEISURE CENTRE AVERAGE DAILY VISITORS EXISTING PARKING DEMAND / PROVISION												
	Jan	**Feb**	**Mar**	**Apr**	**May**	**June**	**July**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
Sunday	3570	5683	4733	2492	3549	3028	2361	3058	3598	3630	4901	3427
Monday	3272	3843	3330	2267	2617	2158	2230	2278	2831	3092	3393	2366
Tuesday	3934	3552	3248	2038	2255	2004	1875	2018	2494	2709	3005	2295
Wednesday	4127	3420	2960	2199	2206	1984	1913	2173	2579	3181	3452	2969
Thursday	2661	3460	2953	2155	2451	2036	1899	2153	2574	3100	3162	2869
Friday	3064	3879	3411	1548	2295	1964	1877	2119	2223	3127	3493	2745
Saturday	2755	5271	4365	2769	3527	2797	2265	2715	3202	3636	4298	3549

Table 5 indicates the following:

- Based on the generalisation that there are four weeks in each month, the average existing parking demand is met by the capacity of the Olympic Park car park 64 days of the year, or approximately 18% of the year; and

- On average, the parking demand exceeds the off-street parking provision requiring on-street parking to be utilised by patrons of Olympic Park every day of the week in the months January, February, March, May, October, November and December.

TABLE 6 RYDE AQUATIC LEISURE CENTRE AVERAGE DAILY VISITORS STAGE 3 PARKING DEMAND / PROVISION												
	Jan	**Feb**	**Mar**	**Apr**	**May**	**June**	**July**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
Sunday	4030	6143	5193	2952	4009	3488	2821	3518	4058	4090	5361	3887
Monday	3732	4303	3790	2727	3077	2618	2690	2738	3291	3552	3853	2826
Tuesday	4394	4012	3708	2498	2715	2464	2335	2478	2954	3169	3465	2755
Wednesday	4587	3880	3420	2659	2666	2444	2373	2633	3039	3641	3912	3429
Thursday	3121	3920	3413	2615	2911	2496	2359	2613	3034	3560	3622	3329
Friday	3524	4339	3871	2008	2755	2424	2337	2579	2683	3587	3953	3205
Saturday	3215	5731	4825	3229	3987	3257	2725	3175	3662	4096	4758	4009

Table 6 indicates the following:

- Based on the generalisation that there are four weeks in each month, the average parking demand during Stage 3 of the draft Masterplan is expected to be met by the capacity of the proposed Olympic Park parking provision 232 days of the year, or approximately 64% of the year; and

- On average, the parking demand is expected to exceed the off-street parking provision requiring on-street parking to be utilised by patrons of Olympic Park on weekends during the months February, March, May, October, November and December.

TABLE 7 RYDE AQUATIC LEISURE CENTRE AVERAGE DAILY VISITORS STAGE 5 PARKING DEMAND / PROVISION												
	Jan	**Feb**	**Mar**	**Apr**	**May**	**June**	**July**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
Sunday	4548	6661	5711	3470	4527	4006	3339	4036	4576	4608	5879	4405
Monday	4250	4821	4308	3245	3595	3136	3208	3256	3809	4070	4371	3344
Tuesday	4912	4530	4226	3016	3233	2982	2853	2996	3472	3687	3983	3273
Wednesday	5105	4398	3938	3177	3184	2962	2891	3151	3557	4159	4430	3947
Thursday	3639	4438	3931	3133	3429	3014	2877	3131	3552	4078	4140	3847
Friday	4042	4857	4389	2526	3273	2942	2855	3097	3201	4105	4471	3723
Saturday	3733	6249	5343	3747	4505	3775	3243	3693	4180	4614	5276	4527

Table 7 indicates the following:

- Based on the generalisation that there are four weeks in each month, the average parking demand during Stage 5 of the draft Masterplan is expected to be met by the capacity of the proposed Olympic Park parking provision 349 days of the year, or approximately 96% of the year; and

- On average, the parking demand is expected to exceed the off-street parking provision requiring on-street parking to be utilised by patrons of Olympic Park only on weekends in February, and Sundays in March and November.

TABLE 8 RYDE AQUATIC LEISURE CENTRE AVERAGE DAILY VISITORS STAGE 6 PARKING DEMAND / PROVISION												
	Jan	**Feb**	**Mar**	**Apr**	**May**	**June**	**July**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
Sunday	4548	6661	5711	3470	4527	4006	3339	4036	4576	4608	5879	4405
Monday	4250	4821	4308	3245	3595	3136	3208	3256	3809	4070	4371	3344
Tuesday	4912	4530	4226	3016	3233	2982	2853	2996	3472	3687	3983	3273
Wednesday	5105	4398	3938	3177	3184	2962	2891	3151	3557	4159	4430	3947
Thursday	3639	4438	3931	3133	3429	3014	2877	3131	3552	4078	4140	3847
Friday	4042	4857	4389	2526	3273	2942	2855	3097	3201	4105	4471	3723
Saturday	3733	6249	5343	3747	4505	3775	3243	3693	4180	4614	5276	4527

Table 8 indicates the following:

- Based on the generalisation that there are four weeks in each month, the average parking demand during Stage 6 of the draft Masterplan is expected to exceed the capacity of the proposed Olympic Park parking provision 224 days of the year, or approximately 61% of the year; and

- On average, the parking demand is expected to exceed the off-street parking provision requiring on-street parking to be utilised by patrons of Olympic Park every day of the week in February, and weekends in March, May, October, November and December.

6.4 Recommendations

On the basis of the previously presented parking considerations and discussion, the following recommendations have been formulated:

- Conduct future traffic and parking analysis prior to implementing Stage 6 in order to ascertain whether sufficient off-street parking is being provided. This study projects that the parking demand generated by Olympic Park will exceed the Stage 6 capacity 31% of the year; therefore, some consideration may need to be given to removal of Stage 6 and/or alternative design options may be pursued;

- Restructure the draft Masterplan to deliver Stage 3 and Stage 4 concurrently, or reverse the order of Stage 3 and Stage 4, whereby the addition of the Program Pool would become operational after the proposed parking has been implemented to ensure a smooth transition of the expanded facility to provide parking accommodation for the increased visitor generation;

- Implement a formalised management plan to schedule events and programs operated by Ryde Aquatic Leisure Centre and Olympic Park, in order to limit the amount of visitors within the Park, especially during peak periods; and

- Give consideration to adjusting the parking restrictions within the on-site car park from the existing four-hour parking restriction to include weekends and/or reflect a two or three hour parking restriction to reduce length of stay and increase parking turnover / availability.

7. EXTERNAL ROAD NETWORK CONSIDERATIONS

7.1 Projected Traffic Generation Methodology

Section 3 of this report presented that a relationship has been developed based on the surveyed inbound / outbound movements to and from Olympic Park and the daily attendance of Ryde Aquatic Leisure Centre. This relationship revealed the following:

1 vehicle movement is generated per 7.8 Saturday visitors; and
1 vehicle movement is generated per 5.4 Thursday visitors.

The following increase of visitors associated with each Stage 3 and Stage 5 of the draft Masterplan was also determined in Section 6.2 of this report:

- 460 new visitors are generated during Stage 3; and
- 518 new visitors are generated during Stage 5.

The derived relationship was then applied to the above newly generated visitors and the projected peak base volumes generated in Section 3.2.3 of this report, in order to determine the additional peak hour movements during each stage of the draft Masterplan. The following section and associated subsections provide the anticipated peak hour traffic generation to Olympic Park during each stage of the draft Masterplan.

7.2 Projected Traffic Generation

7.2.1 Stage 1

Stage 1 is not anticipated to generate additional peak hour movements to the Park as no additional facilities (other than off-street parking) will be provided during this stage; therefore, the peak base volumes extrapolated in Section 3.2.3 of this report is anticipated to remain during this stage.

7.2.2 Stage 2

Stage 2 is not anticipated to generate additional peak hour movements to the Park as no additional facilities (other than off-street parking) will be provided during this stage; therefore, the peak base volumes extrapolated in Section 3.2.3 of this report is anticipated to remain during this stage.

7.2.3 Stage 3

Stage 3 involves the construction of a new program pool which has been anticipated to generate 460 new visits as previously presented.

Therefore, after applying the derived relationship, Olympic Park is anticipated to generate 60 (460/7.7) new Saturday morning peak hour vehicle movements and

86 (460/5.4) new Thursday morning peak hour vehicle movements to and from the Park.

7.2.4 Stage 4

Stage 4 is not anticipated to generate additional peak hour movements to the Park as no additional facilities (other than off-street parking) will be provided during this stage; therefore, the traffic generated during Stage 3 is anticipated to remain.

7.2.5 Stage 5

Stage 5 involves the construction of a two new sports courts which has been anticipated to generate 518 new daily visits as previously presented.

Therefore, after applying the derived relationship, Olympic Park is anticipated to generate 68 (460/7.7) new Saturday morning peak hour vehicle movements and 96 (460/5.4) new Thursday morning peak hour vehicle movements to and from the Park, over and above that generated during Stage 3.

7.2.6 Stage 6

Stage 6 is not anticipated to generate additional peak hour movements to the site as no additional facilities (other than off-street parking) will be provided during this stage; therefore, the traffic generated during Stage 5 is anticipated to remain.

7.2.7 Traffic Generation Summary

Table 9 below provides the 2017 August survey, the derived peak base, Stage 3 and Stage 5 combined inbound and outbound peak hour movements associated with Olympic Park.

TABLE 9
COMBINED INBOUND AND OUTBOUND MOVEMENTS ASSOCIATED WITH OLYMPIC PARK

Condition	Weekend AM Peak	Weekday PM Peak
2017 August Survey	400	375
Derived Peak Base	687	642
Stage 3	747	728
Stage 5	815	824

Table 9 indicates the following:

- The combined inbound and outbound trips to Olympic Park are anticipated to be in the order of 700 - 750 vehicle movements during the morning and afternoon peak hour during Stage 3; and

- The combined inbound and outbound trips to Olympic Park are anticipated to be in the order of 800 - 850 vehicle movements during the morning and afternoon peak hour during Stage 5.

7.3 Trip Assignment Methodology

The Olympic Park-generated trips have been assigned throughout the surrounding road network in accordance with the existing traffic volumes observed from the 2017 Bitzios traffic survey. A figure displaying the percentage of newly generated peak hour movements associated with each movement surrounding the site has been prepared, a copy of which is included in **Appendix 5.**

7.4 Projected Road Network Traffic Volumes

On the basis of the distributed percentages throughout the road network displayed in **Appendix 5**, the projected peak hour traffic volumes at the junctions of Victoria Road / Frank Street, Weaver Street / Olympic Park Access Roadway, Margaret Street / Olympic Park Access Roadway and Searle Street / Weaver Street have been formulated by applying the abovementioned trip assignment to the traffic generation associated with Stage 3 and Stage 5 separately, which have been added to the peak base demands presented in Section 3.2.3 of this report.

Two figures displaying the projected traffic demands at the surrounding intersections associated with Stage 3 and Stage 5 of the draft Masterplan have been prepared, copies of which have been included in **Appendix 6**.

7.5 Projected Road Network Performance

7.5.1 Intersection Performance

The junctions presented above have been modelled in order to estimate the likely impact on traffic safety and efficiency of the road network utilising the projected traffic volumes illustrated within **Appendix 6,** for Stage 3 and Stage 5.

Table 10 overleaf provides a summary of the SIDRA output data for each of the surveyed junctions for the morning and afternoon peak periods, including Stage 3 and Stage 5 conditions. More detailed summaries of the SIDRA output are provided within **Appendix 7**, whilst full details are available upon request.

TABLE 10 SIDRA OUTPUT PROJECTED WEEKEND AM AND WEEKDAY PM PEAK HOUR PERFORMANCE				
	Stage 3		Stage 5	
	AM	PM	AM	PM
Victoria Rd & Frank St				
Delay (seconds)	17.1	21.1	17.1	21.2
Degree of Saturation	0.62	0.72	0.62	0.73
Level of Service	B	B	B	B
Weaver St & Olympic Park Car Park Access				
Delay (seconds)	9.5	9.3	9.7	9.6
Degree of Saturation	0.17	0.18	0.19	0.20
Level of Service	A	A	A	A
Weaver St & Searle St				
Delay (seconds)	6.9	7.0	7.1	7.2
Degree of Saturation	0.14	0.13	0.15	0.15
Level of Service	A	A	A	A
Margaret St & Olympic Park Car Park Access				
Delay (seconds)	8.4	8.5	8.5	8.6
Degree of Saturation	0.15	0.12	0.17	0.14
Level of Service	A	A	A	A

Comparison of the existing and projected conditions contained within **Tables 3** and **10**, respectively, indicates that the additional traffic generated by the draft Masterplan is not projected to result in significant impacts on the existing operational performance of the junctions surrounding the site. In this regard, whilst it is expected that the additional traffic will result in some minor increases to the average vehicle delay and the degree of saturation, the prevailing level of service for each intersection is projected to remain unaltered.

7.5.2 Projected Olympic Park Access Performance

As presented within **Table 10**, both junctions comprising the Olympic Park access driveways and the public road are projected to remain to provide a level of service 'A'. This indicates that the Olympic Park access driveways will continue to operate at a good level of service with spare capacity to accommodate increase traffic demand.

7.5.3 Approach Route Performance

Notwithstanding the previously presented satisfactory public road intersection performance, the limited pavement width of a number of surrounding local roads result in two-way traffic flow being required to occur under courtesy conditions, when on-street kerb-side parking occurs, notably reducing the safety and efficiency of the adjoining road network.

Whilst it has been determined that the Draft Masterplan is expected to significantly reduce in the extent and regularity of on-street parking being demanded (by Park users), it is recommended that consideration be given to the removal of kerb-side parking along one kerb alignment of Searle Street and Weaver Street in order to mitigate the congestive effects of the on-street parking provision and the traffic generation of Olympic park in combination.

8. DESIGN CONSIDERATIONS

8.1 Olympic Park Access

The draft Masterplan proposes six vehicular access driveways / roadways connecting Olympic Park to Weaver Street, three of which are newly constructed driveways connecting with the off-street public parking areas. The Draft Masterplan retains Karen Moras Drive to the north of Searle Street, albeit providing a reduced function connecting only with the loading dock. Further, the two driveways situated between Karen Moras Drive and Victoria Road, connecting with private staff parking areas are also to be retained.

The multiple points of access to Weaver Street, in conjunction with the public road junction with Searle Street, is expected to disrupt traffic flow within Weaver Street. It is accordingly recommended that consideration be given to the rationalisation of the access driveways connecting with Weaver Street. Ideally, it is envisaged that a single access to Olympic Park from Weaver Street be provided in alignment with Searle Street, with the junction being upgraded to operate under single lane circulating roundabout control. The implementation of a roundabout in alignment with the junction of Searle Street would require all passenger vehicle access to the site at one location, improving safety in accessing the site and within the surrounding road network. It is recommended that the proposed driveway arrangements be further explored during the detailed design phases of the Masterplan implementation.

The existing and proposed to be retained vehicular access situated on Margaret Street is satisfactory, and accordingly, no alterations are recommended in this regard.

8.2 Internal Passenger Vehicle Circulation

The internal passenger circulation of the draft Masterplan comprises two internal circulation aisles and three internal ramps situated within the upper and lower levels of the central car park. The temporary car park situated in the south-eastern portion of the site comprises two internal circulation aisles and one vehicular access driveway to Weaver Street as its only entry and exit point.

According to AS2890.1:2004, grades within a parking circulation aisle should not exceed 1:16; however, there are multiple grades within the upper and lower levels of parking shown on the draft Masterplan that exceed this desired grade. Consideration during the future design phases of the draft Masterplan should be given to adjust the grades within the internal circulation and parking areas to be compliant of AS2890.1:2004.

In order to improve the internal circulation throughout the site, it is recommended that an internal access roadway be provided as a link between the two levels of car parking within the central portion of the site and the at-grade car park situated in the south-eastern corner of the site. Providing connectivity between the two car parks would eliminate unnecessary vehicle manoeuvring to and from the off-street parking areas and allow the rationalisation of the access driveways situated on Weaver Street as previously presented.

Further, areas throughout the central two levels of car parking has been identified as inefficient use of space, thereby interrupting the natural internal circulation. Specifically, the area situated to the north-west of the egress driveway connection between Weaver Street and the upper level of car parking provides a pedestrian path traversing a portion of the circulation aisle, with an awkward arrangement of parking spaces situated in the north-eastern portion of the car park. It is recommended that the design of the upper car park level be amended in order to provide a more efficient usage of space that promotes simplicity and safety in regard to vehicle and pedestrian circulation.

8.3 Heavy Vehicle Servicing

8.3.1 Coaches / Buses

The draft Masterplan does not provide on-site accommodation for coaches / buses. It is therefore assumed that coaches / buses servicing the site will be accommodated within the Bus Zone located on the eastern side of Margaret Street to the north of the access driveway.

In order to ensure that this arrangement is satisfactory, it is recommended that an analysis of the coach / bus parking demand be completed in order to determine if the Bus Zone situated within Margaret Street supplies capacity to accommodate the associated Olympic Park demand. With support of a coach / bus parking demand analysis, the proposed draft Masterplan arrangements are deemed satisfactory, on the basis that removing heavy vehicles from with the passenger vehicle internal circulation is envisaged to improve overall safety.

8.3.2 Deliveries

The draft Masterplan provides the retention of the existing Ryde Aquatic Leisure Centre loading dock, accessed via Karen Moras Drive, connecting with Weaver Street. This loading dock is considered satisfactory to accommodate the minor delivery and servicing requirements of Ryde Aquatic Leisure Centre.

However, it is unfavourable that the existing Next Generation Loading dock be accessed via the passenger vehicle parking circulation aisle on the upper level of parking. It is considered that heavy vehicle manoeuvring should be provided separate to off-street passenger vehicle manoeuvring and parking as much as practicable. While Next Generation is regarded as a separate entity, investigation into the feasibility to relocate the Next Generation loading dock should be given in future draft Masterplan design phases.

8.4 Accessible Parking

Ten accessible parking spaces are proposed to be provided in the north-eastern portion of the upper level of car parking in close proximity to the lifts. This arrangement is considered to be satisfactory, although consideration could be given to increasing the number of accessible spaces to approximately 3% of the total off-street parking yield.

8.5 Pedestrian Access / Circulation

Pedestrian access to Olympic Park is proposed via the existing footpaths located along the western side of Weaver Street, the eastern side of Margaret Street and the implementation of a new pedestrian footpath and access ramp that bisects the southern portion of the site, connecting with Potts Street. It is recommended that consideration be given to the provision of pedestrian crossing infrastructure over Pott Street to connect the abovementioned new link with the existing footpath on the southern side of the road.

8.6 Bicycle and Motorcycle Parking Provision

The draft Masterplan does not specifically identify the provision of on-site bicycle or motorcycle parking. It is recommended that during detailed design phases of the Masterplan implementation, consideration should be given to provide bicycle and motorcycle parking at a rate in accordance with The City of Ryde DCP 2014. All bicycle parking should be situated in an area easily accessible and in close proximity to the main lobbies of the Ryde Aquatic Leisure Centre / Next Generation Ryde.

9. CONCLUSIONS & RECOMMENDATIONS

This report forms a Parking & Traffic Study associated with a draft Masterplan for Olympic Park including the existing Ryde Aquatic Leisure Centre. The aim of this Study is to inform the draft Masterplan, which is to investigate the parking and traffic impacts of the proposed draft Masterplan including additions and alterations to the Ryde Aquatic Leisure Centre facility and the off-street parking arrangements. Having consideration of the findings of this Study, the following conclusions are provided:

- Ryde Aquatic Leisure Centre currently produces peak visitor generation in the order of 5,683 visitors on Sundays in February;

- The surrounding public road network operates with a reasonable level of service, however local roads surrounding the Park are significantly influenced by the presence of parallel kerb-side parking;

- Olympic Park currently provides a capacity of 199 off-street public parking spaces. The average peak parking demand currently exceeds the off-street parking capacity during 75% of the year by up to 318 parking spaces;

- The above existing significant and frequent reliance on the surrounding local road network to accommodate the exceedance of the parking demand generated by the Park greatly disrupts traffic flow;

- The draft Masterplan proposes 6 Stages of construction involving the additions of one new program pool, two new sports courts and a maximum off-street public parking provision of 489 parking spaces;

- Stage 6 of the draft Masterplan results in a final off-street public parking provision of 391 parking spaces;

- The draft Masterplan is envisaged to generate an average of 460 and 518 new daily visitors per day to the Park during Stages 3 and 5, respectively;

- The final Stage of the draft Masterplan results in an off-street parking capacity of 391 spaces. The projected average peak parking demand is expected to exceed the off-street parking during 31% of the year by up to 215 parking spaces;

- Whilst the above represents a significant improvement over the existing conditions whereby the draft Masterplan reduces the reliance of the Olympic Park demand to be satisfied by the on-street parking provision, the following recommendations are made:

    - Stage 3 and Stage 4 of the draft Masterplan is to be delivered concurrently or rearranged in order to provide all proposed parking before the implementation of additional traffic-generating elements of the draft Masterplan.

- Conduct future traffic and parking analysis prior to implementing Stage 6 of the draft Masterplan to ascertain whether sufficient off-street parking is being provided and/or alternative design options need to be pursued.
- Implement a schedule management plan in order to limit the visitors within the Olympic Park facility, especially during peak periods.
- Give consideration to altering the 4-hour parking restriction within the public off-street car park to include weekends and / or 2 or 3 or hour parking in order to increase parking turnover.

- Implementation of the above recommendations are expected to result in the ultimate parking demand exceeding the capacity of the off-street parking during 4.5% of the year by up to 117 parking spaces, which is considered acceptable;

- It is considered that the implementation of the above recommendations greatly improves the existing conditions of Olympic Park existing conditions and will significantly improve the traffic flow conditions within the surrounding local road network;

- Stage 3 of the draft Masterplan is projected to generate an additional 60 and 86 combined inbound / outbound peak hour vehicle movements to and from the Park during weekend morning and weekday evening periods, respectively;

- Stage 5 of the draft Masterplan is projected to further generate an additional 68 and 96 combined inbound / outbound peak hour vehicle movements to and from the Park during weekend morning and weekday evening periods, respectively;

- The surrounding public road intersections are projected to be readily capable of accommodating the additional traffic projected to be generated by the draft Masterplan;

- It has been identified, that the presence of on-street parking within the surrounding local roads causes a reduction in the operational efficiency and the level of service of the traffic flow within Searle Street and Weaver Street, specifically;

- According to the above, it is recommended that consideration be given to the removal of kerb-side parking along one kerb alignment of Searle Street and Weaver Street in order to mitigate the congestive effects of the on-street parking provision and the traffic generation of Olympic park in combination;

- Further, the following recommendations are proposed for investigation during the detailed design phases of Masterplan implementation:

  - Undertake network SIDRA modelling prior to the implementation of Stage 3 to ascertain and mitigate any impacts associated with car park entries, Weaver Street and Searle Street.
  - Rationalise the Olympic Park access driveways connecting with Weaver Street into one access point situated opposite from Searle Street, with the intersection operating under roundabout control.

- Adjust the grades of the internal circulation aisle to accord with AS2890.1:2004.
- Provide an internal roadway access link between the central portion of car parking and the open south-eastern car parking area to minimise unnecessary Park access / egress movements.
- Reconfigure the car park layout in order to utilise the space in a more efficient manner and to improve the pedestrian circulation and connectivity.
- Undertake an assessment of the coach / bus parking demand associated with Olympic Park in order to ensure appropriate accommodation for coaches/buses.
- Investigate the feasibility to relocate Next Generation loading dock away from the public car park passenger vehicle internal circulation aisle.
- Provide greater connectivity between the pedestrian footpath bisecting the Olympic Park parkland and Potts Street.
- Include bicycle and motorcycle parking in an accessible and safe location.

It is considered, based on the contents of this report and the conclusions contained herein, the draft Masterplan will not result in unreasonable impacts on the overall level of safety and efficiency of the surrounding road network, incorporating the recommended parking and traffic management initiatives.

APPENDIX 1

ISSUE	DESCRIPTION	DATE	BY
P1	FOR CLIENT REVIEW	20190318	ML
P2	FOR MEETING WITH CLIENT	20190329	ML
R1	FINAL ISSUE TO CLIENT	20190926	ML

GENERAL NOTES

ARCHITECT
MICHAEL DAVIES ARCHITECTURE PTY LTD

Australian Business Number (ABN)	610 776 648
Nominated Architect	Michael John Davies
Registration Numbers	3562 NSW | 2446 ACT
NSW Licenced Builder Number	34299
Address	Level 12/49 York Street, Sydney NSW 2000
Telephone	+ 61 2 9060 8277
Email	business@michaeldaviesarchitecture.com
Website	michaeldaviesarchitecture.com

Michael Davies Architecture

CONSULTANTS

COMMUNICATIONS CONSULTANT
Flagship Communications
Level 2, 91 George Street
Parramatta NSW 2150
p 1300 963 796

RECREATION PLANNER
Rob Parsonson
Recreation Planning Associates

CLIENT
City of Ryde

PROJECT
RYDE AQUATIC LEISURE CENTRE
MASTER PLANNING

DRAWING TITLE
EXISTING BUILDING / SITE PLAN

PROJECT/DRAWING NUBMER
1810 - MP01

ISSUE R1

NORTH POINT

DRAWN BY	ML
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SCALE	1 : 400 @ A0

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VICTORIA ROAD

SCHEDULE OF STAGES:

STAGE 1 - TEMPORARY CARPARK
STAGE 2 - MAIN MULTI-LEVEL CARPARK
STAGE 3 - RALC LOWER EXTENSION
STAGE 4 - EXTERIOR LANDSCAPED AREA
STAGE 5 - RALC UPPER EXTENSION
STAGE 6 - STAGE 1 RETURNS TO COMMUNITY USE

NEXTGEN
HEALTH AND LIFESTYLE
CLUB

STAGE 5
ABOVE

2 ADDITIONAL
BASKET BALL
COURTS WITH
TIERED SEATING

NEW
LOBBY

STAGE 3

PROGRAM/
LTS POOL

STAGE 2
CAR PARK + ROOF PLAZA
144 SPACES

TEMPORARY BARRIER

STAGE 4
CAR PARK + ROOF PLAZA
252 SPACES

ACCESS RAMP

STAGE 6

REMOVE TEMPORARY
CARPARK RETURN TO
COMMUNITY USE

STAGE 1

TEMPORARY
CARPARK
98 SPACES

PATHWAY

MARGARET STREET

WEAVER STREET

SEARLE STREET

POTTS STREET

CURTIS STREET

TYARGARAH STREET

ISSUE	DESCRIPTION	DATE	BY
P1	FOR CLIENT REVIEW	20190318	ML
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GENERAL NOTES

ARCHITECT
MICHAEL DAVIES ARCHITECTURE PTY LTD

Australian Business Number (ABN)	610 776 648
Nominated Architect	Michael John Davies
Registration Numbers	3582 NSW | 2446 ACT
NSW Licenced Builder Number	34289
Address	Level 12/49 York Street, Sydney NSW 2000
Telephone	+ 61 2 9262 6277
Email	business@michaeldaviesarchitecture.com
Website	michaeldaviesarchitecture.com

Michael Davies Architecture

CONSULTANTS

COMMUNICATIONS CONSULTANT
Flagship Communications
Level 2, 81 George Street
Parramatta NSW 2150
p 1300 963 796

RECREATION PLANNER
Rob Parsonson
Recreation Planning Associates

CLIENT
City of Ryde

PROJECT
RYDE AQUATIC LEISURE CENTRE
MASTER PLANNING

DRAWING TITLE
STAGING PLAN

PROJECT/DRAWING NUMBER
1810 - MP02

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NEXTGEN
HEALTH AND LIFESTYLE
CLUB

RYDE AQUATIC LEISURE CENTRE

MARGARET STREET

WEAVER STREET

SEARLE STREET

STAGE 2 LOWER CAR PARK

EXISTING CAR PARK 215 SPACES

EXISTING TENNIS COURTS

8 7 6 5

TEMPORARY
STAIR ONLY
ACCESS

RL 31.250

TEMPORARY CARPARK
98 SPACES

EXIT

RL 31.200

POTTS STREET

STAGE 1: CARPARKING

EXISTING 215 SPACES
TEMPORARY 98 SPACES

313 SPACES

ISSUE	DESCRIPTION	DATE	BY
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R1	FINAL ISSUE TO CLIENT	20190926	ML

GENERAL NOTES

ARCHITECT
MICHAEL DAVIES ARCHITECTURE PTY LTD

Australian Business Number (ABN)	610 776 648
Nominated Architect	Michael John Davies
Registration Numbers	3053 NSW | 2446 ACT
Nominated Licenced Builder Number	3053
Address	Level 12/49 York Street, Sydney NSW 2000
Telephone	+ 61 2 9262 6277
Email	business@michaeldaviesarchitecture.com
Website	michaeldaviesarchitecture.com

Michael Davies Architecture

CONSULTANTS

COMMUNICATIONS CONSULTANT
Flagship Communications
Level 2, 91 George Street
Parramatta NSW 2150
p 1300 963 786

RECREATION PLANNER
Rob Parsonson
Recreation Planning Associates

CLIENT
City of Ryde

PROJECT
RYDE AQUATIC LEISURE CENTRE
MASTER PLANNING

DRAWING TITLE
STAGE 1 - TEMPORARY CARPARK

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MARGARET STREET

WEAVER STREET

SEARLE STREET

POTTS STREET

JOINT LOBBY
RL33.150

OFF 1

OFF 2

STAGE 2 LOWER CAR PARK

RL36.350

1:10 SLOPE UP

RL33.050

75 SPACES

RL35.150

STAGING BREAK

STAGE 4 LOWER CARPARK

113 SPACES

EXISTING TENNIS COURTS

STAIR

DEMOLISH TEMPORARY STAIR IN STAGE 4

RL31.250

TEMPORARY CARPARK 98 SPACES

EXIT

RL31.200

ACCESS RAMP

RL31.000

STAGE 2: CARPARKING

TEMPORARY 98 SPACES
WEST 144 SPACES
EXISTING EAST (REMAINING) 125 SPACES
242 SPACES

STAGE 4: CARPARKING

TEMPORARY 98 SPACES
WEST 144 SPACES
NEW EAST 252 SPACES
494 SPACES

ISSUE	DESCRIPTION	DATE	BY
P1	FOR CLIENT REVIEW	20190318	ML
P2	FOR MEETING WITH CLIENT	20190329	ML
P3	REVISION FOR REVIEW	20190702	ML
P4	REVISION FOR REVIEW	20190711	ML
R1	FINAL ISSUE TO CLIENT	20190926	ML

GENERAL NOTES

ARCHITECT
MICHAEL DAVIES ARCHITECTURE PTY. LTD.

Australian Business Number (ABN)	610 776 648
Nominated Architect	Michael John Davies
Registration Numbers	3562 NSW | 2446 ACT
NSW Licenced Builder Number	34289
Address	Level 12 /49 York Street, Sydney NSW 2000
Telephone	+61 2 9262 6217
Email	business@michaeldaviesarchitecture.com
Website	michaeldaviesarchitecture.com

Michael Davies Architecture

CONSULTANTS

COMMUNICATIONS CONSULTANT
Flagship Communications
Suite 1, 90 Dennison Street
Parramatta NSW 2150
p 1300 963 796

RECREATION PLANNER
Rob Parsonson
Recreation Planning Associates

CLIENT
City of Ryde

PROJECT
RYDE AQUATIC LEISURE CENTRE
MASTER PLANNING

DRAWING TITLE
LOWER CARPARK LEVEL

PROJECT/DRAWING NUMBER
1810 - MP04

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P1	FOR CLIENT REVIEW	20190318	ML
P2	FOR MEETING WITH CLIENT	20190329	ML
P3	REVISION FOR REVIEW	20190702	ML
P4	REVISION FOR REVIEW	20190711	ML
R1	FINAL ISSUE TO CLIENT	20190926	ML

GENERAL NOTES

MARGARET STREET

WEAVER STREET

SEARLE STREET

POTTS STREET

NEXT GEN MAINTENANCE SHOP

NEXT GEN CARPARK ENTRY

RL 38.950

NEXT GEN LOADING DOCKS

RL 35.800

RL 35.500

PEDESTRIAN PATHWAY

JOINT LOBBY

VOID OVER

SPLASH PAD ABOVE

PROGRAM / LTS POOL ABOVE

EXISTING PLANT ROOM

NEW ACCESS TUNNEL

NEW FILTRATION AND WATER TREATMENT PLANT ROOM

PEDESTRIAN PATHWAY

RL 40.000

RAMP TO EXIT

RL 38.950

UPPER CAR PARK

1:10 SLOPE UP

RL 35.650

TRUCK TURNING AREA

1:10 SLOPE UP

RL 36.500

UPPER CARPARK

RL 36.500

RAMP TO EXIT

RL 36.000

STAGE 2
69 SPACES

RL 37.750

1:10 SLOPE UP

STAGING BREAK

RL 35.650

RL 35.650

STAGE 4
133 SPACES

RL 35.650

RAMP TO EXIT

RL 34.500

STAIR

EXISTING TENNIS COURTS

ACCESS RAMP

STAGE 6
RETURN TO COMMUNITY USE

PATHWAY STAGE 4

EXISTING PLAYGROUND

STAGE 2: CARPARKING

TEMPORARY 98 SPACES
WEST 144 SPACES
EXISTING EAST (REMAINING) 125 SPACES
242 SPACES

STAGE 4: CARPARKING

TEMPORARY 98 SPACES
WEST 144 SPACES
NEW EAST 252 SPACES
494 SPACES

ARCHITECT
MICHAEL DAVIES ARCHITECTURE PTY LTD

Australian Business Number (ABN)	610 776 648
Nominated Architect	Michael John Davies
Registration Numbers	3062 NSW | 3446 ACT
NSW Licenced Builder Number	34289
Address	Level 12/49 York Street, Sydney NSW 2000
Telephone	+ 61 2 9262 6277
Email	business@michaeldaviesarchitecture.com
Website	michaeldaviesarchitecture.com

Michael Davies Architecture

CONSULTANTS

COMMUNICATIONS CONSULTANT
Flagship Communications
Level 2, 91 George Street
Parramatta NSW 2150
p 1300 963 786

RECREATION PLANNER
Rob Personson
Recreation Planning Associates

CLIENT
City of Ryde

PROJECT
RYDE AQUATIC LEISURE CENTRE
MASTER PLANNING

DRAWING TITLE
UPPER CARPARK LEVEL

PROJECT/DRAWING NUMBER
1810 - MP05

ISSUE R1

NORTH POINT	
DRAWN BY	ML
APPROVED BY	MD
PLOT DATE	20190926
SCALE	1 : 250 @ A0

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ISSUE	DESCRIPTION	DATE	BY
P1	FOR CLIENT REVIEW	20190318	ML
P2	FOR MEETING WITH CLIENT	20190329	ML
P3	REVISION FOR REVIEW	20190702	ML
P4	REVISION FOR REVIEW	20190711	ML
R1	FINAL ISSUE TO CLIENT	20190926	ML

GENERAL NOTES

SURF RYDER

EXISTING 50M POOL

EXISTING PLANT

RL 40.500

NEW HYDROTHERAPY POOL

PARTY AREA

RL 40.950

EXISTING 25M WAVE POOL

NEW CHANGE VILLAGE

RL 40.680

RL 40.320

RECEPTION

NEW LOBBY

STAIR

RL 40.500

SPLASH PAD

25M PROGRAM/ LTS POOL

EXISTING WATERSLIDE RELOCATED

NEXT GEN CARPARK

NEXT GEN FUTURE RETAIL POTENTIAL

EXISTING RETAIL

VOID

RL 40.350

EXTERIOR HARD PAVEMENT

RL 40.350

EXTERIOR HARD PAVEMENT

GLASS SCREEN

GLASS SCREEN

GLASS SCREEN

GLASS SCREEN

LAWN

NEW MULTI-PURPOSE COURTS

EXISTING TENNIS COURTS

STAIR

TEMPORARY CAR PARK RETURNED TO COMMUNITY USE

ACCESS RAMP

8 7 6 5

MARGARET STREET

WEAVER STREET

SEARLE STREET

37 52 51 50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31

ARCHITECT
MICHAEL DAVIES ARCHITECTURE PTY LTD

Australian Business Number (ABN)	610 776 648
Nominated Architect	Michael John Davies
Registration Numbers	3562 NSW | 3446 ACT
NSW Licenced Builder Number	34289
Address	Level 12/49 York Street, Sydney NSW 2000
Telephone	+ 61 2 9262 6277
Email	business@michaeldaviesarchitecture.com
Website	michaeldaviesarchitecture.com

Michael Davies Architecture

CONSULTANTS

COMMUNICATIONS CONSULTANT	RECREATION PLANNER
Flagship Communications	Rob Parsonson
Level 2, 81 George Street	Recreation Planning Associates
Parramatta NSW 2150	
p 1300 963 786	

CLIENT
City of Ryde

PROJECT
RYDE AQUATIC LEISURE CENTRE
MASTER PLANNING

DRAWING TITLE
MAIN ENTRY LEVEL

PROJECT/DRAWING NUMBER
1810 - MP06

ISSUE R1

NORTH POINT

DRAWN BY	ML
APPROVED BY	MD
PLOT DATE	20190926
SCALE	1 : 250 @ A0

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ISSUE	DESCRIPTION	DATE	BY
P1	FOR CLIENT REVIEW	20190318	ML
P2	FOR MEETING WITH CLIENT	20190329	ML
P3	REVISION FOR REVIEW	20190702	ML
P4	REVISION FOR REVIEW	20190711	ML
R1	FINAL ISSUE TO CLIENT	20190926	ML

GENERAL NOTES

EXISTING MULTI-PURPOSE SPORTS HALL

EXISTING TIERED SEATING

BASKETBALL COURT 3

BASKETBALL COURT 4

TIERED SPECTATOR SEATING

EXISTING ACESS BRIDGE

OFFICE SPACE

RL 44.000

RL 44.000

RL 44.000

MARGARET STREET

WEAVER STREET

SEARLE STREET

STAIR

ARCHITECT
MICHAEL DAVIES ARCHITECTURE PTY LTD

Australian Business Number (ABN)	610 776 648
Nominated Architect	Michael John Davies
Registration Numbers	3562 NSW | 3446 ACT
NSW Licenced Builder Number	34289
Address	Level 12/49 York Street, Sydney NSW 2000
Telephone	+ 61 2 9262 6277
Email	business@michaeldaviesarchitecture.com
Website	michaeldaviesarchitecture.com

Michael Davies Architecture

CONSULTANTS

COMMUNICATIONS CONSULTANT	RECREATION PLANNER
Flagship Communications	Rob Parsonson
Level 2, 91 George Street	Recreation Planning Associates
Parramatta NSW 2150	
p 1300 963 796	

CLIENT
City of Ryde

PROJECT
RYDE AQUATIC LEISURE CENTRE
MASTER PLANNING

DRAWING TITLE
DRY SPORTS HALL LEVEL

PROJECT/DRAWING NUBMER
1810 - MP07

ISSUE
R1

NORTH POINT

DRAWN BY	ML
APPROVED BY	MD
PLOT DATE	20190926
SCALE	1 : 250 @ A0

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EXISTING PLANT

EXISTING TOILET & CHANGE

CHANGING PLACES 1

CHANGING PLACES 2

EXISTING FAMILY / ACCESSIBLE CHANGE EXTENDED

EXISTING TOILET & CHANGE

LOCKERS

EXISTING FIRST AID ROOM

ACCESSIBLE CHANGE

RL 40.500

EXISTING EGRESS

NEW GLASS WALLING

NEW GLASS WALLING

CHILDRENS PARTY AREA

RL 40.950

PARENTS

REHEAT KITCHEN

WC

STORE

OFFICE

RL 40.500

RETAIL DISPLAY AREA

EXISTING RAMP

RL 40.320

LIFT

FITTING ROOM

EXISTING FEMALE CHANGE

BRIDGE OVER

EXIT

EXISTING NEXT GEN ENTRY

RECEPTION

ENTRY

SECURITY SCREEN

EXISTING MALE CHANGE

EXISTING CONCOURSE SHOWERS

NEW ENLARGED MENS SHOWERS

NEW MALE CHANGE ROOM

EXTEND EXISTING LOCKER BANK

GOODS LIFT

NEXT GEN RETAIL

JOINT LOBBY/ DISPLAY AREA

RL 40.500

LIFT 1

COOL ROOM

LIFT 2

WASH

LTS STORE

RL 40.320

KITCHEN

KIOSK / SERVERY

INTERACTIVE ELECTRONIC SPLASH PAD

CAFE / SEATING AREA

VOID

POSSIBLE GROUP MEETING ROOM(S)

STORE

LEARN TO SWIM OFFICE

ENQUIRY COUNTER AND ROLLER SHUTTER

EXISTING 25M WAVE POOL

EXISTING BRIDGE OVER

EXISTING SPA

HYDROTHERAPY POOL

UP

UP

WHEELCHAIRS

WAVE MACHINE

WINDOW GLASS REMOVED NEW GLASS BLOCK WALLING WITH LIGHTING BEHIND

UP

RAMP

NEW ACCESS PATH

STEAM ROOM

SAUNA

ACCESSIBLE CHANGE 1

CHANGE ROOM 1

CHANGE ROOM 2

CHANGE ROOM 3

CHANGE ROOM 4

ACCESSIBLE CHANGE CUBICLES

CONCOURSE SHOWERS 1

WC1

WC2

WC3

NEW CHANGE VILLAGE

CHANGE ROOM 5

ACCESS TO PLANT ROOM TUNNEL BELOW

CHANGE ROOM 6

CHANGE ROOM 7

CONCOURSE SHOWERS 1

CHANGE ROOM 8

RL 40.680

DRY SPORTS HALL OVER

CHANGE ROOM 12

CHANGE ROOM 11

CHANGE ROOM 10

CHANGE ROOM 9

ACCESSIBLE CHANGE 2

EXTENT OF DRY SPORTS HALL EXTENSION OVER

WATER SLIDE ACCESS STAIR

START TUB

RL 47.000

EXISTING SLIDE RELOCATED

LANDING TUB

25M PROGRAM / LTS POOL

DEEP END

PARENT'S SEATING AREA

ISSUE	DESCRIPTION	DATE	BY
P1	FOR CLIENT REVIEW	20190318	ML
P2	FOR MEETING WITH CLIENT	20190329	ML
R1	FINAL ISSUE TO CLIENT	20190926	ML

GENERAL NOTES

ARCHITECT
MICHAEL DAVIES ARCHITECTURE PTY. LTD

Australian Business Number (ABN)	610 776 648
Nominated Architect	Michael John Davies
Registration Numbers	3562 NSW | 2446 ACT
NSW Licenced Builder Number	34289
Address	Level 12/49 York Street, Sydney NSW 2000
Telephone	t +61 2 9262 6317
Email	business@michaeldaviesarchitecture.com
Website	michaeldaviesarchitecture.com

Michael Davies Architecture

CONSULTANTS

COMMUNICATIONS CONSULTANT	RECREATION PLANNER
Flagship Communications	Rob Parsonson
Level 1, 91 Glebe Point Road	Recreation Planning Associates
Parramatta NSW 2150	
p 1300 963 796	

CLIENT
City of Ryde

PROJECT
RYDE AQUATIC LEISURE CENTRE
MASTER PLANNING

DRAWING TITLE
DETAIL ARRANGEMENT DRAWINGS

PROJECT/DRAWING NUMBER
1810 - MP08

ISSUE R1

NORTH POINT

DRAWN BY	ML
APPROVED BY	MD
PLOT DATE	20190926
SCALE	1 : 100 @ A0

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EXISTING DRY SPORTS HALL

RL 44.000

NEW BASKETBALL COURT 1

NEW BASKETBALL COURT 2

NEW TIERED SEATING

FIRE EXIT

EXISTING FUNCTION ROOM

NEW STAFF ROOM

NEW STAFF AMENITIES

UPPER PARK RETAIL

NEXT GEN HEALTH AND LIFESTYLE CLUB

BRIDGE

BRIDGE

BRIDGE

LOUNGE AREA 68m²

GLAZING

UPPER PART OF LOBBY

LIFT 1

LIFT 2

STAFF MEETING ROOM

GENERAL OFFICE 143m²

WATER SLIDE ACCESS STAIR

START TUB

EXISTING SLIDE RELOCATED

LANDING TUB

ISSUE	DESCRIPTION	DATE	BY
P1	FOR CLIENT REVIEW	20190318	ML
P2	FOR MEETING WITH CLIENT	20190329	ML
R1	FINAL ISSUE TO CLIENT	20190926	ML

GENERAL NOTES

ARCHITECT
MICHAEL DAVIES ARCHITECTURE PTY LTD

Australian Business Number (ABN)	610 776 648
Nominated Architect	Michael John Davies
Registration Numbers	3952 NSW I 2446 ACT
NSW Licenced Builder Number	34789
Address	Suite 2.049 York Street, Sydney NSW 2000
Telephone	+ 61 2 8080 6077
Email	business@michaeldaviesarchitecture.com
Website	michaeldaviesarchitecture.com

Michael Davies Architecture

CONSULTANTS

COMMUNICATIONS CONSULTANT	RECREATION PLANNER
Flagship Communications	Rob Personson
Level 2, 91 George Street	Recreation Planning Associates
Parramatta NSW 2150	
p 1300 963 796	

CLIENT
City of Ryde

PROJECT
RYDE AQUATIC LEISURE CENTRE
MASTER PLANNING

DRAWING TITLE
DETAIL ARRANGEMENT DRAWING 2

PROJECT/DRAWING NUMBER
1810 - MP09

ISSUE R1

NORTH POINT

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APPROVED BY	MD
PLOT DATE	20190926
SCALE	1 : 100 @ A0

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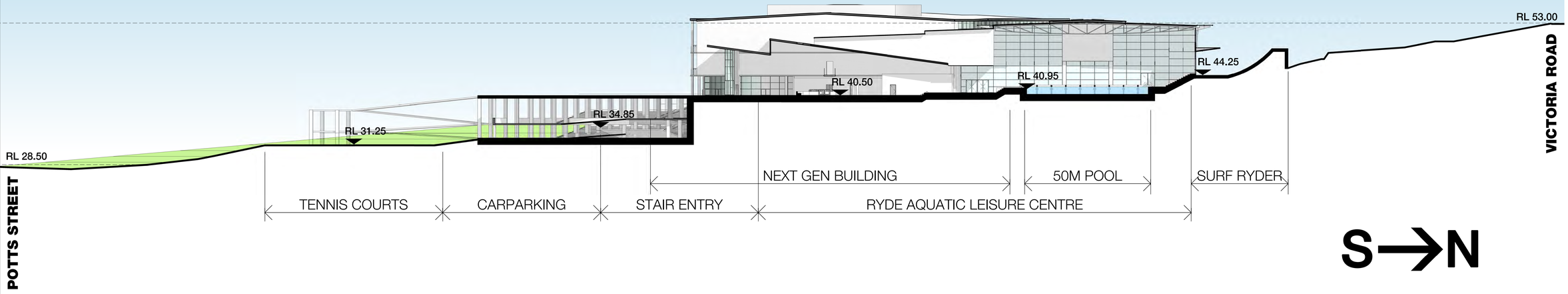

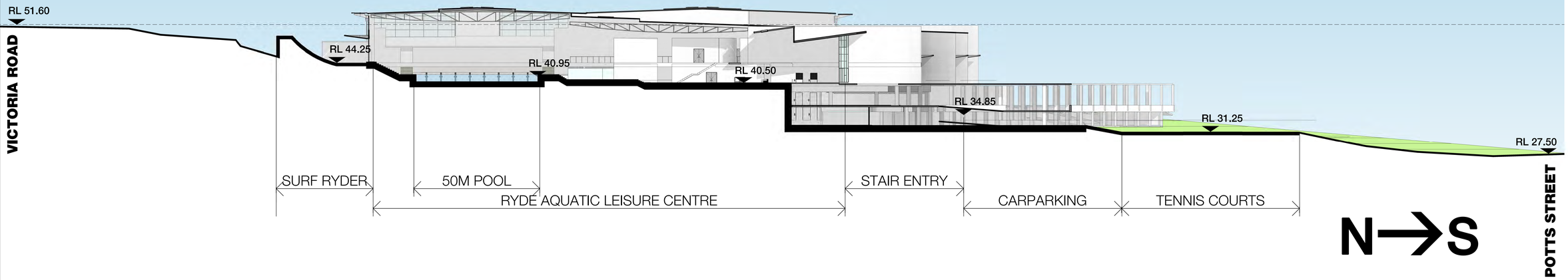

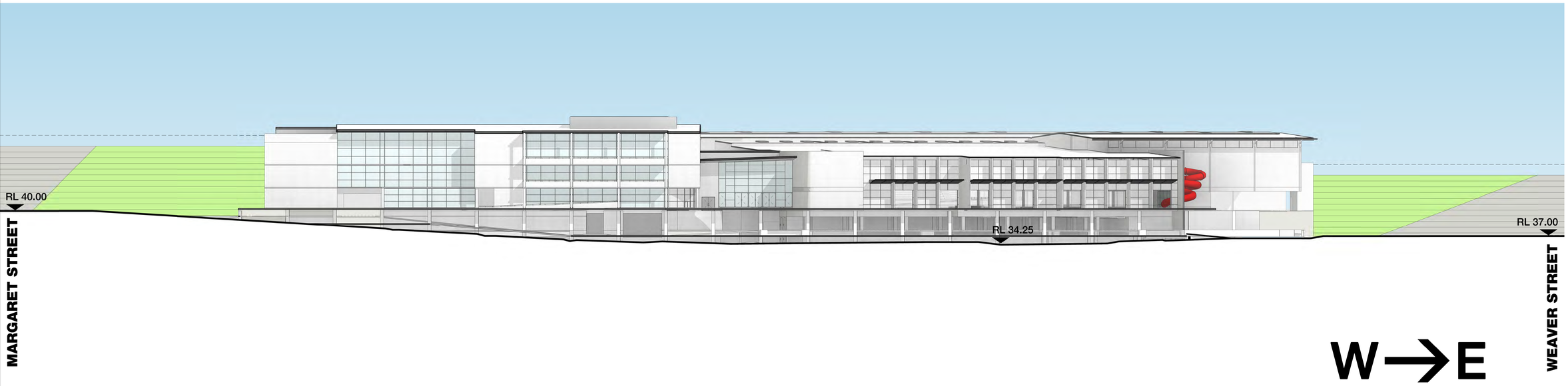

ISSUE	DESCRIPTION	DATE	BY
P1	FOR MEETING WITH CLIENT	20190329	ML
P2	ISSUE TO CLIENT	20190607	ML
R1	FINAL ISSUE TO CLIENT	20190926	ML

GENERAL NOTES

ARCHITECT
MICHAEL DAVIES ARCHITECTURE PTY LTD

Australian Business Number (ABN)	610 776 648
Nominated Architect	Michael John Davies
Registration Numbers	3952 NSW | 3446 ACT
NSW Licenced Builder Number	34289
Address	Level 12 49 York Street, Sydney NSW 2000
Telephone	+ 61 2 9262 6277
Email	business@michaeldaviesarchitecture.com
Website	michaeldaviesarchitecture.com

Michael Davies Architecture

CONSULTANTS

COMMUNICATIONS CONSULTANT	RECREATION PLANNER
Flagship Communications	Rob Parsonson
Level 2, 91 George Street	Recreation Planning Associates
Parramatta NSW 2150	
p 1300 963 786	

CLIENT
City of Ryde

PROJECT
RYDE AQUATIC LEISURE CENTRE
MASTER PLANNING

DRAWING TITLE
SITE SECTIONS

PROJECT/DRAWING NUBMER
1810 - MP10

ISSUE R1

DRAWN BY	ML
APPROVED BY	MD
PLOT DATE	20190926
SCALE	1 : 250 @ A0

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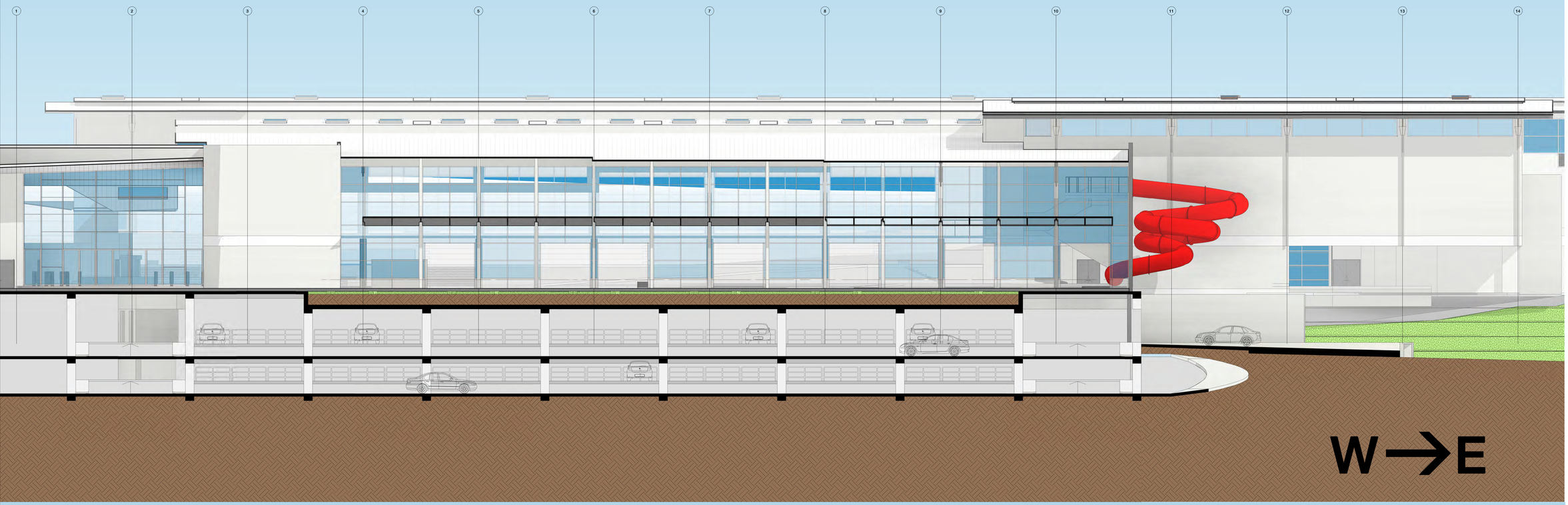

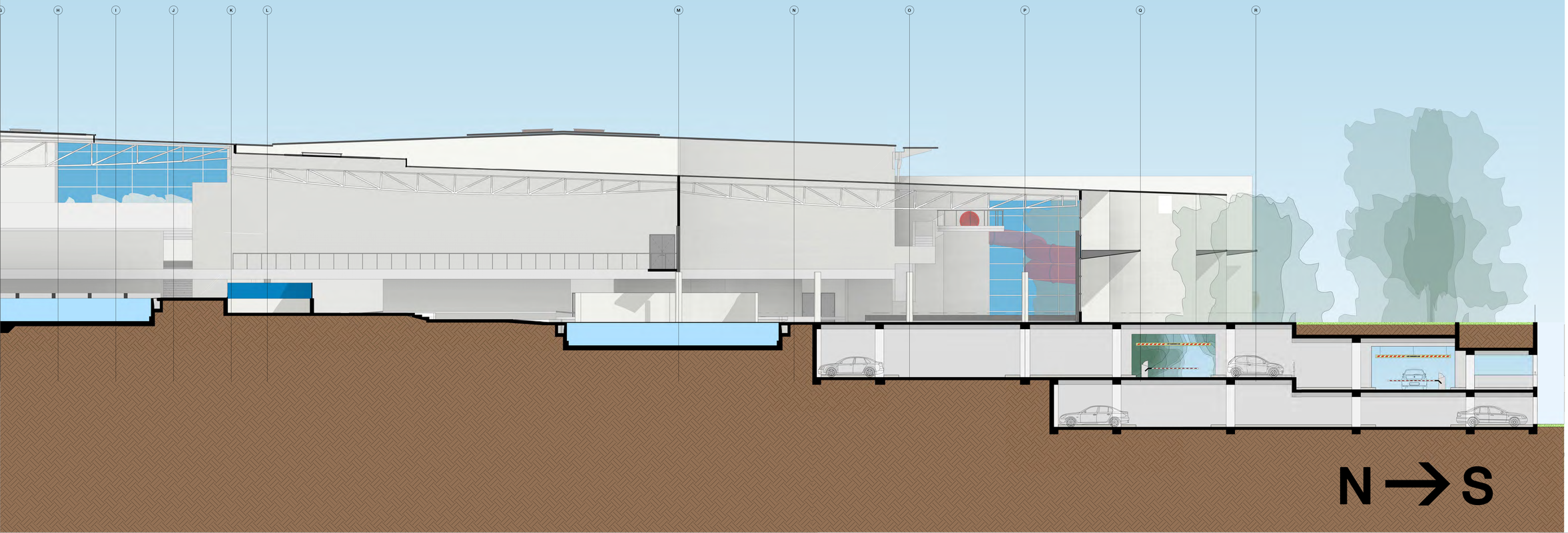

ISSUE	DESCRIPTION	DATE	BY
P1	FOR MEETING WITH CLIENT	20190329	ML
P2	ISSUE TO CLIENT	20190607	ML
R1	FINAL ISSUE TO CLIENT	20190926	ML

GENERAL NOTES

ARCHITECT
MICHAEL DAVIES ARCHITECTURE PTY LTD

Australian Business Number (ABN)	610 776 648
Nominated Architect	Michael John Davies
Registration Numbers	5359 NSW | 3446 ACT
Nominated Licenced Builder Number	24329
Address	Level 12/49 York Street, Sydney NSW 2000
Telephone	+ 61 2 9262 6277
Email	business@michaeldaviesarchitecture.com
Website	michaeldaviesarchitecture.com

Michael Davies Architecture

CONSULTANTS

COMMUNICATIONS CONSULTANT	RECREATION PLANNER
Flagship Communications	Rob Parsonson
Level 2, 91 George Street	Recreation Planning Associates
Parramatta NSW 2150	
p 1300 963 796	

CLIENT
City of Ryde

PROJECT
RYDE AQUATIC LEISURE CENTRE
MASTER PLANNING

DRAWING TITLE
BUILDING SECTIONS

PROJECT/DRAWING NUBMER
1810 - MP11

ISSUE R1

DRAWN BY	ML
APPROVED BY	MD
PLOT DATE	20190926
SCALE	1 : 100 @ A0

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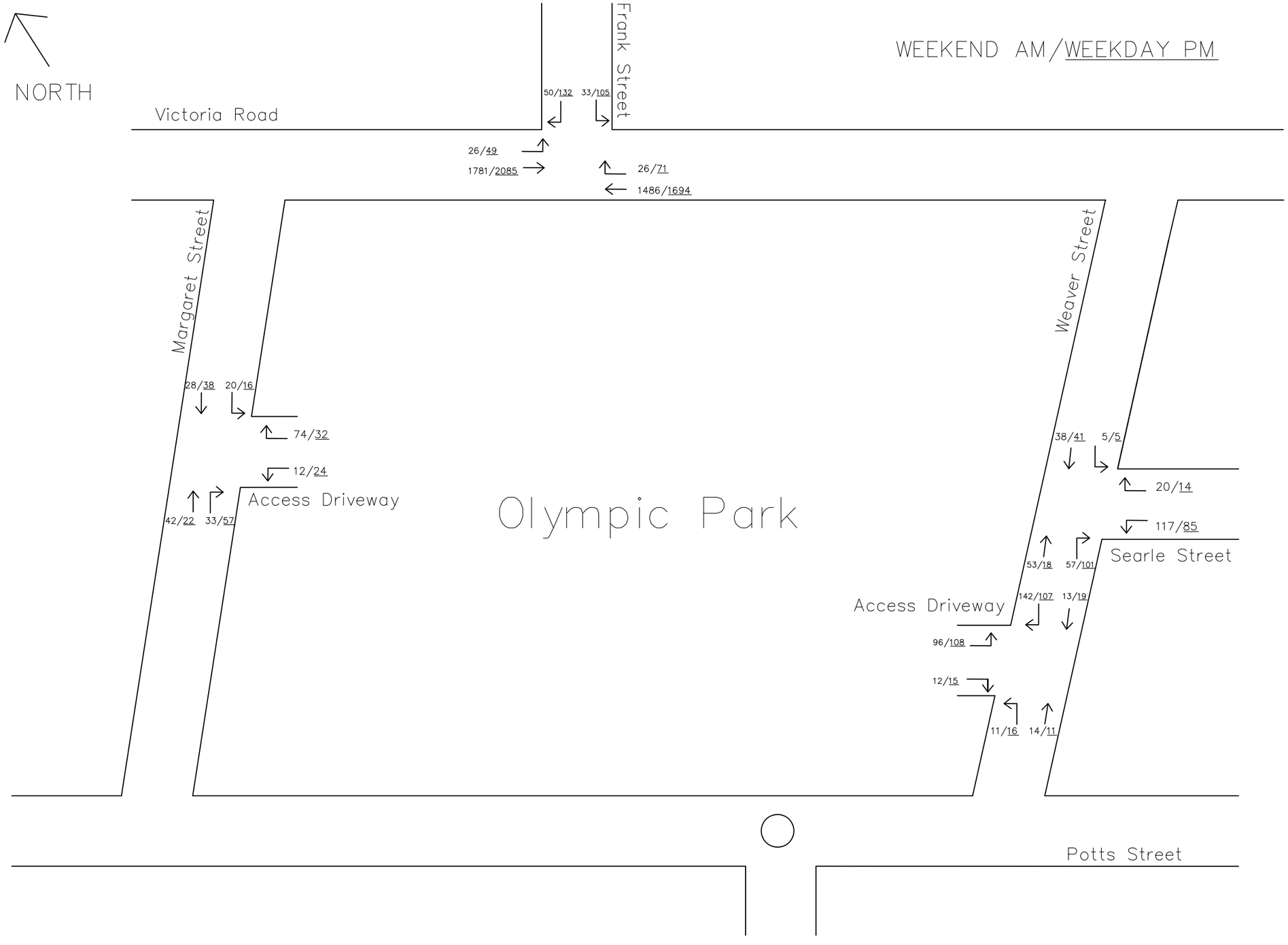
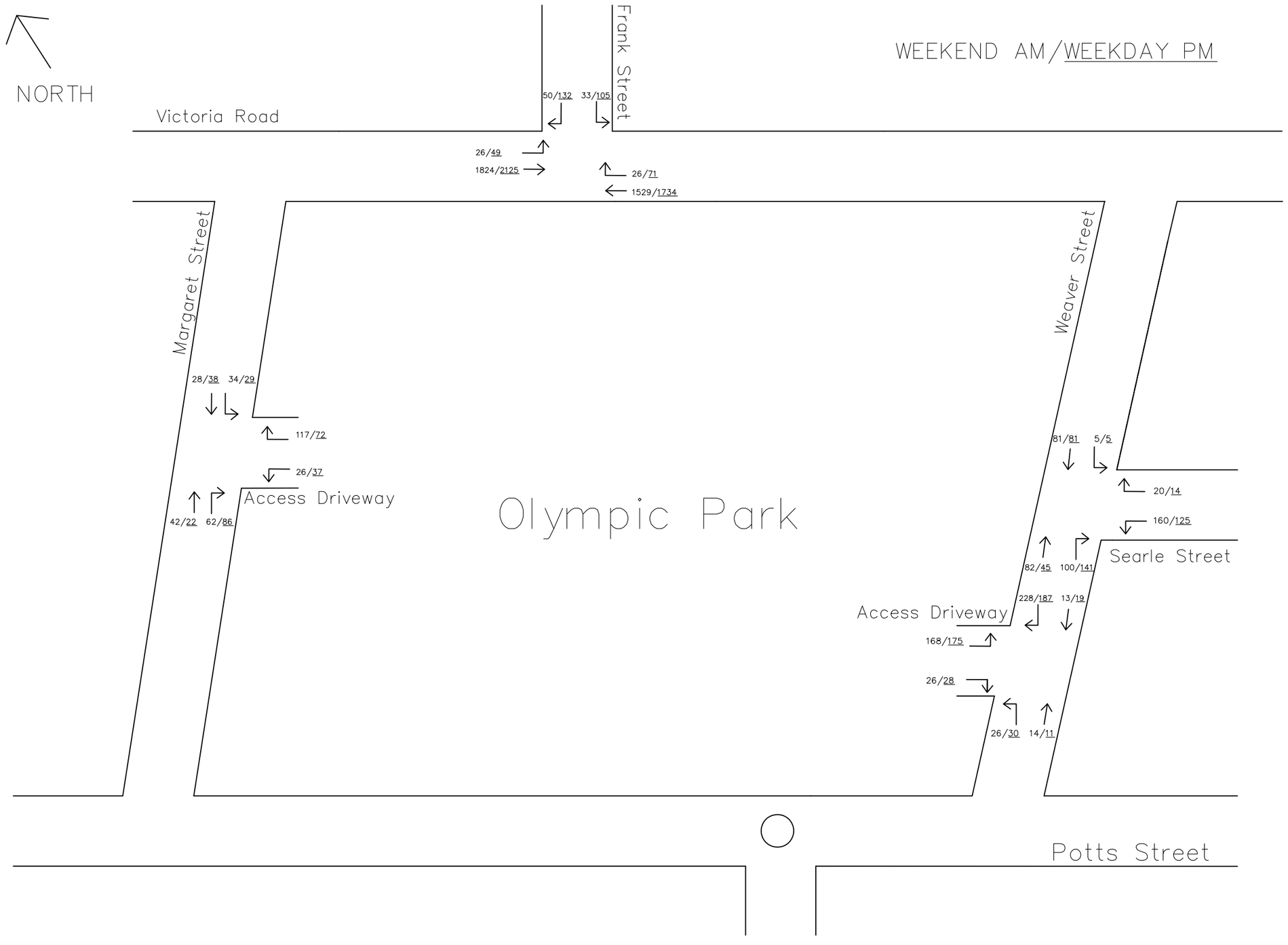
APPENDIX 2



STANBURY TRAFFIC PLANNING TRAFFIC, PARKING & TRANSPORT CONSULTANTS	STANBURY TRAFFIC PLANNING ADDRESS: 302/166 GLEBE POINT RD, GLEBE PH: (02) 8971 8314 MOB: 0410 561 848 EMAIL: info@stanburytraffic.com.au WEBSITE: www.stanburytraffic.com.au	NOTES:	STANBURY TRAFFIC PLANNING TRAFFIC GENERATION AND TRIP ASSIGNMENT 2017 SURVEY EXISTING PEAK HOUR TRAFFIC VOLUMES RYDE OLYMPIC PARK MASTER PLAN 504 VICTORIA AVENUE, RYDE	SCALE: 1:250 AT A3 FILE: 20-197 SUPERSEDES SHEET/ISSUE - DATE: 26/10/20	ISSUE A SHEET 2

APPENDIX 3



STANBURY TRAFFIC PLANNING TRAFFIC, PARKING & TRANSPORT CONSULTANTS	STANBURY TRAFFIC PLANNING ADDRESS: 302/166 GLEBE POINT RD, GLEBE PH: (02) 8971 8314 MOB: 0410 561 848 EMAIL: info@stanburytraffic.com.au WEBSITE: www.stanburytraffic.com.au	NOTES:	STANBURY TRAFFIC PLANNING TRAFFIC GENERATION AND TRIP ASSIGNMENT EXISTING BASE PEAK HOUR TRAFFIC VOLUMES RYDE OLYMPIC PARK MASTER PLAN 504 VICTORIA AVENUE, RYDE	SCALE: 1:250 AT A3 FILE: 20-197 SUPERSEDES SHEET/ISSUE - DATE: 26/10/20 ISSUE A SHEET 3

APPENDIX 4

MOVEMENT SUMMARY

Site: 101 [Ryde Aquatic Centre]

AM 2017 Existing
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Victoria Rd East												
5	T1	1486	5.0	0.421	11.6	LOS A	14.2	103.8	0.54	0.48	0.54	41.0
6	R2	26	5.0	0.138	31.8	LOS C	1.1	7.7	0.72	0.72	0.72	38.7
Approach		1512	5.0	0.421	12.0	LOS A	14.2	103.8	0.54	0.49	0.54	40.9
North: Frank St												
7	L2	33	5.0	0.051	31.5	LOS C	1.2	8.9	0.67	0.70	0.67	33.1
9	R2	50	5.0	0.283	68.9	LOS E	1.5	11.0	1.00	0.71	1.00	22.2
Approach		83	5.0	0.283	54.1	LOS D	1.5	11.0	0.87	0.71	0.87	25.6
West: Victoria Rd West												
10	L2	26	5.0	0.606	25.8	LOS B	23.6	172.2	0.73	0.67	0.73	41.9
11	T1	1781	5.0	0.606	20.4	LOS B	24.0	175.6	0.74	0.67	0.74	27.3
Approach		1807	5.0	0.606	20.5	LOS B	24.0	175.6	0.74	0.67	0.74	27.7
All Vehicles		3402	5.0	0.606	17.5	LOS B	24.0	175.6	0.66	0.59	0.66	33.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P2	East Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P3	North Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P4	West Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		158	54.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Ryde Aquatic Centre]

PM 2017 Existing
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Victoria Rd East												
5	T1	1694	5.0	0.701	14.3	LOS A	31.3	228.8	0.70	0.65	0.70	38.2
6	R2	71	5.0	0.420	43.1	LOS D	3.8	28.0	0.92	0.82	0.92	34.5
Approach		1765	5.0	0.701	15.4	LOS B	31.3	228.8	0.71	0.65	0.71	37.9
North: Frank St												
7	L2	105	5.0	0.170	34.3	LOS C	4.2	30.7	0.73	0.74	0.73	31.9
9	R2	132	5.0	0.641	70.1	LOS E	4.1	29.9	1.00	0.80	1.10	22.0
Approach		237	5.0	0.641	54.3	LOS D	4.2	30.7	0.88	0.77	0.94	25.5
West: Victoria Rd West												
10	L2	49	5.0	0.694	26.0	LOS B	29.2	213.3	0.77	0.71	0.77	41.7
11	T1	2085	5.0	0.694	20.7	LOS B	30.0	219.0	0.78	0.72	0.78	27.0
Approach		2134	5.0	0.694	20.8	LOS B	30.0	219.0	0.78	0.72	0.78	27.6
All Vehicles		4136	5.0	0.701	20.5	LOS B	31.3	228.8	0.76	0.69	0.76	31.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P2	East Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P3	North Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P4	West Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		158	54.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Ryde Aquatic Centre]

AM Feb Existing
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Victoria Rd East												
5	T1	1529	5.0	0.427	11.2	LOS A	14.4	105.5	0.53	0.48	0.53	41.5
6	R2	26	5.0	0.140	31.9	LOS C	1.1	7.7	0.72	0.72	0.72	38.6
Approach		1555	5.0	0.427	11.6	LOS A	14.4	105.5	0.54	0.48	0.54	41.4
North: Frank St												
7	L2	33	5.0	0.052	32.2	LOS C	1.2	9.1	0.68	0.70	0.68	32.8
9	R2	50	5.0	0.283	68.9	LOS E	1.5	11.0	1.00	0.71	1.00	22.2
Approach		83	5.0	0.283	54.3	LOS D	1.5	11.0	0.87	0.71	0.87	25.5
West: Victoria Rd West												
10	L2	26	5.0	0.611	25.2	LOS B	24.0	175.0	0.73	0.66	0.73	42.2
11	T1	1824	5.0	0.611	19.9	LOS B	24.5	178.5	0.74	0.67	0.74	27.6
Approach		1850	5.0	0.611	20.0	LOS B	24.5	178.5	0.74	0.67	0.74	28.0
All Vehicles		3488	5.0	0.611	17.0	LOS B	24.5	178.5	0.65	0.58	0.65	33.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Pedestrian Back of Queue ped	Distance m	Prop. Queued	Effective Stop Rate
P2	East Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P3	North Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P4	West Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		158	54.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Ryde Aquatic Centre]

PM Feb Existing
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Victoria Rd East												
5	T1	1734	5.0	0.717	14.6	LOS B	32.7	239.0	0.71	0.66	0.71	37.9
6	R2	71	5.0	0.425	44.1	LOS D	3.9	28.4	0.93	0.82	0.93	34.2
Approach		1805	5.0	0.717	15.7	LOS B	32.7	239.0	0.72	0.67	0.72	37.6
North: Frank St												
7	L2	105	5.0	0.170	34.3	LOS C	4.2	30.7	0.73	0.74	0.73	31.9
9	R2	132	5.0	0.641	70.1	LOS E	4.1	29.9	1.00	0.80	1.10	22.0
Approach		237	5.0	0.641	54.3	LOS D	4.2	30.7	0.88	0.77	0.94	25.5
West: Victoria Rd West												
10	L2	49	5.0	0.708	26.3	LOS B	30.2	220.4	0.78	0.72	0.78	41.6
11	T1	2125	5.0	0.708	21.0	LOS B	30.9	225.2	0.79	0.73	0.79	26.8
Approach		2174	5.0	0.708	21.1	LOS B	30.9	225.2	0.79	0.73	0.79	27.4
All Vehicles		4216	5.0	0.717	20.7	LOS B	32.7	239.0	0.77	0.70	0.77	31.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P2	East Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P3	North Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P4	West Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		158	54.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Ryde Aquatic Centre]

AM 2017 Existing
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Weaver St South												
1	L2	12	5.0	0.014	5.6	LOS A	0.0	0.0	0.00	0.26	0.00	30.0
2	T1	15	5.0	0.014	0.0	LOS A	0.0	0.0	0.00	0.26	0.00	52.3
Approach		26	5.0	0.014	2.5	NA	0.0	0.0	0.00	0.26	0.00	40.4
North: Weaver St North												
8	T1	14	5.0	0.095	0.1	LOS A	0.5	3.4	0.10	0.52	0.10	45.3
9	R2	149	5.0	0.095	5.6	LOS A	0.5	3.4	0.10	0.52	0.10	29.6
Approach		163	5.0	0.095	5.1	NA	0.5	3.4	0.10	0.52	0.10	30.6
West: RALC Drive												
10	L2	96	5.0	0.082	8.2	LOS A	0.3	2.4	0.05	0.97	0.05	36.4
12	R2	12	5.0	0.082	8.5	LOS A	0.3	2.4	0.05	0.97	0.05	34.1
Approach		108	5.0	0.082	8.3	LOS A	0.3	2.4	0.05	0.97	0.05	36.2
All Vehicles		297	5.0	0.095	6.0	NA	0.5	3.4	0.07	0.66	0.07	33.1

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

MOVEMENT SUMMARY

Site: 101 [Ryde Aquatic Centre]

PM 2017 Existing
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Weaver St South												
1	L2	17	5.0	0.016	5.6	LOS A	0.0	0.0	0.00	0.35	0.00	29.2
2	T1	12	5.0	0.016	0.0	LOS A	0.0	0.0	0.00	0.35	0.00	50.1
Approach		28	5.0	0.016	3.3	NA	0.0	0.0	0.00	0.35	0.00	36.0
North: Weaver St North												
8	T1	20	5.0	0.077	0.1	LOS A	0.4	2.7	0.10	0.48	0.10	46.1
9	R2	113	5.0	0.077	5.6	LOS A	0.4	2.7	0.10	0.48	0.10	29.9
Approach		133	5.0	0.077	4.8	NA	0.4	2.7	0.10	0.48	0.10	31.7
West: RALC Drive												
10	L2	108	5.0	0.093	8.2	LOS A	0.4	2.8	0.05	0.97	0.05	36.4
12	R2	15	5.0	0.093	8.4	LOS A	0.4	2.8	0.05	0.97	0.05	34.1
Approach		123	5.0	0.093	8.2	LOS A	0.4	2.8	0.05	0.97	0.05	36.2
All Vehicles		284	5.0	0.093	6.1	NA	0.4	2.8	0.07	0.68	0.07	33.9

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

MOVEMENT SUMMARY

Site: 101 [Ryde Aquatic Centre]

AM Feb Existing
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Weaver St South												
1	L2	27	5.0	0.023	5.6	LOS A	0.0	0.0	0.00	0.38	0.00	28.9
2	T1	15	5.0	0.023	0.0	LOS A	0.0	0.0	0.00	0.38	0.00	49.4
Approach		42	5.0	0.023	3.6	NA	0.0	0.0	0.00	0.38	0.00	34.5
North: Weaver St North												
8	T1	14	5.0	0.149	0.1	LOS A	0.8	5.5	0.14	0.53	0.14	44.7
9	R2	240	5.0	0.149	5.7	LOS A	0.8	5.5	0.14	0.53	0.14	29.3
Approach		254	5.0	0.149	5.4	NA	0.8	5.5	0.14	0.53	0.14	29.9
West: RALC Drive												
10	L2	168	5.0	0.152	8.2	LOS A	0.6	4.7	0.05	0.97	0.05	36.3
12	R2	26	5.0	0.152	9.3	LOS A	0.6	4.7	0.05	0.97	0.05	34.0
Approach		194	5.0	0.152	8.4	LOS A	0.6	4.7	0.05	0.97	0.05	36.0
All Vehicles		490	5.0	0.152	6.4	NA	0.8	5.5	0.09	0.69	0.09	32.4

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

MOVEMENT SUMMARY

Site: 101 [Ryde Aquatic Centre]

PM ~~AM~~ Feb Existing
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Weaver St South												
1	L2	32	5.0	0.024	5.6	LOS A	0.0	0.0	0.00	0.43	0.00	28.5
2	T1	12	5.0	0.024	0.0	LOS A	0.0	0.0	0.00	0.43	0.00	48.3
Approach		43	5.0	0.024	4.1	NA	0.0	0.0	0.00	0.43	0.00	32.5
North: Weaver St North												
8	T1	20	5.0	0.128	0.1	LOS A	0.6	4.6	0.14	0.51	0.14	45.1
9	R2	197	5.0	0.128	5.7	LOS A	0.6	4.6	0.14	0.51	0.14	29.5
Approach		217	5.0	0.128	5.1	NA	0.6	4.6	0.14	0.51	0.14	30.6
West: RALC Drive												
10	L2	175	5.0	0.158	8.2	LOS A	0.7	5.0	0.04	0.98	0.04	36.3
12	R2	28	5.0	0.158	9.0	LOS A	0.7	5.0	0.04	0.98	0.04	34.0
Approach		203	5.0	0.158	8.3	LOS A	0.7	5.0	0.04	0.98	0.04	36.0
All Vehicles		463	5.0	0.158	6.4	NA	0.7	5.0	0.08	0.71	0.08	32.9

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

MOVEMENT SUMMARY

▽ Site: 101 [Ryde Aquatic Centre]

AM 2017 Existing
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Weaver St South												
2	T1	56	5.0	0.066	0.1	LOS A	0.3	2.1	0.12	0.30	0.12	50.0
3	R2	60	5.0	0.066	5.6	LOS A	0.3	2.1	0.12	0.30	0.12	46.0
Approach		116	5.0	0.066	3.0	NA	0.3	2.1	0.12	0.30	0.12	47.6
East: Searle St												
4	L2	117	5.0	0.094	5.7	LOS A	0.4	2.8	0.11	0.55	0.11	43.4
6	R2	20	5.0	0.094	6.1	LOS A	0.4	2.8	0.11	0.55	0.11	42.5
Approach		137	5.0	0.094	5.8	LOS A	0.4	2.8	0.11	0.55	0.11	43.3
North: Weaver St North												
7	L2	5	5.0	0.024	5.6	LOS A	0.0	0.0	0.00	0.07	0.00	52.6
8	T1	40	5.0	0.024	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	57.7
Approach		45	5.0	0.024	0.7	NA	0.0	0.0	0.00	0.07	0.00	56.9
All Vehicles		298	5.0	0.094	3.9	NA	0.4	2.8	0.10	0.38	0.10	46.3

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

MOVEMENT SUMMARY

▽ Site: 101 [Ryde Aquatic Centre]

PM 2017 Existing
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Weaver St South												
2	T1	19	5.0	0.074	0.1	LOS A	0.4	2.6	0.14	0.48	0.14	45.7
3	R2	106	5.0	0.074	5.7	LOS A	0.4	2.6	0.14	0.48	0.14	43.1
Approach		125	5.0	0.074	4.8	NA	0.4	2.6	0.14	0.48	0.14	43.4
East: Searle St												
4	L2	85	5.0	0.068	5.7	LOS A	0.3	2.0	0.12	0.55	0.12	43.4
6	R2	14	5.0	0.068	6.2	LOS A	0.3	2.0	0.12	0.55	0.12	42.5
Approach		99	5.0	0.068	5.8	LOS A	0.3	2.0	0.12	0.55	0.12	43.3
North: Weaver St North												
7	L2	5	5.0	0.026	5.6	LOS A	0.0	0.0	0.00	0.06	0.00	52.7
8	T1	43	5.0	0.026	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	57.9
Approach		48	5.0	0.026	0.6	NA	0.0	0.0	0.00	0.06	0.00	57.1
All Vehicles		273	5.0	0.074	4.4	NA	0.4	2.6	0.11	0.43	0.11	45.0

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

MOVEMENT SUMMARY

▽ Site: 101 [Ryde Aquatic Centre]

AM 2017 Feb Existing
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Weaver St South												
2	T1	86	5.0	0.112	0.2	LOS A	0.5	3.8	0.19	0.31	0.19	48.9
3	R2	105	5.0	0.112	5.8	LOS A	0.5	3.8	0.19	0.31	0.19	45.2
Approach		192	5.0	0.112	3.3	NA	0.5	3.8	0.19	0.31	0.19	46.6
East: Searle St												
4	L2	160	5.0	0.129	5.9	LOS A	0.5	3.9	0.19	0.56	0.19	43.0
6	R2	20	5.0	0.129	6.8	LOS A	0.5	3.9	0.19	0.56	0.19	42.1
Approach		180	5.0	0.129	6.0	LOS A	0.5	3.9	0.19	0.56	0.19	42.9
North: Weaver St North												
7	L2	5	5.0	0.048	5.6	LOS A	0.0	0.0	0.00	0.03	0.00	53.3
8	T1	85	5.0	0.048	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	58.8
Approach		91	5.0	0.048	0.3	NA	0.0	0.0	0.00	0.03	0.00	58.4
All Vehicles		462	5.0	0.129	3.8	NA	0.5	3.9	0.15	0.35	0.15	46.5

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

MOVEMENT SUMMARY

▽ Site: 101 [Ryde Aquatic Centre]

PM 2017 Feb Existing
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Weaver St South												
2	T1	47	5.0	0.118	0.3	LOS A	0.6	4.2	0.21	0.43	0.21	46.2
3	R2	148	5.0	0.118	5.8	LOS A	0.6	4.2	0.21	0.43	0.21	43.4
Approach		196	5.0	0.118	4.5	NA	0.6	4.2	0.21	0.43	0.21	43.9
East: Searle St												
4	L2	125	5.0	0.099	5.9	LOS A	0.4	3.0	0.18	0.55	0.18	43.0
6	R2	14	5.0	0.099	6.7	LOS A	0.4	3.0	0.18	0.55	0.18	42.1
Approach		139	5.0	0.099	6.0	LOS A	0.4	3.0	0.18	0.55	0.18	42.9
North: Weaver St North												
7	L2	5	5.0	0.048	5.6	LOS A	0.0	0.0	0.00	0.03	0.00	53.3
8	T1	85	5.0	0.048	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	58.8
Approach		91	5.0	0.048	0.3	NA	0.0	0.0	0.00	0.03	0.00	58.4
All Vehicles		425	5.0	0.118	4.1	NA	0.6	4.2	0.16	0.39	0.16	45.6

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

MOVEMENT SUMMARY

Site: 101 [Ryde Aquatic Centre]

AM 2017 Existing
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Margaret St South												
2	T1	42	5.0	0.042	0.1	LOS A	0.2	1.2	0.11	0.25	0.11	51.3
3	R2	33	5.0	0.042	5.7	LOS A	0.2	1.2	0.11	0.25	0.11	42.0
Approach		75	5.0	0.042	2.5	NA	0.2	1.2	0.11	0.25	0.11	47.1
East: RALC Drive												
4	L2	12	5.0	0.082	8.3	LOS A	0.3	2.1	0.16	0.92	0.16	35.5
6	R2	74	5.0	0.082	8.1	LOS A	0.3	2.1	0.16	0.92	0.16	35.5
Approach		86	5.0	0.082	8.2	LOS A	0.3	2.1	0.16	0.92	0.16	35.5
North: Margaret St North												
7	L2	20	5.0	0.026	5.6	LOS A	0.0	0.0	0.00	0.25	0.00	33.0
8	T1	28	5.0	0.026	0.0	LOS A	0.0	0.0	0.00	0.25	0.00	52.7
Approach		48	5.0	0.026	2.3	NA	0.0	0.0	0.00	0.25	0.00	42.6
All Vehicles		209	5.0	0.082	4.8	NA	0.3	2.1	0.11	0.53	0.11	40.8

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

MOVEMENT SUMMARY

Site: 101 [Ryde Aquatic Centre]

PM 2017 Existing
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Margaret St South												
2	T1	22	5.0	0.046	0.2	LOS A	0.2	1.6	0.14	0.41	0.14	47.3
3	R2	57	5.0	0.046	5.7	LOS A	0.2	1.6	0.14	0.41	0.14	38.8
Approach		79	5.0	0.046	4.1	NA	0.2	1.6	0.14	0.41	0.14	41.2
East: RALC Drive												
4	L2	24	5.0	0.050	8.3	LOS A	0.2	1.3	0.13	0.93	0.13	35.5
6	R2	32	5.0	0.050	8.2	LOS A	0.2	1.3	0.13	0.93	0.13	35.5
Approach		56	5.0	0.050	8.2	LOS A	0.2	1.3	0.13	0.93	0.13	35.5
North: Margaret St North												
7	L2	16	5.0	0.029	5.6	LOS A	0.0	0.0	0.00	0.18	0.00	33.8
8	T1	38	5.0	0.029	0.0	LOS A	0.0	0.0	0.00	0.18	0.00	54.6
Approach		54	5.0	0.029	1.7	NA	0.0	0.0	0.00	0.18	0.00	46.6
All Vehicles		189	5.0	0.050	4.6	NA	0.2	1.6	0.10	0.50	0.10	40.7

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

MOVEMENT SUMMARY

Site: 101 [Ryde Aquatic Centre]

AM Feb Existing
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Margaret St South												
2	T1	42	5.0	0.060	0.2	LOS A	0.3	2.0	0.15	0.34	0.15	48.8
3	R2	62	5.0	0.060	5.7	LOS A	0.3	2.0	0.15	0.34	0.15	40.0
Approach		104	5.0	0.060	3.5	NA	0.3	2.0	0.15	0.34	0.15	43.5
East: RALC Drive												
4	L2	26	5.0	0.139	8.3	LOS A	0.5	3.7	0.17	0.93	0.17	35.3
6	R2	117	5.0	0.139	8.4	LOS A	0.5	3.7	0.17	0.93	0.17	35.3
Approach		143	5.0	0.139	8.4	LOS A	0.5	3.7	0.17	0.93	0.17	35.3
North: Margaret St North												
7	L2	34	5.0	0.034	5.6	LOS A	0.0	0.0	0.00	0.32	0.00	32.2
8	T1	28	5.0	0.034	0.0	LOS A	0.0	0.0	0.00	0.32	0.00	50.8
Approach		62	5.0	0.034	3.1	NA	0.0	0.0	0.00	0.32	0.00	39.0
All Vehicles		309	5.0	0.139	5.7	NA	0.5	3.7	0.13	0.61	0.13	38.5

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

MOVEMENT SUMMARY

Site: 101 [Ryde Aquatic Centre]

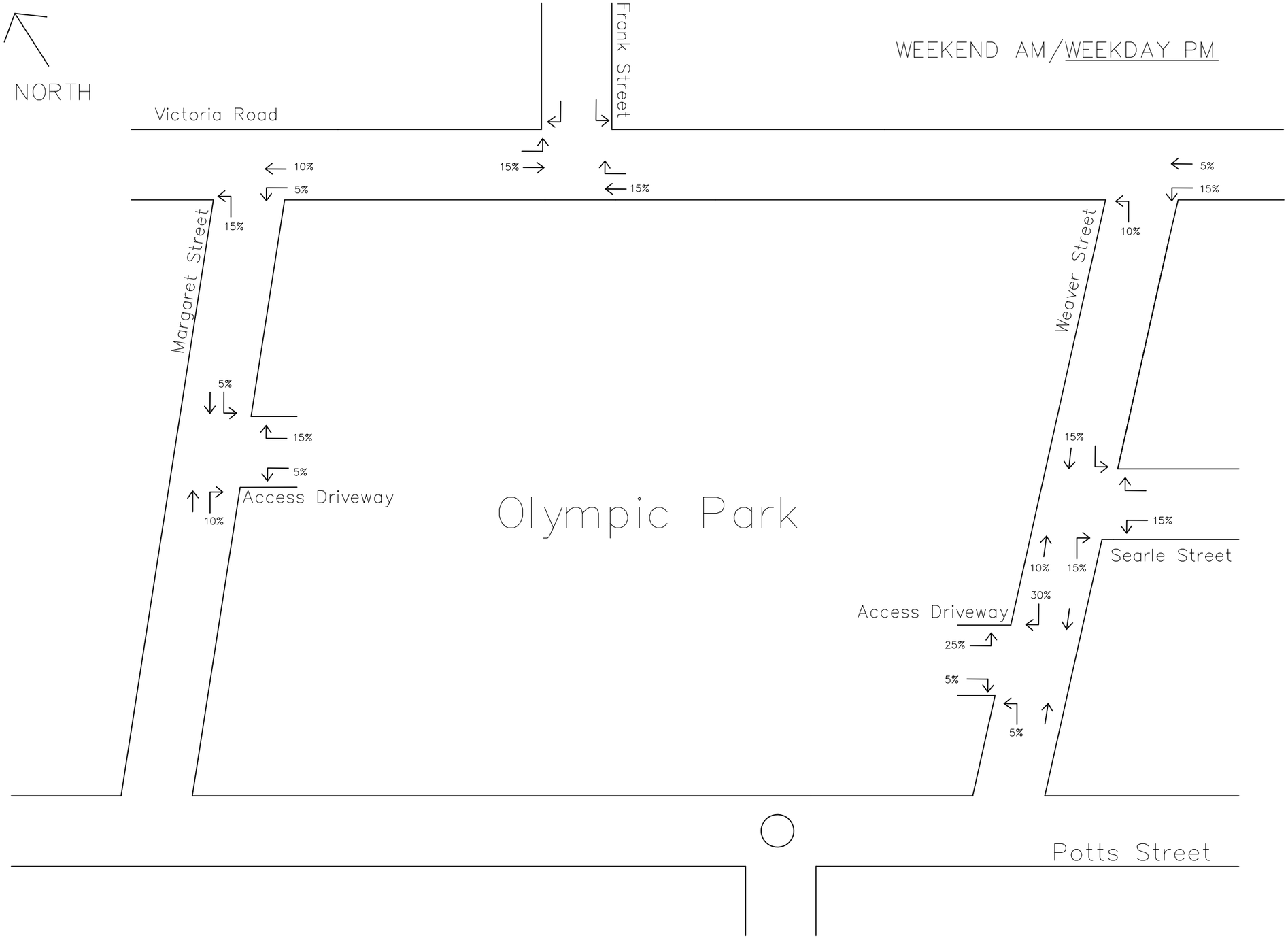
PM Feb Existing
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Margaret St South												
2	T1	22	5.0	0.064	0.2	LOS A	0.3	2.2	0.17	0.45	0.17	46.2
3	R2	86	5.0	0.064	5.7	LOS A	0.3	2.2	0.17	0.45	0.17	38.0
Approach		108	5.0	0.064	4.6	NA	0.3	2.2	0.17	0.45	0.17	39.6
East: RALC Drive												
4	L2	37	5.0	0.102	8.3	LOS A	0.4	2.7	0.15	0.93	0.15	35.3
6	R2	72	5.0	0.102	8.4	LOS A	0.4	2.7	0.15	0.93	0.15	35.3
Approach		109	5.0	0.102	8.4	LOS A	0.4	2.7	0.15	0.93	0.15	35.3
North: Margaret St North												
7	L2	29	5.0	0.036	5.6	LOS A	0.0	0.0	0.00	0.26	0.00	32.9
8	T1	38	5.0	0.036	0.0	LOS A	0.0	0.0	0.00	0.26	0.00	52.5
Approach		67	5.0	0.036	2.4	NA	0.0	0.0	0.00	0.26	0.00	42.2
All Vehicles		284	5.0	0.102	5.5	NA	0.4	2.7	0.12	0.59	0.12	38.4

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

APPENDIX 5



STANBURY TRAFFIC PLANNING
TRAFFIC, PARKING & TRANSPORT CONSULTANTS

STANBURY TRAFFIC PLANNING
ADDRESS: 302/166 GLEBE POINT RD, GLEBE
PH: (02) 8971 8314
MOB: 0410 561 848
EMAIL: info@stanburytraffic.com.au
WEBSITE: www.stanburytraffic.com.au

NOTES:

STANBURY TRAFFIC PLANNING

TRAFFIC GENERATION AND TRIP ASSIGNMENT

PERCENTAGE OF NEW TRIPS - TRIP ASSIGNMENT

RYDE OLYMPIC PARK MASTER PLAN

504 VICTORIA AVENUE, RYDE

SCALE: 1:250 AT A3

FILE: 20-197

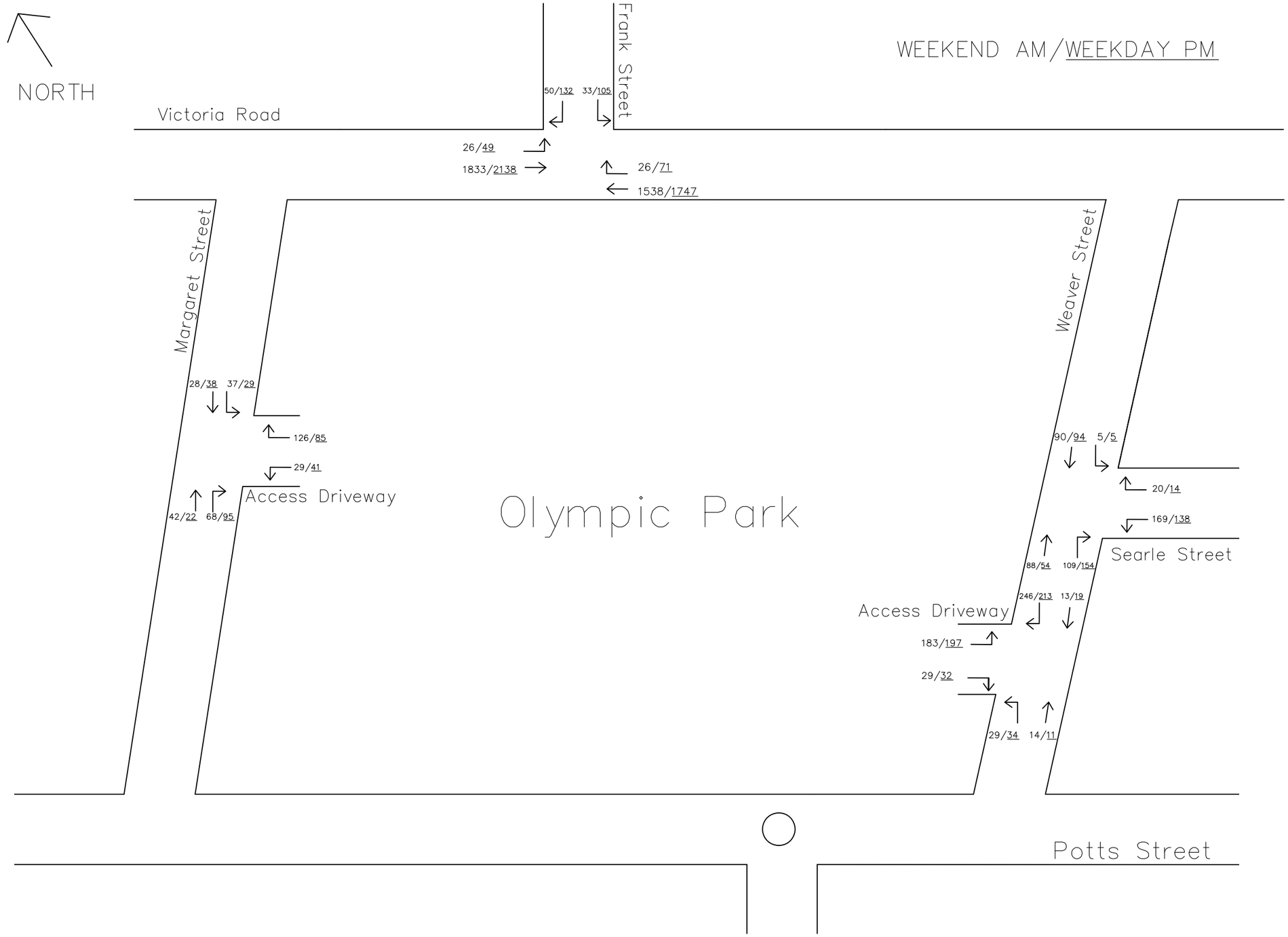
SUPERSEDES SHEET/ISSUE -

DATE: 26/10/20

ISSUE A

SHEET 1

APPENDIX 6



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TRAFFIC, PARKING & TRANSPORT CONSULTANTS

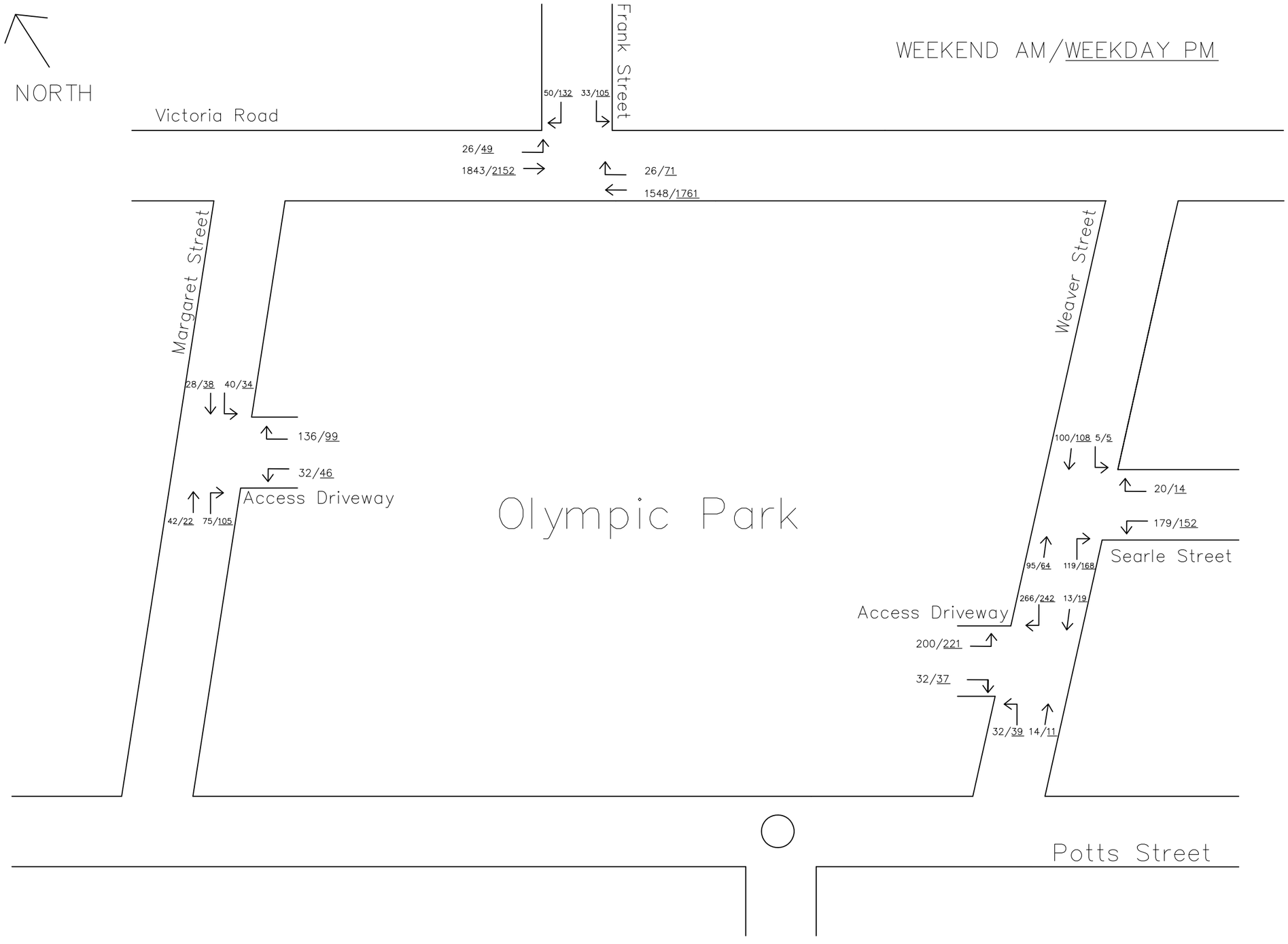
STANBURY TRAFFIC PLANNING
ADDRESS: 302/166 GLEBE POINT RD, GLEBE
PH: (02) 8971 8314
MOB: 0410 561 848
EMAIL: info@stanburytraffic.com.au
WEBSITE: www.stanburytraffic.com.au

NOTES:

STANBURY TRAFFIC PLANNING

TRAFFIC GENERATION AND TRIP ASSIGNMENT
PROJECTED STAGE 3 PEAK HOUR TRAFFIC VOLUMES
RYDE OLYMPIC PARK MASTER PLAN
504 VICTORIA AVENUE, RYDE

SCALE: 1:250 AT A3
ISSUE: A
FILE: 20-197
SUPERSEDES SHEET/ISSUE: -
DATE: 26/10/20
SHEET: 4



STANBURY TRAFFIC PLANNING TRAFFIC, PARKING & TRANSPORT CONSULTANTS	STANBURY TRAFFIC PLANNING ADDRESS: 302/166 GLEBE POINT RD, GLEBE PH: (02) 8971 8314 MOB: 0410 561 848 EMAIL: info@stanburytraffic.com.au WEBSITE: www.stanburytraffic.com.au	NOTES:	STANBURY TRAFFIC PLANNING TRAFFIC GENERATION AND TRIP ASSIGNMENT PROJECTED STAGE 5 PEAK HOUR TRAFFIC VOLUMES RYDE OLYMPIC PARK MASTER PLAN 504 VICTORIA AVENUE, RYDE	SCALE: 1:250 AT A3 FILE: 20-197 SUPERSEDES SHEET/ISSUE - DATE: 26/10/20	ISSUE A SHEET 5

APPENDIX 7

MOVEMENT SUMMARY

Site: 101 [Ryde Aquatic Centre]

AM Projected Pool
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Victoria Rd East												
5	T1	1538	5.0	0.430	11.2	LOS A	14.6	106.3	0.53	0.48	0.53	41.4
6	R2	26	5.0	0.140	32.0	LOS C	1.1	7.7	0.72	0.72	0.72	38.6
Approach		1564	5.0	0.430	11.6	LOS A	14.6	106.3	0.54	0.48	0.54	41.3
North: Frank St												
7	L2	33	5.0	0.052	32.2	LOS C	1.2	9.1	0.68	0.70	0.68	32.8
9	R2	50	5.0	0.283	68.9	LOS E	1.5	11.0	1.00	0.71	1.00	22.2
Approach		83	5.0	0.283	54.3	LOS D	1.5	11.0	0.87	0.71	0.87	25.5
West: Victoria Rd West												
10	L2	26	5.0	0.616	25.3	LOS B	24.1	176.3	0.73	0.67	0.73	42.2
11	T1	1833	5.0	0.616	20.0	LOS B	24.6	179.8	0.74	0.67	0.74	27.6
Approach		1859	5.0	0.616	20.0	LOS B	24.6	179.8	0.74	0.67	0.74	28.0
All Vehicles		3506	5.0	0.616	17.1	LOS B	24.6	179.8	0.65	0.59	0.65	33.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P2	East Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P3	North Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P4	West Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		158	54.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Ryde Aquatic Centre]

PM Projected Pool
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Victoria Rd East												
5	T1	1747	5.0	0.723	14.7	LOS B	33.2	242.4	0.72	0.66	0.72	37.9
6	R2	71	5.0	0.394	44.6	LOS D	3.9	28.4	0.93	0.82	0.93	34.0
Approach		1818	5.0	0.723	15.8	LOS B	33.2	242.4	0.73	0.67	0.73	37.5
North: Frank St												
7	L2	105	5.0	0.166	33.6	LOS C	4.2	30.3	0.72	0.74	0.72	32.2
9	R2	132	5.0	0.641	70.1	LOS E	4.1	29.9	1.00	0.80	1.10	22.0
Approach		237	5.0	0.641	53.9	LOS D	4.2	30.3	0.88	0.77	0.93	25.6
West: Victoria Rd West												
10	L2	49	5.0	0.723	27.1	LOS B	31.1	226.8	0.80	0.74	0.80	41.1
11	T1	2138	5.0	0.723	21.9	LOS B	31.8	231.8	0.81	0.74	0.81	26.2
Approach		2187	5.0	0.723	22.0	LOS B	31.8	231.8	0.81	0.74	0.81	26.8
All Vehicles		4242	5.0	0.723	21.1	LOS B	33.2	242.4	0.78	0.71	0.78	31.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P2	East Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P3	North Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P4	West Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		158	54.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Ryde Aquatic Centre]

AM Projected Courts
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Victoria Rd East												
5	T1	1548	5.0	0.433	11.3	LOS A	14.7	107.3	0.53	0.48	0.53	41.4
6	R2	26	5.0	0.141	32.0	LOS C	1.1	7.7	0.72	0.72	0.72	38.6
Approach		1574	5.0	0.433	11.6	LOS A	14.7	107.3	0.54	0.48	0.54	41.3
North: Frank St												
7	L2	33	5.0	0.052	32.2	LOS C	1.2	9.1	0.68	0.70	0.68	32.8
9	R2	50	5.0	0.283	68.9	LOS E	1.5	11.0	1.00	0.71	1.00	22.2
Approach		83	5.0	0.283	54.3	LOS D	1.5	11.0	0.87	0.71	0.87	25.5
West: Victoria Rd West												
10	L2	26	5.0	0.618	25.4	LOS B	24.4	178.1	0.73	0.67	0.73	42.1
11	T1	1843	5.0	0.618	20.0	LOS B	24.8	180.8	0.74	0.67	0.74	27.5
Approach		1869	5.0	0.618	20.1	LOS B	24.8	180.8	0.74	0.67	0.74	27.9
All Vehicles		3526	5.0	0.618	17.1	LOS B	24.8	180.8	0.65	0.59	0.65	33.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P2	East Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P3	North Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P4	West Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		158	54.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Ryde Aquatic Centre]

PM Projected Courts
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Victoria Rd East												
5	T1	1761	5.0	0.729	14.8	LOS B	33.7	246.1	0.72	0.67	0.72	37.8
6	R2	71	5.0	0.395	44.7	LOS D	3.9	28.5	0.93	0.82	0.93	34.0
Approach		1832	5.0	0.729	15.9	LOS B	33.7	246.1	0.73	0.68	0.73	37.4
North: Frank St												
7	L2	105	5.0	0.166	33.6	LOS C	4.2	30.3	0.72	0.74	0.72	32.2
9	R2	132	5.0	0.641	70.1	LOS E	4.1	29.9	1.00	0.80	1.10	22.0
Approach		237	5.0	0.641	53.9	LOS D	4.2	30.3	0.88	0.77	0.93	25.6
West: Victoria Rd West												
10	L2	49	5.0	0.728	27.2	LOS B	31.4	229.1	0.80	0.74	0.80	41.0
11	T1	2152	5.0	0.728	22.0	LOS B	32.1	234.2	0.81	0.75	0.81	26.1
Approach		2201	5.0	0.728	22.1	LOS B	32.1	234.2	0.81	0.75	0.81	26.8
All Vehicles		4270	5.0	0.729	21.2	LOS B	33.7	246.1	0.78	0.72	0.78	31.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P2	East Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P3	North Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P4	West Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		158	54.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Ryde Aquatic Centre]

AM Projected Pool
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Weaver St South												
1	L2	31	5.0	0.025	5.6	LOS A	0.0	0.0	0.00	0.40	0.00	28.8
2	T1	15	5.0	0.025	0.0	LOS A	0.0	0.0	0.00	0.40	0.00	49.0
Approach		45	5.0	0.025	3.8	NA	0.0	0.0	0.00	0.40	0.00	33.9
North: Weaver St North												
8	T1	14	5.0	0.161	0.2	LOS A	0.8	6.0	0.15	0.53	0.15	44.6
9	R2	259	5.0	0.161	5.7	LOS A	0.8	6.0	0.15	0.53	0.15	29.3
Approach		273	5.0	0.161	5.4	NA	0.8	6.0	0.15	0.53	0.15	29.8
West: RALC Drive												
10	L2	183	5.0	0.167	8.2	LOS A	0.7	5.3	0.05	0.97	0.05	36.2
12	R2	29	5.0	0.167	9.5	LOS A	0.7	5.3	0.05	0.97	0.05	33.9
Approach		212	5.0	0.167	8.4	LOS A	0.7	5.3	0.05	0.97	0.05	35.9
All Vehicles		530	5.0	0.167	6.5	NA	0.8	6.0	0.09	0.70	0.09	32.3

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

MOVEMENT SUMMARY

Site: 101 [Ryde Aquatic Centre]

PM Projected Pool
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Weaver St South												
1	L2	36	5.0	0.026	5.6	LOS A	0.0	0.0	0.00	0.44	0.00	28.4
2	T1	12	5.0	0.026	0.0	LOS A	0.0	0.0	0.00	0.44	0.00	48.0
Approach		47	5.0	0.026	4.2	NA	0.0	0.0	0.00	0.44	0.00	32.0
North: Weaver St North												
8	T1	20	5.0	0.144	0.2	LOS A	0.7	5.3	0.15	0.52	0.15	44.9
9	R2	224	5.0	0.144	5.7	LOS A	0.7	5.3	0.15	0.52	0.15	29.4
Approach		244	5.0	0.144	5.2	NA	0.7	5.3	0.15	0.52	0.15	30.3
West: RALC Drive												
10	L2	197	5.0	0.179	8.2	LOS A	0.8	5.7	0.04	0.98	0.04	36.2
12	R2	32	5.0	0.179	9.3	LOS A	0.8	5.7	0.04	0.98	0.04	33.9
Approach		229	5.0	0.179	8.4	LOS A	0.8	5.7	0.04	0.98	0.04	35.9
All Vehicles		521	5.0	0.179	6.5	NA	0.8	5.7	0.09	0.71	0.09	32.7

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

MOVEMENT SUMMARY

Site: 101 [Ryde Aquatic Centre]

AM Projected Courts
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Weaver St South												
1	L2	34	5.0	0.027	5.6	LOS A	0.0	0.0	0.00	0.41	0.00	28.7
2	T1	15	5.0	0.027	0.0	LOS A	0.0	0.0	0.00	0.41	0.00	48.8
Approach		48	5.0	0.027	3.9	NA	0.0	0.0	0.00	0.41	0.00	33.4
North: Weaver St North												
8	T1	14	5.0	0.174	0.2	LOS A	0.9	6.6	0.15	0.54	0.15	44.5
9	R2	280	5.0	0.174	5.7	LOS A	0.9	6.6	0.15	0.54	0.15	29.2
Approach		294	5.0	0.174	5.4	NA	0.9	6.6	0.15	0.54	0.15	29.7
West: RALC Drive												
10	L2	200	5.0	0.185	8.2	LOS A	0.8	5.9	0.05	0.97	0.05	36.2
12	R2	32	5.0	0.185	9.7	LOS A	0.8	5.9	0.05	0.97	0.05	33.9
Approach		232	5.0	0.185	8.4	LOS A	0.8	5.9	0.05	0.97	0.05	35.9
All Vehicles		574	5.0	0.185	6.5	NA	0.9	6.6	0.10	0.70	0.10	32.3

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

MOVEMENT SUMMARY

Site: 101 [Ryde Aquatic Centre]

PM Projected Courts
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Weaver St South												
1	L2	41	5.0	0.029	5.6	LOS A	0.0	0.0	0.00	0.45	0.00	28.2
2	T1	12	5.0	0.029	0.0	LOS A	0.0	0.0	0.00	0.45	0.00	47.7
Approach		53	5.0	0.029	4.4	NA	0.0	0.0	0.00	0.45	0.00	31.5
North: Weaver St North												
8	T1	20	5.0	0.163	0.2	LOS A	0.8	6.1	0.16	0.52	0.16	44.8
9	R2	255	5.0	0.163	5.7	LOS A	0.8	6.1	0.16	0.52	0.16	29.3
Approach		275	5.0	0.163	5.3	NA	0.8	6.1	0.16	0.52	0.16	30.2
West: RALC Drive												
10	L2	221	5.0	0.204	8.2	LOS A	0.9	6.7	0.04	0.98	0.04	36.2
12	R2	37	5.0	0.204	9.6	LOS A	0.9	6.7	0.04	0.98	0.04	33.9
Approach		258	5.0	0.204	8.4	LOS A	0.9	6.7	0.04	0.98	0.04	35.8
All Vehicles		585	5.0	0.204	6.6	NA	0.9	6.7	0.09	0.72	0.09	32.6

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

MOVEMENT SUMMARY

▽ Site: 101 [Ryde Aquatic Centre]

AM Projected - Pool
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Weaver St South												
2	T1	93	5.0	0.122	0.3	LOS A	0.6	4.2	0.20	0.32	0.20	48.7
3	R2	115	5.0	0.122	5.9	LOS A	0.6	4.2	0.20	0.32	0.20	45.1
Approach		207	5.0	0.122	3.4	NA	0.6	4.2	0.20	0.32	0.20	46.4
East: Searle St												
4	L2	169	5.0	0.136	5.9	LOS A	0.6	4.2	0.20	0.56	0.20	42.9
6	R2	20	5.0	0.136	6.9	LOS A	0.6	4.2	0.20	0.56	0.20	42.0
Approach		189	5.0	0.136	6.0	LOS A	0.6	4.2	0.20	0.56	0.20	42.8
North: Weaver St North												
7	L2	5	5.0	0.053	5.6	LOS A	0.0	0.0	0.00	0.03	0.00	53.3
8	T1	95	5.0	0.053	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	58.9
Approach		100	5.0	0.053	0.3	NA	0.0	0.0	0.00	0.03	0.00	58.5
All Vehicles		496	5.0	0.136	3.8	NA	0.6	4.2	0.16	0.35	0.16	46.5

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

MOVEMENT SUMMARY

▽ Site: 101 [Ryde Aquatic Centre]

PM Projected - Pool
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Weaver St South												
2	T1	57	5.0	0.133	0.3	LOS A	0.7	4.8	0.23	0.42	0.23	46.2
3	R2	162	5.0	0.133	5.9	LOS A	0.7	4.8	0.23	0.42	0.23	43.4
Approach		219	5.0	0.133	4.4	NA	0.7	4.8	0.23	0.42	0.23	44.0
East: Searle St												
4	L2	138	5.0	0.109	5.9	LOS A	0.5	3.3	0.20	0.56	0.20	42.9
6	R2	14	5.0	0.109	7.0	LOS A	0.5	3.3	0.20	0.56	0.20	42.0
Approach		152	5.0	0.109	6.0	LOS A	0.5	3.3	0.20	0.56	0.20	42.8
North: Weaver St North												
7	L2	5	5.0	0.055	5.6	LOS A	0.0	0.0	0.00	0.03	0.00	53.4
8	T1	99	5.0	0.055	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	59.0
Approach		104	5.0	0.055	0.3	NA	0.0	0.0	0.00	0.03	0.00	58.6
All Vehicles		475	5.0	0.133	4.0	NA	0.7	4.8	0.17	0.38	0.17	45.7

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

MOVEMENT SUMMARY

▽ Site: 101 [Ryde Aquatic Centre]

AM Projected - Courts
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Weaver St South												
2	T1	100	5.0	0.133	0.3	LOS A	0.6	4.6	0.22	0.32	0.22	48.5
3	R2	125	5.0	0.133	5.9	LOS A	0.6	4.6	0.22	0.32	0.22	45.0
Approach		225	5.0	0.133	3.4	NA	0.6	4.6	0.22	0.32	0.22	46.3
East: Searle St												
4	L2	179	5.0	0.145	6.0	LOS A	0.6	4.5	0.22	0.56	0.22	42.8
6	R2	20	5.0	0.145	7.1	LOS A	0.6	4.5	0.22	0.56	0.22	41.9
Approach		199	5.0	0.145	6.1	LOS A	0.6	4.5	0.22	0.56	0.22	42.7
North: Weaver St North												
7	L2	5	5.0	0.059	5.6	LOS A	0.0	0.0	0.00	0.03	0.00	53.4
8	T1	105	5.0	0.059	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	59.0
Approach		111	5.0	0.059	0.3	NA	0.0	0.0	0.00	0.03	0.00	58.7
All Vehicles		535	5.0	0.145	3.8	NA	0.6	4.6	0.17	0.35	0.17	46.5

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

MOVEMENT SUMMARY

▽ Site: 101 [Ryde Aquatic Centre]

PM Projected - Courts
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Weaver St South												
2	T1	67	5.0	0.149	0.4	LOS A	0.8	5.5	0.25	0.42	0.25	46.2
3	R2	177	5.0	0.149	5.9	LOS A	0.8	5.5	0.25	0.42	0.25	43.4
Approach		244	5.0	0.149	4.4	NA	0.8	5.5	0.25	0.42	0.25	44.1
East: Searle St												
4	L2	152	5.0	0.121	6.0	LOS A	0.5	3.7	0.22	0.56	0.22	42.8
6	R2	14	5.0	0.121	7.2	LOS A	0.5	3.7	0.22	0.56	0.22	41.9
Approach		166	5.0	0.121	6.1	LOS A	0.5	3.7	0.22	0.56	0.22	42.7
North: Weaver St North												
7	L2	5	5.0	0.063	5.6	LOS A	0.0	0.0	0.00	0.03	0.00	53.4
8	T1	114	5.0	0.063	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	59.1
Approach		119	5.0	0.063	0.2	NA	0.0	0.0	0.00	0.03	0.00	58.8
All Vehicles		529	5.0	0.149	4.0	NA	0.8	5.5	0.18	0.37	0.18	45.8

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

MOVEMENT SUMMARY

Site: 101 [Ryde Aquatic Centre]

AM Projected Pool
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Margaret St South												
2	T1	42	5.0	0.064	0.2	LOS A	0.3	2.1	0.16	0.35	0.16	48.4
3	R2	68	5.0	0.064	5.7	LOS A	0.3	2.1	0.16	0.35	0.16	39.8
Approach		110	5.0	0.064	3.6	NA	0.3	2.1	0.16	0.35	0.16	43.0
East: RALC Drive												
4	L2	29	5.0	0.151	8.3	LOS A	0.6	4.1	0.17	0.93	0.17	35.2
6	R2	126	5.0	0.151	8.4	LOS A	0.6	4.1	0.17	0.93	0.17	35.2
Approach		155	5.0	0.151	8.4	LOS A	0.6	4.1	0.17	0.93	0.17	35.2
North: Margaret St North												
7	L2	37	5.0	0.035	5.6	LOS A	0.0	0.0	0.00	0.33	0.00	32.1
8	T1	28	5.0	0.035	0.0	LOS A	0.0	0.0	0.00	0.33	0.00	50.5
Approach		65	5.0	0.035	3.2	NA	0.0	0.0	0.00	0.33	0.00	38.4
All Vehicles		330	5.0	0.151	5.8	NA	0.6	4.1	0.13	0.62	0.13	38.2

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

MOVEMENT SUMMARY

Site: 101 [Ryde Aquatic Centre]

PM Projected Pool
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Margaret St South												
2	T1	22	5.0	0.070	0.2	LOS A	0.3	2.4	0.17	0.46	0.17	46.0
3	R2	95	5.0	0.070	5.7	LOS A	0.3	2.4	0.17	0.46	0.17	37.8
Approach		117	5.0	0.070	4.7	NA	0.3	2.4	0.17	0.46	0.17	39.4
East: RALC Drive												
4	L2	41	5.0	0.119	8.3	LOS A	0.4	3.2	0.16	0.93	0.16	35.2
6	R2	85	5.0	0.119	8.5	LOS A	0.4	3.2	0.16	0.93	0.16	35.2
Approach		126	5.0	0.119	8.4	LOS A	0.4	3.2	0.16	0.93	0.16	35.2
North: Margaret St North												
7	L2	29	5.0	0.036	5.6	LOS A	0.0	0.0	0.00	0.26	0.00	32.9
8	T1	38	5.0	0.036	0.0	LOS A	0.0	0.0	0.00	0.26	0.00	52.5
Approach		67	5.0	0.036	2.4	NA	0.0	0.0	0.00	0.26	0.00	42.2
All Vehicles		310	5.0	0.119	5.7	NA	0.4	3.2	0.13	0.61	0.13	38.1

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

MOVEMENT SUMMARY

Site: 101 [Ryde Aquatic Centre]

AM Projected Courts
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Margaret St South												
2	T1	42	5.0	0.068	0.2	LOS A	0.3	2.3	0.16	0.36	0.16	48.1
3	R2	75	5.0	0.068	5.7	LOS A	0.3	2.3	0.16	0.36	0.16	39.5
Approach		117	5.0	0.068	3.7	NA	0.3	2.3	0.16	0.36	0.16	42.5
East: RALC Drive												
4	L2	32	5.0	0.165	8.3	LOS A	0.6	4.5	0.17	0.94	0.17	35.1
6	R2	136	5.0	0.165	8.5	LOS A	0.6	4.5	0.17	0.94	0.17	35.2
Approach		168	5.0	0.165	8.5	LOS A	0.6	4.5	0.17	0.94	0.17	35.2
North: Margaret St North												
7	L2	40	5.0	0.037	5.6	LOS A	0.0	0.0	0.00	0.35	0.00	32.0
8	T1	28	5.0	0.037	0.0	LOS A	0.0	0.0	0.00	0.35	0.00	50.3
Approach		68	5.0	0.037	3.3	NA	0.0	0.0	0.00	0.35	0.00	37.9
All Vehicles		353	5.0	0.165	5.9	NA	0.6	4.5	0.13	0.63	0.13	37.9

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

MOVEMENT SUMMARY

Site: 101 [Ryde Aquatic Centre]

PM Projected Courts
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Margaret St South												
2	T1	22	5.0	0.076	0.2	LOS A	0.4	2.6	0.18	0.47	0.18	45.8
3	R2	105	5.0	0.076	5.7	LOS A	0.4	2.6	0.18	0.47	0.18	37.7
Approach		127	5.0	0.076	4.8	NA	0.4	2.6	0.18	0.47	0.18	39.0
East: RALC Drive												
4	L2	46	5.0	0.139	8.3	LOS A	0.5	3.8	0.16	0.93	0.16	35.1
6	R2	99	5.0	0.139	8.6	LOS A	0.5	3.8	0.16	0.93	0.16	35.1
Approach		145	5.0	0.139	8.5	LOS A	0.5	3.8	0.16	0.93	0.16	35.1
North: Margaret St North												
7	L2	34	5.0	0.039	5.6	LOS A	0.0	0.0	0.00	0.28	0.00	32.6
8	T1	38	5.0	0.039	0.0	LOS A	0.0	0.0	0.00	0.28	0.00	51.9
Approach		72	5.0	0.039	2.6	NA	0.0	0.0	0.00	0.28	0.00	41.0
All Vehicles		344	5.0	0.139	5.9	NA	0.5	3.8	0.13	0.62	0.13	37.7

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