Traffix Group

Amendment C444 and C453 to Greater Geelong Planning Scheme

Planning Panels Victoria

Date of Hearing: Commencing 14th April, 2026

Date of Statement: 7th April, 2026

Prepared for: Lara Farms Pty Ltd
Instructed by: Norton Rose Fulbright

STATEMENT TO THE PLANNING PANEL APPOINTED BY THE MINISTER FOR PLANNING IN RELATION TO AMENDMENT C444 AND C453 OF THE GREATER GEELONG PLANNING SCHEME BY LEIGH FURNESS, TRAFFIC ENGINEER

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1. Executive Summary

1 Amendments C444 and C453 have been prepared by City of Greater Geelong Council, which applies to the land at 76-156 Canterbury Road East, 785-805 Princes Highway, 705-765 Princes Highway, and 610 Rennie Street, Lara. Specifically:

- Amendment C444 applies to the land at 76-156 Canterbury Road East, 785-805 Princes Highway, 705-765 Princes Highway, Lara; and
- Amendment C453 applies to the land at 76-156 Canterbury Road East, 785-805 Princes Highway, 705-765 Princes Highway, and 610 Rennie Street, Lara.

2 This statement provides my assessment of the traffic engineering and transport planning aspects of the proposed Amendments C444 and C453 of the Greater Geelong Planning Scheme. My assessment has been completed independently as instructed by Norton Rose Fulbright on behalf of Lara Farms Pty Ltd.

3 The proposed amendments introduces the following changes:

- **Amendment C444**: rezone the land from the Farming Zone to General Residential Zone Schedule 1, apply the Development Plan Overlay Schedule 48 (DPO48) to the land, and apply an Environmental Audit Overlay (EAO) to part of the land.
- **Amendment C453**: rezone the land from the Farming Zone to Industrial 1 Zone and Industrial 3 Zone and apply the Design and Development Overlay Schedule 55 (DDO55) to the land.

4 The proposed Amendments C444 and C453 seek to facilitate a residential development and industrial (business park) development within the subject land in accordance with City of Geelong Council's strategic plans.

5 Traffix Group prepared a report supporting the proposed amendments (Ref: G37968R-02A, dated 18th March, 2026), which has been attached in Appendix A of this statement. I adopt the report as my primary evidence in support of the proposed amendments.

6 Having undertaken a detailed traffic engineering assessment of the proposed Amendments C444 and C453 at 176-156 Canterbury Road East, 785-805 Princes Highway, 705-765 Princes Highway, and 610 Rennie Street, Lara, I am of the opinion that:

a) A development of the land yielding 666 standard residential lots within the residentially zoned land and an industrial estate within the industrially zoned land can be accommodated by the surrounding road network, with some upgrades.

b) To accommodate the development traffic, the following mitigating works are required:

   i. The upgrade of the existing Canterbury Road East level crossing to include an active gated control to facilitate safe pedestrian and dismounted cyclist movements across the rail line (on the south side, the side of the development).

   ii. The provision of a short channelised right turn lane and a basic left turn treatment to be provided on Rennie Street at the Canterbury Road East/Rennie Street Intersection.

iii. The upgrade of Canterbury Road East to a connector style road, consistent with the balance of Canterbury Road East to the west of the rail line.

iv. Nasmyth Street should be closed, or attractiveness reduced such that local traffic is encouraged to head to the Avalon Road interchange via Archimedes Avenue.

c) The traffic generated by the rezoning of the land as part of proposed Amendments can be accommodated by the surrounding road network, with only minor impacts to the operation of key intersections.

d) Sensitivity analysis was undertaken in this regard for a higher traffic generation rate.

e) The indicative site access points are considered appropriate.

f) The surrounding bus network is able to be extended along Canterbury Road East. This would ensure the vast majority of future dwellings, industrial land use, and the potential regional sports reserve would be adequately serviced by public transport.

g) The site is well serviced by quality off-road bicycle trails to the east of the subject site and to the north-west of the subject site. Footpath/shared paths should be introduced along the site's northern frontage to Canterbury Road East and the north-eastern section of Rennie Street to provide pedestrians with a connection to the existing pedestrian infrastructure surrounding the site. A pedestrian connection should also be proposed to connect the proposed paths along the site's frontages to the Hovells Creek Trail, located at the east of the site.

h) I am satisfied with DPO48 and DDO55, however I do recommend that they are updated to reference the latest Traffic Impact Assessment, dated March, 2026.

i) There are no traffic engineering reasons why the proposed Amendments C444 and C453 at 176-156 Canterbury Road East, 785-805 Princes Highway, 705-765 Princes Highway, and 610 Rennie Street, Lara should not be approved.

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2. Introduction

7 The City of Greater Geelong has prepared Amendments C444 and C453. The amendments seek to facilitate urban development in accordance with the Lara Structure Plan (adopted April, 2011), specifically:

Amendment C444 (76-156 Canterbury Road East, 785-805 Princes Highway, 705-765 Princes Highway, Lara)

- rezone the site from Farming Zone (FZ) to General Residential Zone (GRZ) and to insert a new Schedule (Schedule 48) to Clause 43.04 Development Plan Overlay to the land affected by the amendment to guide future land use and development outcomes.

Amendment C453 (76-156 Canterbury Road East, 785-805 Princes Highway, 705-765 Princes Highway, and 610 Rennie Street, Lara)

- rezone the site from Farming Zone (FZ) to Industrial 1 Zone (IN1Z) and Industrial 3 Zone (IN3Z), as well as to insert a new Schedule (Schedule 55) to Clause 43.02 Design and Development Overlay to the land affected by the amendment to guide future land use and development outcomes.

8 I have been engaged by Norton Rose Fulbright on behalf of Lara Farms Pty Ltd to undertake a traffic engineering and transport assessment of the following lands that are subject to Amendments C444 and C453:

- 76-156 Canterbury Road East, Lara
- 785-805 Princes Highway, Lara
- 705-765 Princes Highway, Lara
- 610 Rennie Street, Lara

9 Traffix Group has prepared a Transport Impact Assessment for Amendments C444 and C453 (dated 18th March, 2026). I prepared that report and have adopt the report as my primary evidence in support of the proposed planning scheme amendment. A copy of this report is attached at Appendix A of this statement.

3. Statement of Witness

3.1. Qualifications and Experience

Name

10 Leigh Alan Furness

Position

11 Director, Traffix Group

Address

12 Level 28, 459 Collins Street, Melbourne 3000

Qualifications and Experience

13 My qualifications and membership of professional associations are as follows:

- Bachelor of Civil Engineering (honours), Monash University, Clayton
- Bachelor of Science, Monash University, Clayton
- Masters of Traffic, Monash University
- Member, Engineers Australia
- Member, Victorian Planning & Environmental Law Association

14 I have almost 20 years' experience as a Traffic Engineering and Transport Planning consultant with Traffix Group Pty Ltd. My experience also includes two local government appointments which involved acting in the role of a Traffic Engineer at the City of Frankston and City of Stonnington.

Area of Expertise

15 I have experience and expertise in traffic management, road safety planning and engineering, parking management and strategy development, and development impact assessment of a range of land-use developments.

3.2. Project Team

16 Kenneth Ewe (Traffic Engineer, Traffix Group) assisted with review and analysis of the material and the preparation of this statement.

3.3. Scope of Work

17 This report specifically reviews the traffic engineering implications of the proposed Amendments C444 and C453 to the Greater Geelong Planning Scheme. The Amendments seek to facilitate urban development in accordance with the Lara Structure Plan (adopted April, 2011).

18 I have been instructed by Norton Rose Fulbright on behalf of Lara Farms Pty Ltd to provide a traffic engineering and transport assessment of the lands that are subject to Amendments C444 and C453. My specific instructions are to:

1) *review of this memorandum and the background materials in your brief;*
2) *provision of your expert opinion in respect of the appropriateness of the proposed Amendments, having regard to relevant matters within the limits of your expertise;*
3) *preparation of an expert witness statement; and*
4) *appearance before the Panel to provide expert evidence.*

3.3.1. Key Tasks

19 The scope of my engagement has included the following tasks:

- review of the study area and the surrounding transportation network,
- review of supporting documentation and planning history,
- review of Council policies and other relevant documents,
- review of the traffic and parking impacts of the amendment, in particular the effect of increased development on the surrounding road network,
- review of and response to submissions, and
- preparation and giving of Expert Evidence in accordance with Planning Panels Victoria – Guide to Expert Evidence.

3.3.2. Experiments

20 I have visited the study area on Wednesday 4th February, 2026 to examine the local transport network and observe traffic activity within the study area.

3.3.3. Prior Involvement

21 Traffix Group was previously engaged by Lara Farms to prepare a traffic impact assessment residential rezoning component of this proposal (what became Amendment C444). I was the Director responsible for this project. This work was largely completed in 2024.

3.3.4. Reference Documents

22 The following key documents have been relied upon when preparing this report:

- Various exhibited amendment documentation and background reports related to Amendments C444 and C453.
- Relevant sections of the Greater Geelong Planning Scheme.
- Transport Impact Assessment, prepared by Traffix Group (G33105R-03C, dated November, 2024) prepared to support Amendment C444.
- Transport Impact Assessment, prepared by Ratio Consultants (version F01, dated 24th May, 2022) prepared to support Amendment C453.

- Planning Report, prepared by Tract (dated September, 2025), prepared to support Amendment C444.
- Planning Report, prepared by Tract (dated November, 2024), prepared to support Amendment C453.
- Illustrative Framework Plan, prepared by Tract (dated November, 2024).
- Infrastructure Design Manual (Version 5.60, dated 1st December, 2025).
- Lara Structure Plan, prepared by the City of Greater Geelong (adopted April, 2011).
- City of Greater Geelong Settlement Strategy (dated August, 2020).
- Lara Traffic Management Plan (2019-2029).
- The City of Greater Geelong Municipal Road Management Plan (Version 9.0, adopted 28th October, 2025).
- Railway Crossing Risk Assessment Report, prepared by Nelson-Furnell Pty Ltd (dated 29th March, 2026).
- City of Greater Geelong Council's Part A submission.

4. Proposal

23 The subject land is known as 76-156 Canterbury Road East, 705-765 Princes Highway, 785-805 Princes Highway & 610 Rennie Street, Lara (Amendments C444 and C453). The proposed amendments include the following:

Amendment C444 (76-156 Canterbury Road East, 785-805 Princes Highway, 705-765 Princes Highway, Lara)

- rezone the site from Farming Zone (FZ) to General Residential Zone (GRZ) and to insert a new Schedule (Schedule 48) to Clause 43.04 Development Plan Overlay to the land affected by the amendment to guide future land use and development outcomes.

Amendment C453 (76-156 Canterbury Road East, 785-805 Princes Highway, 705-765 Princes Highway, and 610 Rennie Street, Lara)

- rezone the site from Farming Zone (FZ) to Industrial 1 Zone (IN1Z) and Industrial 3 Zone (IN3Z), as well as to insert a new Schedule (Schedule 55) to Clause 43.02 Design and Development Overlay to the land affected by the amendment to guide future land use and development outcomes.

4.1. Amendment C444

4.1.1. Proposed Development Plan Overlay

24 The proposed schedule to the Development Plan Overlay (DPO48) details the following objectives to facilitate appropriate development of the site, with the traffic related objectives highlighted below:

- *To facilitate the orderly and integrated residential development of the area.*
- ***To create a safe and integrated road network that minimises road connections on to Canterbury Road East.***
- ***To provide a shared pathway network that establishes safe and interconnected walking and cycling routes that link to nearby destinations.***
- *To provide a liveable and sustainable urban environment inclusive of a range of lot sizes and housing types to meet diverse community needs, including affordable housing.*
- *To promote best practice storm water management and water quality treatment measures to protect and conserve biodiversity and waterways.*

25 Figure 1 of DPO48 is provided below.

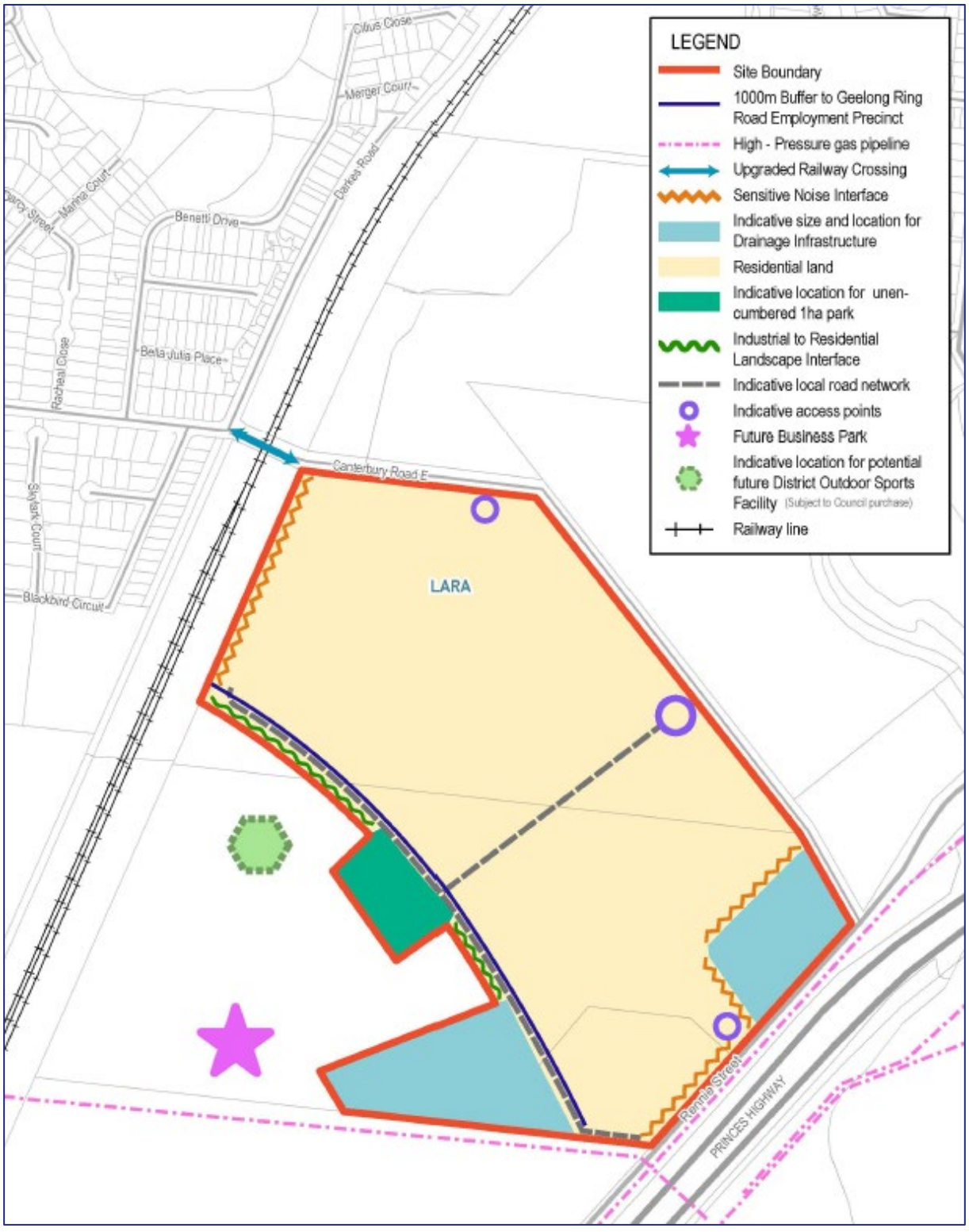


Figure 1: Draft DPO48 Figure 1

4.1.2. Proposed Development Overview

26 Subject to the proposed rezoning of the land as part of Amendment C444, the site could be developed to include the following:

- Indicative yield of 666 residential lots, which may ultimately include a proportion of medium density lots.
- An unencumbered public open space provided within the site.
- Drainage infrastructure located in the eastern corner of the site and within the southern portion of the site.
- Three vehicle access points to the external road network, with :
  - A primary vehicle access to Canterbury Road East, at the approximate mid-point of the site.
  - A secondary vehicle access to Canterbury Road East, approximately 200m east of the level crossing of the rail line.
  - A secondary vehicle access to Rennie Street, approximately 200m south-west of Canterbury Road East.
- A vehicle connection to the site to the south, which could provide access to a regional sports reserve.

4.1.3. Shared Path Connections

27 It is anticipated that a shared path connection or a walking trail can be provided:

- Along Canterbury Road East and Rennie Street.
- Along the edge of the rail line, the landscape interface and the retarding basin, adjacent to the southern boundary of the site.
- To the trails along Hovells Creek.

28 A Concept Framework Plan for the land subject to Amendment C444 has been prepared by Tract and is provided at Figure 2.

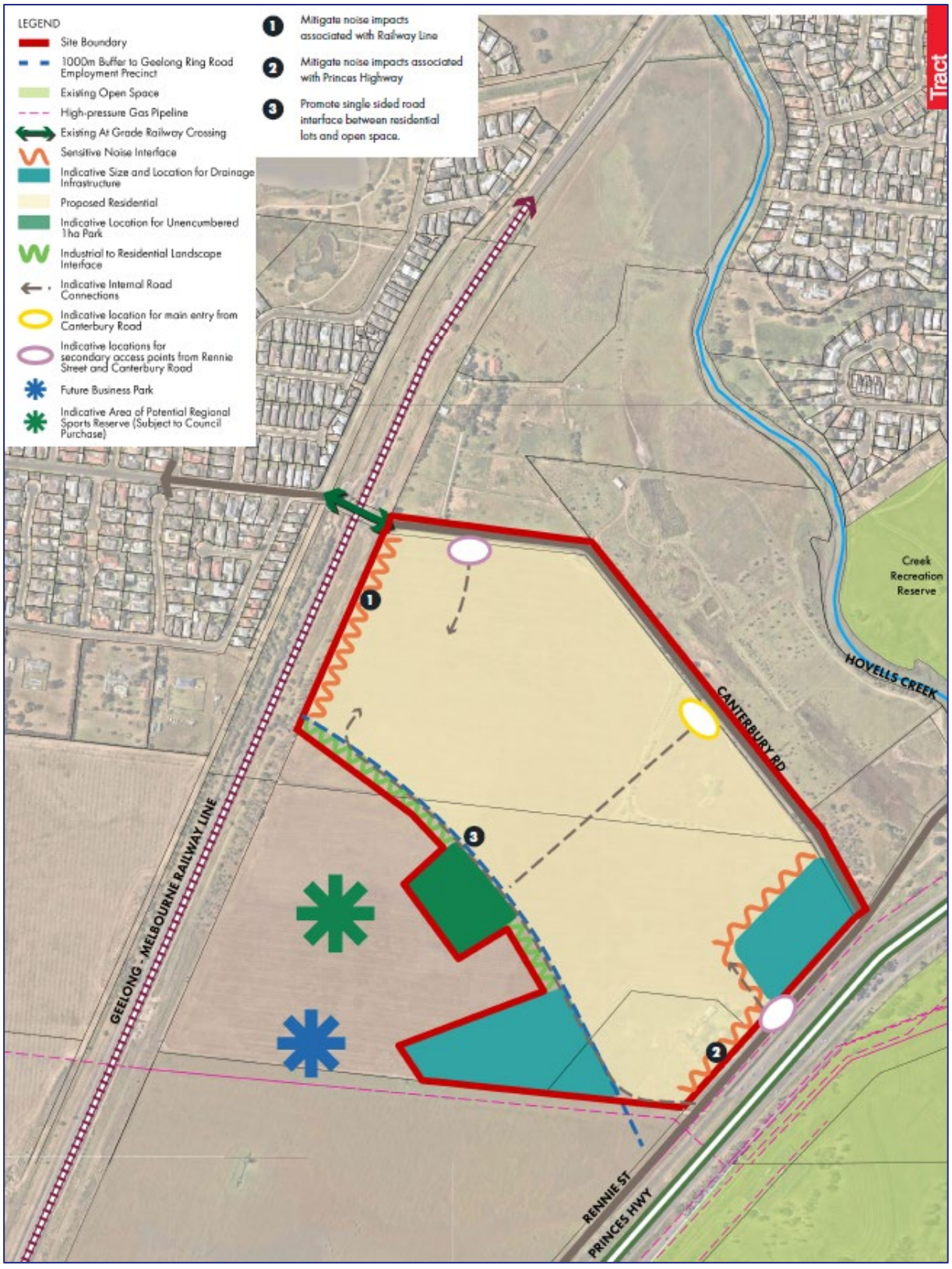


Figure 2: Amendment C444 - Residential Amendment Framework Plan (Tract - November, 2024)

4.2. Amendment C453

4.2.1. Proposed Development Plan Overlay

29 The proposed schedule to the Development Plan Overlay (DPO55) details the following objectives to facilitate appropriate development of the site, with the objectives highlighted below:

- *To facilitate commercial and industrial development that is efficient, functional and meets changing market demands.*
- *To ensure development achieves a high-quality, site responsive design that enhances visual amenity from major transport routes and surrounding non industrial land.*
- *To promote best practice stormwater quality, management and reuse measures that protect, and conserve biodiversity and waterway values of the Ramsar Wetlands and Hovells Creek.*

30 An extract of Figure 1 of the Draft DPO55 is provided below.

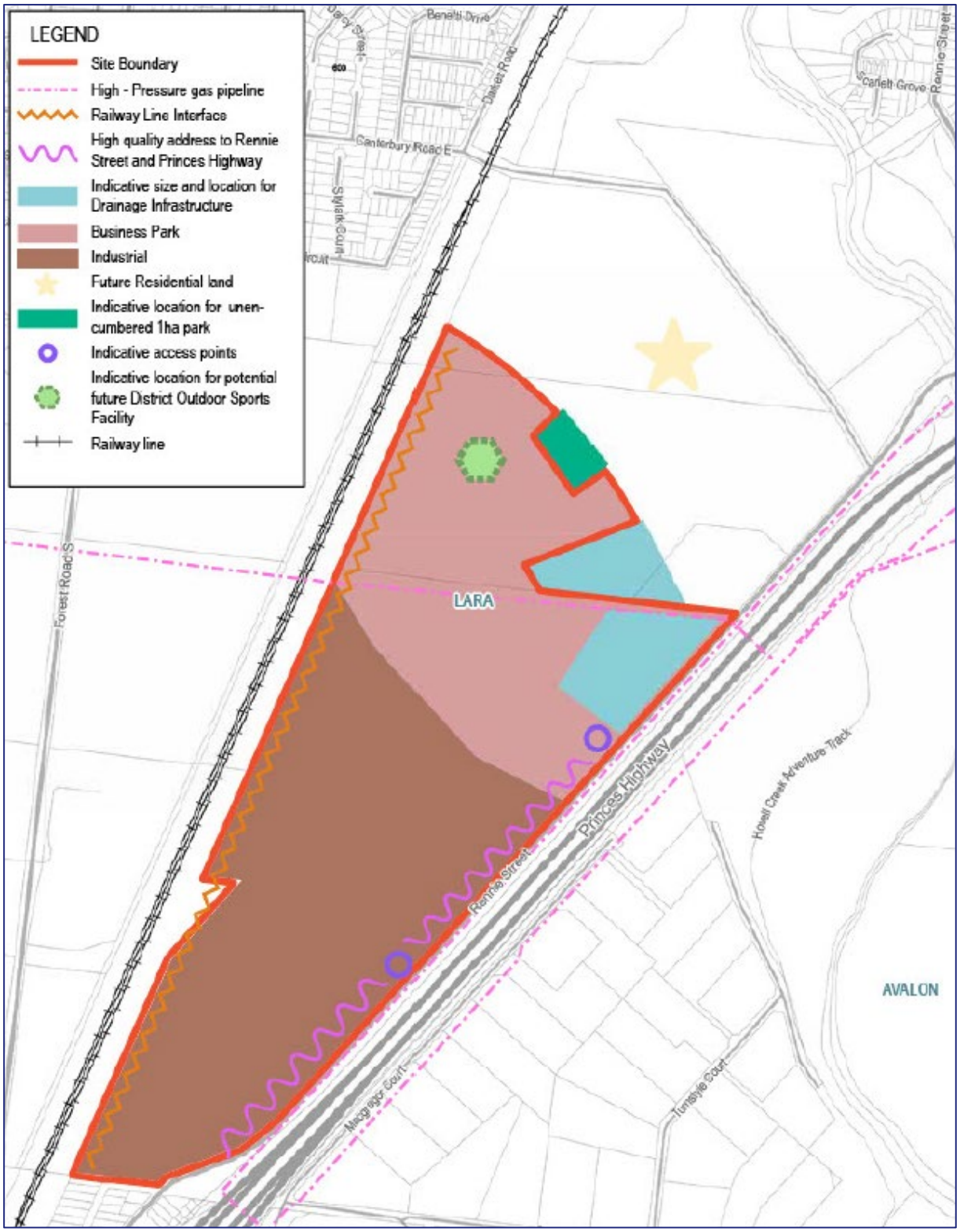


Figure 3: Extract of Draft DPO55 Figure 1

4.2.2. Proposed Development Overview

31 Subject to the proposed rezoning of the land as part of Amendment C453, the site could be developed to include a specialised activity centre and an employment centre within an approximate net developable area of 80.12ha across the overall site.

32 Three vehicle access points are proposed for the industrial component of the land to Rennie Street along the site's eastern boundary.

33 A Concept Framework Plan for the land subject to Amendment C453 has been prepared by Tract and is provided at Figure 4.

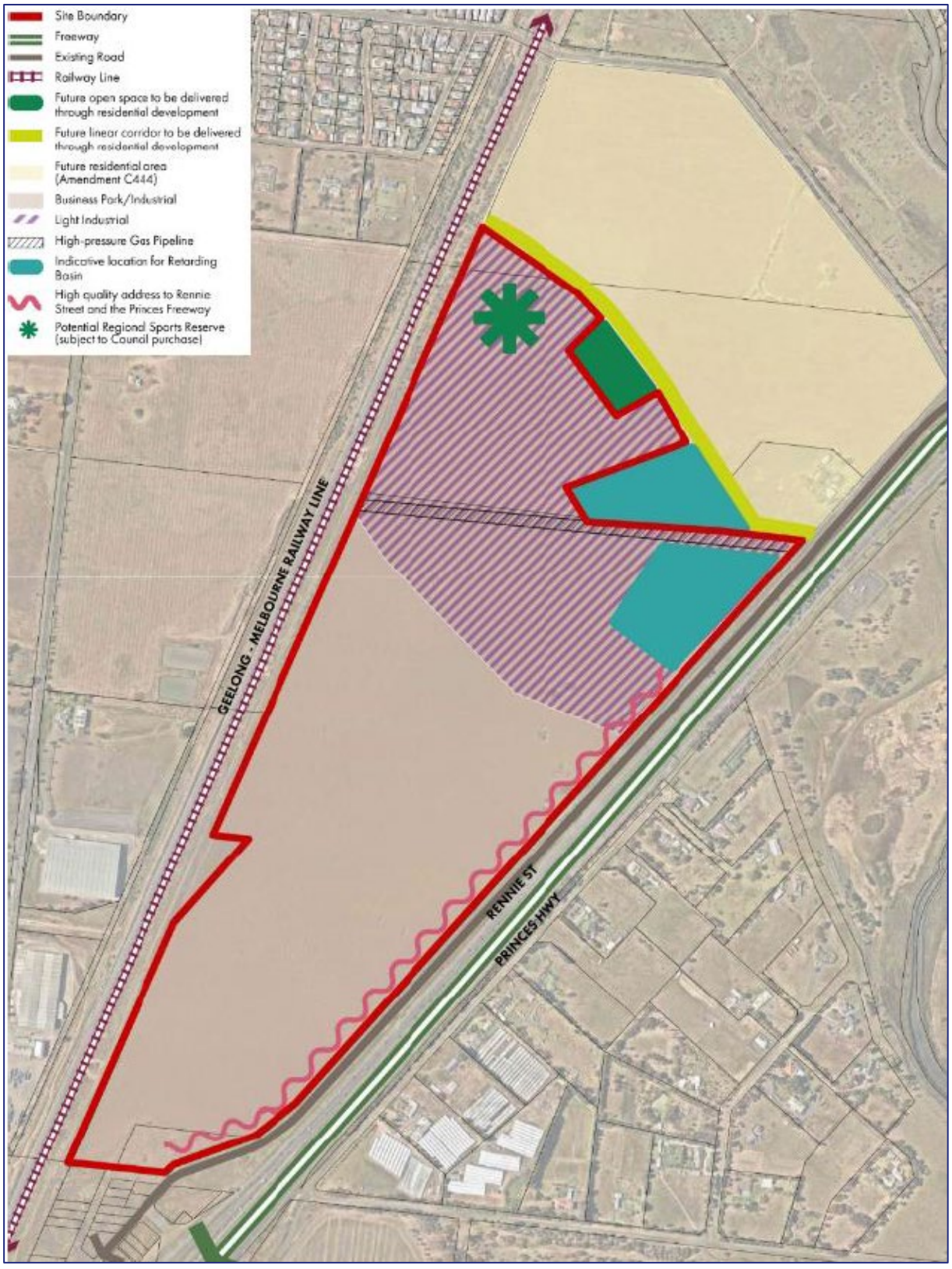


Figure 4: Amendment C453 - Industrial Amendment Concept Plan (Tract - November, 2024)

5. Summary of Opinions

34 Traffix Group prepared a report supporting the proposed Amendments C444 and C453 (Ref: G37968R-02A, dated 18th March, 2026). I adopt the report as my primary evidence in support of the proposed amendments.

35 A summary of my key opinions contained in that report are provided below.

5.1. Traffic Generation and Distribution

36 There are three main road links out of the immediate area which traffic generated from the development will be distributed to, namely:

- Rennie Street to the north
- Rennie Street to the south
- Canterbury Road East

5.1.1. Residential Development

37 The traffic generation rate for the residential dwellings have been adopted at 0.8 vehicle trips per dwelling per peak hour and 8 vehicle trips per dwelling per day.

38 I am satisfied that the above mentioned rates is appropriate for the residential dwellings as the rates are consistent (slightly higher) than the traffic generation rates set out within the Transport for New South Wales Guide (TfNSW) to Transport Impact Assessment (Version 1.1, dated 4th November, 2024) for regional areas.

39 Traffic generated from the residential development will be distributed in accordance a review of the Victorian Integrated Survey of Travel and Activity (VISTA) database, which revealed the following distribution as shown in Figure 5 below.

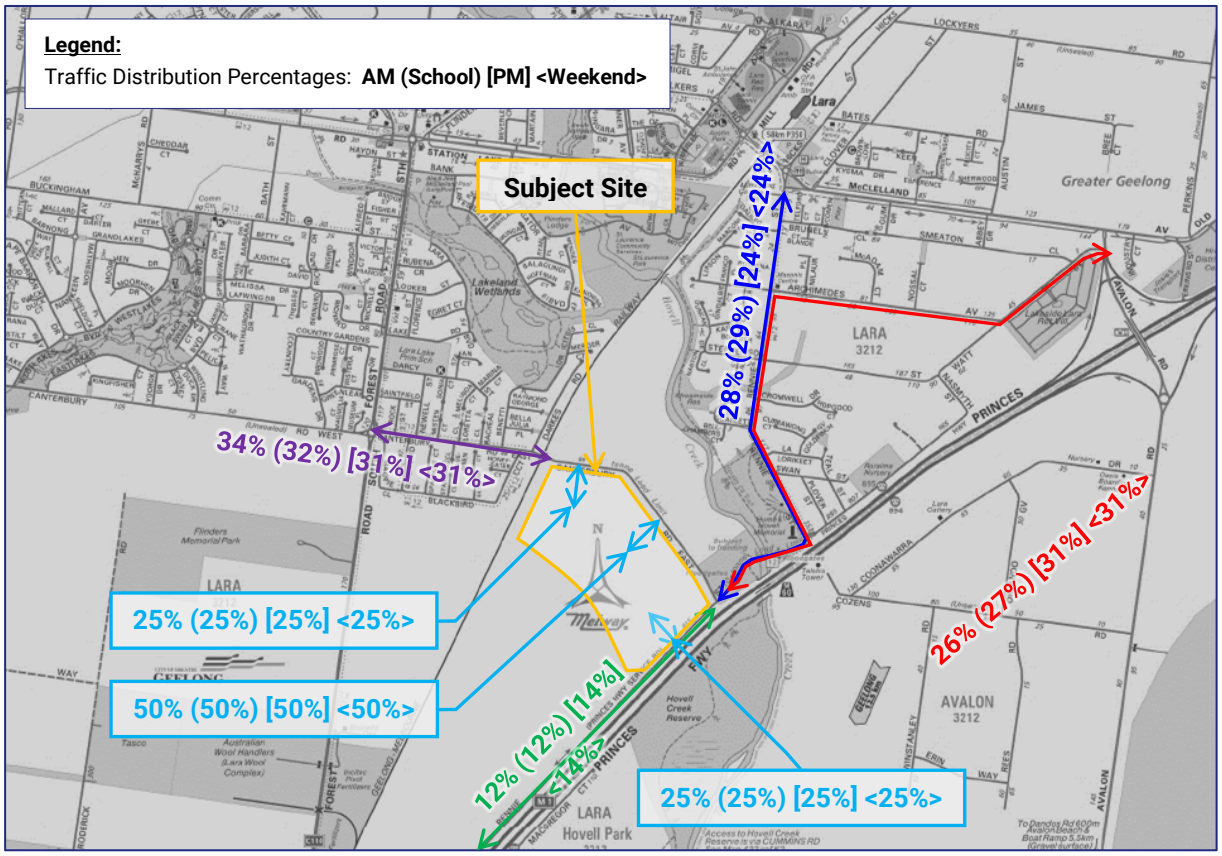


Figure 5: Peak Hour Traffic Distribution (Residential Component)

40 Following on conversations with City of Greater Geelong Council, I have distributed eastbound traffic to the Avalon Road interchange to Rennie Street and Archimedes Avenue instead of Nasmyth Street (as per the original assessment) given the constraints of Nasmyth Street with:

- its unsealed nature near Watt Street
- its low standard of construction, making it unsuitable to accommodate higher traffic volumes
- a significant gas pipeline under the road pavement that has minimal cover, making any upgrade problematic

41 Given that Archimedes Avenue has a 30m wide road reserve with clear traffic lane each way and accommodates a bus route, I am satisfied that it be a logical route for residents wanting to travel eastbound to the Avalon Road interchange.

42 Given that Nasmyth Street is only being able to accommodate limited traffic in Council's view, Council will adopt traffic management measures, or a mid-block road closure to Nasmyth Street to make this route unattractive by through traffic.

5.1.2. Industrial Development

43 The updated TfNSW guide (2024) includes traffic generation rates for large format warehouses, which has been adopted for the industrial development as it will most likely be the predominant use of the industrial land.

44 The industrial development traffic has been separated into heavy vehicles and light (passenger) vehicles, with approximately 20% of traffic generated by the industrial land use is heavy vehicles, which reduces to approximately 10% during peak periods, primarily light to medium rigid trucks.

Light (Passenger) Vehicles

45 Traffic for passenger vehicles generated by the proposed industrial development are based on the Residential Location of Local Workers data from the ABS Census undertaken in 2021, where majority of workers within the City of Greater Geelong LGA live and work in the area (81.8%).

46 The traffic distribution for passenger vehicles of the industrial development is shown in Figure 6 below.

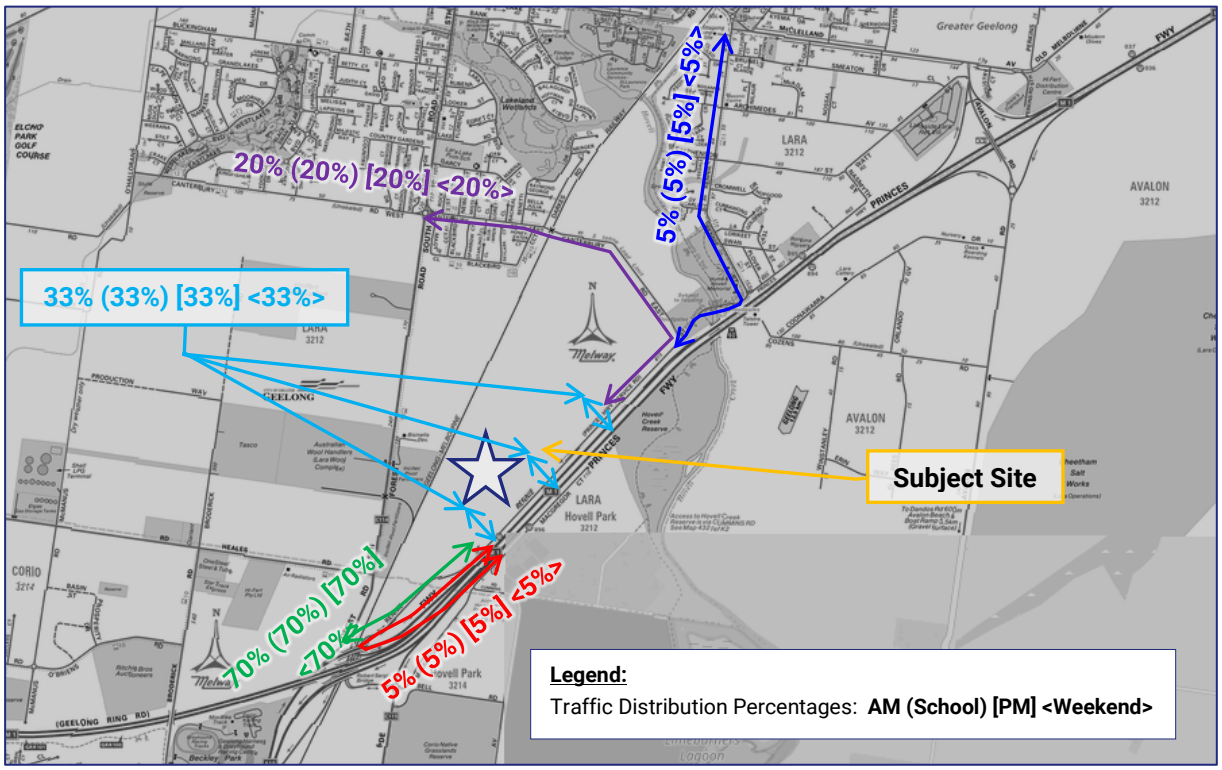


Figure 6: Peak Hour Traffic Distribution (Industrial Component – Light Vehicles)

Heavy Vehicles

47 I have adopted the traffic distribution where all heavy vehicles will travel southbound to Princes Freeway to access Melbourne and via Shell Parade to access Geelong Port Precinct.

48 Heavy vehicles will not access Princes Freeway via Nasmyth Street or Rennie Street via McClelland Avenue as:

- These routes are comparatively much more circuitous
- Section of Rennie Street between Nasmyth Street and Canterbury Road East subject to a 10-tonne load limit

49 Figure 7 below illustrates the distribution of heavy traffic generated by the industrial component.

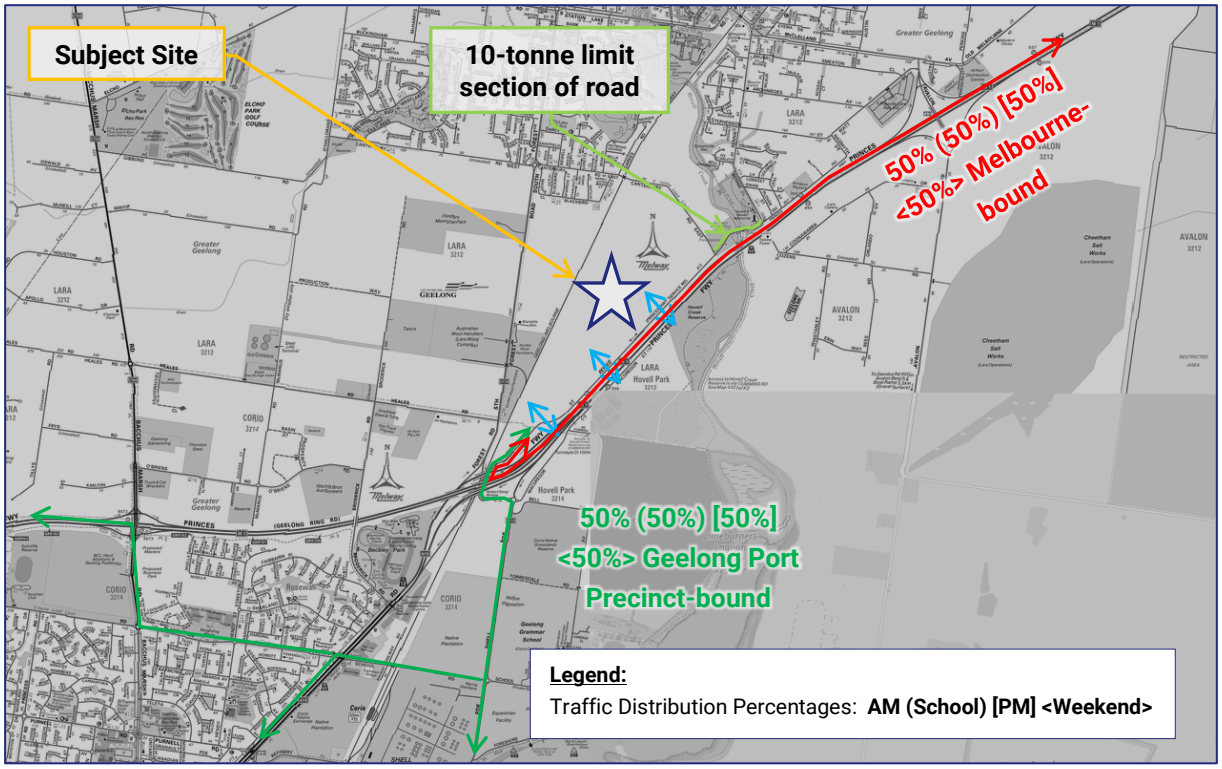


Figure 7: Peak Hour Traffic Distribution (Industrial Component – Heavy Vehicles)

5.1.3. Regional Sports Reserve

50 I understand that Council is potentially seeking to acquire part of the industrial development land affected by Amendment C453 for the delivery of a regional sports reserve.

51 Vehicular access to the regional sports reserve will be provided through the subject land (i.e. a connection between Canterbury Road East and the regional sports reserve and to Rennie Street through the proposed industrial precinct.

52 It is anticipated that the regional sports reserve will serve the Greater Lara area, including the residential dwellings proposed on-site.

53 A first principles assessment has been undertaken to review the anticipated number of players, officials and spectators across each of the proposed sports fields and courts.

54 Figure 8 below illustrates the distribution of the traffic generated by the Sports Reserve.

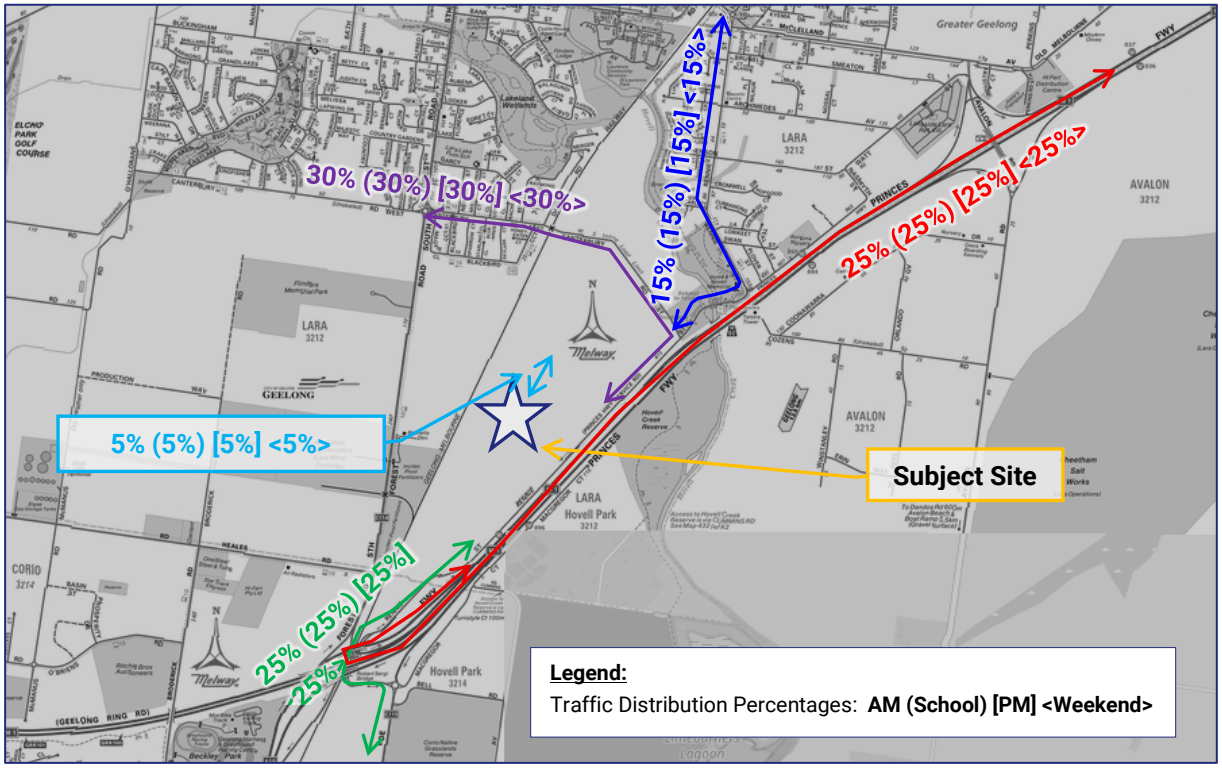


Figure 8: Peak Hour Traffic Distribution (Regional Sports Reserve)

55 The assessment of the sports reverse was very conservative as no deduction was made for lost industrial development area.

5.2. Traffic Analysis

56 SIDRA 9.1 has been used to assess the performance of each of the relevant intersections within the surrounding road network, based on the post-development traffic volumes under the different scenarios in comparison to the traffic volumes under existing conditions.

57 When undertaking the analysis of the different scenarios, the traffic distribution as detailed in the sections above remained the same.

58 Under **Existing Conditions**, all of the intersections analysed operate under Level of Service (LoS) A ('Excellent') with minimal delays and queues across each of the peak periods, except for the Forest Road South/Canterbury Road East/Canterbury Road West roundabout, which operates at a LoS B ('Very Good') during the school peak period.

59 Based on the **post-development traffic volumes of the residential and industrial components** as a result of the proposed amendments, all of the intersections analysed continues to operate under Level of Service (LoS) A ('Excellent') with minimal delays and queues across each of the peak periods, except for the Forest Road South/Canterbury Road East/Canterbury Road West roundabout, which operates at a LoS C ('Good') during the school and PM peak period.

60 A scenario was also investigated which considers the **northern land parcel located at 95 & 101-145 Canterbury Road East, Lara** (not part of the proposed amendments) in addition to the post-development traffic volumes. The results of this scenario provided similar results to the previous analysis with all of the intersections analysed continues to operate under Level of Service (LoS) A ('Excellent') with minimal delays and queues across each of the peak periods, except for the Forest Road South/Canterbury Road East/Canterbury Road West roundabout, which operates at a LoS C ('Good') during the school and PM peak period.

61 To undertake a more conservative assessment, the same assessment was undertaken with the **post-development traffic volumes of the residential and industrial components** and the **northern land parcel located at 95 & 101-145 Canterbury Road East, Lara**, but with a **higher traffic generation rate** for the residential dwellings (1 vehicle trips per dwelling per peak hour and 10 vehicle trips per dwelling per day). All of the intersections analysed continues to operate under Level of Service (LoS) A ('Excellent') with minimal delays and queues across each of the peak periods, except for the Forest Road South/Canterbury Road East/Canterbury Road West roundabout, which operates at a LoS B ('Very Good') during the AM peak period and LoS C ('Good') during the school and PM peak period.

62 A consolidated assessment of the **residential dwellings, industrial development and the regional sports reserve** was also undertaken. The results of this analysis indicated that all of the intersections analysed continues to operate under Level of Service (LoS) A ('Excellent') with minimal delays and queues across each of the peak periods, except for the Forest Road South/Canterbury Road East/Canterbury Road West roundabout, which operates at a LoS C ('Good') during the school and PM peak period.

63 I have not deducted the area of the regional sports reserve from the industrial land when undertaking the traffic analysis of the traffic impacts resulted from the consolidated development, which provides a more conservative assessment.

64 Accordingly, the above indicates that the impact of the Regional Sports Reserve will not fundamentally change the impact to the wider area compared with the development of the subject site in isolation.

65 The mid-block weekday daily traffic volumes of the consolidated development (residential dwellings, industrial development and regional sports reserve) at each of the roads analysed is shown in Figure 9 below.

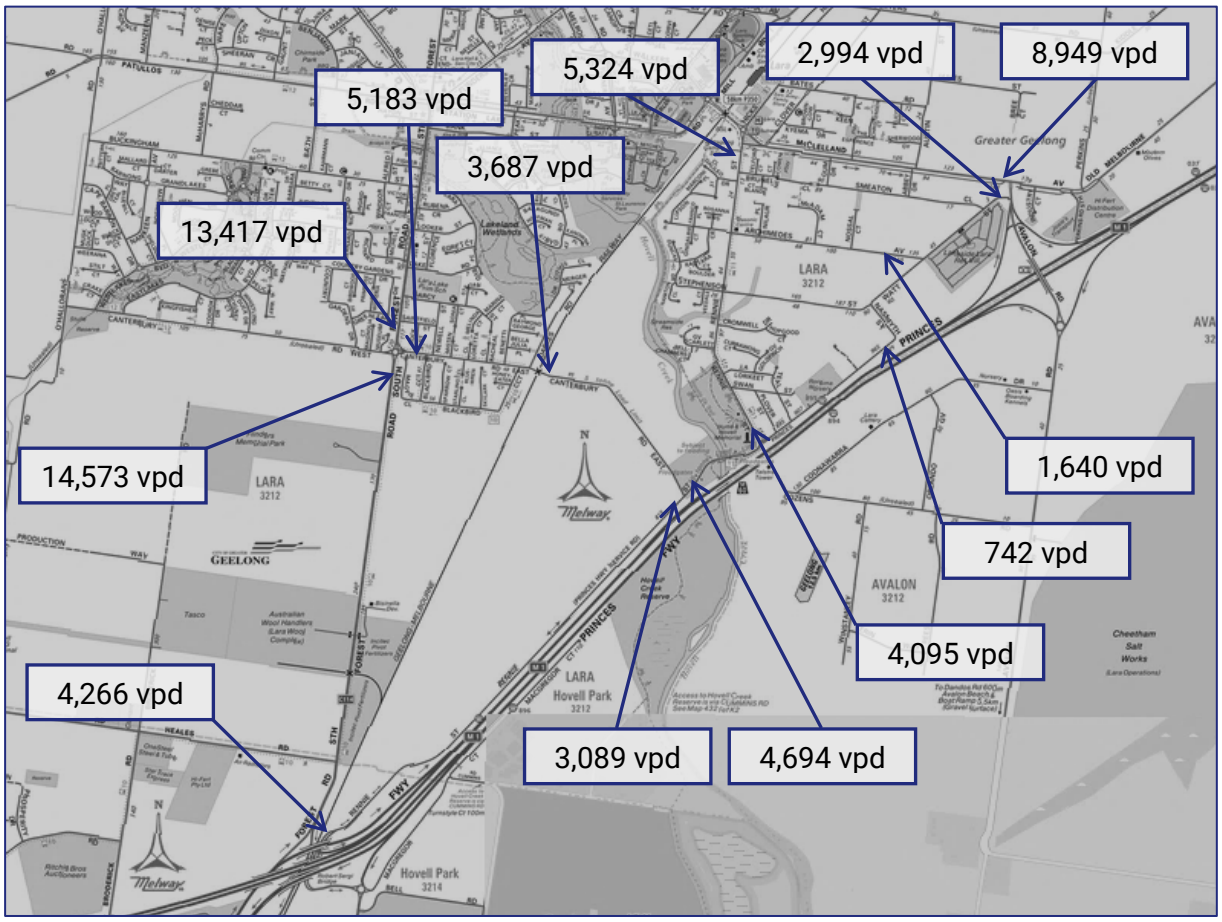


Figure 9: Post Development (including Sports Precinct) Weekday Daily Average (Two-Way Volumes)

66 The following Table 1 sets out the relative increase in traffic volumes of these roads and compares to the target traffic volumes set out within the Greater Geelong Road Management Plan.

Table 1: Daily Traffic Volumes and Road Characteristic Volume – Full Development of Site and Sports Precinct

Road Name	Location	Classification	Recorded Weekday Average (vpd)	Key Characteristic Volume[1] (vpd)	Within Characteristic Volume?
Canterbury Road East	East of Train Line	Category 2 – Local Access – Urban	3,687	1,000 – 2,000	**No**
Canterbury Road East	East of Forest Road South	Category 3 – Secondary Distributor	5,183	3,000-5,000	**No**
Forest Road South	North of Canterbury Road East	Transport Zone 2	13,417	<18,000[2]	Yes
	South of Canterbury Road East		14,573		Yes
Rennie Street	North of Canterbury Road East	Category 3 – Collector Road Rural	4,694	3,000-5,000[3]	Yes
	South of Canterbury Road East		3,089		Yes
	North of Princes Freeway On-Ramp		4,266		Yes
	South of McClelland Avenue	Category 3 – Secondary Distributor	5,324	3,000-5,000	**No**
	North of Nasmyth Street		4,095		Yes
Nasmyth Street	Southwest of Bend	Category 2 – Local Access – Urban	742	<2,000	Yes
Archimedes Avenue	West of Watt Street	Category 2 – Local Access – Urban	1,640	<2,000	Yes
Watt Street	West of Avalon Road	Category 3 – Collector Road Rural	2,994	3,000-5,000[3]	Yes
McClelland Avenue	West of Avalon Road	Category 4 – Main Distributor – Urban & Transport Zone 3	8,949	5,000-10,000	Yes

Notes:
1. The previous version of The City of Greater Geelong Municipal Road Management Plan (dated 25th May, 2021) included key characteristic volumes for the different type of roads under Attachment 1. However, it has been removed within the latest version of the plan (Version 9.0, adopted 28th October, 2025).
2. It is generally accepted that a traffic volume of less than 18,000 vehicles per day is acceptable for an arterial road with one lane in each direction. Beyond this threshold, duplication would be considered.
3. Not specifically stated in the Road Management Plan. However, have assumed based on other Category 3 roads.

67 Based on the above, each of the key roads which would facilitate vehicle access to the subject land are currently within their environmental capacities, except the section of Canterbury Road East, east of the railway line and east of Forest Road South, as well as Rennie Street, south of McClelland Avenue, which slightly exceed its characteristic volume.

68 Under Council's Road Management Plan Category 3 – Secondary Distributor roads have a key characteristic volume of 3,000-5,000 vehicles per day. However, under Clause 56.06 of the Planning Scheme, a road such as this would be classed as a Connector Street - Level 2, which would have an indicative maximum traffic volume for a 24-hour period of 3,000-7,000 vehicles per day.

69 In the case of Canterbury Road East, east of train line, this road would be upgraded to a Category 3 – Secondary Distributor road standard, consistent with the balance of Canterbury Road East, west of the train line. Accordingly, the anticipated traffic volume to be carried by this section of Canterbury Road East is acceptable in the context of this upgrade.

70 Similarly, Rennie Street, south of McClelland Avenue will not exceed its characteristic volume of 3,000-7,000 vehicles per day under Clause 56.06 of the Planning Scheme.

5.3. Avalon Road/Princes Freeway Interchange

71 A SIDRA analysis of the intersections along Avalon Road, including Avalon Road/McClelland Avenue intersection, Avalon Road/Watt Street intersection, and Avalon Road/Princes Freeway Interchange were analysed under a growth scenario (10 years into the future with a traffic growth rate of 2%), which considered the consolidated assessment of the residential dwellings, industrial development and the regional sports reserve.

72 The SIDRA analysis results revealed that all of the above mentioned intersections still operates under Los A ('Excellent') and LoS B ('Very Good') conditions across each of the peak periods.

73 Given that all traffic queues within each traffic lane that are generated post-development are shorter than the distances between each intersection, I am satisfied that SIDRA Network modelling is not required.

74 I am satisfied that no mitigating works are required to the interchange because of this amendment.

75 Comparing the level of traffic anticipated to be generated as a result of this proposed amendment of 2,994 vehicles per day to the Greater Avalon Employment Precinct (GAEP) of 16,900-19,100 vehicles per day, indicates that the traffic generated by the GAEP is approximately 10 times of the traffic generated by the proposed amendment through the Avalon Road interchange. It is the development of this precinct that will trigger the need for an upgrade of this interchange.

5.4. Canterbury Road East Railway Crossing

76 The level of vehicular traffic crossing the existing level crossing along Canterbury Road East will increase as a result of the proposed rezoning application as part of the amendments.

77 The post-development traffic conditions inclusive of the regional sports reserve represents the maximum anticipated increase in traffic that will be traversing across the existing Canterbury Road East Railway Crossing at 3,687 vehicle movements per day, increased from the existing traffic volumes of 2,127 vehicle movements per day.

78 I am satisfied with the operations of the Canterbury Road East railway crossing from a road safety perspective considering the anticipated traffic increase across the road. This intersection:

- Is located on a relatively straight section of Canterbury Road East and is readily seen by approaching drivers.
- Traffic at the crossing is controlled by flashing lights and boom gates on both sides of the railway crossing.
- There are no major intersections in the vicinity of the railway crossing and there will be no spillback of queued traffic across the railway line.

79 My assessment has recommended that a controlled pedestrian crossing be provided of the rail line (on the south side) to facilitate safe pedestrian and cyclist movements across the rail line.

80 An Australian Level Crossing Assessment Model (ALCAM) as part of a Railway Crossing Risk Assessment Report was undertaken for the Canterbury Road East level crossing by Nelson-Furnell Pty Ltd (dated 29th March, 2026). I note that this assessment concluded that the existing road crossing controls and environment are adequate for the level of traffic increase anticipated by the proposed amendments.

81 The findings of that report have indicated similar views to myself, being satisfied that from a traffic engineering perspective that this crossing is safe and fit for purpose as, noting that '*there are no significant factors related to the road environment, nearby intersections or other control points which might lead to vehicle congestion in the vicinity of the crossing, even with the proposed traffic increase*.'

5.5. Hovells Creek Floodway

82 I understand that the section of Rennie Street between Canterbury Road East and Nasmyth Street will be closed once or twice per year due to flooding of Hovells Creek for between 1-3 days. It therefore affects one of the three routes into/out of the precinct.

83 Based on the traffic distribution as detailed in Section 5.1, only vehicles travelling northbound (to Central Lara) and eastbound (to Princes Freeway) are temporarily affected.

84 I am satisfied that eastbound movements to Princes Freeway can be diverted to Rennie Street interchange in the south and northbound movements which only represent approximately 24% - 29% of the development traffic, which can be accommodated via Canterbury Road East as shown in Figure 10 below.

85 Given that this is an event that only occurs once or twice per year on average, I am satisfied that the additional traffic can be sufficiently accommodated.

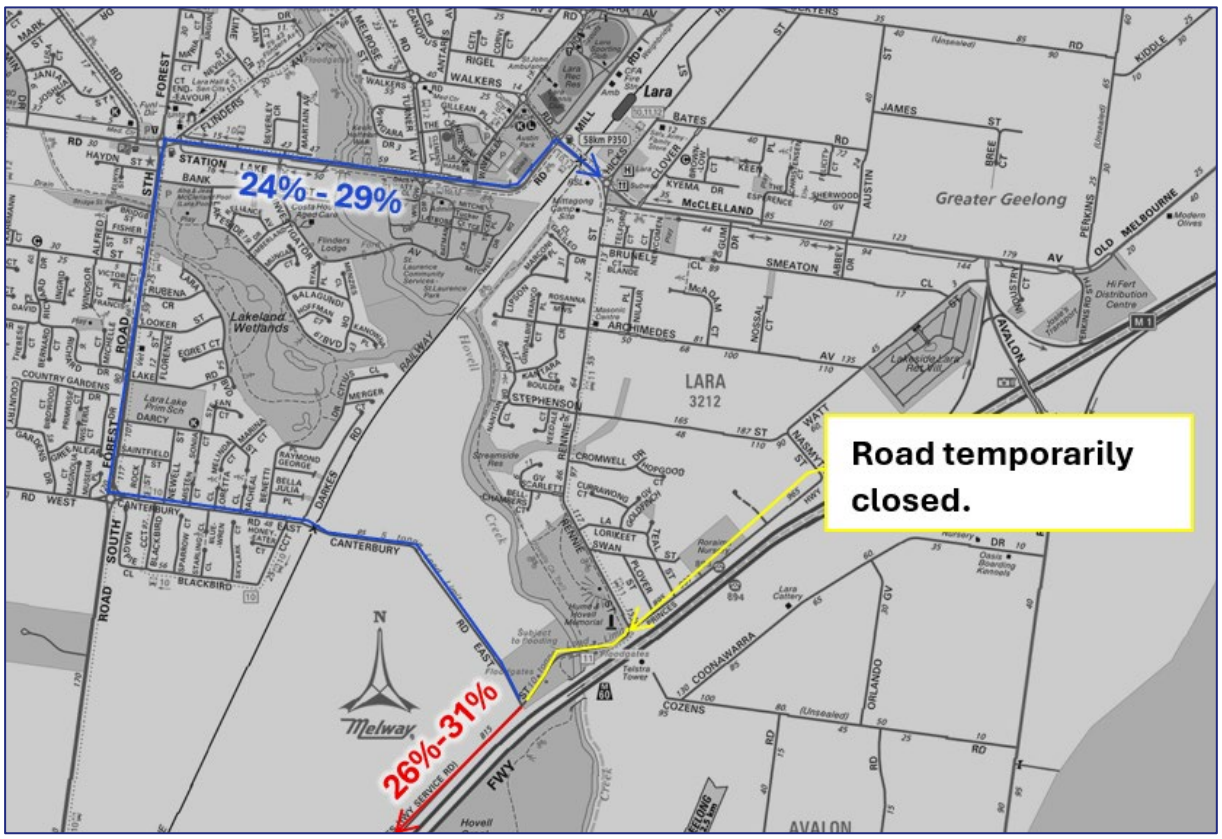


Figure 10: Traffic Diversion due to Rennie Street Closure

6. Review of DPO and DDO

86 The following section reviews these two key planning controls.

- Schedule 48 to Clause 43.04 Development Plan Overlay (DPO48) which is part of Amendment C444.
- Schedule 55 to Clause 43.02 Design and Development Overlay (DDO55), which is part of Amendment C452.

I have also included my response to DTP's suggested changes to the DPO and DDO, where appropriate.

6.1. Review of DPO48

87 My review and response to DPO48 is set out in the table below. I have also included a response to DTP's version of this control, as set out in their submission.

Table 2: Response to DPO48

DPO Traffic Response	Response
1.0 Objectives • *To facilitate the orderly and integrated residential development of the area.* • *To create a safe and integrated road network that minimises road connections on to Canterbury Road East.* • *To provide a shared pathway network that establishes safe and interconnected walking and cycling routes that link to nearby destinations.*	I have no concerns with these objectives.
4.0 Requirements for development plan *An **Urban Design Masterplan** that includes:* • *A pedestrian and bicycle network plan showing shared paths that are well connected to nearby destinations including adjoining residential land and the Hovells Creek Public Recreation Reserve as determined by the Road Network and Traffic Management Plan.* • *A cross section for the "Industrial to Residential Landscape Interface" which provides a 3 metre landscaped verge between residential development and industrial precincts. This does not apply to areas where the park or drainage basin interfaces between the two precincts.*	I have no concerns with the Urban Design Masterplan requirements that relate to transport matters. DTP in their submission added these requirements to the Urban Design Masterplan: *Identification of land required for future upgrades of the Canterbury Road East level crossing.* *A pedestrian and bicycle network plan showing shared paths that are well connected to nearby destinations including adjoining residential land and the Hovells Creek Public Recreation Reserve as determined by the Road Network and Traffic Management Plan. Conflicts between pedestrian/bicycle networks and*

DPO Traffic Response	Response
	general traffic across the developable area must be minimized as much as possible. *A network of bus-capable roads that enable convenient access to the regional sports facility and other key sites.* I don't have a concern with additions to the pedestrian/cycling network or the bus network, although consideration should be given to placing these in the traffic section (see below). The level crossing does not require an upgrade, aside from a controlled pedestrian crossing on the south side. This control as worded is open ended as to the upgrade required and in an extreme case could mean grade separation, which is not the responsibility of the developer of this land. If it is to be included, it should reference "*Identification of land required for the provision of a controlled, at-grade pedestrian crossing on the south side of Canterbury Road East level crossing."*
*A **Road Network and Traffic Management Plan** that has regard to the Traffic Impact Assessment G33105R-03B prepared by Traffix Group dated November 2024 and includes:* • *An internal road network with a high level of access for all vehicular and non-vehicular traffic and which responds to the topography.* • *Details of all necessary upgrades to the surrounding road network to urban standards including any required upgraded intersection treatments or level crossings informed by a Traffic Impact Assessment.* • *Identification of locations where separate paths for pedestrians and cyclists are required to connect to the wider movement network including along Canterbury Road East.* • *The provisions of safe egress routes during a 1% AEP flood event.*	I recommend updating the reference to the latest TIA: • has regard to the *Traffic Impact Assessment – 76-156 Canterbury Road East, 705-765 Princes Highway, 785-805 Princes Highway & 610 Rennie Street, Lara (C444ggee and C453ggee) by Traffix Group, dated March 2026* Aside from this change, I am satisfied with all other requirements. DTP added this requirement in its submission: *Identification of any land required for future upgrades of the Canterbury Road East level crossing.* The ALCAM assessment identified that the level crossing is fit for purpose in its

DPO Traffic Response	Response
	current form (aside from needing a pedestrian crossing point). As per my response above, this point should be narrowed to the pedestrian crossing upgrade only.

6.2. Review of DDO55

88 My review and response to DDO55 is set out in the table below. I have also included a response to DTP's version of this control, as set out in their submission.

Table 3: Response to DDO55

DDO Responding to Traffic	Response
2.0 Buildings and Works ***Car parking and Access*** • *Avoid potential conflict between pedestrian and vehicle movements including through provision of pedestrian links through car parking areas.* • *Car parking should be provided at the front of the site.* • *All vehicle crossings, accessways and parking areas should be sealed with an all weather coat.* • *Lighting should be provided to car parking areas where relevant.* • *If more than 10 car spaces are provided the design should incorporate landscaped island beds to break up the hard surface area and improve visual amenity.*	I have no concerns with these requirements.
3.0 Subdivision **Traffic and Pedestrian Movements** • Subdivision design should provide a movement network that: • has regard to the *Traffic Impact Assessment – Proposed Rezoning by Ratio (705-765 Princes Highway, 710 Rennie Stret & 76-156 Canterbury Road East, Lara) – dated 31 October 2024* • or an alternative Traffic Impact Assessment approved by the Responsible Authority.	I recommend changing the reference to the Ratio TIA to: • has regard to the *Traffic Impact Assessment – 76-156 Canterbury Road East, 705-765 Princes Highway, 785-805 Princes Highway & 610 Rennie Street, Lara (C444ggee and C453ggee) by Traffix Group, dated March 2026* Aside from this change, I am satisfied with all other requirements.

DDO Responding to Traffic	Response
• minimises the number of road crossings of the high pressure gas pipeline and ensure they are at 90 degrees to the pipeline. • promotes a high degree of internal permeability including the provision of at least two entry roads off Rennie Street. • prevents vehicle connection to the future residential land to the north. • delivers road widths and cross-sections that are suitable for industrial vehicle movements and consistent with the Infrastructure Design Manual. • provides an integrated network of safe and convenient footpaths on both sides of every street. • provides shared pathways to facilitate future active transport connections between the future residential area and park as well as connecting the business park to the surrounding shared trail network, particularly the Hovells Creek Shared Path and any future shared path and/or bike lane along Canterbury Road East.	DTP in their submission added this requirement to **'General'** requirements: *Subdivision sequencing should support the early delivery of public and active transport infrastructure.* Whilst I don't have an issue with this control, in reality the primary public transport and active infrastructure link for the industrial land is Rennie Street and the internal subdivision will not impact this link. At **Traffic and Pedestrian Movements** DTP added: *provides a network of bus-capable roads that enable convenient access to the regional sports facility and other key sites.* I don't have a concern with this requirement.

7. Review of Submissions

89 The following tables provides a summary response to each submission made in relation to transport planning matters for both of the proposed planning scheme amendments (Amendments C444 and C453).

90 Where the submission number is not identified, this is due to the submitter either being in support of the amendments, including any specific transport related items or there were no specific transport related matters raised within the submissions.

7.1. Submissions for Amendment C444

Table 4: Review and Responses to Submissions for Amendment C444

Sub No.	Issue	Response
2, 8, 19	The section of Rennie Street which forms the Hovells Creek Floodway, will be closed in both directions along Rennie Street, resulting Rennie Street to be disconnected when there is significant rainfall. As a result, there will be an increase in traffic flow in other roads resulting from the residential component of the proposed development, where vehicles wanting to access the town centre of Lara or Lara Railway Station will use Canterbury Road East and then Forest Road and vehicles wanting to access Geelong will use Rennie Street and Shell Parade.	There are three road links out of the immediate area: • Rennie Street to the north, • Rennie Street to the south, and • Canterbury Road East. Closing Rennie Street to the north only impacts one of the three links. This event is temporary. In an event where Rennie Street is closed due to the impacts of flooding of Hovells Creek, only vehicles wanting to travel northbound (to central Lara) and eastbound (to the Princes Freeway) will be affected (only residential dwellings and light vehicles from industrial development). All vehicles wanting to travel to Princes Freeway can travel south and utilise the Princes Freeway on-ramp via the Rennie Street intersection and only northbound movements will have to be diverted westbound past the railway crossing before continuing north. As detailed in the Traffic Impact Assessment previously undertaken by my office, northbound movements represent approximately 24% - 29% of the total traffic during each peak hour (or between 52-109 vehicles per peak hour), which can be sufficiently accommodated along Canterbury Road East, with the anticipated volumes still being under the characteristic volumes of 7,000 vpd (6,157 vpd) east of the railway line. Given that this is an event that only occurs once or twice per year on average, I am satisfied that the additional traffic can be sufficiently accommodated.

Sub No.	Issue	Response
2	The speed limit along Rennie Street, west of Shell Parade is posted at 80km/h, and reduces to 60km/h near the bend. The posted speed limit of 80km/h poses a safety risk, specifically to residents who enter/exit their driveway onto Rennie Street.	This is a matter to be investigated by Council given Rennie Street is a Council managed road. However, a Road Safety Review of CrashStats has been undertaken as part of the Traffic Impact Assessment completed by my office (dated 18th March, 2026), which showed that there has only been 1 casualty crash that has occurred along that section of Rennie Street across the review period.
2	The number of vehicles that currently uses the road network surrounding the site has increased significantly across each of the peak periods since the Traffic Report was completed, which was prior to the Spirit of Tasmania being docked in Corio Quay.	As part of the Traffic Impact Assessment undertaken by my office (dated 18th March, 2026), updated traffic surveys were undertaken, including turning movement counts at each of the key traffic intersections and 7-day automatic tube counts at key road locations, to better represent the current traffic conditions, which have been utilised when undertaking the relevant traffic analysis.
2	Whenever there is a vehicle accident along Princes Freeway near Hovells Creek, traffic has been diverted to Beach Road, McClelland Avenue, and then onto Rennie Street, and onto Shell Parde back onto the highway. Rennie Street is a road that is not in good condition and not wide enough for both vehicles and cyclists.	An occasional closure of Princes Freeway in extreme circumstances should not be the basis on which this Amendment is determined.
4, 10 (Sub 11 as well), 13, 17, 21, 22, 23 (Sub 24 as well)	The roads around the site cannot support the volume of housing proposed by the amendment. There is grossly insufficient road and transport infrastructure in place for the industrial precinct and furthermore, the increase in industrial traffic will eroded the public amenity of residents local to the proposed development.	The Traffic Impact Assessment undertaken by my office (dated 18th March, 2026) has analysed the potential traffic impacts of Amendments C444 and C453, which have revealed that a majority of the surrounding intersections will remain operating under a Level of Service A ('Excellent') across each of the peak periods, with only minor decrease to the level of performance at identified at the Forest Road South/Canterbury Road East/Canterbury Road West intersection. Canterbury Road East and Rennie Street abutting the site will be upgraded as they are urbanised to accommodate the development traffic. All heavy vehicle traffic and the majority of car-based traffic accessing the industrial precinct will do so from Rennie Street to the south and not impact amenity of areas to the north. Overall, I am satisfied that the level of traffic impact generated by the proposed amendments is acceptable and will not have a detrimental impact to the operation of the local road network during each of the peak periods.

Sub No.	Issue	Response
4	Level crossing removals, traffic lights, roundabouts, pedestrian crossings and improving existing roads and infrastructure are all things that need to be considered before the population of Lara increases by another few thousand via these further housing developments. Especially in the immediate surrounding of the proposed affected area.	My assessment has considered all these aspects and made recommendations for infrastructure upgrades as appropriate.
7	See Table 2 below (DTP Submissions)	
8	(Sub 9 as well) Rennie Street bridge will not accommodate the level of traffic generated by the proposed amendment. There is no entry/exit point close to this development. Similarly, Nasmyth Street and part of Stephenson Street are dirt roads, which will not accommodate the level of traffic generated by the proposed amendment. Watt Street is not wide enough to accommodate the level of traffic generated by the proposed amendment.	Rennie Street and the bridge will remain within environmental capacity post-development. In response to discussions with Council regarding the use of Nasmyth Street, my traffic analysis and relevant traffic distribution has been updated where traffic accessing the development has been shifted from Nasmyth Street to Archimedes Avenue, the next most direct sealed road. I have assumed that Council either partially closes Nasmyth Street or makes it unattractive to through traffic. This does not change the ultimate travel path of these drivers to the interchange, who will continue to use Watt Street. In our view, these drivers are not rat-running. They are local drivers making a local trip through to the arterial road network. According to the analysis undertaken in the Traffic Impact Assessment, only approximately 30% of the site generated traffic from the residential land is being distributed to the east via Watt Street/Archimedes Avenue and a short section of Watt Street between Archimedes Avenue and Avalon Road. The SIDRA analysis results also indicate that the Watt Street/Archimedes Avenue intersection will continue to operate under 'Excellent' conditions post development. The daily volume of Watt Street will remain under 3,000 vehicles per day, within its capacity as a collector road. Its cross section at over 6m wide allows a continuous traffic lane in each direction. I note that Council sees future development on the western side of Watt Street urbanising the west side of the road, and this is appropriate. This urbanisation is not required as a result of the traffic generated by this proposal. Accordingly, I am satisfied that the existing local road network will be able to accommodate the easterly distributed traffic generated from the site.

Sub No.	Issue	Response
12	Rennie Street traffic has greatly increased since the development of the Lara Lakes Estate due to increased traffic congestion at the 6 ways intersection off the back of the Coridale Estate development. The number of vehicles entering and exiting the area via Rennie Street or Forest Road to access the current facilities in Lara or the Highway will increase with the proposed amendment.	The traffic assessment has comprehensively reviewed Rennie Street both on a daily traffic volume basis and at key intersections. I am satisfied that with suitable upgrades, Rennie Street can accommodate the development traffic.

Table 5: Review and Responses to DTP's Submissions for Amendment C444 (Submission No. 7)

Submission	Response
2. *Planning for the Greater Avalon Employment Precinct (GAEP) is currently underway which will require significant reliance on the Avalon Road interchange.*	Jacobs prepared a Transport Assessment Memo (Version B, dated November 2025). This Transport Assessment Memo reviews the background policy and existing conditions of the GAEP and provides recommendations to guide the effective integration of the proposed development with the existing and planned transport network. The memo identifies that the GAEP could result in Avalon Road (south of the Princes Freeway) changing from 2,100 vehicles per day in the 2056 base case to between 16,900-19,100 vehicles per day. It recommends Avalon Road be duplicated and the interchange at Princes Freeway upgraded to accommodate the GAEP. This level of traffic is approximately 10 times the traffic to be generated by Amendment C444 through the Avalon Road interchange. The analysis in this report shows that there is minimal change to the operation of the interchange as a result of this amendment. Accordingly no mitigating works are required at the interchange as a result of the proposed amendments.
3. *A cumulative impact assessment of the Amendment and the adjacent Lara Business Park to the south (Amendment C453ggee) is required to address; the potential capacity of the Avalon Road interchange to cater for future traffic demand, the performance of the Watt Street and Avalon Road intersection, and potential 'rat-running' on the local road network including Nasmyth and Watt streets.*	As identified above, the GAEP will: • Generate traffic through the interchange at an order of magnitude greater than Amendments C444 and C453. • Generate so much traffic that Avalon Road requires duplication, and an upgrade of the interchange. The previously completed Traffic Impact Assessment has addressed the traffic impacts of Amendments C444 and C453 through the interchange and all intersections involved will operate with a 'Very Good' to 'Excellent' level of service. This includes an

Submission	Response
	assessment of 10 years growth as detailed in the Traffic Impact Assessment completed by my office. Accordingly, I am satisfied that the Avalon Road interchange and its intersection with Watt Street does not require an upgrade as a result of this amendment. In response to discussions with Council, this assessment has shifted the traffic accessing this development from Nasmyth Street to Archimedes Avenue. This does not change the ultimate travel path of these drivers to the interchange, who will continue to use Watt Street. In our view, these drivers are not rat-running. They are local drivers making a local trip through to the arterial road network.
4. The Head, TfV requires further work to be undertaken as part of a revised traffic impact assessment, to determine any potential upgrades to the Canterbury Road East level crossing, due to combined traffic impacts of this amendment and C453ggee Lara Business Park and to determine the potential need for contributions towards upgrades from both these developments.	HTfV requested an ALCAM assessment of the safety of this crossing. This is a specialist level crossing safety assessment, which have been completed by Nelson-Furnell Pty Ltd as part of their Railway Crossing Risk Assessment Report. This report found that the existing crossing is fit for purpose and can accommodate the additional traffic. I am satisfied that from a traffic engineering perspective that this crossing is safe and fit for purpose (aside from the need for a pedestrian crossing).
A3. The design of the internal road network must also support active transport connectivity and wider connecting networks to the proposed sports facility area part of Amendment C453ggee. This will need to include features such as active transport priority crossings, connection to entrances/exits, end-of-trip facilities such as bike parking, etc.	These items are matters of detail for future planning permit applications. The future shared path network is discussed at Section 4.16 of the Traffic Impact Assessment previously prepared (Ref: G37968R-02A, dated 18th March, 2026), which is attached in Appendix A of this statement.
A4. Section 2.5 needs to be expanded to consider a more comprehensive shared path network that provides greater connectivity for residents to surrounding key destinations.	
A5. Figure 7 shows an extract from the Lara Structure Plan which considers the provision of a freeway off-ramp connecting to Canterbury Road East. This is not supported.	The proposed amendments and this assessment does not rely on any provision of a freeway off-ramp connecting to Canterbury Road East to distribute traffic generated by the development.

7.2. Submissions for Amendment C453

Table 6: Review and Responses to Submissions for Amendment C453

Sub No.	Issue	Response
2	The number of vehicles, including heavy traffic that currently uses the road network surrounding the site has increased significantly since the Traffic Report was completed, which was prior to the Spirit of Tasmania being docked in Corio Quay.	Refer to the above responses detailed in Table 1 Sub No.2.
2	Most heavy vehicles do not use Hovells Creek Floodway as there is a weight limit on the Floodway. Accordingly, they would not access Rennie Street at the McClelland Avenue end, nor would they be able to access Canterbury Road/Forest Road roundabout.	I expect that almost all heavy vehicles will travel to/from the precinct via Rennie Street to the south. This offers direct freeway access and connections via arterial roads to the south. Setting aside the load restriction of the bridge, I am satisfied that access to that the route north is high unattractive for heavy vehicle movements.
2	The number of heavy vehicles that will be generated as part of the industrial development along Rennie Street, and going under the overpass and further down along Rennie Street to access Princes Freeway will increase. Rennie Street is too narrow, and the off-ramp is not in good condition.	Based on the SIDRA Analysis undertaken as part of the Traffic Impact Assessment (dated 18th March, 2026), Rennie Street, specifically the intersection between Rennie Street and Princes Freeway on-ramp is capable of accommodating the increase in traffic generated as part of the amendment, with the intersection continuing to operate at a Level of Service A "Excellent" condition post-development. Accordingly, I am satisfied Rennie Street is well suited to accommodate the heavy vehicle traffic demands of the proposed amendment. The maintenance of the off-ramp is a State responsibility.
6	See Table 4 below (DTP Submissions)	
7	Rennie Street traffic has greatly increased since the development of the Lara Lakes Estate due to increased traffic congestion at the 6 ways intersection off the back of the Coridale Estate development. The number of vehicles entering and exiting the area via Rennie Street or Forest Road to access the current facilities in Lara or the Highway will increase with the proposed amendment.	Refer to the above responses detailed in Table 1 Sub No.12.

Sub No.	Issue	Response
8	The land release of the proposed amendment be coordinated with the Greater Avalon Employment Precinct release in terms of timing and impact on trunk infrastructure (i.e. considering the likely need for expansion or upgrades).	The GAEP could result in Avalon Road (south of the Princes Freeway) changing from 2,100 vehicles per day in the 2056 base case to between 16,900-19,100 vehicles per day. It recommends Avalon Road be duplicated and the interchange at Princes Freeway upgraded to accommodate the GAEP. The GAEP will generate traffic through the interchange at an order of magnitude greater than Amendments C444 and C453, and requires a duplication of Avalon Road, and an upgrade to the interchange. Rennie Street will be urbanised and upgraded in future, but duplication is not necessary as the volume of traffic is well below that to trigger duplication. SIDRA assessments also indicate the signalisation of the freeway entrance is not necessary.
8	In the event that the amendment is approved, this should require the duplication of Rennie Road and the signalisation of the freeway entrance on Rennie Street.	
11	Increased likelihood of traffic incidents along Rennie Street given the risk is already moderate-to-high with speeding and cars driving on the wrong side of the road.	A Road Safety Review of CrashStats has been undertaken as part of the Traffic Impact Assessment (dated 18th March, 2026), which showed one casualty crash on Rennie Street, adjacent to the site. I am satisfied that the review does not highlight any particular road safety issues that is of concern to the road network surrounding the proposed amendments. Rennie Street will be upgraded and urbanised as part of the development of the site.
12	These changes will only cause more traffic in this section of Lara along with over the train line which is not set up for this level of traffic and will result in more delays and issues for those travelling and living around Lara.	I am satisfied that section of Canterbury Road East where the railway crossing is located at will be capable of accommodating the potential traffic demands that the proposed land will generate as a result of the amendment. An Australian Level Crossing Assessment Model (ALCAM) as part of the Railway Crossing Risk Assessment Report was undertaken for the Canterbury Road East level crossing by Nelson-Furnell Pty Ltd, which, notes that the existing road crossing controls and environment of the level crossing are adequate for the level of traffic increase anticipated by the proposed amendments.

Table 7: Review and Responses to DTP's Submissions for Amendment C453 (Submission No. 6)

Submission	Response
2. Planning for the Greater Avalon Employment Precinct (GAEP) is currently underway which will require significant reliance on the Avalon Road interchange.	Refer to the above responses detailed in Table 2.
3. A cumulative impact assessment of the Amendment and the adjacent Lara Residential Rezoning to the north (Amendment C444ggee) is required to address; the potential capacity of the Avalon Road interchange to cater for future traffic demand, the performance of the Watt Street and Avalon Road intersection, and potential 'rat-running' on the local road network including Nasmyth and Watt streets.	Refer to the above responses detailed in Table 2.
4. The Head, TfV requires further work to be undertaken as part of a revised traffic impact assessment, to determine any potential upgrades to the Canterbury Road East level crossing, due to combined traffic impacts of this amendment and C444ggee Lara Residential Rezoning and to determine the potential need for contributions towards upgrades from both these developments.	Refer to the above responses detailed in Table 2.
A3. Section 4.3 needs to state that all internal roads will provide pedestrian connectivity to the broader network, to align with Section 6.1.	This item is addressed in Section 4.16 of the Traffic Impact Assessment completed by my office (dated 18th March, 2026).
A4. Section 4.4 needs to be updated to be more specific about creating pedestrian connectivity to the regional sports facility and adjacent residential development.	This item is addressed in Section 4.16 of the Traffic Impact Assessment completed by my office (dated 18th March, 2026).
A5. Table 4-4 needs to include a summary of end-of-trip facilities for active transport users, including the number of bike parking spaces to be delivered.	This is a matter of detail for future planning permit stages.
A6. Head TfV requests further information on the underlying assumptions for traffic distribution detailed in Section 5.3. It is unclear to what extent the TIA anticipates light or heavy vehicles using Avalon Road interchange, Watt Street and Nasmyth Street to access the development. There is as assumption that 100% of heavy vehicles will approach the site from the south-west, but it needs to be explained why no movements are expected to occur from the north-east. It is also noted that the possible regional sports reserve would be expected to have a wider catchment.	In my view, Amendment C444 will not generate traffic to the north, other than local trips by local residents travelling to/from work. The industrial land as part of Amendment C453 is substantially closer to the Rennie Street interchange than Avalon Road. Avalon Road involves travelling low speed, lower order roads and multiple intersections. For heavy vehicles, there is also a 10-tonne load limit on the Rennie Street bridge. I am satisfied that for both heavy and light vehicles, the Rennie Street interchange is far more accessible and convenient than Avalon Road and industrial trips to the interchange will be negligible.

Submission	Response
A7. The freeway on-ramp assessment (at Rennie Street) is acceptable. For completeness, Table 5-31 should also consider a larger vehicle fleet, up to B-double, so that the deficiencies of the on-ramp are understood and documented for this vehicle type.	The Princes Freeway on-ramp assessment has been further expanded to include assessment of a B-double detailed in the Traffic Impact Assessment completed by my office (dated 18th March, 2026).
A8. Section 6.1 needs to discuss the provision of footpaths along the site frontage.	This item is addressed in Section 4.16 of the Traffic Impact Assessment completed by my office (dated 18th March, 2026).
A9. Section 6.2 should include an indicative map showing how the expansion of the bus network could service the business park and sporting reserve.	This item can be addressed once the framework plan for the industrial component of the development is formalised.
A10. Section 6.7 should note the opportunity to provide walking/riding paths along Rennie Street as part of anticipated upgrades.	This item is addressed in Section 4.16 of the Traffic Impact Assessment completed by my office (dated 18th March, 2026).

8. Conclusions

91 This statement provides my assessment of the traffic engineering and transport planning aspects of the proposed Amendments C444 and C453 of the Greater Geelong Planning Scheme. My assessment has been completed independently as instructed by Norton Rose Fulbright on behalf of Lara Farms Pty Ltd.

92 Having undertaken a detailed traffic engineering assessment of the proposed Amendments C444 and C453 at 176-156 Canterbury Road East, 785-805 Princes Highway, 705-765 Princes Highway, and 610 Rennie Street, Lara, I am of the opinion that:

a) A development of the land yielding 666 standard residential lots within the residentially zoned land and an industrial estate within the industrially zoned land can be accommodated by the surrounding road network, with some upgrades.

b) To accommodate the development traffic, the following mitigating works are required:

   i. The upgrade of the existing Canterbury Road East level crossing to include an active gated control to facilitate safe pedestrian and dismounted cyclist movements across the rail line (on the south side, the side of the development).

   ii. The provision of a short channelised right turn lane and a basic left turn treatment to be provided on Rennie Street at the Canterbury Road East/Rennie Street Intersection.

   iii. The upgrade of Canterbury Road East to a connector style road, consistent with the balance of Canterbury Road East to the west of the rail line.

   iv. Nasmyth Street should be closed, or attractiveness reduced such that local traffic heading to the Avalon Road interchange via Archimedes Avenue.

c) The traffic generated by the rezoning of the land as part of proposed Amendments can be accommodated by the surrounding road network, with only minor impacts to the operation of key intersections.

d) Sensitivity analysis was undertaken in this regard for a higher traffic generation rate.

e) The indicative site access points are considered appropriate.

f) The surrounding bus network is able to be extended along Canterbury Road East. This would ensure the vast majority of future dwellings, industrial land use, and the potential regional sports reserve would be adequately serviced by public transport.

g) The site is well serviced by quality off-road bicycle trails to the east of the subject site and to the north-west of the subject site. Footpath/shared paths should be introduced along the site's northern frontage to Canterbury Road East and the north-eastern section of Rennie Street to provide pedestrians with a connection to the existing pedestrian infrastructure surrounding the site. A pedestrian connection should also be proposed to connect the proposed paths along the site's frontages to the Hovells Creek Trail, located at the east of the site.

h) I am satisfied with DPO48 and DDO55, however I do recommend that they are updated to reference the latest Traffic Impact Assessment, dated March, 2026.

i) There are no traffic engineering reasons why the proposed Amendments C444 and C453 at 176-156 Canterbury Road East, 785-805 Princes Highway, 705-765 Princes Highway, and 610 Rennie Street, Lara should not be approved.

93 I have made all inquiries that I believe are desirable and appropriate and there are no matters of significance which I regard as relevant which, to the best of my knowledge, have been withheld from the Panel.



LEIGH ALAN FURNESS

B.SC./B.E. (Civil) Hons., Masters of Traffic, M.V.P.E.L.A

Appendix A

Transport Impact Assessment for Amendments C444 and C453 (dated 18th March, 2026)

Traffix Group

Transport Impact Assessment

Proposed Planning Scheme Amendments

76-156 Canterbury Road East, 705-765 Princes Highway, 785-805 Princes Highway & 610 Rennie Street, Lara (C444ggee and C453ggee)

Prepared for
Lara Farms Pty Ltd

March 2026

G37968R-02A

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AS/NZS ISO 45001-2018 Occupational Health & Safety Management Systems
AS/NZS ISO 14001 Environmental Management Systems
AS/NZS ISO 9001-2016 Quality Management Systems

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Appendix J **SIDRA Results – Post-Development Conditions (Growth Scenario – 10-Year)**

1. Introduction

Traffix Group has been engaged by Lara Farms Pty Ltd to undertake a Transport Impact Assessment (TIA) for a proposal to rezone the land at 76-156 Canterbury Road East, 705-765 Princes Highway, 785-805 Princes Highway & 610 Rennie Street, Lara (C444ggee and C453ggee).

This report assesses the application to rezone the land and apply the necessary overlays to guide future development. Amendments C444ggee and C453ggee were previously supported by separate traffic reports. This report reviews both amendments together in one document.

This report also responds to subsequent feedback from Council and the Department of Transport and Planning (DPT) on a variety of traffic engineering matters.

We have had regard to the following key documentation in undertaking this traffic impact assessment:

- Transport Impact Assessment, prepared by Traffix Group (G33105R-03C, dated November, 2024) prepared to support Amendment C444ggee.
- Transport Impact Assessment, prepared by Ratio Consultants (version F01, dated 24th May, 2022) prepared to support Amendment C453ggee. This document is referred to as the 'Ratio Report' throughout this report.
- Planning Report, prepared by Tract (dated September, 2025), prepared to support Amendment C444ggee.
- Planning Report, prepared by Tract (dated November, 2024), prepared to support Amendment C453ggee.
- Illustrative Framework Plan, prepared by Tract (dated November, 2024).
- Infrastructure Design Manual (Version 5.60, dated 1st December, 2025).
- Lara Structure Plan, prepared by the City of Greater Geelong (adopted April, 2011).
- City of Greater Geelong Settlement Strategy (dated August, 2020).
- Lara Traffic Management Plan (2019-2029).
- The City of Greater Geelong Municipal Road Management Plan (Version 9.0, adopted 28th October, 2025).

2. Proposed Planning Scheme Amendment

The subject land is known as 76-156 Canterbury Road East, 705-765 Princes Highway, 785-805 Princes Highway & 610 Rennie Street, Lara (C444ggee and C453ggee). The proposal includes the following:

Amendment C444 (76-156 Canterbury Road East & 785-805 Princes Highway, Lara)

- Rezoning of the site from Farming Zone (FZ) to General Residential Zone (GRZ) and to insert a new Schedule to Clause 43.04 Development Plan Overlay to the land affected by the amendment to guide future land use and development outcomes.

Amendment C453 (705-765 Princes Highway & 610 Rennie Street, Lara)

- Rezoning of the site from Farming Zone (FZ) to Industrial 1 Zone (IN1Z) and Industrial 3 Zone (IN3Z), as well as to insert a new Schedule (Schedule 55) to Clause 43.02 Design and Development Overlay to the land affected by the amendment to guide future land use and development outcomes.

2.1. Amendment C444

2.1.1. Proposed Development Plan Overlay

The proposed schedule to the Development Plan Overlay (DPO46) details the following objectives to facilitate appropriate development of the site, with the traffic related objectives highlighted below:

- *To generally implement the South East Lara Framework Plan as attached to this schedule and facilitate the orderly and integrated residential development of the area.*
- ***To create a safe and integrated road network that avoids excessive road connections on to Canterbury Road East.***
- ***To provide a shared pathway network and links that establish safe and interconnected walking and cycling routes.***
- *To ensure the park is conveniently connected to linear open space adjoining the southern boundary of the growth area.*
- *To ensure best practice stormwater management and water quality treatment to prevent any adverse impact on downstream areas.*

2.1.2. Proposed Framework Plan

Tract has prepared a Framework Plan for the south-east Lara area (76-156 Canterbury Road East & 785-805 Princes Highway, Lara) which details the indicative road access locations, and locations suitable for development. The full plan is attached at Appendix A of this report, with an extract provided in the figure below.

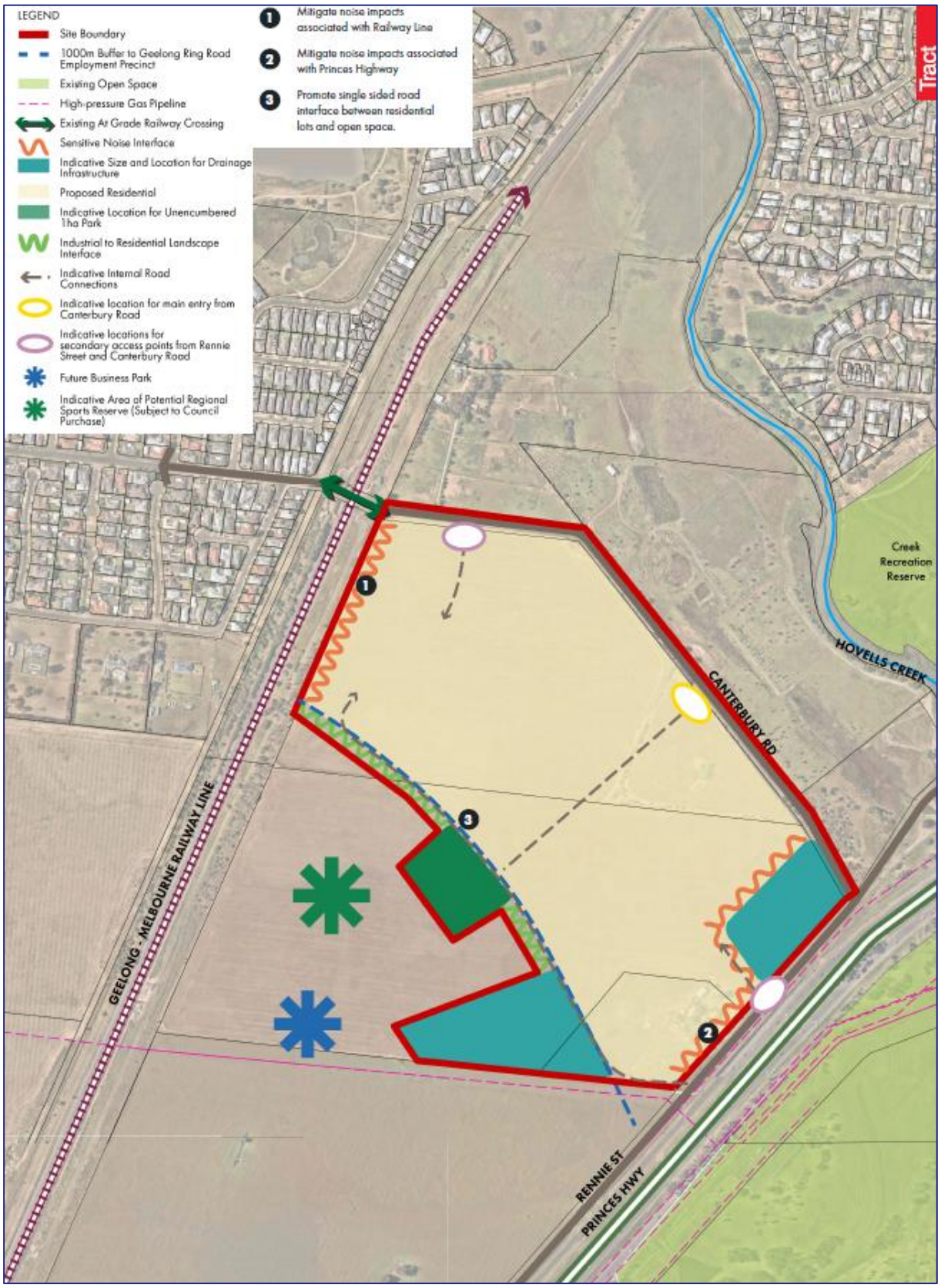


Figure 1: South-East Lara Framework Plan (Tract – November, 2024)

2.1.3. Indicative Development Yield

The rezoning is based on the following development yield and assumptions:

- A total of 666 standard residential lots. The site may ultimately include a proportion of medium density lots. These uses would be at the expense of residential lots, and a changing of the development yield would not make a material difference to the overall traffic generation.
- An unencumbered public open space is provided within the site.
- Drainage infrastructure located in the eastern corner of the site and within the southern portion of the site.

2.1.4. Vehicle Access

The site is proposed with vehicle access to the external road network at the following locations (the numbering follows through to the figure and throughout the remainder of the report):

1) Primary vehicle access to Canterbury Road East, at the approximate mid-point of the site.
2) Secondary vehicle access to Canterbury Road East, approximately 200m east of the level crossing of the rail line.
3) Secondary vehicle access to Rennie Street, approximately 200m south-west of Canterbury Road East.

A through vehicle connection to the site to the south will also be provided providing access into a possible regional sports reserve. The vehicle access locations are detailed in the figure below.

2.1.5. Shared Path Connections

It is anticipated that a shared path connection or a walking trail can be provided:

- Along Canterbury Road East and Rennie Street.
- Along the edge of the rail line, the landscape interface and the retarding basin, adjacent to the southern boundary of the site.
- To the trails along Hovells Creek.

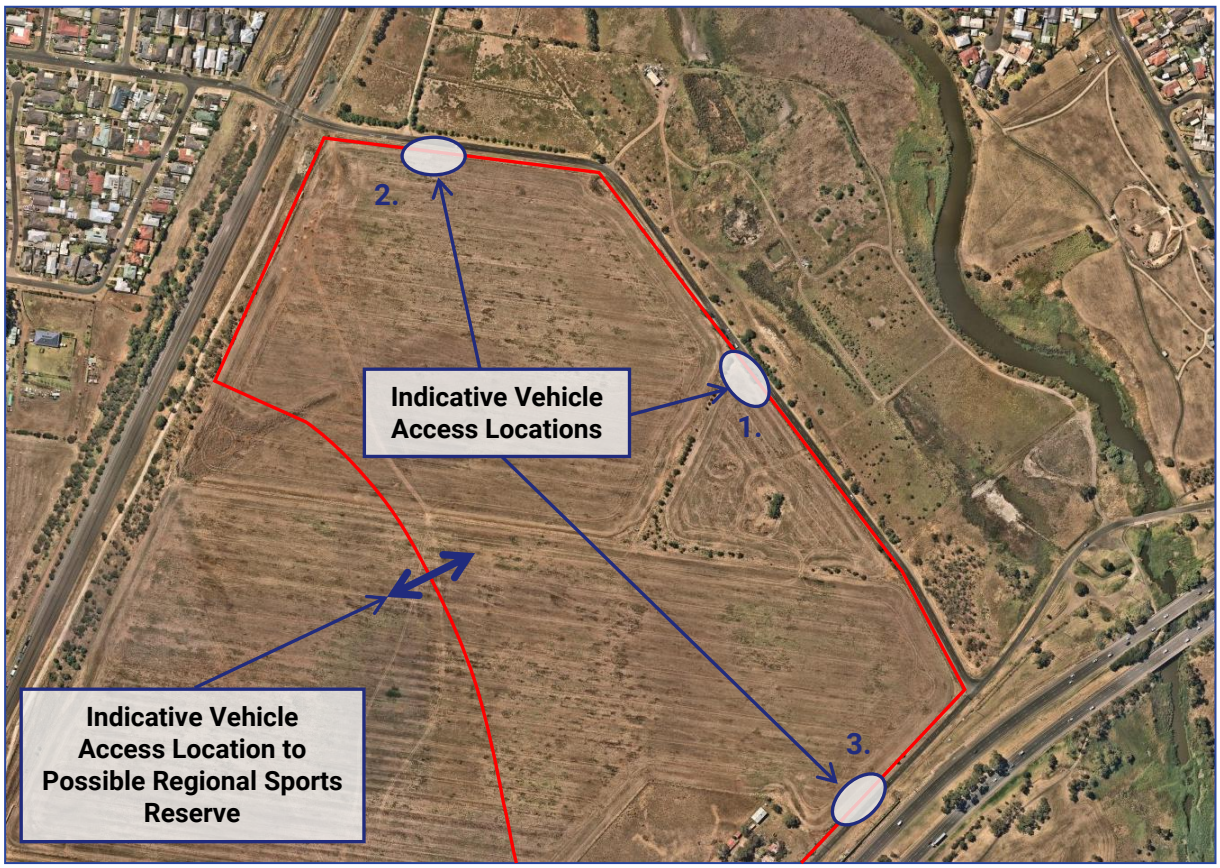


Figure 2: Indicative Vehicle Access Locations (Source: Nearmap)

2.2. Amendment C453

2.2.1. Proposed Development Plan Overlay

The proposed schedule to the Design and Development Overlay (DPO55) details the following objectives to facilitate appropriate development of the site:

- *To facilitate commercial and industrial development that is efficient, functional and meets changing market demands.*
- *To ensure development achieves a high-quality, site responsive design that enhances visual amenity from major transport routes and surrounding non industrial land.*
- *To promote best practice stormwater quality, management and reuse measures that protect, and conserve biodiversity and waterway values of the Ramsar Wetlands and Hovells Creek.*

2.2.2. Proposed Development Overview

Subject to the proposed rezoning of the land, the site could be developed to include a specialised activity centre and an employment centre within an approximate net developable area of 80.12ha across the overall site.

Based on historical data that we have undertaken for industrial business parks, buildings typically occupy approximately 40% of the entire land area with the remaining site being used for vehicle access, car parking, loading bays and landscaping, which is largely consistent with the previous Ratio TIA, which adopted 41.85% of the entire site area for the proposed buildings on-site.

Accordingly, in the interest of undertaking a conservative assessment, we have continued to adopt 41.85% of the entire site area as the proposed buildings, which translates to a building footprint of approximately 335,290m^2.

A Concept Framework Plan has been prepared by Tract and is provide at Figure 3.

2.2.3. Vehicle Access

The site is proposed with three vehicle access points to Rennie Street along the site's eastern boundary, in accordance with the proposed Schedule 55 to Clause 43.02 of the Planning Scheme, which details the requirement of promoting *"a high degree of internal permeability including the provision of at least two entry roads off Rennie Street"*.

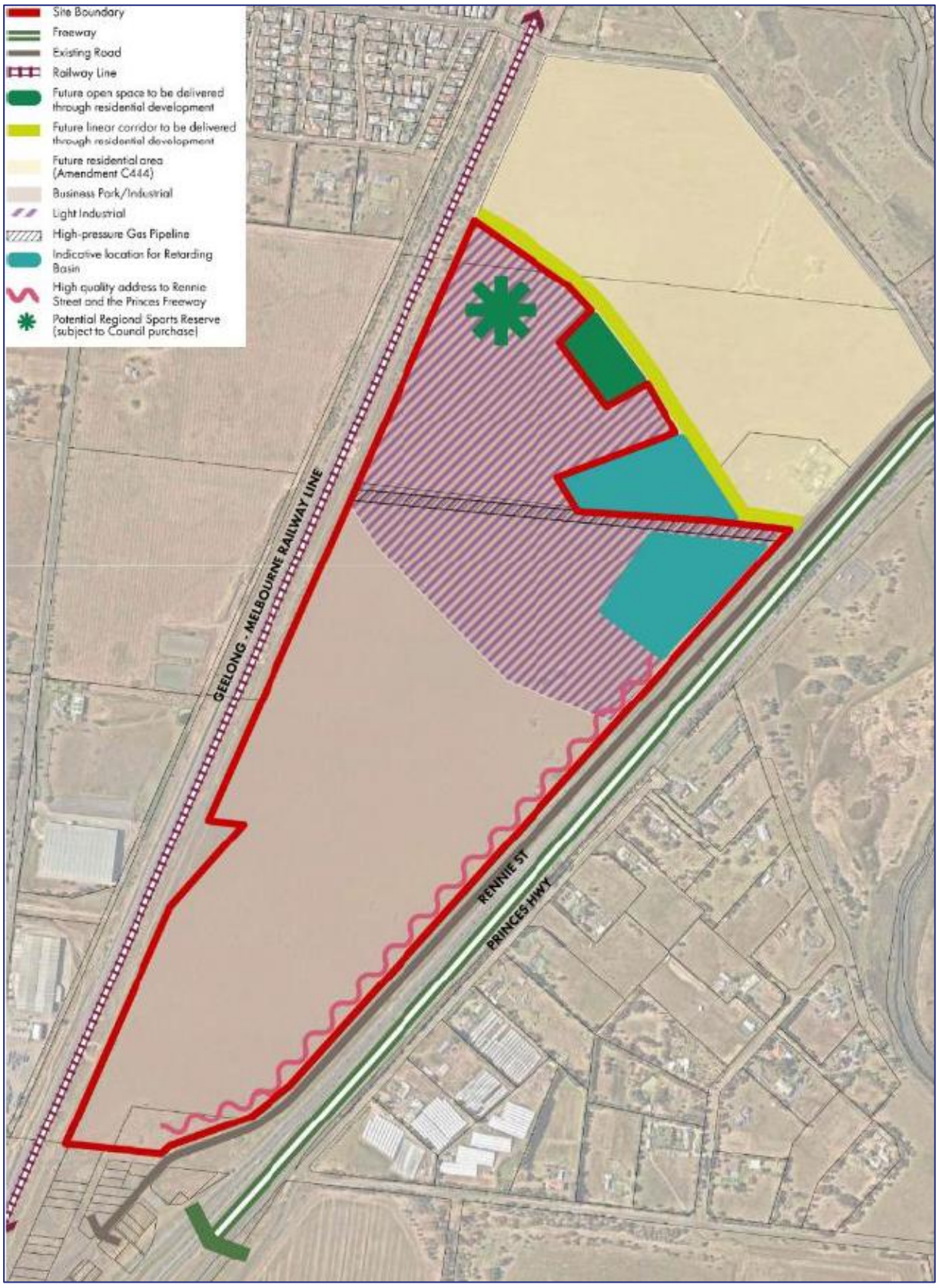


Figure 3: Amendment C453 - Business Park Amendment Concept Plan (Tract – November, 2024)

2.3. Land Parcel North of the Site

The Lara Structure Plan, prepared by the City of Greater Geelong (adopted April, 2011) sets out the strategic framework for the future planning and development of the township.

The parcel of land opposite the subject site, north of Canterbury Road East (95 & 101-145 Canterbury Road East), is also identified as a 'conventional residential' area. We understand that the northern parcel of land could have a development yield of up to 134 residential lots, but is subject to its own strategic planning process separate to Amendment C444 and Amendment C453.

3. Existing Conditions

3.1. Subject Site

The subject site comprises the following properties:

- 76-156 Canterbury Road East,
- 705-765 Princes Highway,
- 785-805 Princes Highway, and
- 610 Rennie Street.

The subject land is bound by the train line to the west, Rennie Street to the west, Canterbury Road East to the north and the Geelong Ring Road to the south. A locality plan and aerial photograph are provided at Figure 4 and Figure 5.

The site is currently used for farming purposes, with a dwelling and minor outbuildings provided across the land parcel.

Vehicle access is currently provided via the following access points:

- an access point along the site's northern frontage to Canterbury Road East,
- an access point at the site's south-eastern corner to Rennie Street, and
- an access point at the site's north-eastern frontage leading to the existing dwelling on the site to Rennie Street.

The site is currently zoned Farming Zone (FZ). A land use zoning map is provided at Figure 6.

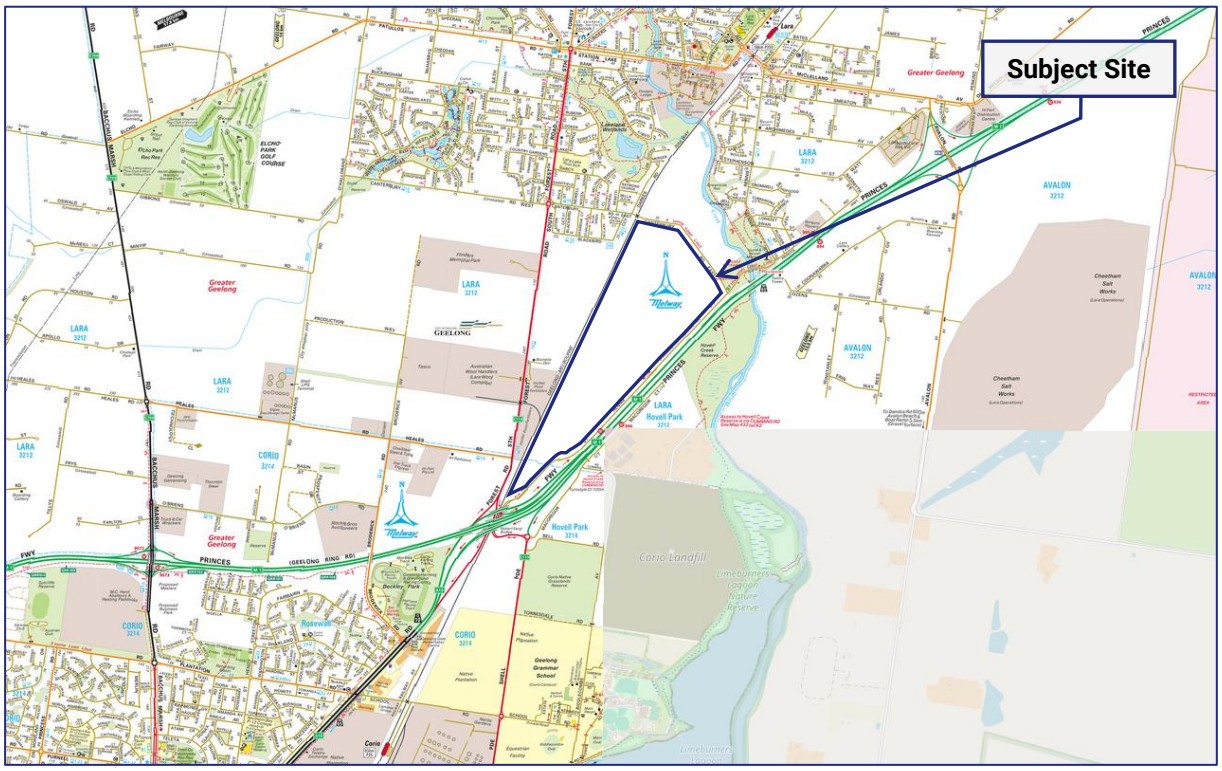


Figure 4: Locality Plan (Source: Melway)

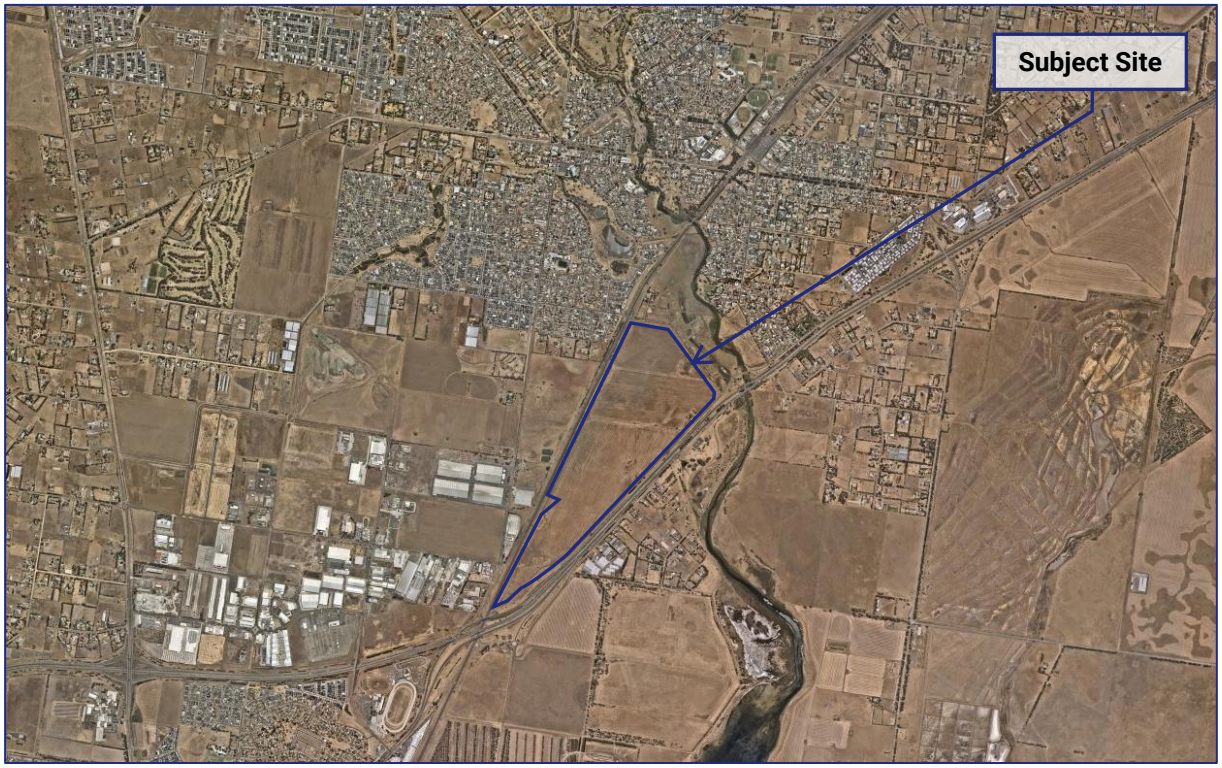


Figure 5: Aerial Photograph (Source: Nearmap)

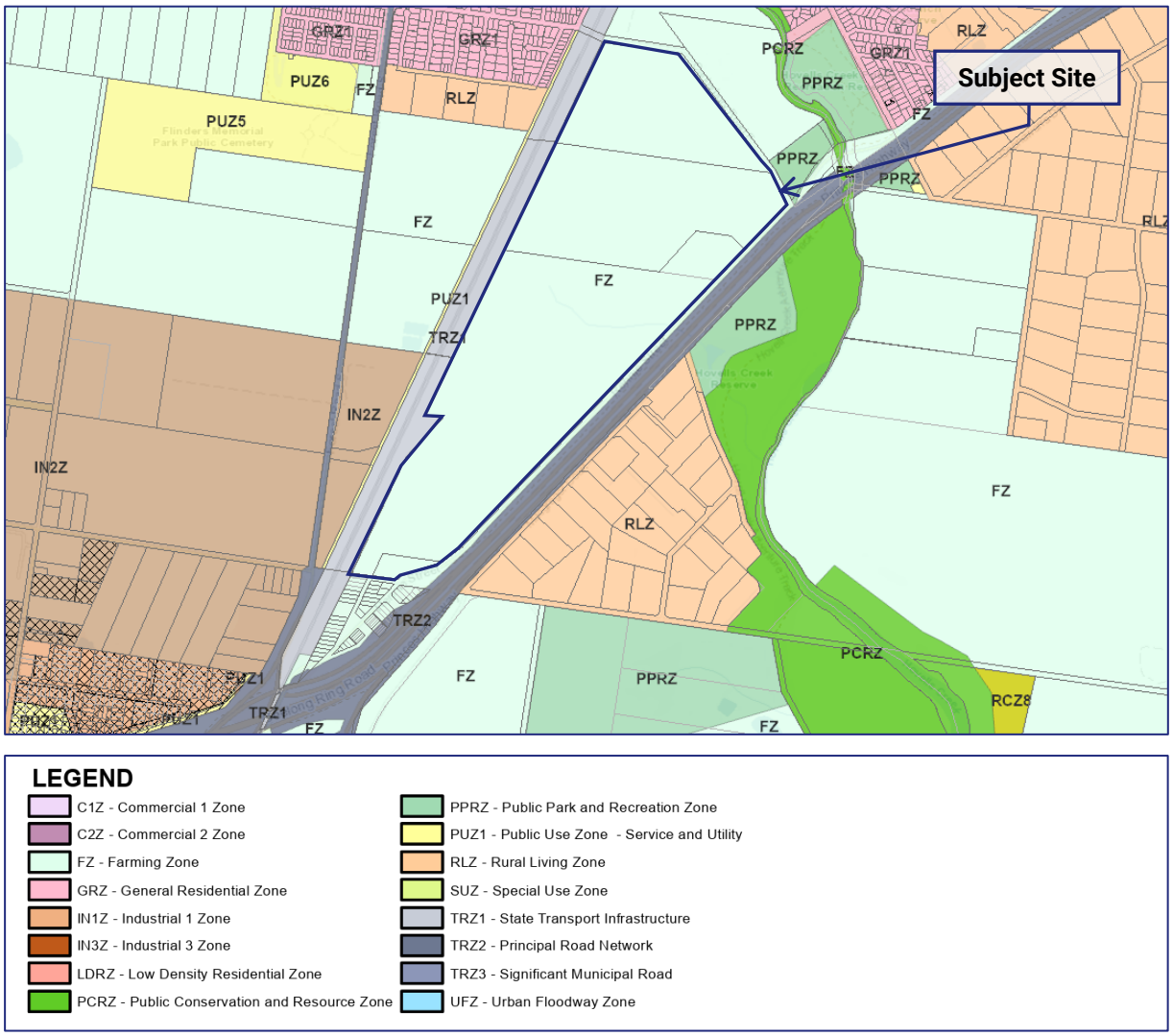


Figure 6: Land Use Zoning Map (Source: Planning Schemes Online)

3.2. Lara Structure Plan

The Lara Structure Plan, prepared by the City of Greater Geelong (adopted April, 2011) sets out the strategic framework for the future planning and development of the township.

The following figure details the Structure Plan, which identifies the northern section of the subject land as a 'conventional residential' area, and the southern section of the subject land to accommodate for 'potential business park' and 'potential open space' opportunities.

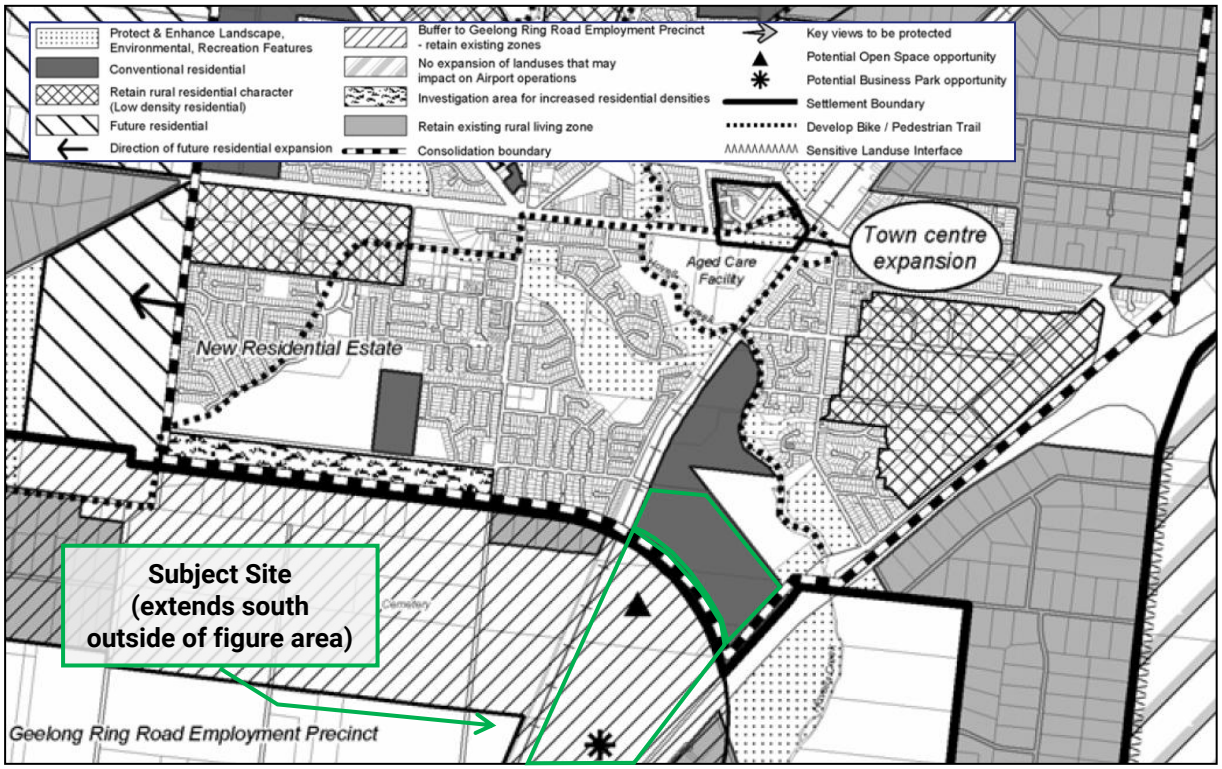


Figure 7: Lara Structure Plan

The Structure Plan sets out the following in terms of achieving development on the subject land:

> ***76-156, 705-775 & 785-805 Canterbury Road East***
>
> *This is an area of high ground between Hovells Creek, the Princes Highway and the Melbourne-Geelong Railway line. It is currently undeveloped rural land zoned Farming Zone.*
>
> *The land offers good opportunities for residential development provided such development is located outside the 100 year flood extent with minimum floor levels set above the adjacent flood level with an appropriate freeboard or safety margin. As this area is adjacent to Hovells Creek, best practice stormwater quality management needs to be installed as part of any subdivision to ensure that there is minimal impact on the Creek downstream to Limeburners Bay.*
>
> *The south west corner of the site is located within the 1000 metre buffer zone required for the Heales Road Industrial Estate. It is not recommended the area within the buffer be rezoned for residential purposes. There is an opportunity to investigate non-sensitive land uses on the balance of this site which will not compromise the buffer to*

Heales Road. Uses could include a sporting facility (as identified in the Structure Plan) or a potential Business Park on the southern most portion of the site adjacent to the Heales Road Industrial Estate.

It is recommended that this site be rezoned from Farming Zone to Residential 1 Zone subject to a Development Plan Overlay or approved subdivision plan to address development issues such as storm water management, open space, movement network, infrastructure provision, subdivision layout and interface to the railway line and Hovells Creek reserve.

The Structure Plan sets out a number of items within a Transport Management Plan located within close proximity to the subject site, including the following items within immediate proximity to the subject site:

- Improve Level Crossing at Canterbury Road East – this is an outstanding matter, which is discussed at Section 4.7.4 and 4.7.5. We recommend that the level crossing be upgraded to include a pedestrian crossing, with active gated controls on both sides of Canterbury Road East to facilitate pedestrians crossing the train line.
- Seal Road (Canterbury Road East along site boundary) – this has been completed. However, Canterbury Road East along site boundary will be upgraded to a Category 3 – Secondary Distributor road standard, consistent with the balance of Canterbury Road East, west of the train line
- Implement Off Ramp (from inbound lanes of Princes Freeway to Rennie St) – this is an outstanding matter. We understand through submissions that DTP does not support a freeway ramp here.

The following figure details the location of the above projects.

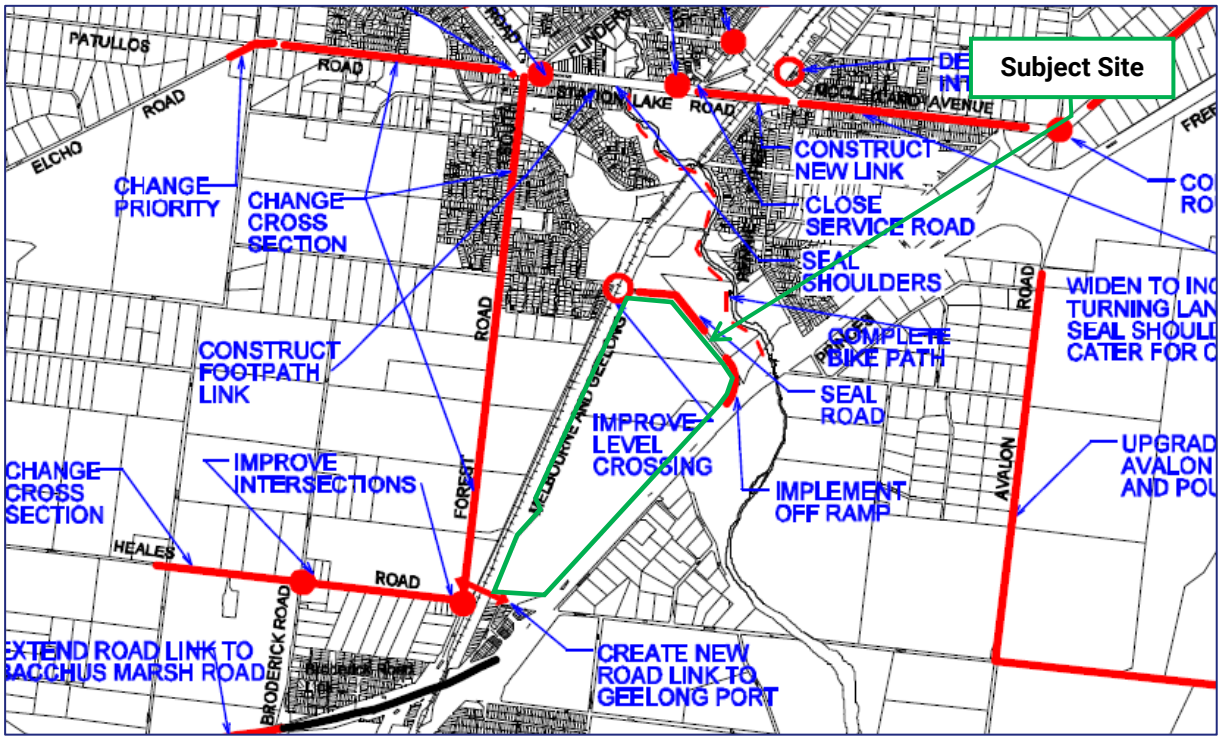


Figure 8: Transport Management Plan Extract (Lara Structure Plan, Map 3)

3.3. Lara Traffic Management Plan (2019-2039)

The Lara Traffic Management Plan (2019-2039) sets out a list of issues within an action plan. The list of items which are highly relevant to the subject site are provided within the following table.

Table 1: List of Action Plan Items

Issue	Description	Responsible Authority	Timing
Request for a 'Rail Overpass or Underpass' at McClelland Ave level crossing to improve congestion and accessibility.	*The Geelong to Melbourne rail corridor is reviewed as part of the Western Rail Plan [Geelong to Melbourne rail corridor improvements for fast rail & electrification]. Future plans for the existing level crossing are unknown at this stage. Department of Transport states that this crossing is not one of the 75 funded grade separation sites across the state.*	DTP/RRV	2024-2030
Request to consider installing traffic calming in Canterbury Road West to reduce entering vehicle speeds to Forest Road South.	*Investigated this intersection and have completed gathering data via 'traffic classier counts'. To identify most appropriate LATM treatment and then it would be listed in the Capital Works Program.*	CoGG	2024-2030
Intersection - Forest Road South and Canterbury Road *Request to review the roundabout at this intersection. This has become a high risk accident zone due to limited sight lines from Forest Road South.*	*To discuss improvements with Regional Roads Victoria.*	DTP/RRV	2019-2025
Request to improve Hovells Creek shared path near Rennie St.	*This requires further investigation and funding to implement rectification.*	CoGG	2019-2025

In addition to the above, in relation to the issue regarding a level crossing removal at McClelland Avenue, the Traffic Management Plan states:

> *A recurrent theme throughout 'The Lara Traffic Management Plan' engagement related to the rail crossing of McClelland Avenue. Concerns specifically related to the congestion and safety of pedestrians and vehicles at the railway crossing, condition of the road surface across the rail tracks and delays for emergency vehicles wanting to cross the rail line. The grade separation would improve traffic movements from Station Lake Road to McClelland Avenue.*

- *During one of the community consultation sessions, Department of Transport discussed the grade separation (road over rail) issue with the community. The State Government's Level Crossing Removal Authority has this crossing listed on their 'top 300 sites for removal' and at the time of this Plan ranked 169 in Victoria.*
- *The Geelong to Melbourne rail corridor is being reviewed as part of the Western Rail Plan [Geelong to Melbourne rail corridor improvements for fast rail & electrification]. Future plans for the existing level crossing are unknown at this stage. This crossing is not one of the 75 funded grade separation sites across the state.*
- *The City will continue to advocate with the community to the State Government for the grade separation to be committed for delivery.*

Since the preparation of the of Lara Traffic Management Plan, no further updates have been made in terms of the level crossing removal at McClelland Avenue.

3.4. Transport Network

3.4.1. Road Network

A summary of the local road network is provided in the table below. Photographs depicting the surrounding road network are presented in Figure 9 to Figure 22 following the table.

Table 2: Local Road Network

Road Name	Classification[1]	Configuration	Speed Limit	On-Street Parking
Canterbury Road East (east of the rail line)	Council managed 'Category 2 – Local Access – Urban' road	It has a 6.5m wide pavement width in this location, which facilitates a lane for traffic in each direction. Shoulders, on-street car parking and footpaths are not provided within this section of Canterbury Road East.	Posted speed limit of 80km/h	On-street parking is not provided along this section of the road.
Canterbury Road East (west of the rail line)	Council managed 'Category 3 – Secondary Distributor' road	It is aligned in an east-west direction between the rail line in the east and Forest Road South in the west. Canterbury Road East has a 9.7m wide pavement width in this location, which facilitates a lane for traffic in each direction and kerbside car parking on both sides. A footpath is provided on at least one side of Canterbury Road East between the rail line and Forest Road South.	Posted speed limit of 60km/h	Unrestricted on-street car spaces is generally provided on both sides.
Rennie Street (south-west of the Hume and Hovell Memorial Monument)	Council managed 'Category 3 – Collector Road Rural'	Rennie Street in this area generally has a 6.0-6.5m wide pavement width, which facilitates a lane for traffic in each direction. Shoulders, on-street car parking and footpaths are not provided within this section of Rennie Street.	A speed limit of 60km/h applies to this section of Rennie Street, increasing to 100km/h further south.	On-street parking is not provided along this section of the road.

Road Name	Classification[1]	Configuration	Speed Limit	On-Street Parking
Rennie Street (north of the Hume and Hovell Memorial Monument)	Council managed 'Category 3 – Secondary Distributor' road	Rennie Street has a 10.4m wide pavement width in this location, which facilitates a lane for traffic in each direction and kerbside car parking on both sides. A footpath is provided on one side of Rennie Street.	A speed limit of 60km/h applies to Rennie Street in this location.	Unrestricted on-street car spaces is generally provided on both sides.
Forest Road South	DTP declared arterial and Transport Zone 2 (TRZ2)	North of Canterbury Road East, Forest Road South provides for a lane for through traffic in each direction, a bicycle lane in each direction and a kerbside parking lane on the east side. Footpaths are provided on both sides of the road. South of Canterbury Road East, Forest Road South provides for a lane for through traffic in each direction. No formal shoulders or footpaths are provided on either side of Forest Road South in this location.	Posted speed limit of 60km/h	North of Canterbury Road East, unrestricted on-street car spaces is generally provided on eastern side of the carriageway.
Nasmyth Street	Council managed 'Category 2 – Local Access – Urban' road	It is generally aligned in a northeast-southwest direction between Watt Street in the north-east and Rennie Street in the south-west. It provides a traffic lane in each direction within an undivided carriageway. No formal shoulders or footpaths are provided on either side.	Posted speed limit of 60km/h	On-street parking is not provided on either side.
Archimedes Avenue	Council managed 'Category 2 – Local Access – Urban' road	It is aligned in an east-west direction between Watt Street in the east and forms a dead end in the west. It provides a traffic lane in each direction within an undivided carriageway.	Posted speed limit of 60km/h	Unrestricted on-street car spaces is generally provided on both sides.
Watt Street	Council managed 'Category 3 – Collector Road Rural'	It is generally aligned in a northeast-southwest direction between Avalon Road in the north-east and Stephenson Street in the south-west. It provides a traffic lane in each direction within an undivided carriageway, with only formal shoulders and footpaths provided on the southern side.	Posted speed limit of 60km/h	On-street parking is not provided on either side.
McClelland Avenue	Council managed 'Category 4 – Main Distributor – Urban' and Transport Zone 3 (TRZ3)	It is aligned in an east-west direction between Perkins Road South in the east (where it continues as Old Melbourne Road) and Station Lake Road in the west. It provides a traffic lane in each direction within an undivided carriageway, with service roads provided on both sides.	Posted speed limit of 70km/h	On-street parking is not provided on either side.

Notes:
1. Based on the City of Greater Geelong Council's Municipal Public Road Register, dated 8th January, 2025.



Figure 9: Canterbury Rd East - view west (east of rail line)



Figure 10: Canterbury Rd East - view east (east of rail line)



Figure 11: Canterbury Rd East - view west (west of rail line)



Figure 12: Canterbury Rd East - view east (west of rail line)



Figure 13: Rennie Street - view south-west (at subject site)



Figure 14: Rennie Street - view north-east (at subject site)



Figure 15: Rennie Street - view south-west (at Hovell Creek)



Figure 16: Rennie Street - view north-east (at Hovell Creek)



Figure 17: Rennie Street - view north



Figure 18: Rennie Street - view south



Figure 19: Forest Road South – view north from (north of Canterbury Road East)

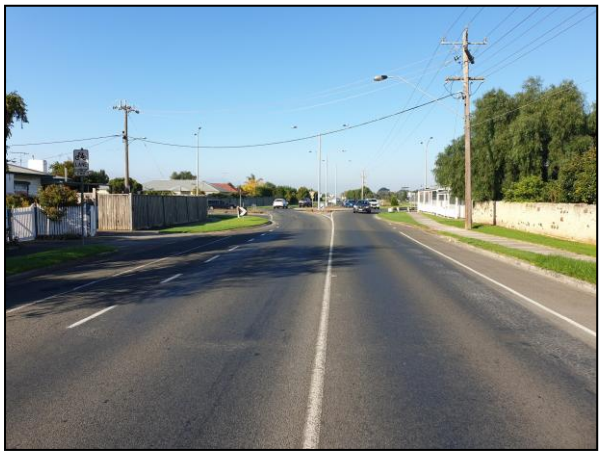


Figure 20: Forest Road South – view south from (north of Canterbury Road East)



Figure 21: Forest Road South – view north from (south of Canterbury Road East)



Figure 22: Forest Road South – view south from (south of Canterbury Road East)

3.4.2. Existing Traffic Conditions

Traffix Group undertook a series of traffic surveys, including turning movement counts and 7-day automatic tube counts at the following locations:

Turning Movement Counts

- Forest Road South/Canterbury Road East/Canterbury Road West,
- Canterbury Road East/Rennie Street,
- Rennie Street/Princes Freeway On-Ramp,
- Rennie Street/Princes Freeway Exit Lane/MacGregor Court/Shell Parade,
- Rennie Street/McClelland Avenue/Hicks Street,
- Rennie Street/Nasmyth Street,
- Avalon Road/Watt Street,
- Avalon Road/McClelland Avenue, and
- Avalon Road/Princes Freeway Interchange (Northern and Southern Intersections).

7-Day Automatic Tube Counts

- Forest Road South, north of Canterbury Road East,
- Forest Road South, south of Canterbury Road East,
- Canterbury Road East, east of Forest Road South,
- Canterbury Road East, east of railway line,
- Rennie Street, south of Canterbury Road East,
- Rennie Street, north of Canterbury Road East,
- Rennie Street, north of Nasmyth Street,
- Rennie Street, south of McClelland Avenue,

- Nasmyth Street, southwest of the bend,
- Archimedes Avenue, west of Watt Street
- Watt Street, west of Avalon Road,
- McClelland Avenue, west of Avalon Road, and
- Rennie Street, north of Princes Freeway On-Ramp

The locations of the surveyed intersections and tube count locations are provided at Figure 23.

The turning movement counts were conducted on:

- Thursday 12th February, 2026 from 7am-10am and 2:30pm-6:30pm and
- Saturday 14th February, 2026 between 10am and 2pm; and

The 7-day tube counts were conducted from Wednesday 11th February, 2026 to Tuesday 17th February, 2026.

All of these times are outside of school holiday times and clear of public holidays.

Figure 25 summarises the peak hour traffic count data for the key intersections surrounding the site. The map provided is not to scale. The overall network peak hour observed across all of the intersections surveyed are:

- AM Peak: 8am – 9am
- School Peak: 3:45pm – 4:45pm
- PM Peak: 4:15pm – 5:15pm
- Saturday Peak: 11:15am – 12:15pm

Figure 24 presents a summary of the weekday average daily traffic volumes of key roads within the study area.

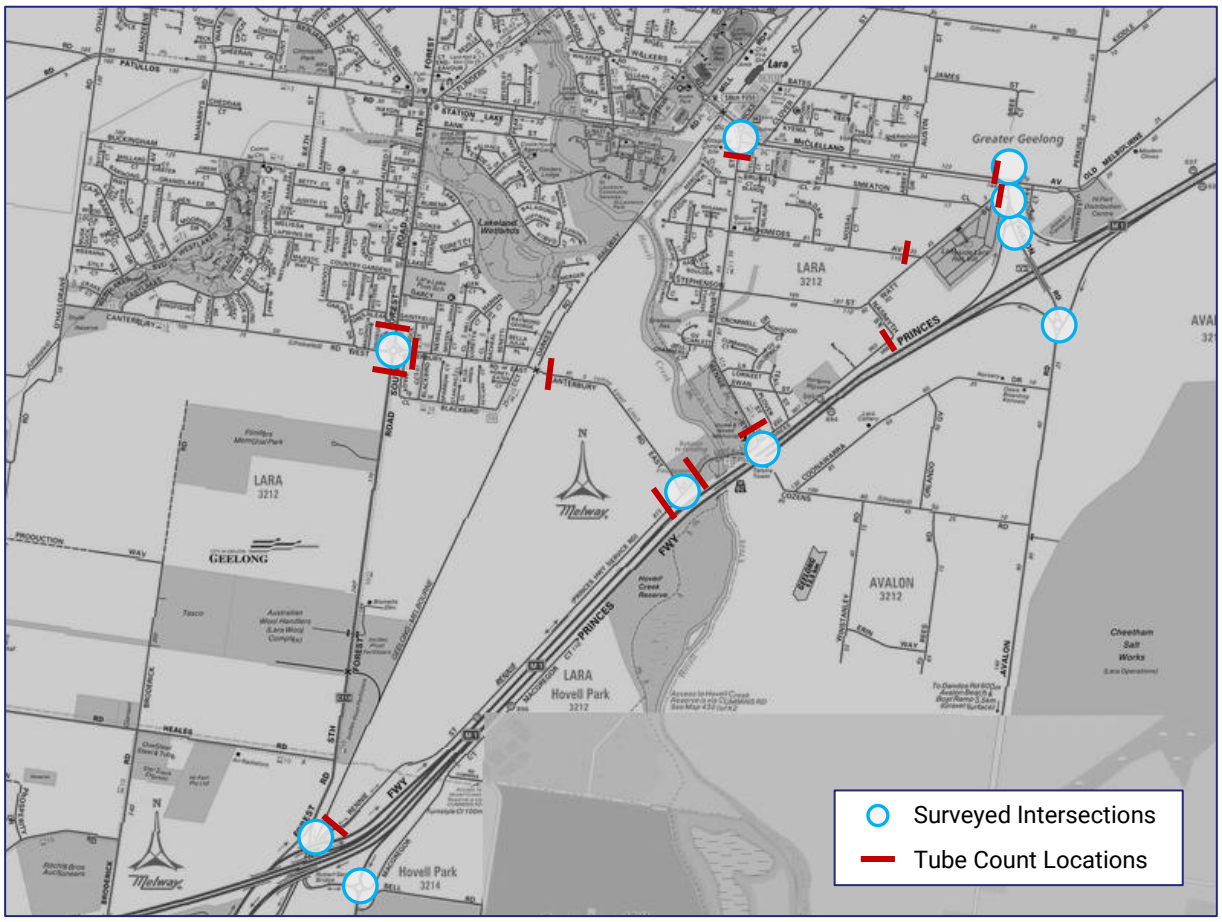


Figure 23: Surveyed Intersections (Source: Melway)

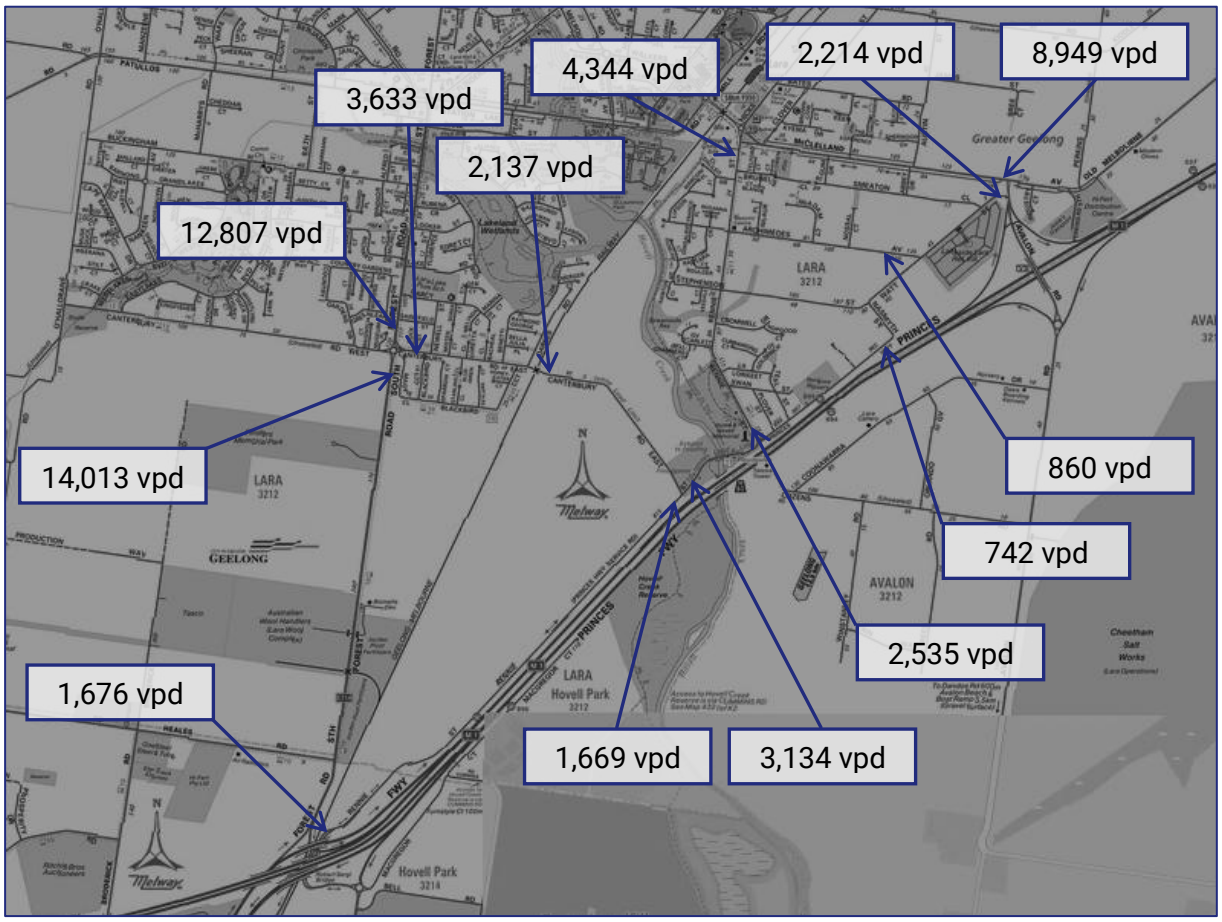


Figure 24: 7-Day Tube Count Results – Weekday Daily Average Two-Way Volumes (February, 2026)

The detailed results of the tube counts undertaken by Traffix Group have been provided at Appendix B. The table below summarises the results in the context of their respective key characteristic volume based on their classifications under the Greater Geelong Road Management Plan.

Table 3: Daily Traffic Volumes and Road Characteristic Volume

Road Name	Location	Classification	Weekday Average (vpd)	Characteristic Volume[1] (vpd)	Within Characteristic Volume?
Canterbury Road East	East of Train Line	Category 2 – Local Access – Urban	2,137	1,000–2,000	No
Canterbury Road East	West of Train Line to East of Forest Road South	Category 3 – Secondary Distributor	3,633	3,000-5,000	Yes
Forest Road South	North of Canterbury Road East	Transport Zone 2	12,807	<18,000[2]	Yes
	South of Canterbury Road East		14,013		Yes
Rennie Street	North of Canterbury Road East	Category 3 – Collector Road Rural	3,134	3,000-5,000[3]	Yes
	South of Canterbury Road East		1,669		Yes
	North of Princes Freeway On-Ramp		1,676		Yes
	South of McClelland Avenue	Category 3 – Secondary Distributor	4,344	3,000-5,000	Yes
	North of Nasmyth Street		2,535		Yes
Nasmyth Street	Southwest of Bend	Category 2 – Local Access – Urban	742	<2,000	Yes
Archimedes Avenue	West of Watt Street	Category 2 – Local Access – Urban	860	<2,000	Yes
Watt Street	West of Avalon Road	Category 3 – Collector Road Rural	2,214	3,000-5,000[3]	Yes
McClelland Avenue	West of Avalon Road	Category 4 – Main Distributor – Urban & Transport Zone 3	8,949	5,000-10,000	Yes

Notes:
1. The previous version of The City of Greater Geelong Municipal Road Management Plan (dated 25th May, 2021) included key characteristic volumes for the different type of roads under Attachment 1. However, it has been removed within the latest version of the plan (Version 9.0, adopted 28th October, 2025). The key characteristic volumes from the previous Road Management Plan has been adopted for assessment purposes.
2. It is generally accepted that a traffic volume of less than 18,000 vehicles per day is acceptable for an arterial road with one lane in each direction. Beyond this threshold, duplication would be considered.
3. Not specifically stated in the Road Management Plan. However, have assumed based on other Category 3 roads.

Based on the above, each of the key roads which would facilitate vehicle access to the subject land are currently within their environmental capacities, except the section of Canterbury Road East, east of the railway line, which under current conditions slightly exceed its characteristic volume.

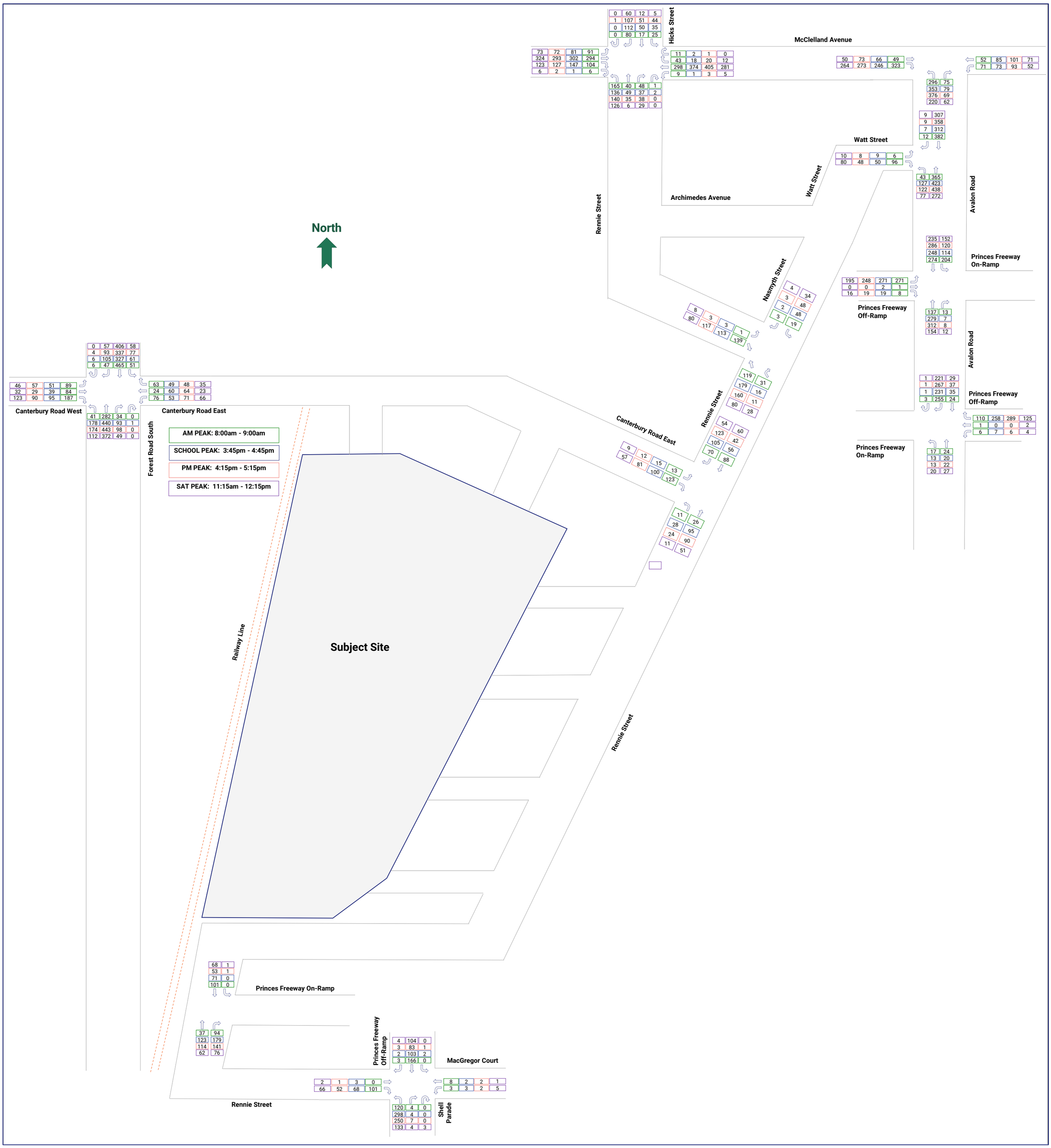


Figure 25: Existing Peak Hour Traffic Volumes (Wednesday 5th April, 2023

3.4.3. Existing Intersection Operation

SIDRA 9.1 has been used to assess the performance of each of the intersections surveyed by our office, based on the traffic volumes presented at Figure 25.

The intersection capacity analysis allows estimation of key operating parameters such as intersection Degree of Saturation (DoS), Level of Service (LoS) and 95th percentile queue, which are described below:

- **Degree of Saturation (DoS)** – measure of intersection performance expressed as a ratio of demand/capacity. A DOS greater than 0.95 is generally regarded as unsatisfactory for a signalised intersection, while a DOS greater than 0.90 is generally regarded as unsatisfactory for an unsignalised intersection. This is shown in the table below.
- **Level of Service (LoS)** – the level of service is based on the Degree of Saturation in this analysis.

Table 4: Description of Intersection Performance Levels

Level of Service		Intersection Degree of Saturation	
		Unsignalised Intersection (Including Roundabouts)	Signalised Intersection
A	Excellent	<= 0.60	<= 0.60
B	Very Good	0.60 – 0.70	0.60 – 0.70
C	Good	0.70 – 0.80	0.70 – 0.90
D	Acceptable	0.80 – 0.90	0.90 – 0.95
E	Poor	0.90 – 1.00	0.95 – 1.00
F	Very Poor	>= 1.0	>= 1.0

- **95th Percentile Queue** – this is the length of queue in vehicles or meters which is exceed only 5% of the time over the analysis period (i.e. a peak hour).

The SIDRA intersection diagrams are presented in the figures below. These images are diagrammatic models and are not to scale.



Figure 26: Forest Road South/Canterbury Road East

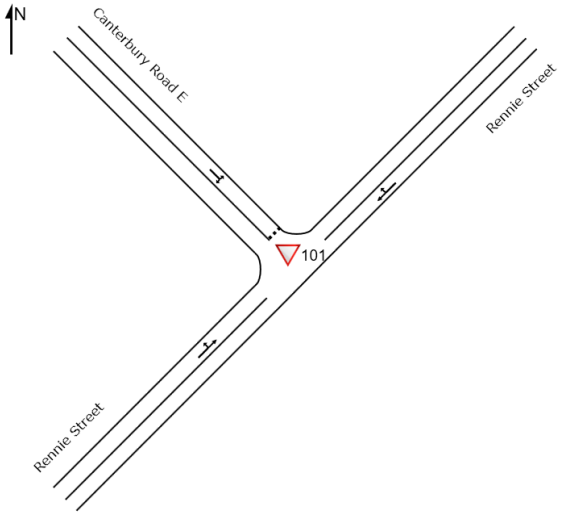


Figure 27: Canterbury Road East/Rennie Street

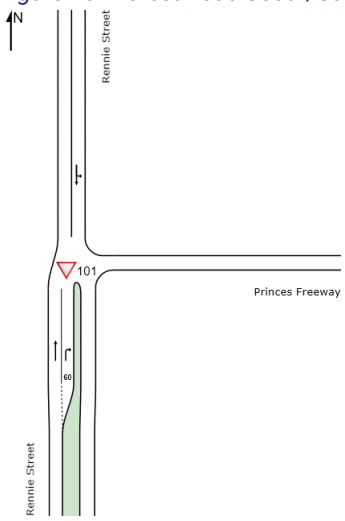


Figure 28: Rennie Street/Princes Freeway On-Ramp

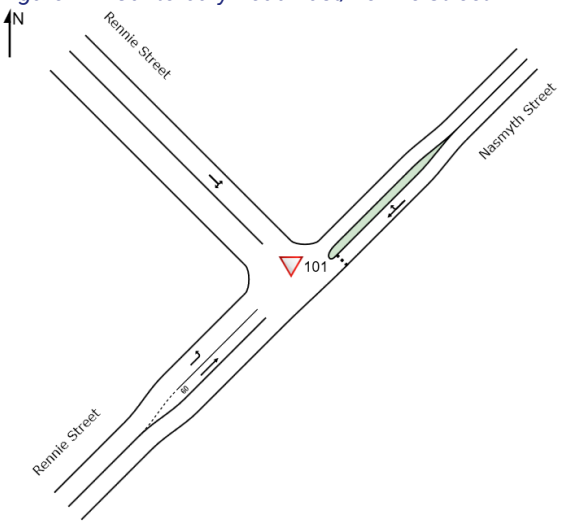


Figure 29: Rennie Street/Nasmyth Road

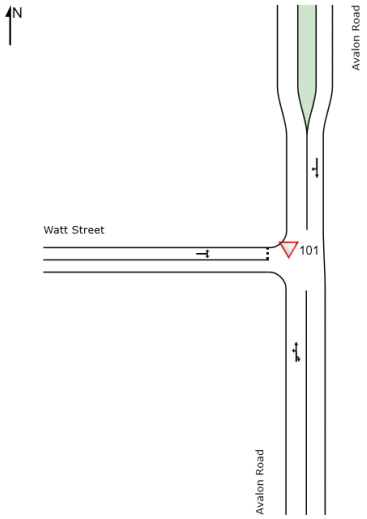


Figure 30: Watt Street/Avalon Road

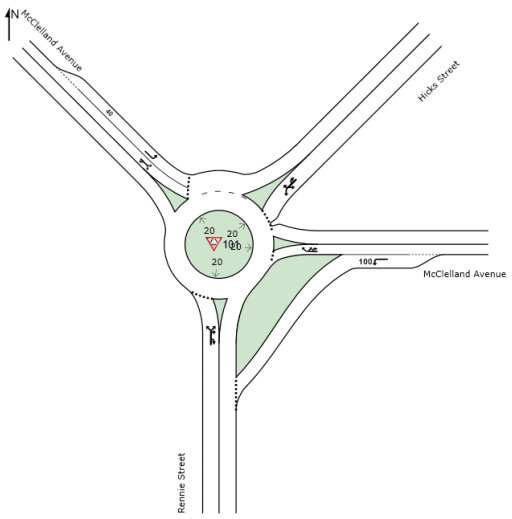


Figure 31: McClelland Avenue/Rennie Street/Hicks Street

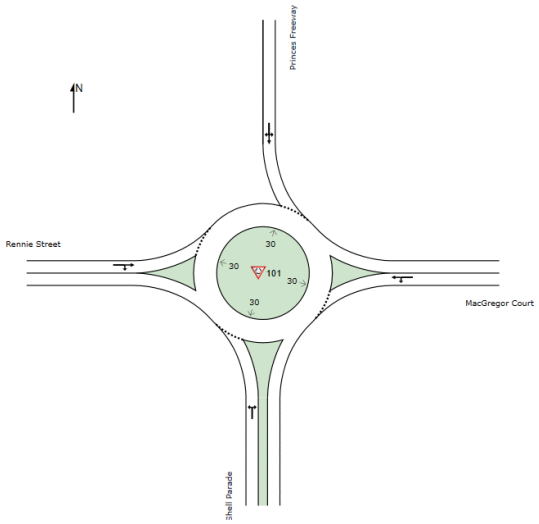


Figure 32: Rennie Street/MacGregor Court/Shell Parade/Princes Freeway Off-Ramp

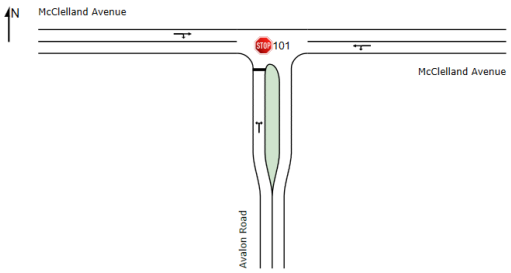


Figure 33: McClelland Avenue/Avalon Road

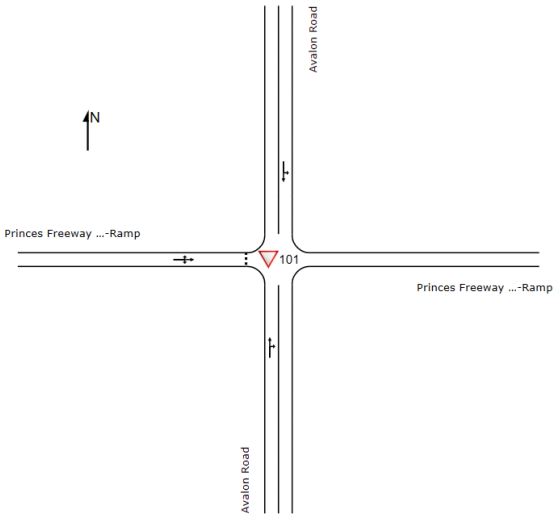


Figure 34: Avalon Road/Princes Freeway (Northern End)

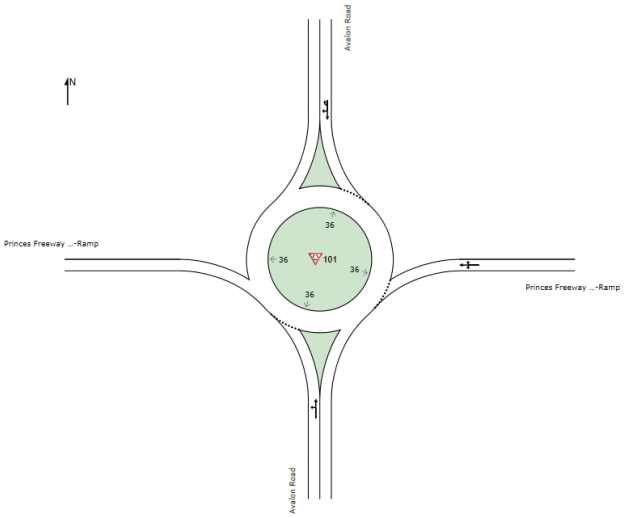


Figure 35: Avalon Road/Princes Freeway (Southern End)

All default SIDRA parameters have been adopted within the analysis of the above sites. The sites have not been assessed as a network, as they are located too far away for there to be any interaction between intersections. Accordingly, they have each been assessed in isolation.

All intersections operate under Level of Service A ('Excellent') with minimal delays and queues, except for the Forest Road South/Canterbury Road East/ Canterbury Road West roundabout, which operates at a LoS B with a DOS of 0.66 during the school peak hour. This intersection is still considered to operate at a 'Very Good' level of service.

The detailed SIDRA outputs are provided at Appendix C.

3.4.4. Road Safety Review

A review of the State Road Accident Records (CrashStats) has been undertaken in the vicinity of the site for the past 5 years of available data (01/07/2021 to 30/06/2025)[1]. The review area is shown in Figure 36 and Figure 37. A summary of the crash history is provided in Table 5.

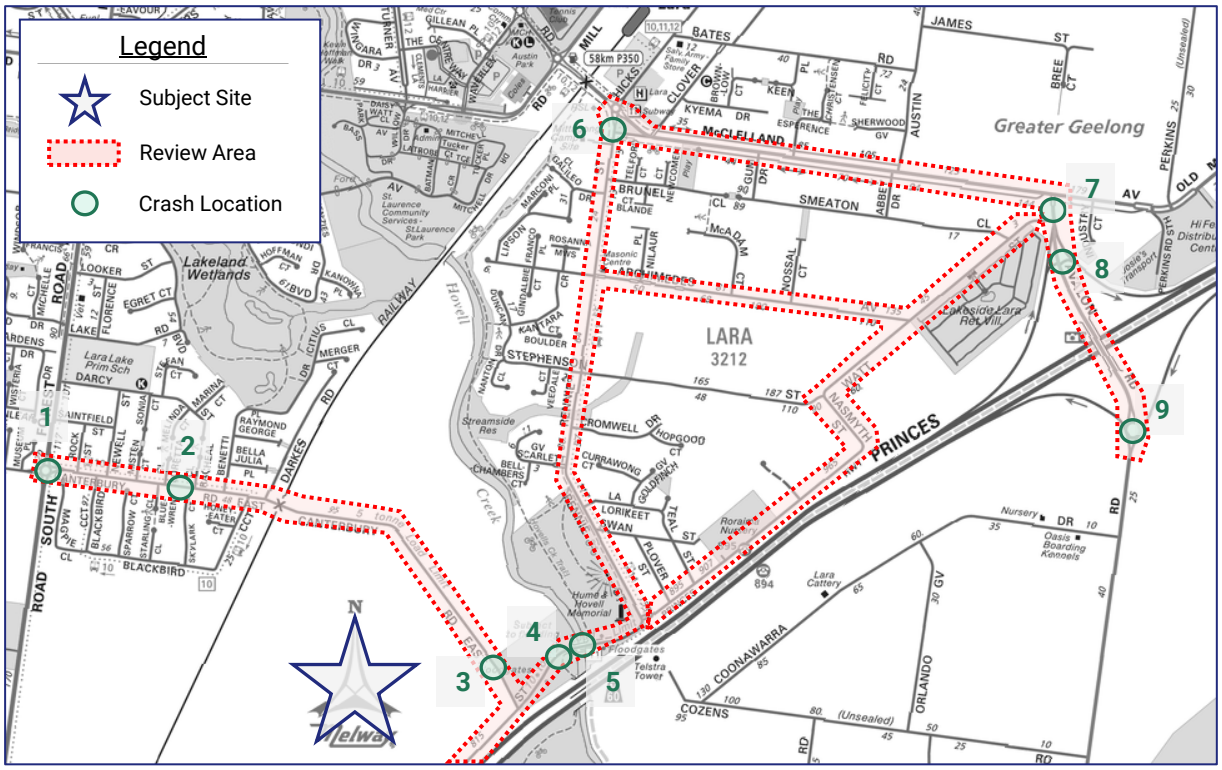


Figure 36: Crash History Investigation Area 1 (Source: Melway)

[1] Casualty crash data is contained in the VicRoads' *Crashstats Internet Database* and includes all reported casualty crashes (i.e. injury crashes), which are classified into Fatal Injury, Serious Injury and Other Injury (i.e. minor injury) crashes. Property damage only or non-injury crashes are not included in the database.

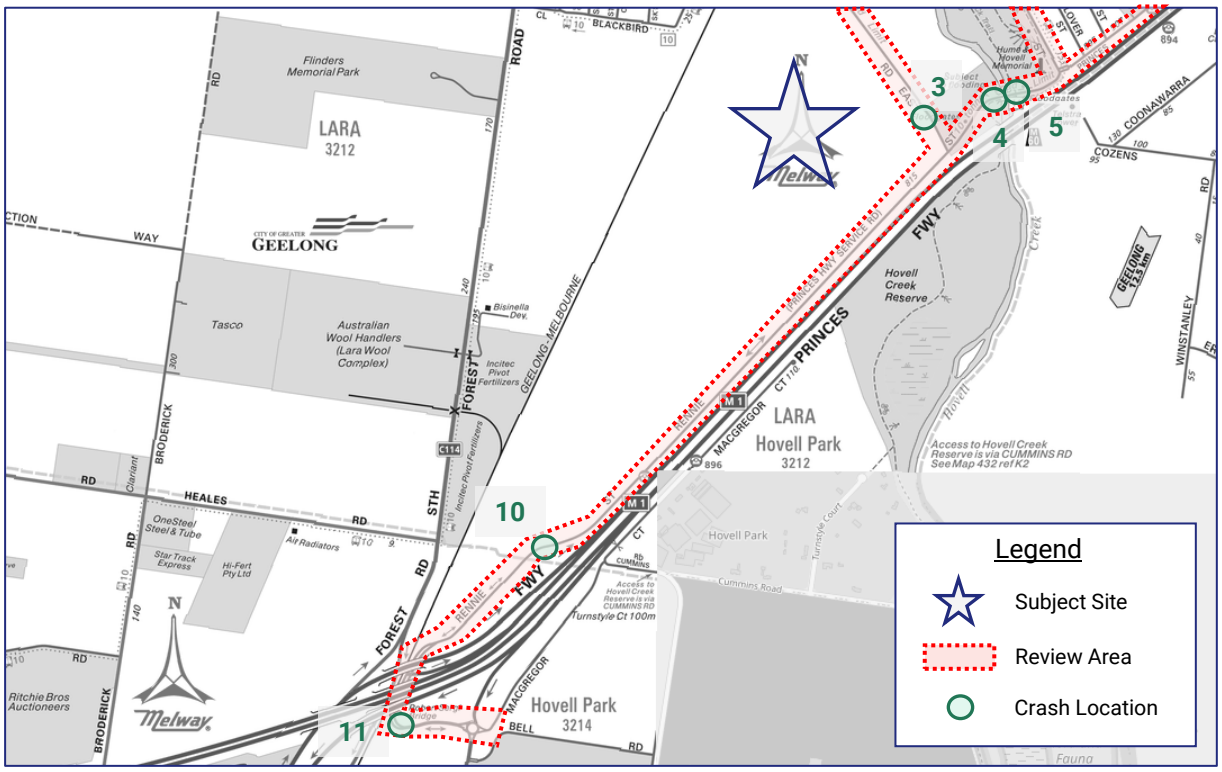


Figure 37: Crash History Investigation Area 2 (Source: Melway)

Table 5: Casualty Crash History

No.	Location	Date	Time	Severity	Conditions	DCA Code	Type of Accident
1	Forest Road 9m S of Canterbury E road	Wednesday 11/05/2022	18:06	OI	Dark, clear, dry	130	Rear end (vehicles in same lane), involving three northbound cars.
2	Canterbury Road 37m W of Racheal Close	Thursday 29/09/2022	20:00	OI	Day, clear, dry	160	Vehicle collides with vehicle parked on left or road, involving a westbound car.
3	Canterbury Road 104m NW of Rennie Street	Tuesday 27/07/2021	7:20	SI	Dark, clear, wet	171	Left off carriageway into object/parked vehicle, involving a south-eastbound car.
4	Rennie Street 216m SW of Nasmyth Street	Tuesday 22/03/2022	19:31	OI	Dusk/Dawn, raining, wet	120	Head on (not overtaking), involving a northbound and southbound car.
5	Rennie Street 179m SW of Nasmyth Street	Tuesday 26/04/2022	17:10	OI	Day, clear, dry	148 (B)	Vehicle off footpath strikes vehicle on carriageway, involving a north-eastbound car and a bicycle.

No.	Location	Date	Time	Severity	Conditions	DCA Code	Type of Accident
6	McClelland Avenue at Rennie Street	Saturday 14/12/2024	11:30	SI	Day, clear, dry	131	Left rear, involving a north-westbound van and car.
7	Avalon Road 10m S of McClelland Avenue	Tuesday 1/03/2022	7:50	SI	Day, clear, dry	130	Rear end (vehicles in same lane), involving two northbound cars.
8	Avalon Road 138m S of Avalon-Princes in On Ramp	Friday 24/02/2023	17:25	OI	Day, clear, dry	132	Right rear, involving two northbound cars.
9	Avalon Road at Princes out-Avalon Off Ramp	Monday 22/01/2024	19:00	OI	Day, clear, dry	181 (M)	Off right bend into object/parked vehicle, involving a south-westbound motorcycle.
10	Rennie Street 155m NE of Princes Highway	Tuesday 8/10/2024	8:37	SI	Day, clear, dry	120	Head on (not overtaking), involving a north-eastbound and south-westbound car.
11	Rennie Street 119m SW of Princes Highway	Wednesday 5/06/2024	7:00	SI	Dark, clear, dry	120	Head on (not overtaking), involving a south-westbound car and a north-eastbound car, and a north-eastbound light commercial vehicle.

LEGEND:

OI:	Other Injury	SI:	Serious Injury	F:	Fatality
(B):	Bicyclist	(M):	Motorcyclist	(P):	Pedestrian
(C):	Bus/Coach	(RT):	Rigid Truck	(ST):	Semi-trailer

The road safety review indicates that there have been 11 casualty crashes reported within the review area.

The presence of 11 casualty crashes over this sized area, over the past 5 years of available data is low considering the extent of the road network that the review relates to. There is no history of repeat crashes at the same location.

The review does not highlight any particular road safety issues that is of concern to this development.

3.5. Alternative Transport

3.5.1. Public Transport

There are no public transport services within the immediate vicinity of the site. This is consistent with the current Farming Zone of the land.

Two bus routes (Routes 10 and 11) operate almost to the site boundaries approaching from the east and the west, then turn back on themselves and do not pass by the site.

From 15th March, 2026, a new bus route (Route 18) will be operating between Lara Station and Avalon Airport, connecting the Greater Avalon Employment Precinct (GAEP) and Avalon Airport.

Route 18 will partially replace Route 11, which will become obsolete[2].

It is reasonable to expect that once the site is rezoned that these bus routes could continue past the subject land to service the site. This would be a matter for DTP to determine.

A map of the broader services is provided at Figure 38 and Route 18 is depicted at Figure 39. The map details the public transport network for the suburb of Lara as a whole. The Lara Railway Station is located a minimum of 2.4km walking distance from the subject site, and would be accessible via both aforementioned routes which operate almost to the site boundary.

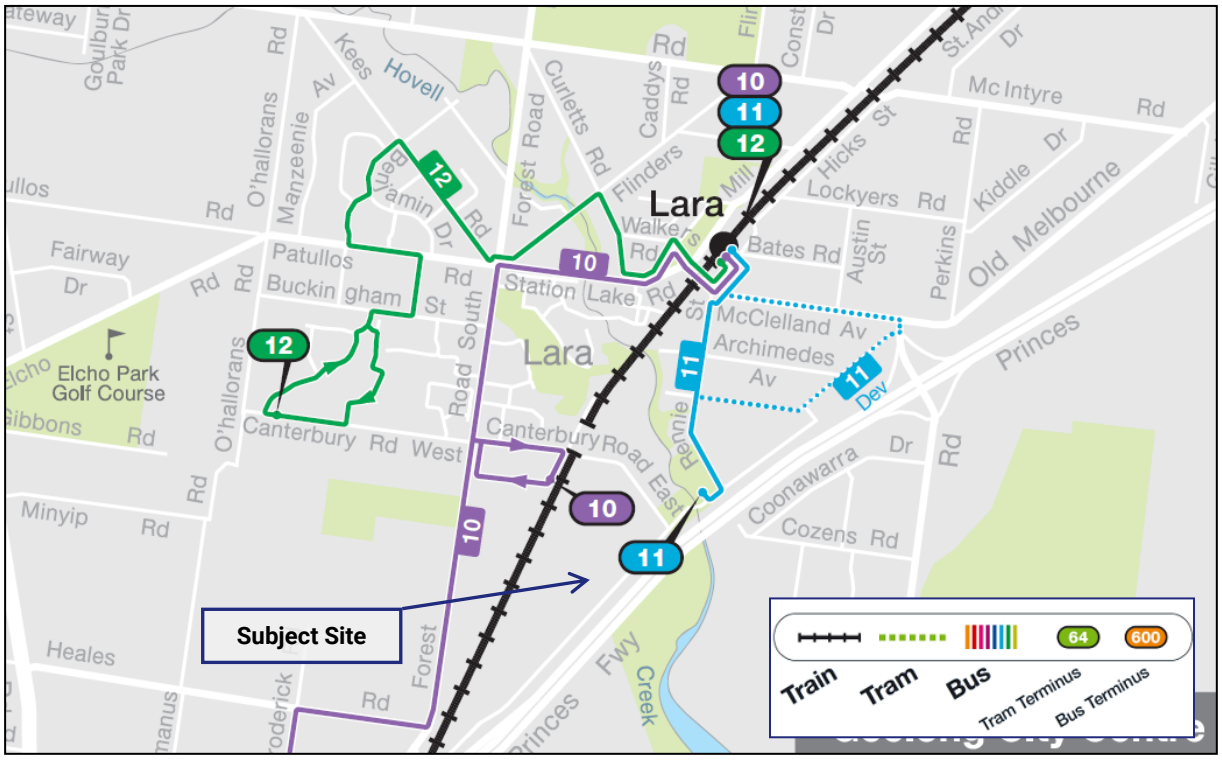


Figure 38: Public Transport Map (Source: Transport Victoria)

[2] Based on the news released on Transport Victoria website (https://transport.vic.gov.au/news-and-resources/news/new-bus-route-for-lara-and-avalon-airport#h2-e239a, published date 27th February, 2026)

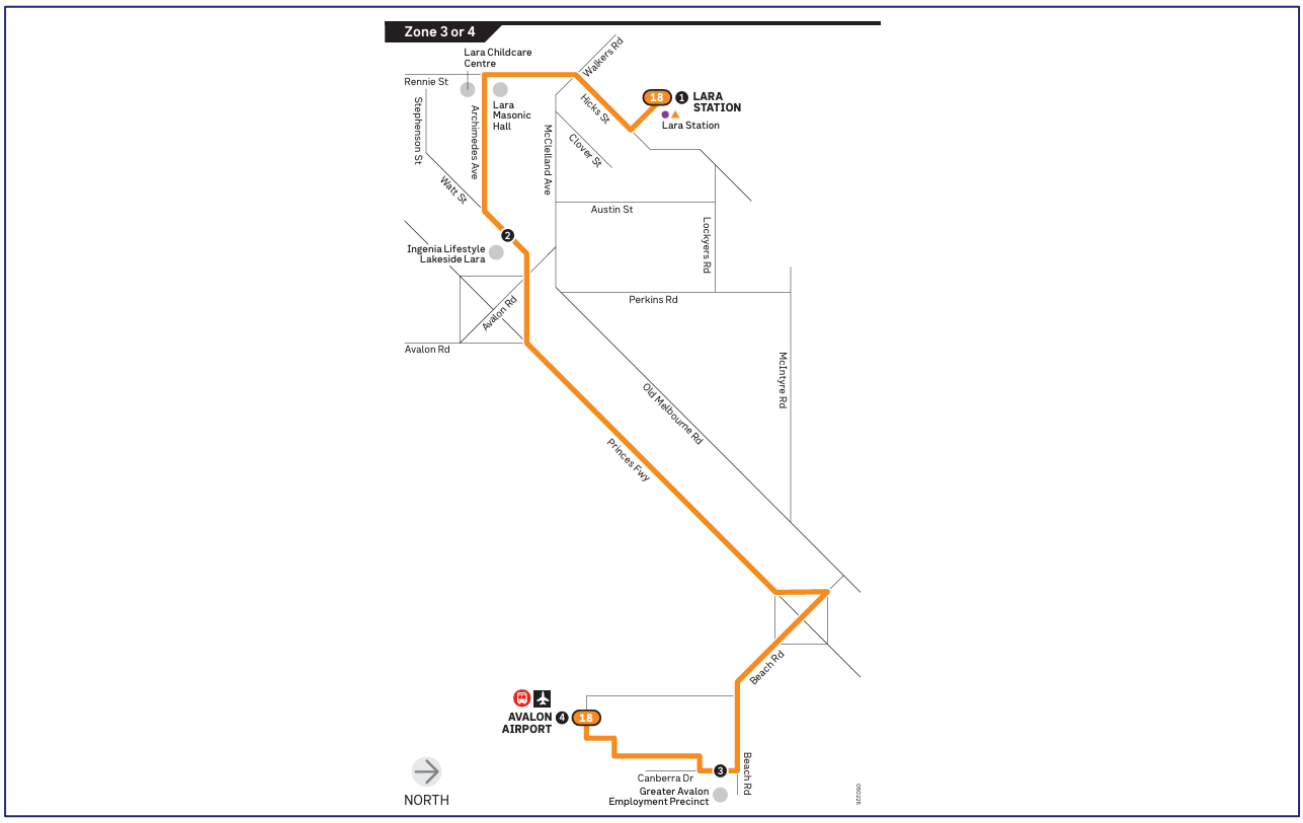


Figure 39: Bus Route 18 Map (Source: Transport Victoria)

3.5.2. Lara Railway Station and Surrounds

Lara Railway Station is located to the east of the Lara Town Centre and is located a minimum of 2.4km walking distance from the subject site. Lara Railway Station is located on the Warrnambool V-Line line, on the same line as Geelong, Waurn Ponds, Sunshine and Footscray.

The Lara Railway Station acts as a bus interchange for three bus services (Bus Routes 10, 11 and 12).

A key focus of the Lara Structure Plan is to expand the existing Lara Railway Station to create a Transit Interchange to enhance links and access and increase the use of public transportation. Under the sub-heading of 'Movement' in the Structure Plan, the document states:

> *The UDF proposes upgrading the Lara Train Station into a state of the art transit interchange. This involves increasing carparking, landscaping, connections to the town centre and public transport services. It could also include some commercial floor space, kiosk and pedestrian overpass. It also recommends investigating transport options from the Lara town centre to Avalon Airport.*

With the following associated 'Direction':

> *Support the redevelopment of the Lara Train Station to create a high quality transport interchange which integrates trains, buses, bikes, pedestrians, taxis, private vehicles and links to Avalon Airport.*

3.5.3. Bicycle/Walking Infrastructure

The following aerial photograph details the pedestrian and cycling infrastructure, including where footpaths are provided, the location of off-street shared paths and on-street bicycle lanes within close proximity to the subject land. The paths detail the major routes expected to be used by future residents from any development of the land, including towards nearby schools, the town centre and the Railway Station.

We note that the route to the town centre and the Railway Station would be in the order of 2.5-3.5km walking distance.

The site is currently not served by footpaths or bicycle paths, typical of a farming zoned land. Notably, there is no pedestrian level crossing to cross the rail line on Canterbury Road East.

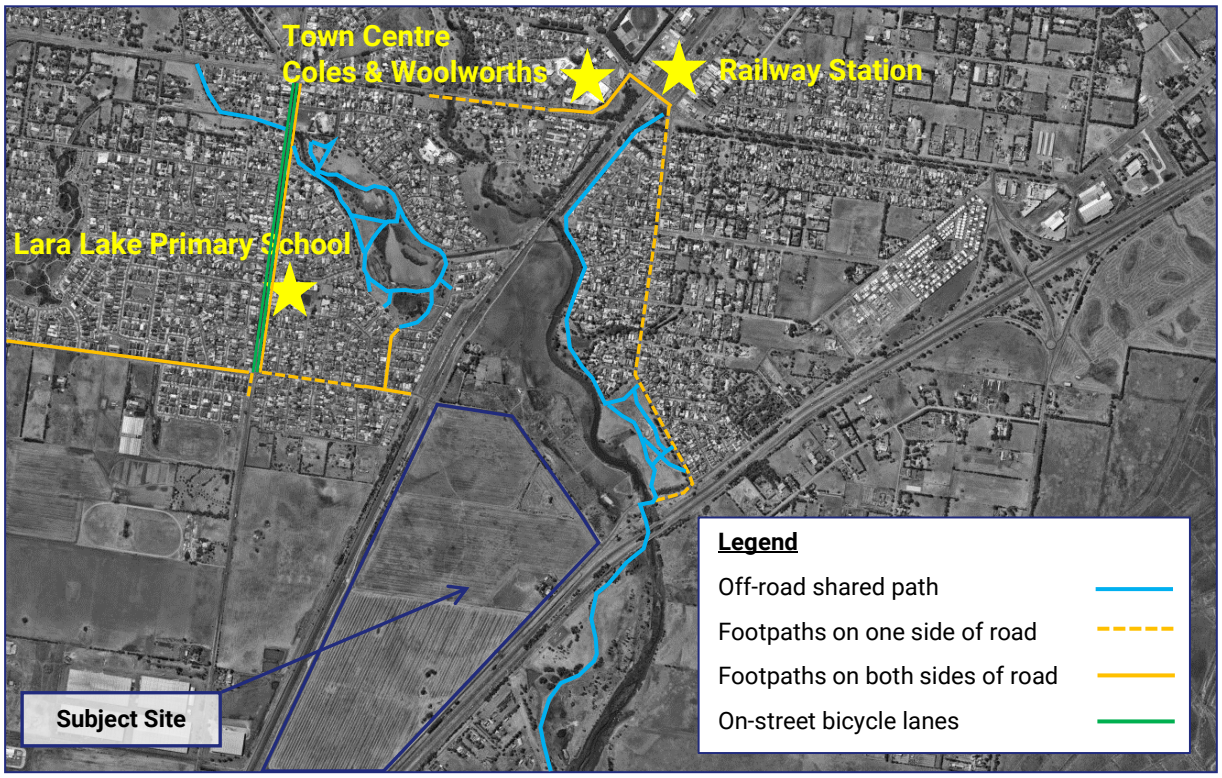


Figure 40: Bicycle and Pedestrian Network

The current Principal Bicycle Network (PBN) is detailed in the image below. Canterbury Road East is designated as part of the PBN to the west of the rail line. Once the development of the site occurs, it is anticipated that the PBN would extend along the balance of Canterbury Road East (past the subject land) to join into the PBN network to the east of the site. It would be the decision of DTP as to whether the PBN extends through the balance of Canterbury Road East.

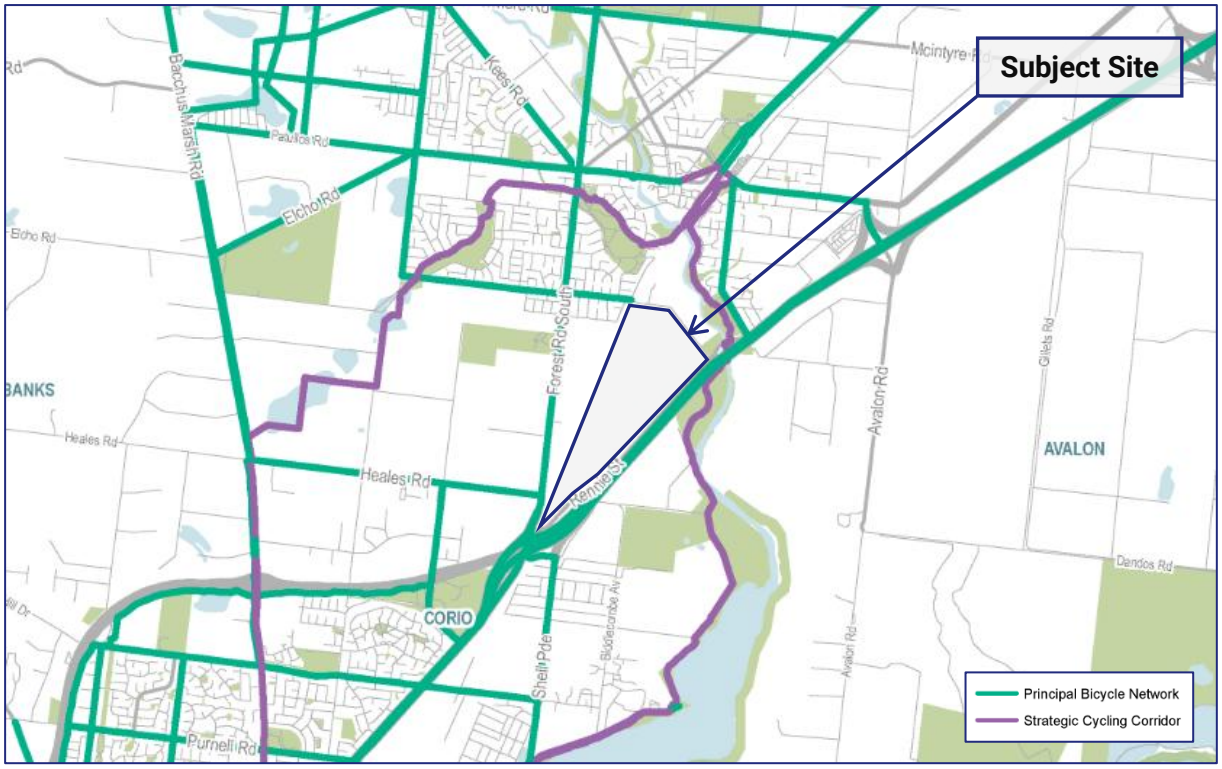


Figure 41: Principal Bicycle Network

3.5.4. Existing Level Crossing

The level crossing on Canterbury Road East includes boom gates for vehicles travelling along Canterbury Road East. It does not include any allowance for a pedestrian crossing, gates or similar. Under existing conditions there is very little demand for pedestrian movements along Canterbury Road East in this location. This is primarily due its location within the Farming Zone and there being no footpaths along Canterbury Road East to the east of the rail line.

The photograph below details the existing conditions of the level crossing on Canterbury Road East, as viewed from east of the rail line.



Figure 42: Level Crossing at Canterbury Road East, view west

Traffix Group has undertaken pedestrian movement counts of Canterbury Road East across the rail line to ascertain the existing pedestrian demand for crossing the rail line. The surveys were conducted at the following times:

- 6am-6pm on Sunday 2nd April, 2022, and
- 6am-6pm on Tuesday 4th April, 2022.

During the surveys, a total of 6 pedestrians were recorded on the Tuesday and 10 were recorded on the Sunday.

The vast majority of pedestrians were ages 18-40, with only one pedestrian on Sunday aged 40-65. No children (>18) or seniors (65+) were recorded during the surveys.

Based on the above, there is very little demand for pedestrian movements across the rail line under existing conditions.

A total of 5 cyclists were recorded on the Tuesday surveys, and 34 cyclists were recorded on the Sunday, indicating some demand for recreational bicycle riding on the weekends, rather than for commuting etc. However, very little demand was recorded during the week.

4. Traffic Impact Assessment

4.1. Traffic Generation

4.1.1. Residential Dwellings

We have adopted the following key traffic generation estimates for the indicative 666 dwellings located over the subject land:

- 0.8 vehicle trips per dwelling per peak hour
- 8 vehicle trips per dwelling per day

The above mentioned rates are consistent (slightly higher) that the traffic generation rates set out within the Transport for New South Wales Guide (TfNSW) to Transport Impact Assessment (Version 1.1, dated 4th November, 2024) for regional areas.

The surveys undertaken by TfNSW indicate a traffic generation rate of 7.53 vehicle movements per dwelling per day or 0.83 and 0.84 vehicle movements per dwelling per AM and PM peak hour for low density residential dwellings; and a traffic generation rate of 3.67 vehicle movements per dwelling per day or 0.41 and 0.60 vehicle movements per dwelling per AM and PM peak hour for medium density residential dwellings.

The surveys conducted were of similarly located residential catchments in New South Wales. Accordingly, we are satisfied that the aforementioned traffic generation rates are appropriate to apply to this site.

This assessment is based on traffic generated by 666 standard residential lots that would accommodate larger family homes. A proportion of the development would likely accommodate smaller households, which would typically generate a lower daily traffic volume compared to larger residential lots.

At the planning permit application stage, the ultimate development of the land may accommodate slightly more or less than the 666 dwellings in total. We are satisfied that these estimates represents a conservative assessment of the development potential of the residential land.

Based on the above, a total of 5,328 vehicle movements are expected to be generated by the rezoning of the land, including 533 vehicle movements during the AM and PM peak hours.

4.1.2. Industrial Development

We understand that the previous Traffic Report undertaken by Ratio has adopted a traffic generation rate of 0.5 vehicle movements per 100m^2 during the peak hours and a daily traffic generation rate of 5 vehicle movements per day per 100m^2.

The updated TfNSW guide (2024) includes traffic generation rates for large format warehouses, which will most likely be the predominant use of the industrial land. The traffic generation rates for various sized estates are set out in the table below.

Table 5.21. **Large format warehousing summary (2024 and 2012)**

Estate Gross Floor Area			
Weekend rates	**0 – 10,000m² GFA**	**10,000m² - 100,000m² GFA**	**> 100,000m² GFA**
Vehicle trips (vehicle trips/100m² GFA)			
Site AM peak hour	0.5	0.26	0.17
Site PM peak hour	Not available	0.23	0.15
Network AM peak	Not available	0.17	0.14
Network AM peak	Not available	0.21	0.14
Daily	4	2.83	1.94

Figure 43: Large Format Warehousing Traffic Generation Rates (Source: TfNSW Guide)

In light of this updated data, it is our view the traffic generation rates originally adopted by Ratio are too high and not fit for purpose[3].

Given the proposed industrial estate on the subject site is estimated to have an overall floor area of 335,290m^2, the following rates[4] apply:

- AM Peak Vehicle Movements: 0.14 vehicle movements per 100m^2 GFA
- School Peak Vehicle Movements: 0.14 vehicle movements per 100m^2 GFA (conservatively assumed to be the same as the PM peak vehicle movements)
- PM Peak Vehicle Movements: 0.14 vehicle movements per 100m^2 GFA
- Daily Vehicle Movements: 1.94 vehicle movements per 100m^2 GFA

We have adopted the same amount of heavy vehicle percentage as nominated by the previous Traffic Report prepared by Ratio, where approximately 20% of traffic generated by the industrial land use is heavy vehicles, which reduces to approximately 10% during peak periods, primarily light to medium rigid trucks.

[3] We have reviewed the full TfNSW survey results for large format warehouse uses and note that warehouse uses with floor areas ranging between 100,000 and 200,000m² GFA typically have traffic generation rates that are consistently ranging around 0.15 vehicle trips per 100m² GFA.

[4] The site peak periods of a warehouse generally occurs earlier than the typical road network peak periods. Accordingly, the network peak periods traffic generation rates have been adopted.

4.2. Traffic Distribution

4.2.1. Residential Dwellings

We have assumed that development traffic for the residential component is split in the following manner:

- AM Peak – 30% arrival / 70% departure
- School Peak – 50% arrival / 50% departure
- PM Peak – 60% arrival / 40% departure
- Weekend Peak – 50% arrival / 50% departure

These splits are consistent with our experience and industry sources regarding residential traffic distribution, and we are satisfied that they are reasonable.

The following map details the nearby major traffic attractors, and their fastest travel path based on Google Maps information. The key attractors include Lara Lake Primary School (this area is zoned to this primary school), Lara High School (this area is also zoned to this high school), Princes Freeway entrance at Avalon Road, Lara Town Centre, Lara Railway Station and the fastest route to Geelong via Forest Road South.

Traffic travelling to the Avalon Road interchange has been directed via Rennie Street and Archimedes Avenue. We understand following discussions with Council that Nasmyth Street is constrained by:

- its unsealed nature near Watt Street
- its low standard of construction, making it unsuitable to accommodate higher traffic volumes
- a significant gas pipeline under the road pavement that has minimal cover

Council therefore views this road as only being able to accommodate limited traffic. Our assessment accordingly assumes that:

- Traffic generated by the rezoning uses Rennie Street and Archimedes Avenue to access Watt Street, as the next most direct route to the interchange via sealed roads.
- Council will adopt traffic management measures, or a mid-block road closure of Nasmyth Street to make this route unattractive or unusable by through traffic.

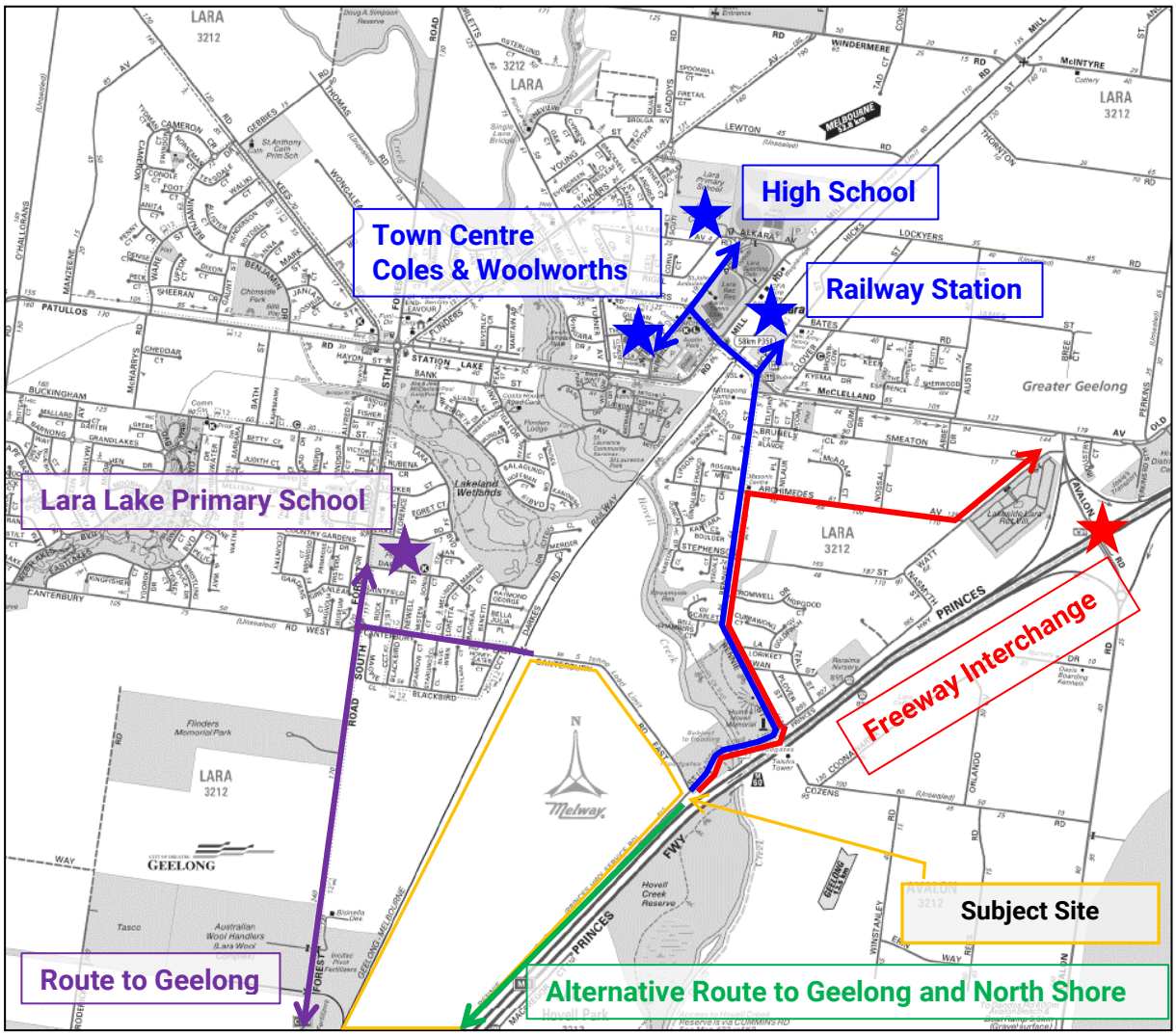


Figure 44: Nearby Traffic Generators

We have undertaken a review of the VISTA database to determine trip purposes during the peak hours for the 'Geelong' area. The tables below set out the distribution by trip purpose at different times of the day and then the associated directional distribution based on the nearby traffic generators presented above at Figure 44 above.

Overall, the following travel purpose split was recorded for the Geelong area on a daily basis:

- Work Related – 34%
- Education – 7%
- Accompanying/Pick-Up/Drop off – 15%
- Shopping – 19%
- Social/Recreation – 21%
- Other – 4%

However, the above distribution of trip purpose differs across the day, as demonstrated in the below tables.

Table 6: AM Peak Hour Distribution

Trip Purpose	% of Total Trips (Note 1)	No. of Traffic Movements	Directional Distributions - % (Veh)			
			North via Rennie Street	North-East towards Freeway	West via Canterbury Rd East	South Via Rennie Street
Work Related	32%	206	15% (31)	35% (72)	35% (72)	15% (31)
Education	35%	226	35% (79)	15% (34)	40% (90)	10% (23)
Accompanying/ Pick-Up/Drop off	18%	114	30% (34)	30% (34)	30% (34)	10% (11)
Shopping	5%	35	55% (19)	15% (5)	15% (5)	15% (5)
Social/Recreation	9%	59	30% (18)	30% (18)	30% (18)	10% (6)
TOTAL			**28% (181)**	**25% (163)**	**34% (220)**	**12% (76)**

Note 1: Based on review of VISTA database for the Geelong area.

Table 7: School Peak Hour Distribution

Trip Purpose	% of Total Trips (Note 1)	No. of Traffic Movements	Directional Distributions - % (Veh)			
			North via Rennie Street	North-East towards Freeway	West via Canterbury Rd East	South Via Rennie Street
Work Related	30%	194	15% (29)	35% (68)	35% (68)	15% (29)
Education	23%	147	35% (52)	15% (22)	40% (59)	10% (15)
Accompanying/ Pick-Up/Drop off	19%	121	30% (36)	30% (36)	30% (36)	10% (12)
Shopping	10%	66	55% (36)	15% (10)	15% (10)	15% (10)
Social/Recreation	17%	111	30% (33)	30% (33)	30% (33)	10% (11)
TOTAL			**29% (187)**	**27% (170)**	**32% (207)**	**12% (77)**

Note 1: Based on review of VISTA database for the Geelong area.

Table 8: PM Peak Hour Distribution

Trip Purpose	% of Total Trips (Note 1)	No. of Traffic Movements	Directional Distributions - % (Veh)			
			North via Rennie Street	North-East towards Freeway	West via Canterbury Rd East	South Via Rennie Street
Work Related	58%	374	15% (56)	35% (131)	35% (131)	15% (56)
Education	2%	10	35% (4)	15% (2)	40% (4)	10% (1)
Accompanying/ Pick-Up/Drop off	12%	79	30% (24)	30% (24)	30% (24)	10% (8)
Shopping	11%	73	55% (40)	15% (11)	15% (11)	15% (11)
Social/Recreation	16%	104	30% (31)	30% (31)	30% (31)	10% (10)
TOTAL			**24% (155)**	**31% (198)**	**31% (201)**	**13% (86)**

Note 1: Based on review of VISTA database for the Geelong area.

The following figures set out:

- The general distribution of residential traffic throughout the area on a wide scale at Figure 45,
- The development traffic volumes at each relevant intersection at Figure 48, and
- The post-development traffic volumes at each relevant intersection at Figure 50.

The traffic distribution throughout the area demonstrates that the majority of vehicle movements occur to towards the north of the development, including north along Rennie Street towards the railway station, freeway and town centre or west along Canterbury Road East and north along Forest Road South towards the primary school, town centre and other community facilities.

This is reflected in the overall traffic split at the Canterbury Road East/Rennie Street intersection, which demonstrates an overall traffic distribution in each of the peak periods of in the order of 80% north and 20% south. We are satisfied that this is an appropriate split of traffic given the surrounding attractors.

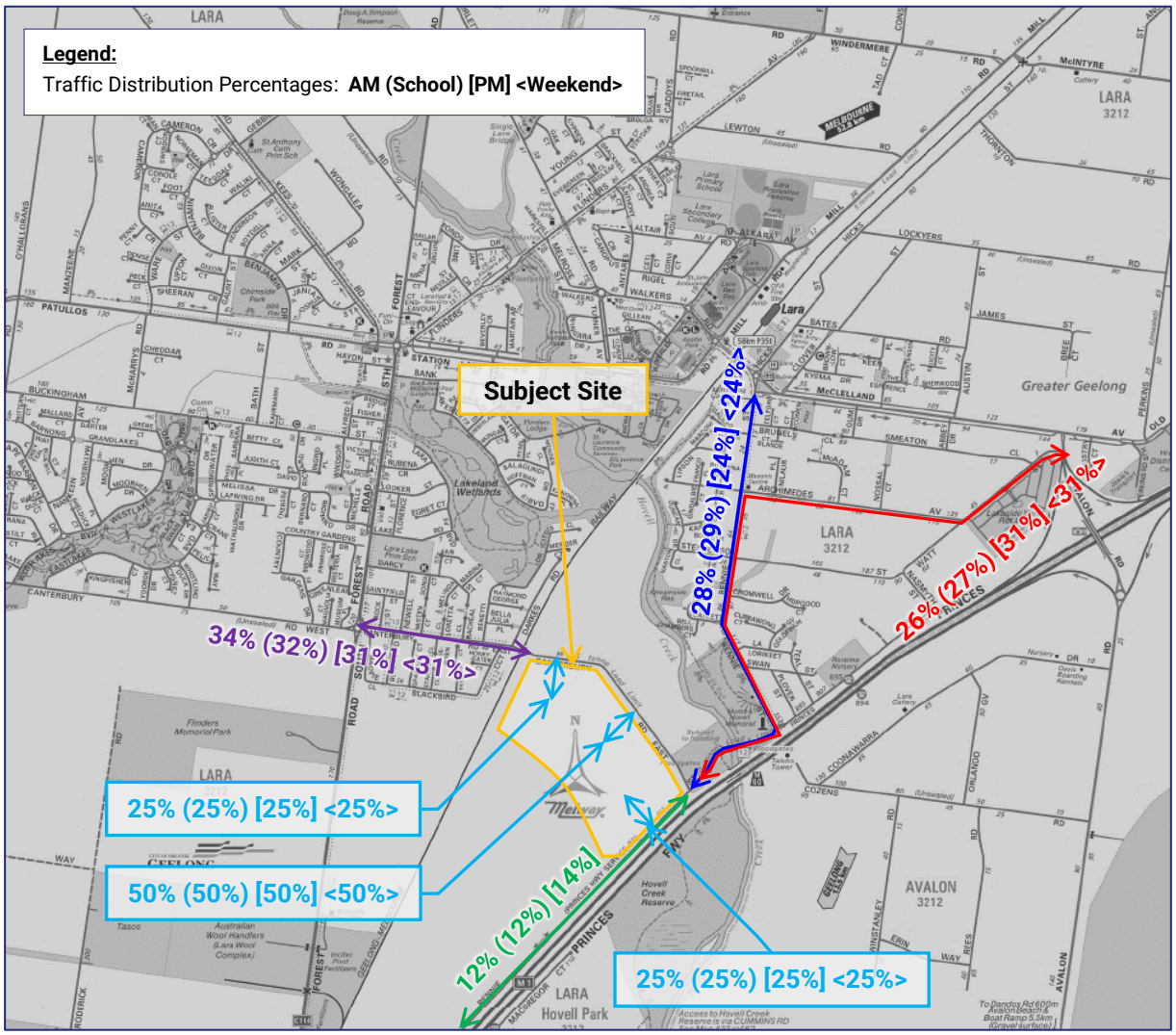


Figure 45: Peak Hour Traffic Distribution (Residential Component)

4.2.2. Industrial Component

We have assumed that development traffic for the industrial development is split in the following manner:

- AM Peak – 60% arrival / 40% departure
- School Peak – 40% arrival / 60% departure
- PM Peak – 40% arrival / 60% departure

These splits are consistent with our experience and industry sources regarding industrial traffic distribution across the AM and PM peak periods with the school peak period being conservatively adopted the same as the PM peak period, and we are satisfied that they are reasonable.

Based on the Residential Location of Local Workers data from the ABS Census undertaken in 2021, majority of workers within the City of Greater Geelong LGA[5] live and work in the area (81.8%) with the next two largest LGA for workers within the City of Greater Geelong arriving from Surf Coast LGA (5.2%) and Golden Plains LGA (3.3%).

Based on the above Census results, the majority of workers will be local workers residing within the City of Greater Geelong. Accordingly, we have adopted the following breakdown for standard passenger vehicles, where:

- 70% of vehicles will travel to and from the site from Rennie Street (Southbound) and on towards Geelong,
- 20% of vehicles will travel to and from the site from the local catchment area of Lara (Westbound),
- 5% of vehicles will travel to and from the site from the local catchment area of Lara (Northbound), and
- 5% of vehicles will travel to and from the site from the direction of Melbourne via the Rennie Street interchange, which is significantly closer and more accessible than Avalon Road for these trips.

Heavy Vehicles

We are generally in agreement with the traffic distribution detailed in Ratio's traffic report, which assigns all heavy vehicles accessing the industrial land to using the section of Rennie Street, west of Canterbury Road East, which provides the most direct access to Princes Freeway and Geelong Port Precinct.

We do not believe that trucks would travel to Princes Freeway via Nasmyth Street or Rennie Street via McClelland Avenue as:

- These routes involve travelling local roads in a circuitous manner compared to directly accessing the freeway from Rennie Street.
- The section of Rennie Street between Nasmyth Street and Canterbury Road East is subject to a heavy vehicle restriction (10 tonne load limit).

Accordingly, we anticipate that the vast majority of heavy vehicles will travel southbound via Rennie Street to access Princes Freeway (Melbourne-bound) and the Geelong Port Precinct via Shell Parade, with only minor incidental heavy vehicle movements (zero or only a little above zero) accessing the site via Canterbury Road East.

Figure 46 illustrates the distribution of traffic generated by the industrial component.

[5] The ABS statistics do not break this down further into Lara specific information. However, we expect that the overall trend would be similar.

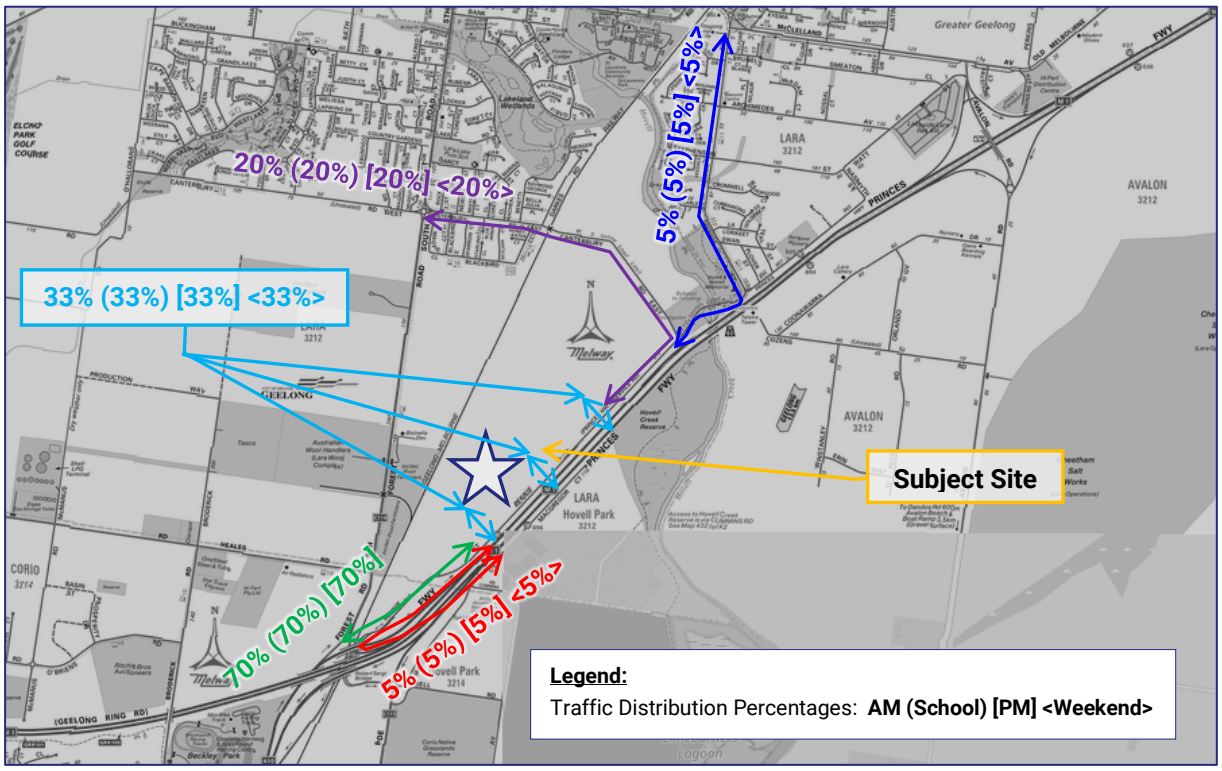


Figure 46: Peak Hour Traffic Distribution (Industrial Component – Light Vehicles)

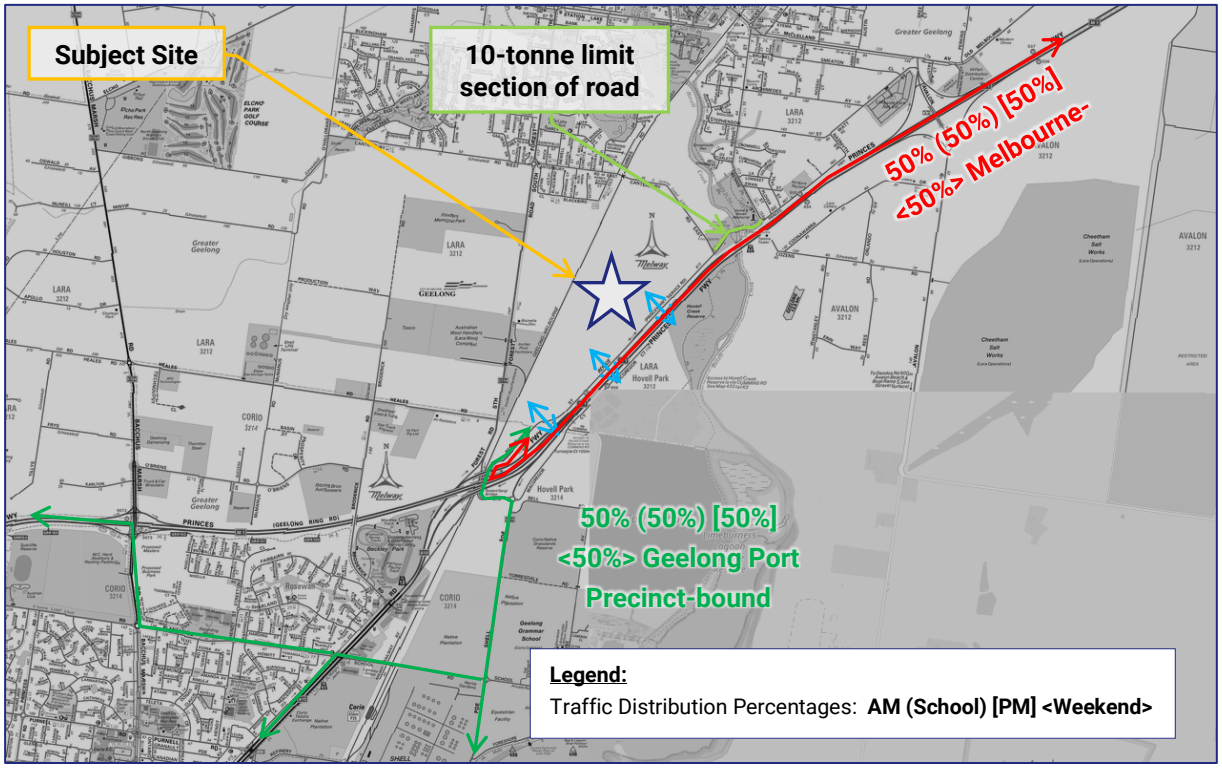


Figure 47: Peak Hour Traffic Distribution (Industrial Component – Heavy Vehicles)

The peak hour traffic volumes generated by the overall development is shown in the figures below.

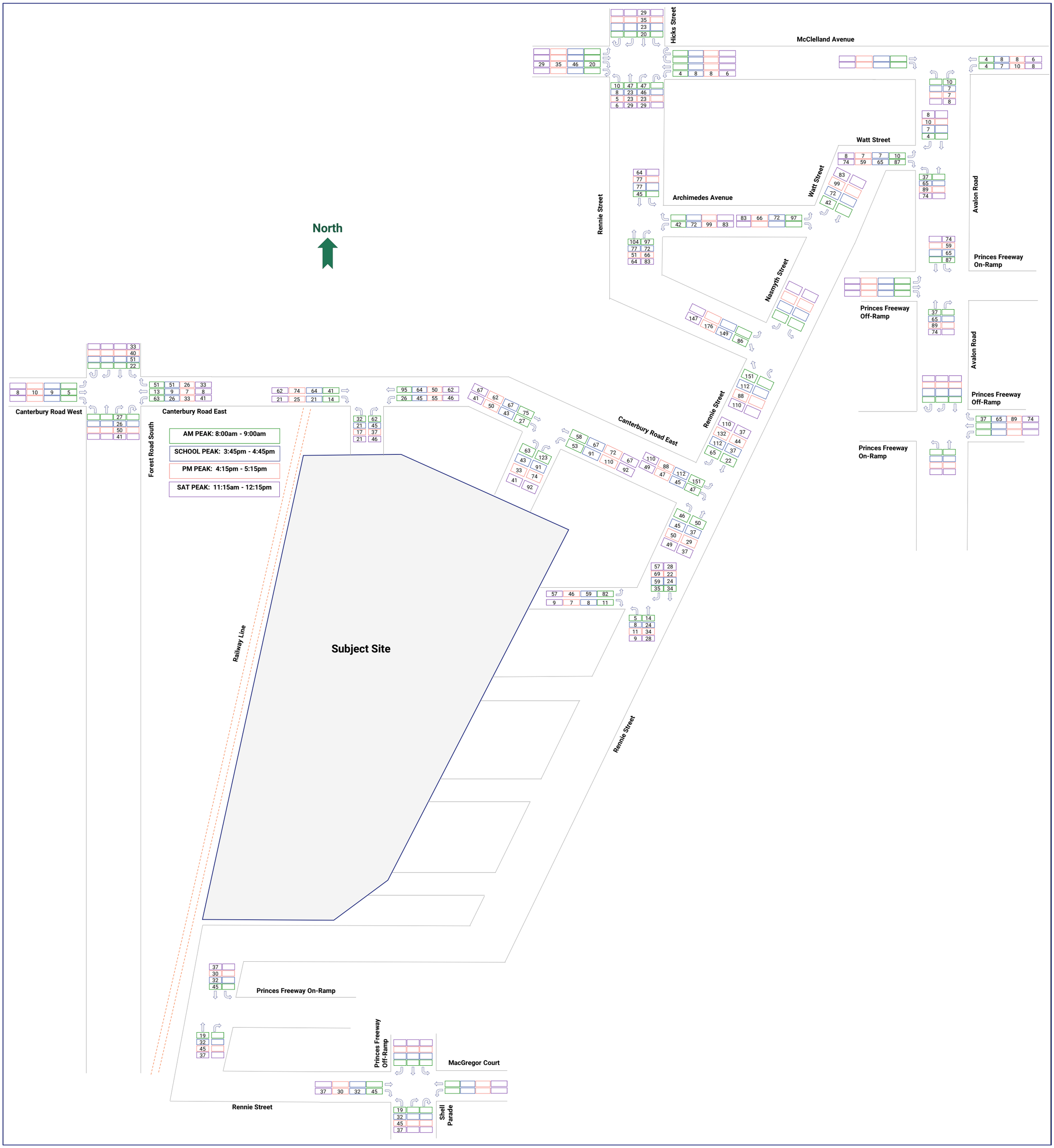


Figure 48: Peak Hour Traffic Volumes (Residential Component)

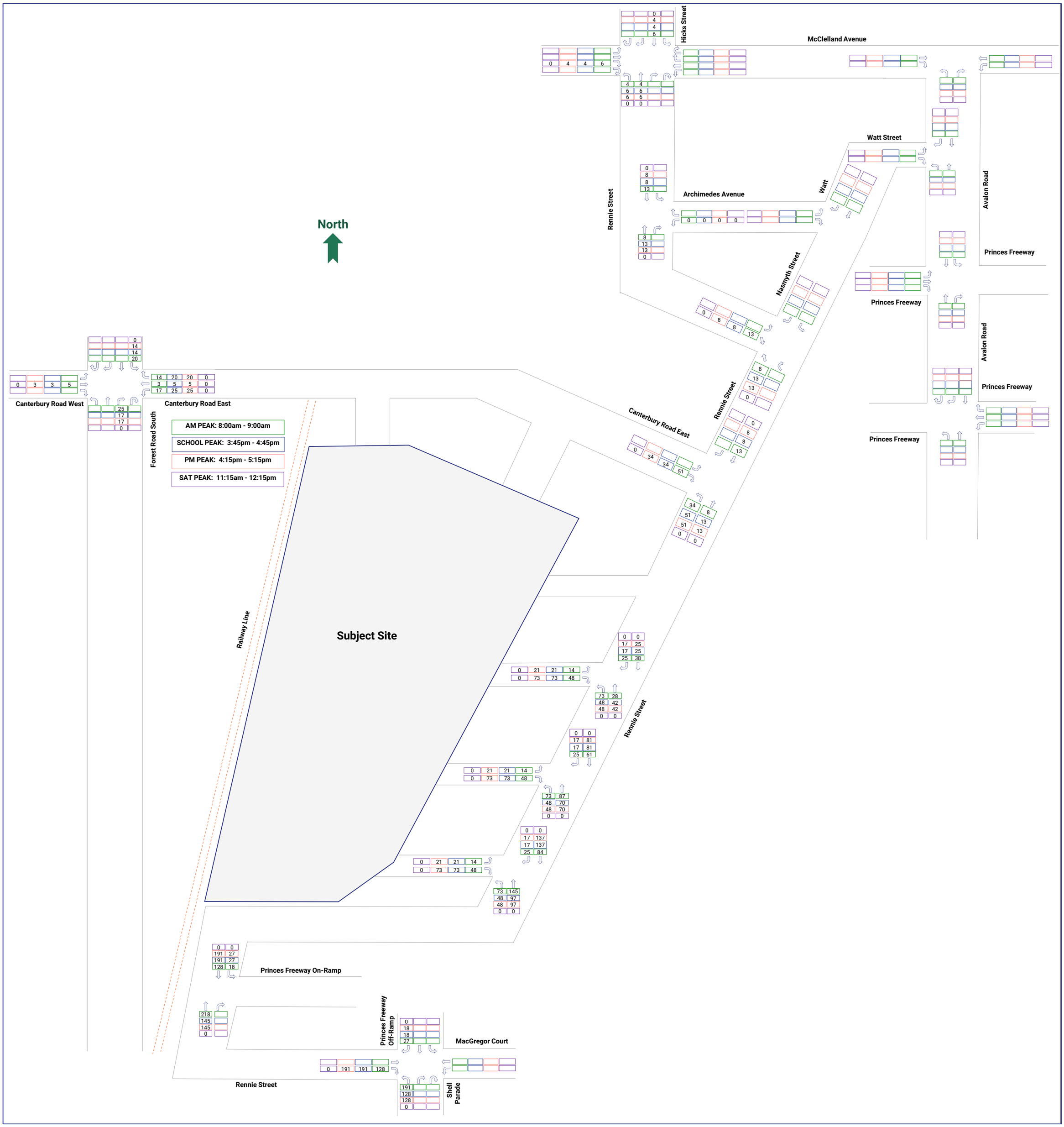


Figure 49: Peak Hour Traffic Volumes (Industrial Component)

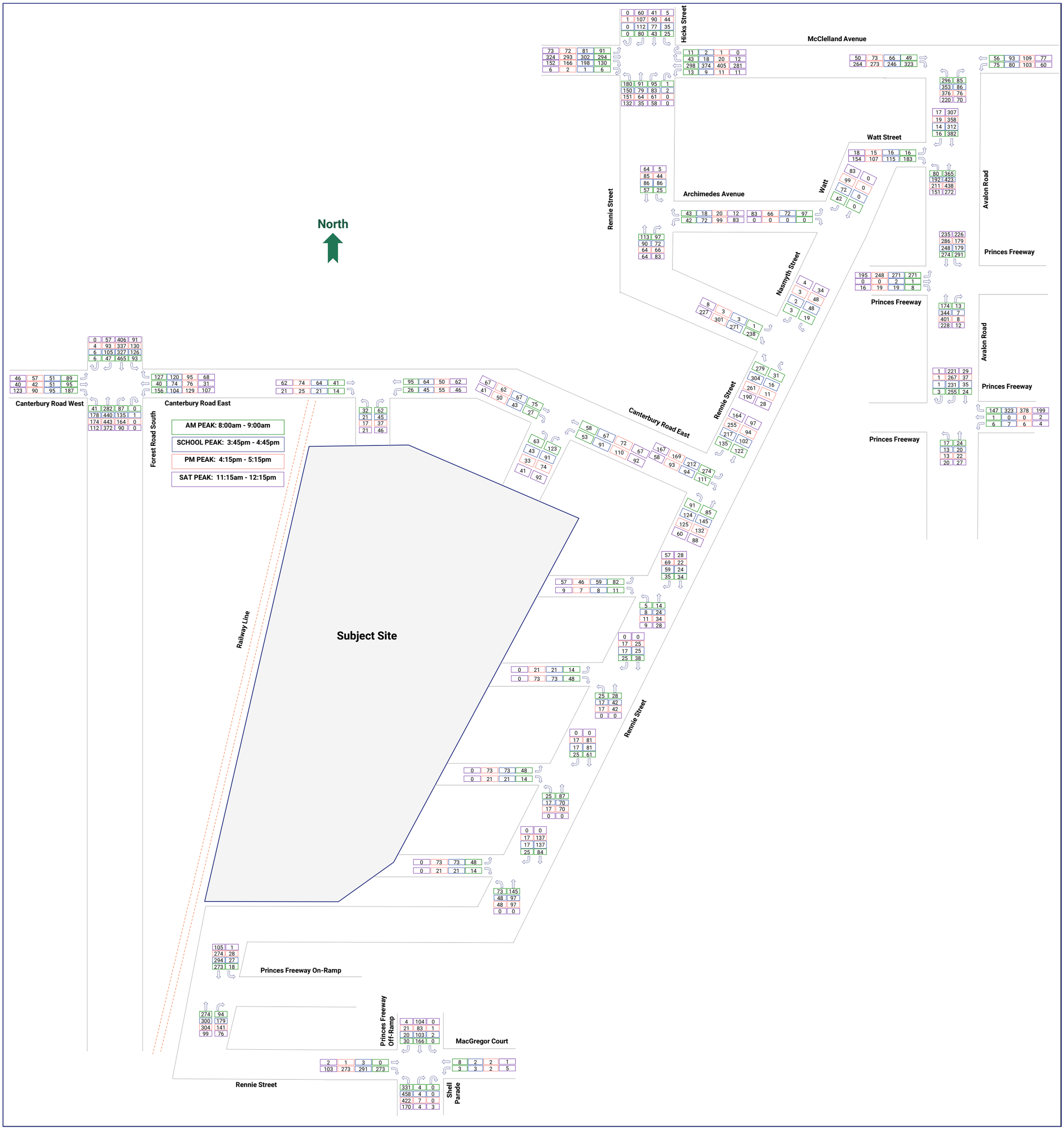


Figure 50: Post Development Traffic Volumes

4.3. Traffic Analysis

SIDRA 9.1 has been used to assess the performance of each of the relevant intersections, based on the post-development traffic volumes presented at Figure 50. The methodology and assumptions adopted for our analysis of the existing conditions at Section 3.4.3 has been reflected within this analysis. The detailed SIDRA outputs are provided at Appendix D.

Our analysis indicates that the majority of the intersections will remain operating under a **Level of Service A ('Excellent') at AM Peak, PM Peak, school pick-up time and during the weekend.**

The one exception is the Forest Road South/Canterbury Road East/Canterbury Road West intersection, which is discussed below.

Forest Road South/Canterbury Road East/Canterbury Road West Intersection

During the school pick-up times and the PM peak period at the Forest Road South/Canterbury Road East/Canterbury Road West intersection, a decrease to the level of performance is identified at the roundabout. The changes to the operation of the roundabout are detailed in the following figures and table.

Existing Conditions



Figure 51: Forest Road South/Canterbury Road East School Peak (Existing)

Post-Development Conditions



Figure 52: Forest Road South/Canterbury Road East School Peak (Post-Development)



Figure 53: Forest Road South/Canterbury Road East PM Peak (Existing)



Figure 54: Forest Road South/Canterbury Road East PM Peak (Post-Development)

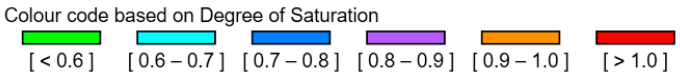


Table 9: Impact to Forest Road South/Canterbury Road East/Canterbury Road West Intersection

Critical Movement on Approach	Existing Conditions			Post-Development Conditions			*Difference*		
	DoS (LoS)	Average Delay (sec)	95th %ile Queues (m)	DoS (LoS)	Average Delay (sec)	95th %ile Queues (m)	*DoS (LoS)*	*Average Delay (sec)*	*95th %ile Queues (m)*
School Peak Hour									
South Approach	0.664 (B)	7.7	44.8	0.774 (C)	11.3	74.2	*+0.110*	*+3.6*	*+29.4*
PM Peak Hour									
South Approach	0.656 (B)	7.3	42.5	0.765 (C)	10.3	70.7	*+0.109*	*+3.0*	*+28.2*

We are satisfied that this level of impact to the operation of the Forest Road South/Canterbury Road East/Canterbury Road West roundabout is acceptable and will not have a detrimental impact to its operation during either peak hours.

4.4. Mid-Block Daily Traffic Volumes

Based on the traffic distribution detailed above, the daily traffic volumes generated by the development of the land are expected to increase traffic volumes to the levels with the anticipated site generated traffic shown in Figure 55 and the post-development traffic volumes shown in Figure 56. Table 10 sets out the relative increase in traffic volumes of these roads and compares to the target traffic volumes set out within the Greater Geelong Road Management Plan.

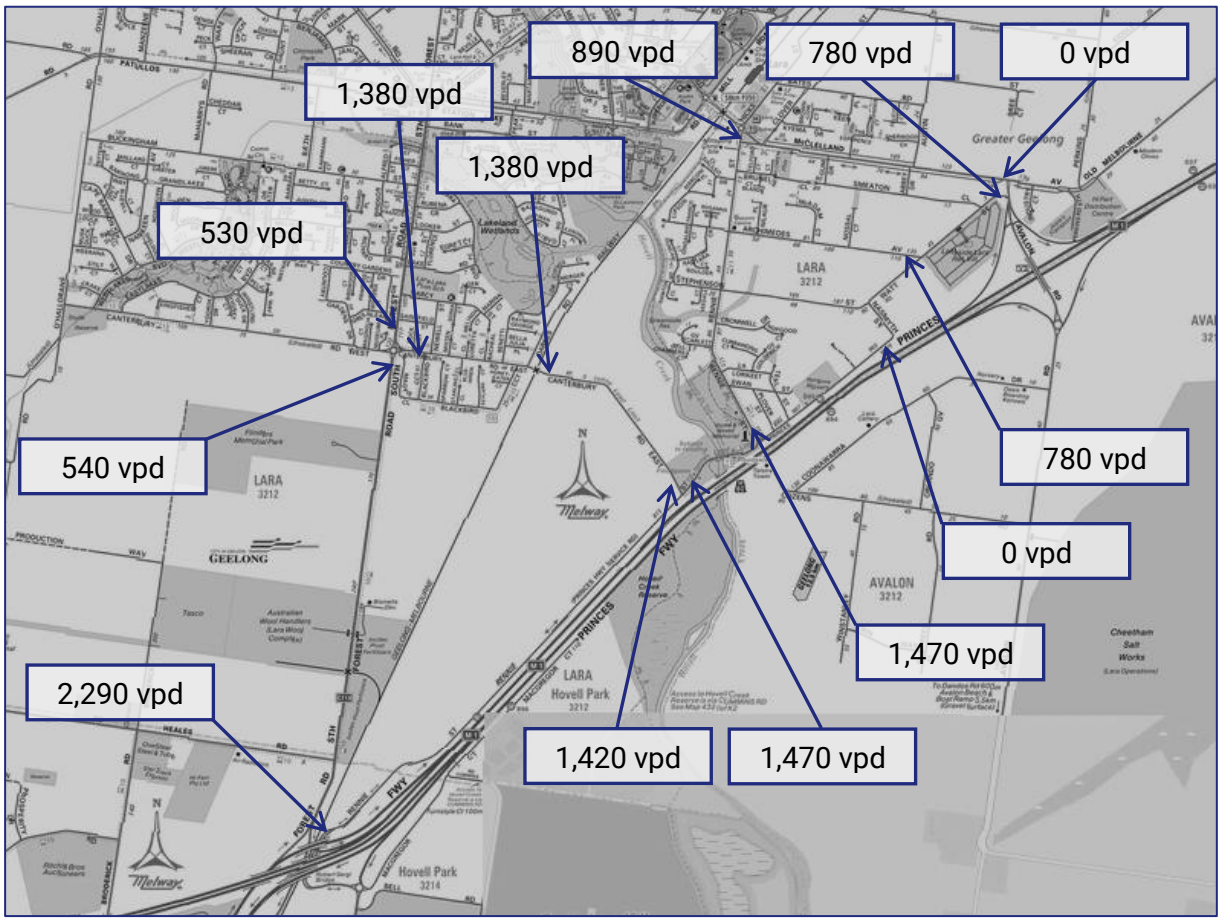


Figure 55: Site Generated Traffic Volumes - Weekday Daily Average (Two-Way Volumes)

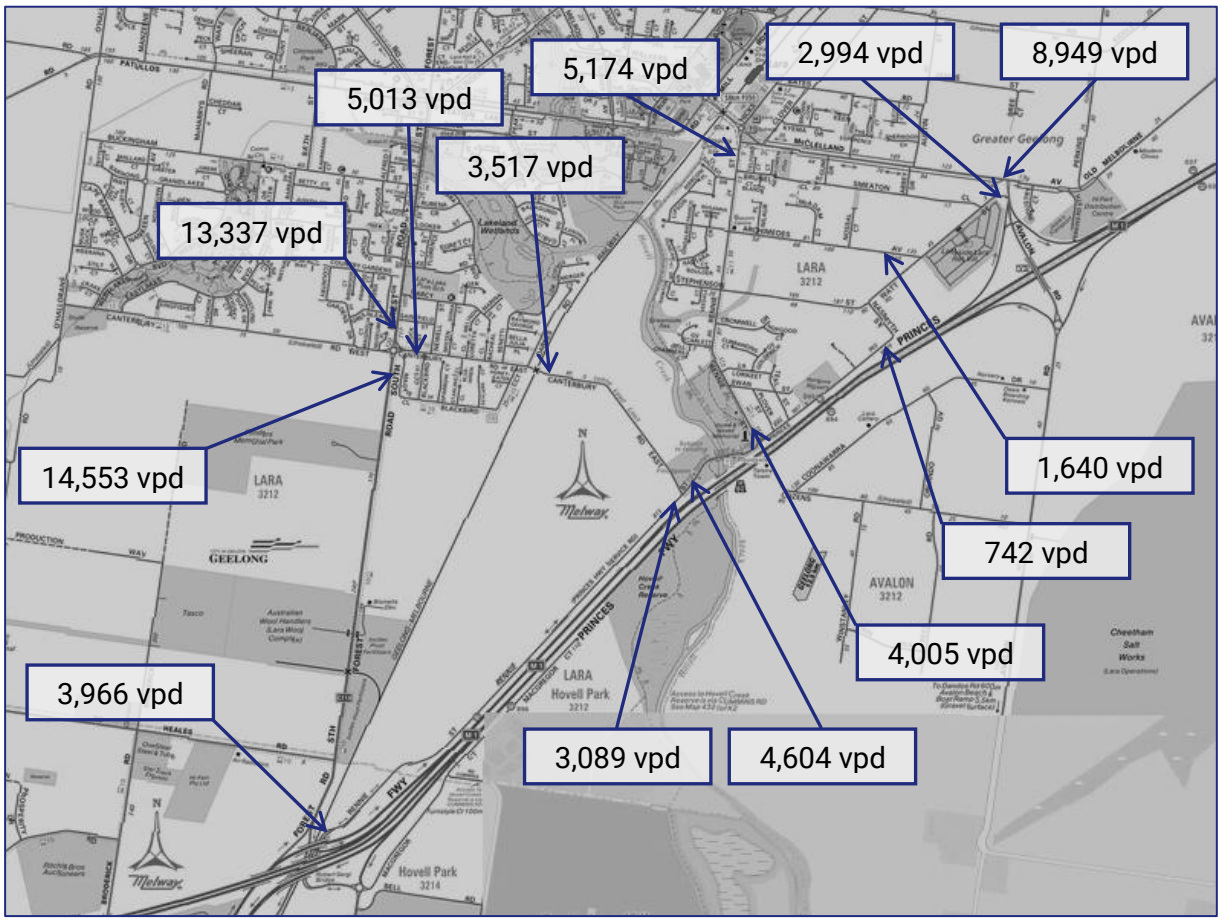


Figure 56: Post Development Traffic Volumes – Weekday Daily Average (Two-Way Volumes)

Table 10: Post-Development Daily Traffic Volumes and Road Characteristic Volume

Road Name	Location	Classification	Weekday Average (vpd)	Key Characteristic Volume[1] (vpd)	Within Characteristic Volume?
Canterbury Road East	East of Train Line	Category 2 – Local Access – Urban	3,517	1,000 – 2,000	No
Canterbury Road East	East of Forest Road South	Category 3 – Secondary Distributor	5,013	3,000-5,000	No
Forest Road South	North of Canterbury Road East	Transport Zone 2	13,337	<18,000[2]	Yes
	South of Canterbury Road East		14,553		Yes
Rennie Street	North of Canterbury Road East	Category 3 – Collector Road Rural	4,604	3,000-5,000[3]	Yes
	South of Canterbury Road East		3,089		Yes
	North of Princes Freeway On-Ramp		3,966		Yes
	South of McClelland Avenue	Category 3 – Secondary Distributor	5,174	3,000-5,000	No
	North of Nasmyth Street		4,005		Yes
Nasmyth Street	Southwest of Bend	Category 2 – Local Access – Urban	742	<2,000	Yes
Archimedes Avenue	West of Watt Street	Category 2 – Local Access – Urban	1,640	<2,000	Yes
Watt Street	West of Avalon Road	Category 3 – Collector Road Rural	2,994	3,000-5,000[3]	Yes
McClelland Avenue	West of Avalon Road	Category 4 – Main Distributor – Urban & Transport Zone 3	8,949	5,000-10,000	Yes

Notes:
1. The previous version of The City of Greater Geelong Municipal Road Management Plan (dated 25th May, 2021) included key characteristic volumes for the different type of roads under Attachment 1. However, it has been removed within the latest version of the plan (Version 9.0, adopted 28th October, 2025).
2. It is generally accepted that a traffic volume of less than 18,000 vehicles per day is acceptable for an arterial road with one lane in each direction. Beyond this threshold, duplication would be considered.
3. Not specifically stated in the Road Management Plan. However, have assumed based on other Category 3 roads.

Under Council's Road Management Plan Category 3 – Secondary Distributor roads have a key characteristic volume of 3,000-5,000 vehicles per day and are described as roads which *carry significant volumes of traffic and provide access, by linking residential areas to arterial roads. They also provide links between the various collector roads*.

Under Clause 56.06 of the Planning Scheme a road such as this would be classed as a Connector Street - Level 2, described as; *A street that carries higher volumes of traffic. It connects access places and access streets through and between neighbourhoods.* Under this clause in the Planning Scheme, this type of road would have an indicative maximum traffic volume for a 24-hour period of 3,000-7,000.

Accordingly, based on the classifications of the Category 3 – Secondary Distributor roads listed above as having a maximum daily traffic volume of 7,000 vehicles, we are satisfied that the level of traffic which these roads carry is acceptable.

In the case of Canterbury Road East, east of train line, this road would be upgraded to a Category 3 – Secondary Distributor road standard, consistent with the balance of Canterbury Road East, west of the train line. Accordingly, the anticipated traffic volume to be carried by this section of Canterbury Road East is acceptable in the context of this upgrade.

Based on the above, we do not recommend any upgrades to the surrounding road cross sections, outside of the alterations to Canterbury Road East, east of train line, to be upgraded to a Category 3 – Secondary Distributor road standard.

In response to Council feedback regarding Nasymth Street and its limitations, traffic has been redirected to Archimedes Avenue. This is the next most logical route to the Avalon Road interchange. As per the table above, Archimedes Avenue is expected to remain within its environmental capacity. It should be also noted that Archimedes Avenue has characteristics of a higher order local road including:

- A wide, 30m road reserve
- A clear traffic lane each way
- It accommodates a bus route

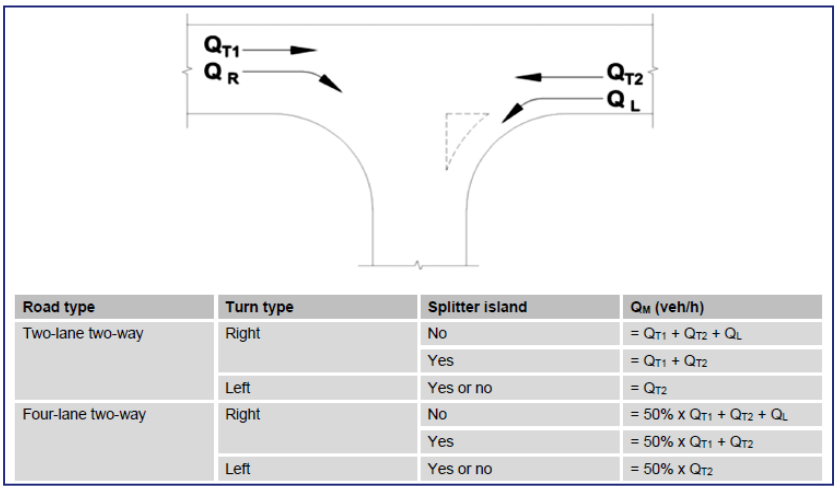
We are satisfied that Archimedes Avenue is able to accommodate the additional traffic expected.

4.5. Intersection Treatments

Turn lane Warrants – Canterbury Road East/Rennie Street Intersection

The development of the site significantly increases the traffic to the Canterbury Road East/Rennie Street Intersection. It would therefore be appropriate to assess the turn lane warrants set out at Section 3.3.6 of the *AustRoads Guide to Traffic Management Part 6 (2020)* for this intersection.

The turning volumes and the relevant through traffic movements have been determined based on Figure 3.26 from *AustRoads Guide to Traffic Management Part 6 (2020)* extracted below.



Road type	Turn type	Splitter island	Q_M (veh/h)
Two-lane two-way	Right	No	= $Q_{T1} + Q_{T2} + Q_L$
		Yes	= $Q_{T1} + Q_{T2}$
	Left	Yes or no	= Q_{T2}
Four-lane two-way	Right	No	= 50% x $Q_{T1} + Q_{T2} + Q_L$
		Yes	= 50% x $Q_{T1} + Q_{T2}$
	Left	Yes or no	= 50% x Q_{T2}

Figure 57: Calculation of Relevant Values (Figure 3.26, Austroads)

This assessment is presented in the following figures for the more critical PM peak period and is based on the traffic volumes presented at Figure 50.

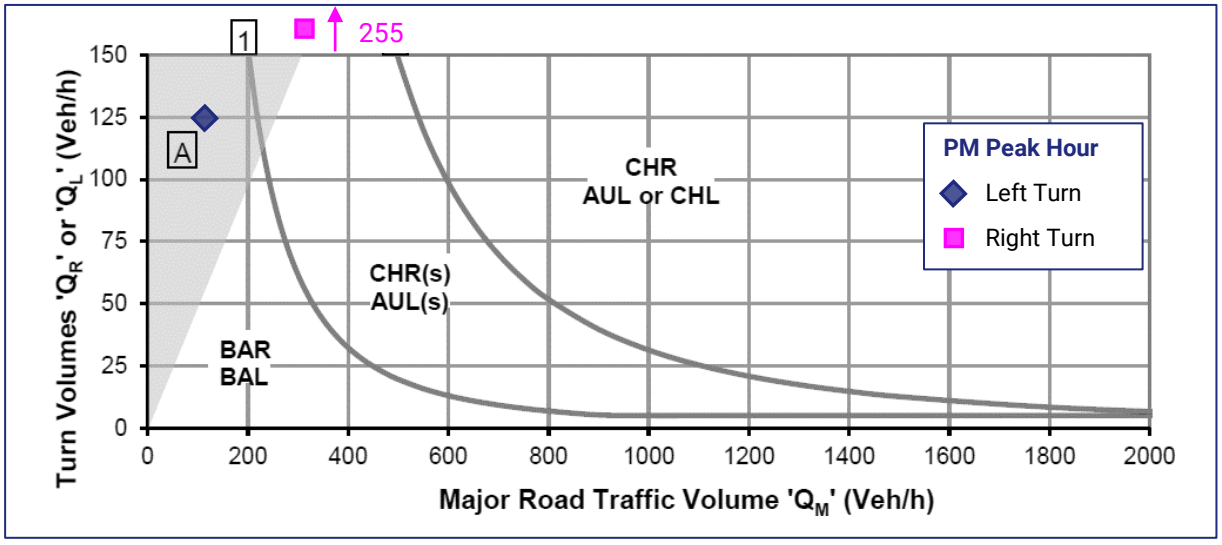


Figure 58: Left and Right Turn Warrants - Canterbury Road East/Rennie Street Intersection

Accordingly, based on the chart above, the Canterbury Road East/Rennie Street Intersection requires a channelised right turn lane and a basic left turn treatment to be provided on Rennie Street.

4.6. Traffic Analysis with Future Development of the Northern Land Parcel

Additional analysis has also been undertaken, where both the subject site and the northern parcel of land (95 & 101-145 Canterbury Road East) have been fully developed as a 'conventional residential' areas.

This land is not part of the amendment and would be subject to a separate planning processed. However, it is included for completeness. Details of this analysis is presented in Appendix E.

4.7. Sensitivity Analysis

Sensitivity analysis has been undertaken by adopting a traffic generation estimate that is 25% higher than that adopted in our primary analysis (a rate of 10 vehicle trips per day, instead of 8) for the indicative 800 dwellings located across the subject site and the parcel of land to the north of the subject site.

This is a highly conservative assessment, and again considers possible development of land that is not part of these amendments.

Details of this analysis is presented in Appendix G.

4.8. Other Proposals (Possible Regional Sports Reserve)

We understand that Council is potentially seeking to acquire part of the industrial development land affected by Amendment C453 for the delivery of a possible regional sports reserve.

Vehicular access to the possible regional sports reserve will be provided through the subject land (i.e. a connection between Canterbury Road East and the possible regional sports reserve and to Rennie Street through the proposed industrial precinct. Accordingly, vehicle movements are expected to occur through the residential land and impact upon the analysis for the proposed rezoning.

We understand that the possible regional sports reserve will consist of the following uses:

- 6 x tennis courts,
- 4 x soccer pitches,
- 2 x cricket pitches,
- active play area, and
- a carpark with 380 car spaces.

A first principles assessment has been undertaken to review the anticipated number of players, officials and spectators across each of the sports fields and courts. We are generally in agreeance with the Ratio Traffic Report's traffic generation rate for the potential

regional sports reserve with the following assumptions and the projected patronage per field/court and projected traffic generation shown in Figure 59 and Figure 60:

- Car occupancy: 1.5 people per vehicle during training and tennis and 2.2 people per vehicle during game days
- Car mode share: 90%

Sport	Game Day		Training
	Players / Officials	Spectators	Participants
Soccer	35	70	20
Football	60	200	30
Tennis	4	3	4
Cricket	30	50	15

As a rule of thumb, typical car occupancy for training / tennis is projected to be 1.5 people per vehicle with a slightly higher occupancy for game days 2.2 people per vehicle.

Figure 59: Projected Patronage per Field/Court

Table 5-4: Projected Traffic Generation – Possible Regional Sports Reserve

Peak Hour	Scenario	Peak Hour Traffic	Inbound / Outbound
Weekday PM Peak Hour	1 football match All tennis courts occupied Allowance of 10 vehicle movements generated by ad-hoc use of play space, walking tracks etc.	170 two-way vehicle movements	50% inbound / 50% outbound
Weekend Peak Hour	2 football matches All tennis courts occupied Allowance of 10 vehicle movements generated by ad-hoc use of play space, walking tracks etc.	486 two-way vehicle movements	50% inbound / 50% outbound

Figure 60: Projected Traffic Generation – Possible Regional Sports Reserve

The traffic generated to/from the possible regional sports reserve is anticipated to be distributed as follows:

- 15% of traffic to and from the north via the residential land site access,
- 30% of traffic to and from the west via the residential land site access,
- 25% of traffic to and from the east via the industrial land site access,
- 25% of traffic to and from the south via the industrial land site access, and
- 5% internally generated trips (i.e. generated from the residential land).

It is anticipated that the possible regional sports reserve will serve the Greater Lara area. While 45% of traffic is expected to access the site from the west, this includes a significant proportion from the residential areas between the rail line and Forest Road South. Accordingly, it is anticipated that 30% of the total traffic reaches the intersection between Forest Road and Canterbury Road West.

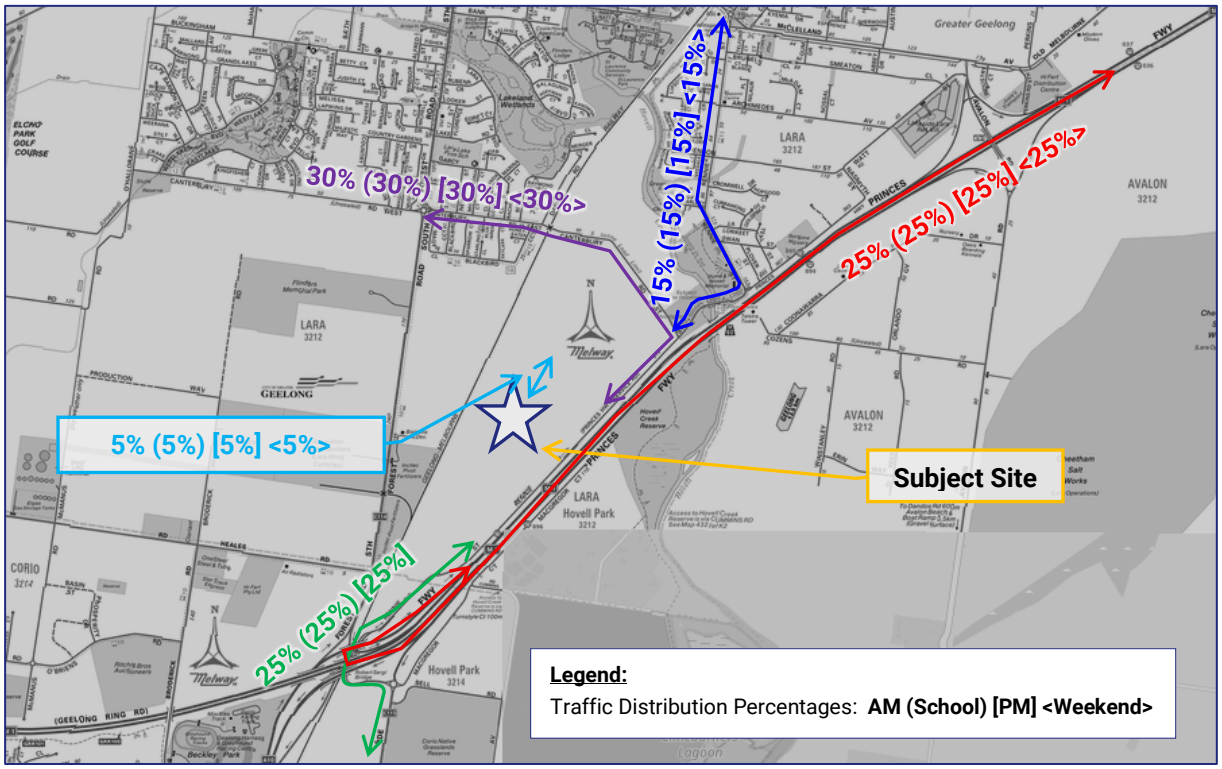


Figure 61: Peak Hour Traffic Distribution (Potential Regional Sports Reserve)

The directional distribution assumptions remain consistent with the methodology outlined in the previous sections.

SIDRA 9.1 has been used to assess the performance of each of the relevant intersections. The methodology and assumptions adopted for our analysis of the existing conditions at Section 3.4.3 and post-development conditions at Section 4.3 has been retained for this analysis. The detailed SIDRA outputs are provided at Appendix I.

Our analysis indicates that the majority of the intersections will remain operating under a Level of Service A ('Excellent') at AM Peak, PM Peak, school pick-up time and during the weekend, except for the intersections discussed below which experience minor decreases to their performance.

Finally, this assessment is conservative. It had not reduced the traffic generated by the industrial area that would occur if a sports reserve was delivered.

Forest Road South/Canterbury Road East/Canterbury Road West Intersection

During the PM peak and during School Pick-up times at the Forest Road South/Canterbury Road East/Canterbury Road West intersection, a decrease to the level of performance is

identified at the roundabout. The changes to the operation of the roundabout are detailed in the following figures and table.

Existing Conditions



Figure 62: Forest Road South/Canterbury Road East School Peak (Existing)

Post-Development Conditions



Figure 63: Forest Road South/Canterbury Road East School Peak (Post-Development)



Figure 64: Forest Road South/Canterbury Road East PM Peak (Existing)



Figure 65: Forest Road South/Canterbury Road East PM Peak (Post-Development)

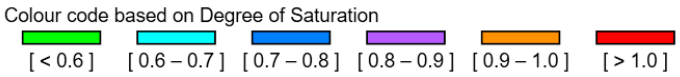


Table 11: Impact to Forest Road South/Canterbury Road East/Canterbury Road West Intersection

Critical Movement on Approach	Existing Conditions			Post-Development Conditions			*Difference*		
	DoS (LoS)	Average Delay (sec)	95th %ile Queues (m)	DoS (LoS)	Average Delay (sec)	95th %ile Queues (m)	*DoS (LoS)*	*Average Delay (sec)*	*95th %ile Queues (m)*
School Peak Hour									
South Approach	0.664 (B)	7.7	44.8	0.798 (C)	12.4	82.2	*+0.134*	*+4.7*	*+37.4*
PM Peak Hour									
South Approach	0.656 (B)	7.3	42.5	0.788 (C)	11.3	78.2	*+0.132*	*+4.0*	*+35.7*

We are satisfied that this level of impact to the operation of the Forest Road South/Canterbury Road East/Canterbury Road West roundabout is acceptable and will not have a detrimental impact to its operation during either peak hours.

4.8.1. Mid-Block Daily Traffic Volumes – Including Sports Precinct

Based on the traffic distribution detailed above, the daily traffic volumes generated by the development of the land are expected to increase traffic volumes to the levels in the following figure. The table following the figure sets out the relative increase in traffic volumes of these roads and compares to the target traffic volumes set out within the Greater Geelong Road Management Plan.

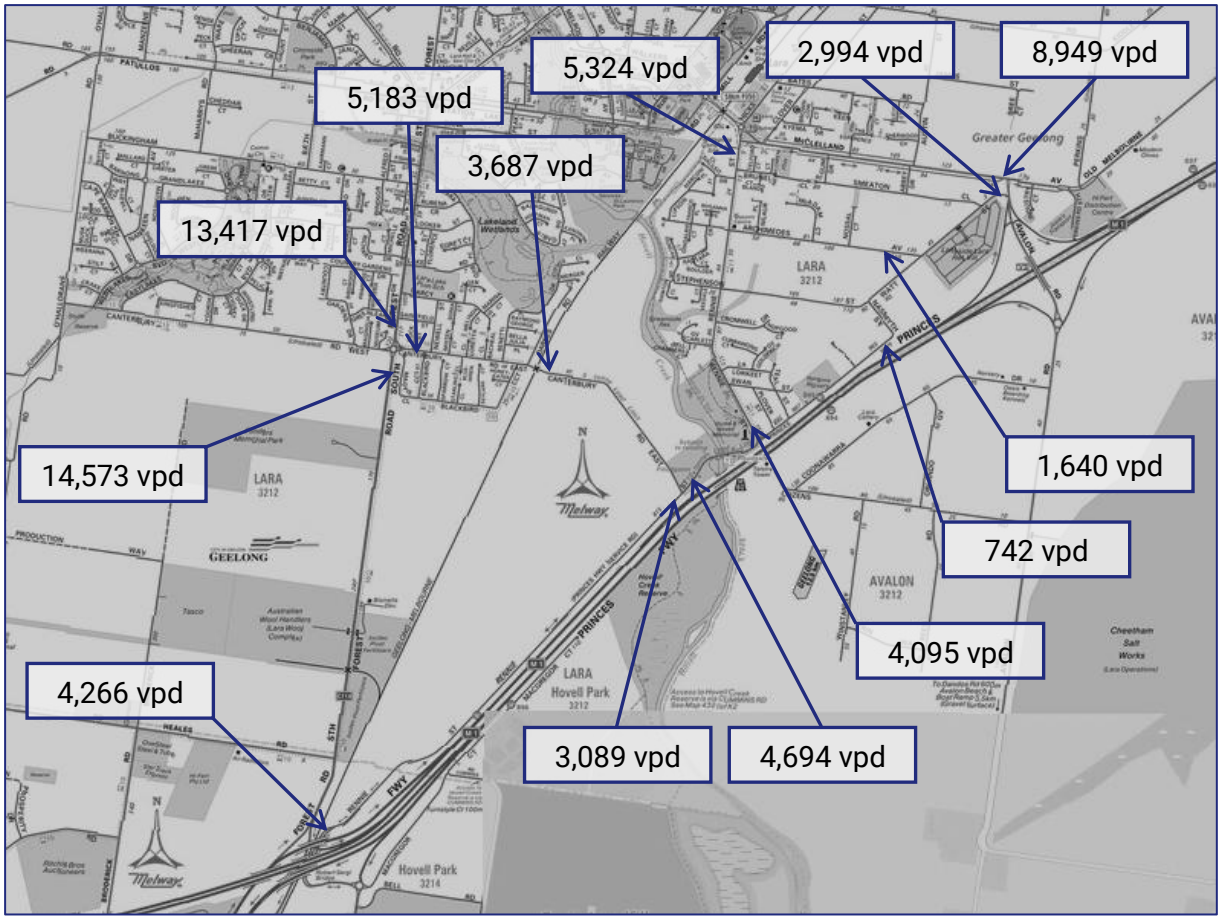


Figure 66: Post Development (including Sports Precinct) Traffic Volumes – Weekday Daily Average (Two-Way Volumes)

Table 12: Daily Traffic Volumes and Road Characteristic Volume – Full Development of Site and Sports Precinct

Road Name	Location	Classification	Recorded Weekday Average (vpd)	Key Characteristic Volume[1] (vpd)	Within Characteristic Volume?
Canterbury Road East	East of Train Line	Category 2 – Local Access – Urban	3,687	1,000 – 2,000	No
Canterbury Road East	East of Forest Road South	Category 3 – Secondary Distributor	5,183	3,000-5,000	No
Forest Road South	North of Canterbury Road East	Transport Zone 2	13,417	<18,000[2]	Yes
	South of Canterbury Road East		14,573		Yes
Rennie Street	North of Canterbury Road East	Category 3 – Collector Road Rural	4,694	3,000-5,000[3]	Yes
	South of Canterbury Road East		3,089		Yes
	North of Princes Freeway On-Ramp		4,266		Yes
	South of McClelland Avenue	Category 3 – Secondary Distributor	5,324	3,000-5,000	No
	North of Nasmyth Street		4,095		Yes
Nasmyth Street	Southwest of Bend	Category 2 – Local Access – Urban	742	<2,000	Yes
Archimedes Avenue	West of Watt Street	Category 2 – Local Access – Urban	1,640	<2,000	Yes
Watt Street	West of Avalon Road	Category 3 – Collector Road Rural	2,994	3,000-5,000[3]	Yes
McClelland Avenue	West of Avalon Road	Category 4 – Main Distributor – Urban & Transport Zone 3	8,949	5,000-10,000	Yes

Notes:
1. The previous version of The City of Greater Geelong Municipal Road Management Plan (dated 25th May, 2021) included key characteristic volumes for the different type of roads under Attachment 1. However, it has been removed within the latest version of the plan (Version 9.0, adopted 28th October, 2025).
2. It is generally accepted that a traffic volume of less than 18,000 vehicles per day is acceptable for an arterial road with one lane in each direction. Beyond this threshold, duplication would be considered.
3. Not specifically stated in the Road Management Plan. However, have assumed based on other Category 3 roads.

The above indicates that the impact of the Possible Regional Sports Reserve will not fundamentally change the impact to the wider area compared with the development of the subject site in isolation.

4.9. Canterbury Road East Railway Crossing

Based on previous sections of the report, the level of vehicular traffic crossing the existing level crossing along Canterbury Road East will increase as a result of the proposed rezoning application.

The post-development traffic conditions inclusive of the potential regional sports reserve represents the maximum anticipated increase in traffic that will be traversing across the existing Canterbury Road East Railway Crossing at 3,857 vehicle movements per day, increased from the existing traffic volumes of 2,127 vehicle movements per day.

Based on our site visit, we are satisfied with the operations of the Canterbury Road East railway crossing from a road safety perspective considering the anticipated traffic increase across the road. This intersection:

- Is located on a relatively straight section of Canterbury Road East and is readily seen by approaching drivers.
- Traffic at the crossing is controlled by flashing lights and boom gates on both sides of the railway crossing.
- There are no major intersections in the vicinity of the railway crossing and there will be no spillback of queued traffic across the railway line.

While the volume of traffic will increase, we are satisfied that the volume of traffic remains modest and the layout of the intersection, its isolation from other intersections and the level of control already provided means that the additional traffic can be safely accommodated.

4.10. Watt Street/Avalon Road/Princes Freeway Interchange

Based on previous sections of the report, specifically the SIDRA analysis of the intersection between Avalon Road and Princes Freeway interchange has revealed that the intersection will still operate under 'Excellent' conditions even under the sensitivity analysis, where a conservative traffic generation has been adopted for the residential component of the site. Detailed results of the SIDRA analysis based on the sensitivity analysis are shown in Appendix H.

To further examine the performance of the intersection between Avalon Road/Princes Freeway interchange (both the northern end and southern end)10 years into the future, a growth factor has been applied on the post-development traffic at a 2% per annum for the next 10 years to 2036.

The population forecasts presented at https://forecast.id.com.au/lara has been used to establish the 2% growth factor, where a population increase in Lara has been estimated from 24,256 people in 2026 to 29,509 people in 2046. This relates to a growth rate of 1.1% per annum. Whilst population growth is not directly proportional to traffic volumes, however it provides a reasonable estimation as most trips on the network are linked to residential (arrival or departure).

To obtain a complete picture of how the intersection would perform, the nearby intersections along Avalon Road, specifically the Avalon Road/McClelland Avenue intersection and the Avalon Road/Watt Street intersection have also been examined using SIDRA Analysis. Similar to the analysis undertaken in Section 4.3 of this report, each of these intersections were analysed as individual sites under the growth scenario.

Our SIDRA analysis based on the potential traffic growth across the road network has confirmed that the majority of intersections analysed will continue to perform under 'Excellent' LoS conditions, with only the southern leg of the Avalon Road/McClelland Avenue intersection during the PM peak period, and the western leg of Avalon Road/Watt Street intersection during the AM peak period and weekend peak period operating under 'Very Good' LoS conditions. Detailed results of the SIDRA analysis are shown in Appendix J.

Given that the traffic queues at each of the intersections under the growth scenario, do not flow onto the subsequent intersections, we are satisfied that a SIDRA network model is not required and traffic generated by the proposed development can be adequately accommodated at each of the intersections under existing conditions.

Accordingly, we are satisfied that no upgrade works are required at the Avalon Road/Princes Freeway interchange as a result of this development.

4.11. Assessment of the Rennie Street/Princes Freeway On and Off-Ramp

We are in agreeance with the assessment of the freeway on and off-ramps that has been undertaken within the previous Ratio report.

4.11.1. Details of On-Ramp

The merge length of the Princes Freeway eastbound on-ramp has been previously measured and detailed in the Ratio report as shown in Table 13, which is approximately 20m (~6%) shorter than the distances set out in the DTP Supplement.

Table 13: Freeway On-Ramp Assessment - Merge Length

Parameter	Existing Measurement	Department of Transport Requirement (from Figure V11.1 of Supplement to AGRD Part 4C)
Nose to parallel section	140m	140m
Length of parallel section	70m	80m
Length of taper	90m	100m
Total length	300m	320m

Similar to the Ratio Report, the section of road between the Rennie Street intersection and the Princes Freeway on-ramp merge is 285m with an estimated gradient of approximately 1% to allow for vehicle acceleration, has been tested against the different type of vehicles, including typical passenger cars, rigid trucks and B-doubles.

The typical truck and B-double acceleration rates[6] were retrieved from Table 2.16 and Table 2.17 of the *Austroads Research Report (AP-R609-19) Improving Reliability of Heavy Vehicle Parameters to Support More Accurate Traffic Modelling in Australia and New Zealand (published November, 2019)* and the typical acceleration rates for a typical passenger car has been obtained from Table C2 1 under Commentary 2 of the *Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections (published May, 2023)*.

Based on the aforementioned acceleration rates, an acceleration profile of the different vehicles starting from 0km/h have been developed as shown in Figure 67, and have been compared against the actual distances at the Princes Freeway on-ramp at the southern end of Rennie Street as detailed in Table 15.

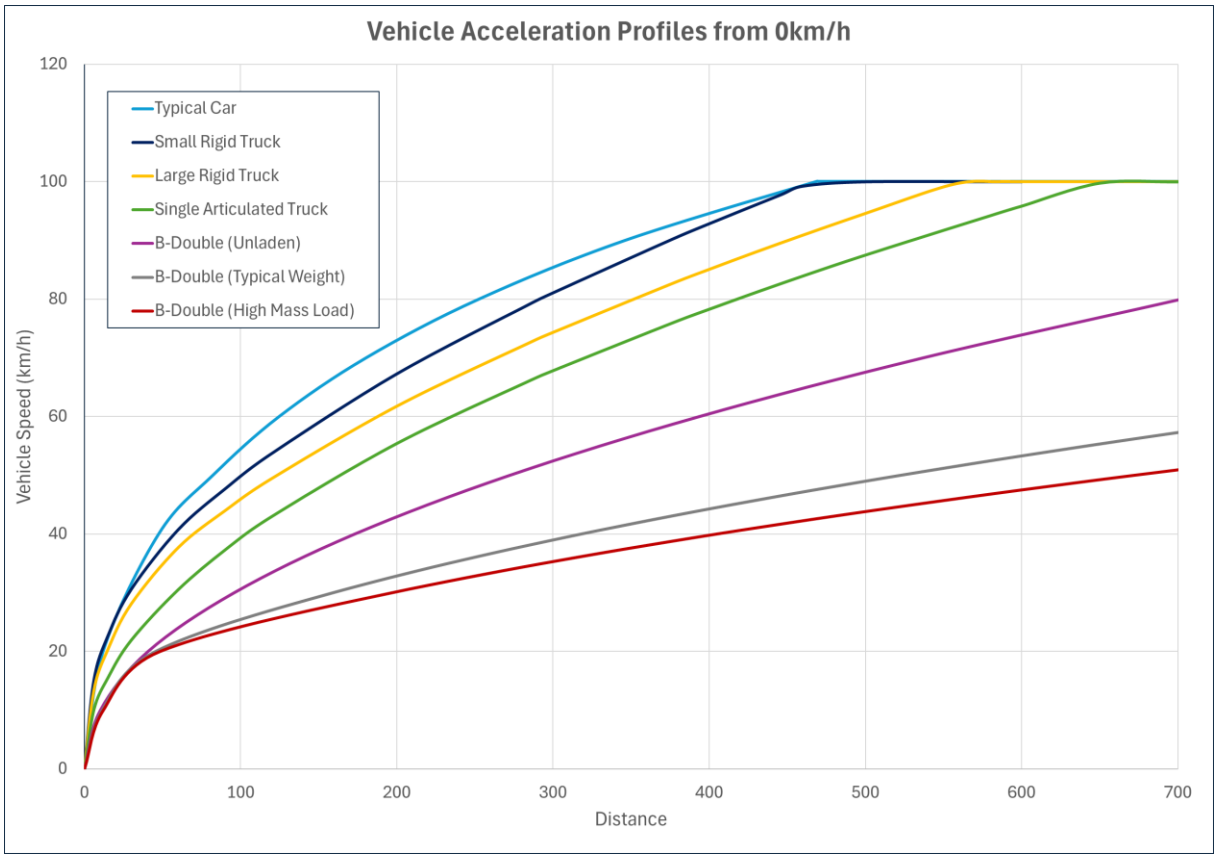


Figure 67: Typical Vehicle Acceleration Profiles from 0km/h

[6] B-double acceleration estimates were conservatively obtained based on a normal driving mode on a flat grade given the section of the road analysed only has an approximately 1% gradient.

Table 14: Princes Freeway On-Ramp Assessment – Vehicle Speeds

Vehicle Type	Speed at Nose (285m)	Speed at Start of Parallel Section (375m)	Speed at Start of Taper (445m)	Speed at End of Taper (585m)
Typical Car	84 km/h	94 km/h	99 km/h	100 km/h
Small Rigid Truck	79 km/h	90 km/h	98 km/h	100 km/h
Large Rigid Truck	73 km/h	83 km/h	89 km/h	100 km/h
Single Articulated Truck	66 km/h	76 km/h	83 km/h	95 km/h
B-Double (Unladen)	51 km/h	59 km/h	64 km/h	73 km/h
B-Double (Typical Weight)	38 km/h	43 km/h	47 km/h	53 km/h
B-Double (High Mass Load)	35 km/h	39 km/h	42 km/h	47 km/h

Based on the above results, it is noted that trucks are generally unable to achieve 80km/h at the nose of the Princes Freeway on-ramp given the limited acceleration distance provided from the Rennie Street intersection. However, given the close proximity of the merging of Geelong Ring Road and Princes Freeway further downstream, there is limited scope to increase this distance. Notwithstanding, we consider this slight deficiency acceptable based on the following:

- All vehicles can typically achieve a speed of greater than 80km/h at the start of the parallel section and can travel at 100km/h at the end of the merge taper, except for articulated trucks and B-doubles.
- Majority of trucks accessing the industrial precinct will be smaller trucks up to semi-trailers. B-doubles being expected to be in the minority.
- Any vehicles approaching the merge point of Princes Freeway will be clearly visible to approaching traffic along the Freeway due to the downgrade on the main approach and clear sight lines allowing drivers to adjust their speed, as required.

4.12. Pedestrian and Cyclist Considerations

The following sets out our analysis of the likely pedestrian and cyclist volumes generated by the development of the land and any infrastructure upgrades/provision that would be required as a result of these demands. We note that this analysis includes the development associated with the subject site as well as a potential future rezoning on the north side of Canterbury Road East.

As set out at Section 3.5.3 and 3.5.4 there is currently a lack of pedestrian infrastructure immediately adjacent to the site. This is consistent with the current zoning of the land as Farming Zone. Notably, there are no footpaths provided along Canterbury Road East between the rail line and Rennie Street and there is no pedestrian crossing at the level crossing to the west of the site.

4.12.1. Pedestrian Volume Generation

In order to determine the likely pedestrian generation for a residential development on the subject land we have reviewed the VISTA data between 2012 and 2020 (Victorian Integrated Survey of Travel and Activity) available for download at https://dtp.vic.gov.au/about/data-and-research/vista/vista-data-and-publications. The method of data collection for the VISTA data is through participants keeping a travel diary of a single specified day.

Based on our review of all trips generated in the Lara state suburb, the following breakdown of mode of travel has been determined:

- Private Vehicle Trips – 80%
- **Walking – 12%**
- Motorcycle – 1%
- School Bus – 1%
- **Bicycle – 1%**
- Other – 5%

The above breakdown of mode of travel is based on the first method of travel for a journey. Accordingly, a subset of the 12% of walking trips were recorded as the first part of the journey, with the remainder of the trip undertaken via public transport. The above is based upon a data set of 348 responses, and therefore represents a robust data set.

As set out at Section 4.1, vehicle movements are expected to be generated at a rate of 8 vehicle movements per dwelling per day, for a total of 6,400 vehicle movements. Accordingly, if 6,400 vehicle movements represent 80% of the total trips as per the above mode of travel distribution, a total pedestrian volume of 960 pedestrian movements can be expected to be generated by the site based on a mode share of 12%. We are satisfied that this is a conservative assessment, as the mode share established by the VISTA data is based on dwellings which would in all likelihood be located closer to existing services, when compared with the subject site which is located a minimum walking distance of 2.5km from the Lara Town Centre.

The 12% of trips relates to pure walking trips to a destination, as well as the first mode of a longer trip. i.e. walking to the railway station or to a bus stop.

The VISTA data also presents the trip purpose for all mode styles. In the 'Geelong' area, the purpose of walking trips is broken down as follows:

- Work related – 30%
- Education – 10%
- Shopping – 20%
- Social/Recreation – 33%
- Accompanying//pick-up/drop-off – 5%
- Other – 2%

4.12.2. Pedestrian Distribution

Similar to the approach undertaken at Section 4.2, trip purposes will be distributed towards the likely destinations for the appropriate trip purposes. The following general distributions would be expected:

- The majority of work related pedestrian movements will be distributed towards the town centre and towards the railway station or to bus routes likely to be internal.
- Education trips will generally be distributed towards Lara Lake Primary School, with some trips being take to Lara High School.
- Shopping will be primarily focussed towards the town centre.
- Social/Recreational trips will be evenly distributed to the east and west towards the walking tracks, but also internally towards internal parks, visiting friends, etc.
- Accompanying/pick-up/drop-off and other trips will be evenly distributed.

Table 15 sets out our pedestrian movements distribution based on the above assumptions.

Table 15: Pedestrian Directional Distribution

Trip Purpose	% of Total Trips (Note 1)	No. of Pedestrian Movements	Directional Distributions		
			East % (no. ped)	West % (no. ped)	Internal % (no. ped)
Work Related	30%	288	70% (202)	30% (86)	-
Education	10%	96	20% (19)	80% (77)	-
Shopping	20%	192	40% (77)	60% (115)	-
Social/Recreation	33%	317	30% (95)	30% (95)	40% (127)
Accompanying/Pick-Up/Drop off and other	7%	77	30% (23)	30% (23)	40% (31)
TOTAL			**43% (416)**	**41% (396)**	**16% (158)**

Based on the table above it is expected that 158 pedestrian movements will be generated internally, 416 pedestrian movements will be generated to the east along Canterbury Road East towards the walking tracks to the east of the site, with the remaining 396 pedestrian movements generated to the west along Canterbury Road East, requiring movement across the railway line.

4.12.3. Cyclist Volume Generation

The table below applies the same directional distribution applied to pedestrians to the cyclist movements likely to be generated. Based on the VISTA data presented at Section 4.12.1, it is expected that cyclist movements will make up 1% of the total movements from the site. Based on the historic data collected, a total of 80 cyclist movements per day are expected.

Table 16: Cyclist Directional Distribution

Trip Purpose	% of Total Trips (Note 1)	No. of Cyclist Movements	Directional Distributions		
			East % (no. cycl)	West % (no. cycl)	Internal % (no. cycl)
Work Related	30%	24	70% (17)	30% (7)	-
Education	10%	8	20% (2)	80% (6)	-
Shopping	20%	16	40% (6)	60% (10)	-
Social/Recreation	33%	26	30% (8)	30% (8)	40% (10)
Accompanying/Pick-Up/Drop off and other	7%	6	30% (2)	30% (2)	40% (2)
TOTAL			**43% (35)**	**41% (33)**	**16% (12)**

Based on the above, it is expected that 12 cyclist movements will be generated internally, 35 cyclist movements will be generated to the east along Canterbury Road East towards the shared paths to the east of the site, with the remaining 33 cyclist movements generated to the west along Canterbury Road East, requiring movement across the railway line.

4.12.4. Pedestrian and Cyclist Infrastructure Requirements at the Level Crossing

The existing level crossing on Canterbury Road East does not currently provide any pedestrian facilities and would be required to be upgraded to accommodate pedestrian/cyclist movements across the rail line as part of the development of the land.

The crossing of the rail line by pedestrians and cyclists would need to be suitable to accommodate a combined volume of in the order of 406 movements per day (396 predicted pedestrian volume + existing volume of 10 pedestrians) and a cyclist volume of 77 movements per day (33 predicted volume + 34 existing weekend trips, noting that this would be conservative as this demand is not present during the week).

In our view the most appropriate solution would be incorporating an 'active gated control' into the existing level crossing on the south side of the road (i.e. the development side). The alternative solution of a grade separated pedestrian crossing would be impractical in this case. The active gated control would be suitable to accommodate pedestrians and cyclists (once cyclists have dismounted as per normal practice at a level crossing).

The below extracts use the term 'pedestrians'. However in this context, cyclists would also be referred to as pedestrians, as they will have dismounted their bicycle to wheel the bicycle across.

In order to determine an appropriate treatment at the level crossing we have reviewed the Australian Standards – Manual of Uniform Traffic Control Devices – Part 7 Railway Crossings (AS1742.7-2016).

Section 6.2 of this standard sets out a hierarchy of control for at-grade crossing facilities for pedestrians and states the following:

Where at-grade crossing facilities are to be provided for pedestrians, the hierarchy of control shall be in ascending order of level of control as follows:

(a) Passive control for pedestrians with or without vehicular traffic – minimum treatment

(b) Passive control for pedestrians with or without vehicular traffic – with pedestrian mazes

(c) Active control for vehicular traffic only

(d) Active signal control for pedestrians, without gates

(e) Active gated control for pedestrians

We note that; *This Standard does not provide guidance on when a crossing should progress from one hierarchical step in the type of control to the next, i.e. passive control to active control and active control to elimination*.

In order for a passive control to be provided for pedestrians at a level crossing i.e. no gates or signals for pedestrians, there must be sufficient sight distance in each direction.

At Section 6.3.1, the formula to calculate sight distance is provided as follows:

$$SD = \frac{V}{3.6}\left(\frac{d}{1.0} + 2\right)$$ Where:

V = speed of trains – in this case 150km/h has been assumed.

D = the distance required to be traversed by pedestrians – in this case 15m has been adopted.

Accordingly, a sight distance of 700m is required in both directions from the pedestrian crossing. This is provided to the south of the crossing but not to the north, where a sight distance of approximately 400m is provided.

If the sight distance is not available, one of the following would need to be provided:

(a) Removal of obstructions to achieve the required sight distance.

(b) Provision of active control.

(c) Closure or relocation of the crossing.

(d) Reduction of train speed.

(e) Grade Separation.

Option (a) would not be possible, as the obstruction to sight distance relates to a vertical alignment issue. i.e. the track is not visible over a crest approximately 400m from the crossing.

Option (c) is not practical, and option (d) is not an equitable outcome. Accordingly, the two options remaining are the provision of an active control or grade separation.

Our recommendation is that an 'active gated control' be provided on both sides of the level crossing in this instance.

The recommendation is due to the relatively low number of pedestrian movements expected to be crossing the rail line (406 pedestrians and 77 cyclists per day), and the relatively low number of trains which travel past the level crossing (approximately 110 trains per day).

There are a number of examples that we are aware of within similar contexts where an active control has been implemented instead of the use of grade separation. These are discussed as follows.

Diamond Creek to Wattle Glen Rail Line Duplication Project

This project included the provision of a new active pedestrian crossing, in the location set out in the image below.

The example below is a project which was completed in the first quarter of this year where a new active pedestrian crossing was chosen to be provided instead of a grade separated crossing. This example connects directly to Diamond Creek Primary School and Diamond Valley College. Sacred Heart Primary School is also located on the north side of the rail line.

This pedestrian level crossing is likely to carry in the order of what is proposed as part of the proposed rezoning, but will include a far greater number of school children, and a similar number of train services once the rail duplication is completed.

The project was undertaken by the state government as part of 'Victoria's Big Build'.

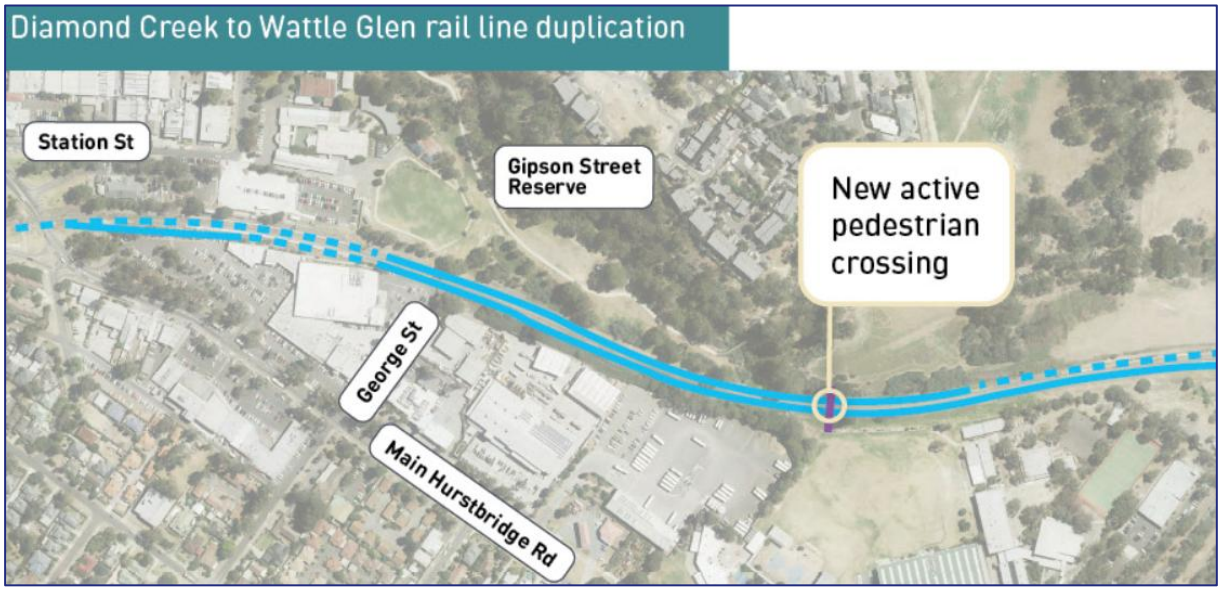


Figure 68: Diamond Creek to Wattle Glen Rail Line Duplication Project Map Extract

Donnybrook Railway Station Carpark Upgrade

An upgrade to the Donnybrook Railway Station carpark and peripheries was completed mid-2020 when 150 car spaces were added to the carpark. The project did not include the upgrade of the pedestrian crossing along Donnybrook Road to be grade separated. This is a case whereby a new demand for 150 pedestrian movements associated with 150 car spaces did not necessitate the grade separation of the pedestrian crossing over the rail line.

Cardinia Road, Pakenham is another example where a pedestrian level crossing was implemented on one side of Cardinia Road in 2019.

We have also reviewed the Victorian Railway Crossing Safety Strategy 2018-2027 prepared on behalf of the State Government. This document sets out strategies for safety at level crossings throughout the state. This document does not mention grade separation for pedestrian crossings.

In relation to the Statewide Level Crossing Upgrade Program, the document states:

> *In 2016–2017, 21 pedestrian crossings in the Melbourne area were upgraded as part of the program, including new automatic gates at seven crossings and upgrades to automatic gates at a further 13. These works were delivered by VicTrack. In 2017–2018 the program upgraded 14 high risk pedestrian crossings in the Melbourne area.*

None of these upgrades were to grade separate a level crossing.

Similarly, under the Safer Country Crossings Program, the document states:

> *The Safer Country Crossings Program is a four-year program being delivered by the Victorian Government to improve safety at regional level crossings. The $50 million program will boost safety at 52 priority roads and level crossings which carry high speed passenger trains or a high number of heavy vehicles. The upgrades will include works to install flashing lights and boom gates. The program, delivered by V/Line and VicTrack, is also upgrading 25 pedestrian crossings at 13 priority locations. The Safer Country Crossings Program is also well advanced. As of July 2018, 38 road crossings and 23 pedestrian crossings have been upgraded to improve safety.*

Again, we understand that none of these upgrades were to grade separate a level crossing.

The provision of a grade separated crossing would create a distinct barrier in the pedestrian network, which would act as a deterrent for pedestrian trips across the rail line.

Assuming that a ramp to achieve a 5m headroom clearance above the tracks is constructed at a maximum grade of 1 in 40, the total length of ramp would be 400m.

The addition of an estimated 400m to a pedestrian trip is significant, considering the average walking trip distance is 1.4km within Geelong and 1.1km within outer Melbourne[7]. Accordingly, the extension of a walking trip by 400m would represent an increase of between 28-36% to the average trip distance and would be a barrier to sustainable/active transport in the area.

Based on the above, we are satisfied that the most appropriate treatment is for the provision of an 'active gated control' on the south side of Canterbury Road East. The timing of these works can be determined through the planning stage of the project.

7 Victorian Integrated Survey of Travel & Activity (VISTA) database

4.12.5. Design of Active Gated Control

An example of an active gated control system is provided below, extracted from the Australian Standards (AS1742.7: 2016). This type of control is suitable for pedestrians and for cyclists to traverse (cyclists to traverse once dismounted from their bicycles). We are satisfied that this type of control is suitable in this case.

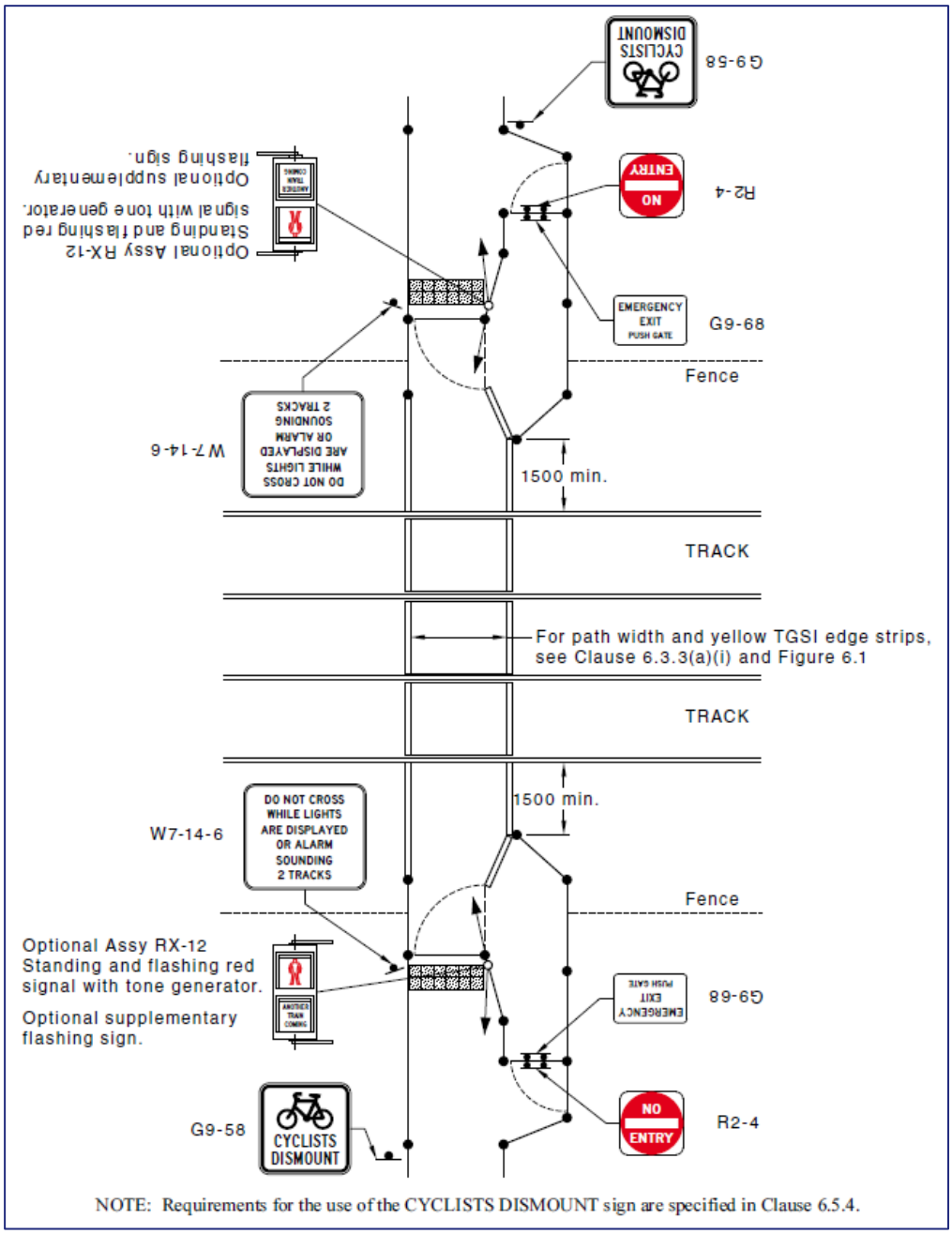


Figure 69: Active Gated Control Example (Figure F6, AS1742.7: 2016)

4.13. Site Access Arrangements

4.13.1. Sight Distance Review

Residential Component

We have reviewed the indicative access points shown on the South-East Lara Framework Plan, prepared by Tract, in the context of their relative sight distances. The following assumptions have been made about the development of the land, and the speed limits of adjacent roads. We have assumed:

- The development of the land will include some form of structure on the property boundary (i.e. fence line or similar which would inhibit sight lines around the bend in Canterbury Road East.
- The speed limit of Canterbury Road East will be reduced from 80km/h to 60km/h to reflect the urbanisation of this road and to be consistent with Canterbury Road East to the west of the rail line.
- The speed limit of Rennie Street to the south-west of the subject land will be reduced from 100km/h to 60km/h to reflect the urbanisation of this road and to be consistent with Rennie Street to the north-west of Canterbury Road East and along the site frontage.

Sight distance criteria is set out at Section 3 of *Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections*. Safe intersection sight distance (SISD) is the minimum sight distance which should be provided on the major road at any intersection. SISD is the measurement between two points to provide inter-visibility between drivers and vehicles on the major road and minor road approaches.

Each of the access points to the site will need to satisfy the SISD requirements for a 60km/h speed environment of 123m (based on reaction time of 2.0 seconds).

Figure 2 in Section 2.1.4 details the proposed access locations and includes a numbering of the access points 1-4. The sight distance for each of these access points is reported in the table below, with discussions regarding the access points provided below the table.

Table 17: Sight distance assessment

Access Location	Sight Distance Available to East	Sight Distance Available to West	Achieves 123m Sight Distance Requirement?
Access Point 1	175m	150m	Yes
Access Point 2	130m	200m	Yes
Access Point 3	200m+	200m+	Yes
Access Point 4	200m+	200m+	Yes

As detailed above, the sight distance available to the east of Access Point 2 is measured at 130m. This is quite close to the SISD requirement and should be checked to ensure compliance with SISD requirements during the planning application stage involving this

access location. The access point may be required to shift to the west to ensure compliance with the SISD requirements.

Based on the above, we are satisfied that the indicative site access locations set out in the South-East Lara Framework Plan prepared by Tract are appropriate. However, we recommend that Access Point 2 (to the northern land parcel) should be assessed against the SISD requirements at the application stage to confirm compliance.

Industrial Component

The site access locations for the industrial component within the site have yet to be formalised and are not shown in the current proposed framework plan; and the associated sight distance at each of the site accesses will have to be assessed when their locations have been confirmed.

However, we are satisfied that given that Rennie Street is relatively straight, there will not be any potential sight distance issues for the industrial component accesses, subject to a formalised sight distance review.

4.14. Internal Street Network

Residential Component

Given the land use zoning of the land as residential, without commercial component or any through links to the south proposed (aside from the access to the possible regional sports reserve), we are satisfied that a standard local road reservation width throughout the land is appropriate in this case.

A road reservation of 16m, including a 7.3m wide pavement width and footpaths on both sides would be appropriate in this case. Banning car parking along the primary access into the site between Canterbury Road East and the possible regional sports reserve should be considered to allow for uninterrupted two-way vehicle movements.

For any roads which abut a reserve or similar space where no services are required on one side of the road, the road reserve could be reduced to 14.5m.

Both of the cross sections above would accommodate a two-way road with on-street car parking provided on one or both sides of the road. Bicycles would be accommodated within the 7.3m wide road reserve and would be appropriate to mix with standard vehicle traffic.

The following figures detail a possible cross section for the typical road reservation discussed above.

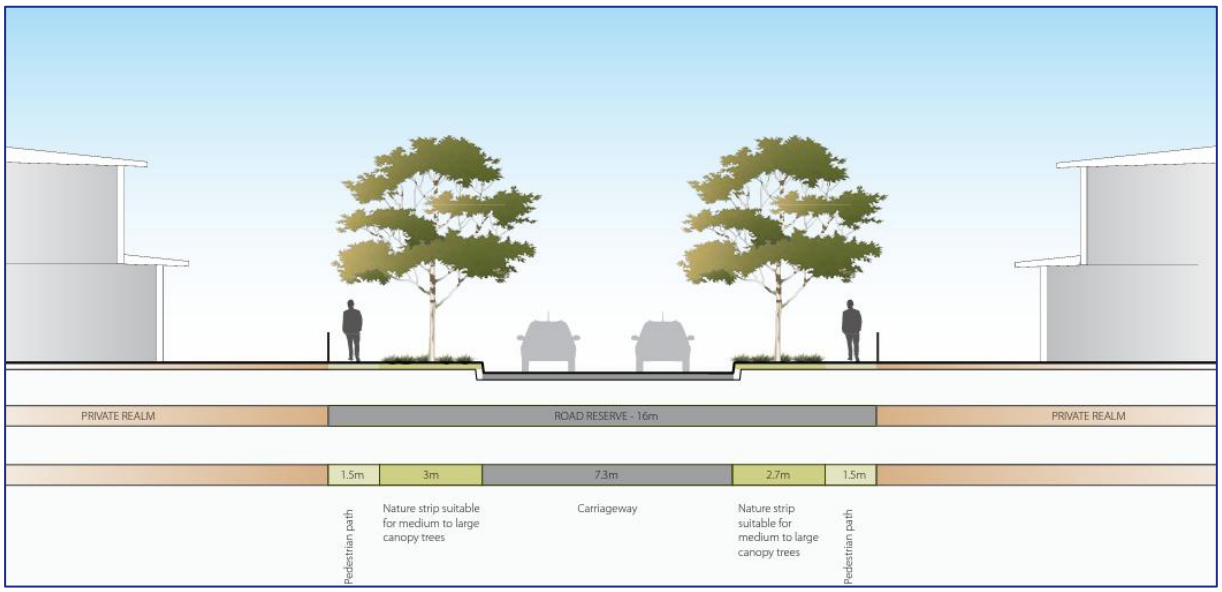


Figure 70: Potential Typical Road Reservation

4.14.1. Canterbury Road East Road Cross Section

The road reserve of Canterbury Road East is a minimum of 20m wide. This width reservation can accommodate the cross section of a typical connector style road, consistent with the balance of Canterbury Road East to the west of the rail line or Canterbury Road West, to the west of Forest Road South which each have a 20m wide road reservation.

The 20m wide road reservation in the case of Canterbury Road West accommodates a 7.6m wide trafficable pavement width, indented car parking on one side and footpaths on both sides of the road. We note that within a 20m wide road reserve, a shared path could be provided on one side of the road instead of one of the footpaths, if desired by Council.

The above represents the ultimate arrangement for Canterbury Road East, at a time when both sides of Canterbury Road East are developed. The interim arrangement for Canterbury Road East, i.e. when the southern side of Canterbury Road East is developed only, the arrangement will include urbanisation of the south side of the road, with kerb and channel and appropriate footpath/shared path. The northern side of Canterbury Road East would remain without kerb and channel or footpath until such time that the northern side were developed.

This is a common arrangement in developing areas, including at the western end of Canterbury Road East, near O'Halloran's Road, detailed below.

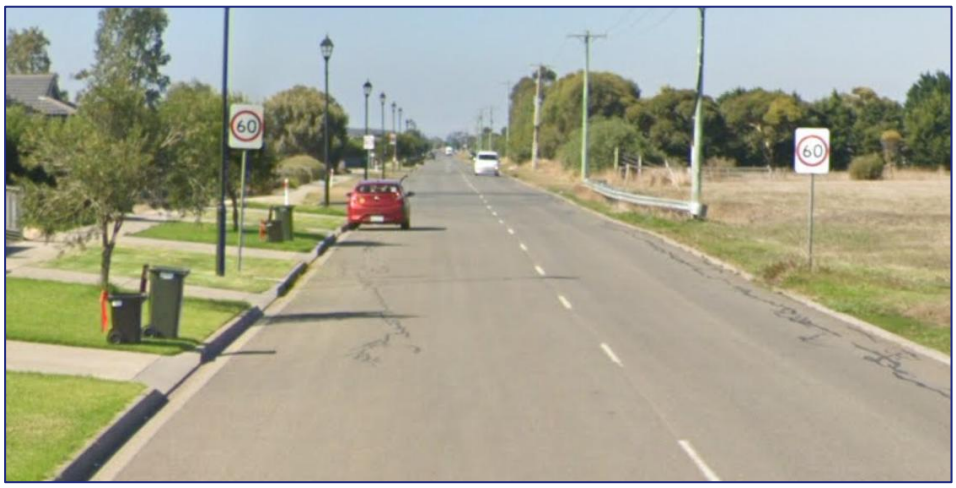


Figure 71: Example of Rural and Urban sides of Road

4.14.2. Rennie Street Cross Section

To the north of Canterbury Road, a footpath or shared path will need to be provided on Rennie Street in order to connect the footpaths provided along Canterbury Road East to the existing shared paths along Hovells Creek and through Hovells Creek Reserve (also discussed at Section 4.16). This could take the form of a kerbside shared path on the north or south side of Rennie Street, or via an off-road shared path through the Public Park and Recreation Zone on the north side Rennie Street or along the freeway reserve along the south side of Rennie Street. A change to the cross section of Rennie Street would not be required outside of the provision of a shared path (i.e. no road widening).

A speed limit of 60km/h applies to Rennie Street to the north and south of the intersection with Canterbury Road East. This speed limit is appropriate for this style of road in this context and does not present a road safety issue.

Depending on the ultimate alignment of the shared path or footpath, raised shared path crossings could be provided to facilitate the crossing of Rennie Street either on the north side of the intersection with Canterbury Road east or closer to the Hovell Creek Crossing. This measure would have the added benefit of controlling speed through this section of Rennie Street.

No changes to the road width would be required to accommodate the increase in traffic associated with development of the site for either section of Rennie Street (north or south of Canterbury Road East). Accordingly, the presentation of Rennie Street for through traffic traveling north or south along Rennie Street would not vary from the north to south sides of the intersection.

Urbanisation of the north-west side of Rennie Street will be required along the subject site's frontage, including providing kerb and channel, footpaths and any verge landscaping etc. The speed limit of Rennie Street along the site's frontage and to the immediate west of the site should be limited to 60km/h, with the speed limit reducing an appropriate distance from the access to the subject land. We do not consider any further traffic calming to be required in this case.

Industrial Component

The internal road layout within the industrial component of the proposed development will be designed to provide convenient access and seeks to avoid creating dead end roads, where possible. The development will also seek to provide a road adjacent to the basin.

A road reservation of 25m, including a 12.5m wide pavement width and footpaths on both sides would be appropriate for the industrial streets. A 3m off-road bicycle path along one side of the road is to be provided along the main streets of the industrial land.

All internal roads within the industrial land will be provided with footpaths on both sides of the road to provide pedestrian connectivity to the broader network.

Potential Regional Sports Reserve Internal Roads

The internal road network for the regional sports reserve will consist of accessways providing access to various car parking areas within the sports precinct, which will be designed to facilitate two-way movements throughout the precinct in accordance with the Greater Geelong Planning Scheme.

4.15. Public Transport Considerations

Residential Component

New subdivisions should ensure that dwellings are located within 800m of a public transport route. In this case, no bus routes operate within immediate proximity to the site. However, once the site is developed, the existing bus routes which operate almost to the site boundaries (Routes 10 and 18) should be extended such that at least one of them travel past the site along Canterbury Road East. This is the responsibility of the Department of Transport and Planning to determine.

As detailed in Section 3.5.1 of the report, the new bus route (Route 18) commencing on 15th March, 2026 will partially the Route 11, which will cease to operate past that date. The closest bus station and the associated bus routes in the vicinity of the proposed development is shown in Figure 72.

Currently, the closest bus station serviced by Route 10 is located approximately 350m from the north-western corner of the site. Bus Route 10 can be further extended east towards the subject site given that both Canterbury Road East and the proposed site access points for the residential land are bus-capable roads.

Route 10 currently operates 7 days a week between Lara Railway Station and Corio Village Shopping Centre via Lara South, including the residential catchment north of the site as well as Lara Lake Primary School. Accordingly, it would be beneficial to further extend its service to the residential land and potentially the regional sports reserve to provide parents and children with an alternative to travel to the sports reserve for training of during game days.

We recommend that DTP review the existing public transport coverage in the area, in the context of additional residential land being provided on the subject site. We understand that there is currently no current proposal to extend bus route in this location by DTP.

The depth of the southern portion of the land is approximately 400m and accordingly, all dwellings will be located within 800m of a bus route.

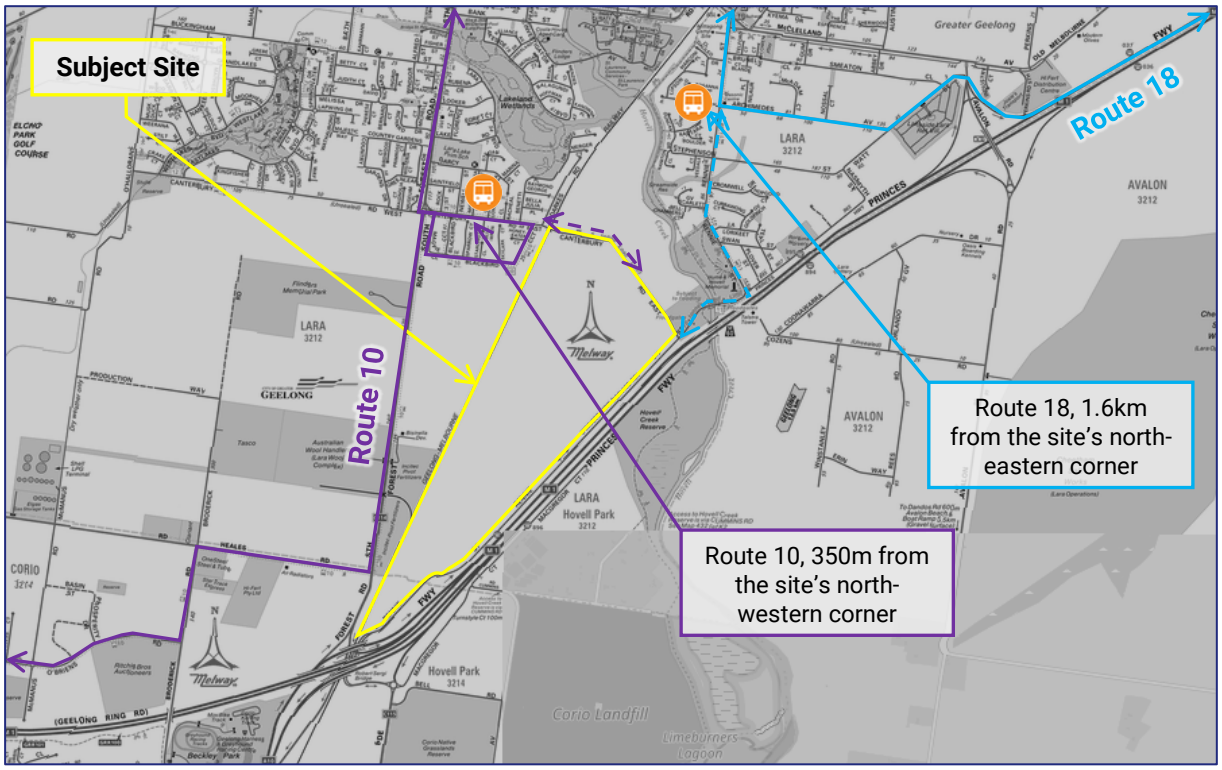


Figure 72: Nearest Public Transport Stops (Source: Melway & Transport Victoria)

Industrial Component

The closest bus station to the industrial land is located approximately 1.6km from the at the intersection between Archimedes Avenue and Rennie Street, serviced by the newly proposed Bus Route 18.

Given Rennie Street is a bus-capable road, Route 18 can potentially be extended southwards along Rennie Street and connecting to the site access points of the industrial land. However, this would be up to the discretion and review of DTP.

Bus Route 18 services between Lara Railway Station and Avalon Airport via the Greater Avalon Employment Precinct (GAEP). Accordingly, if the Route 18 were to be further extended towards the industrial land, workers within the industrial land will be able to simply utilise public transport to and from their workplace, achieving a synergy between the employment precinct and the industrial land.

4.16. Walking and Cycling Network

4.16.1. External Network

Off-road shared paths are provided to the east of the subject site, including the Hovells Creek Trail on the east side of Hovells Creek, which extends to the Railway Station and the Town Centre precinct. Off-road shared paths are also provided to the north-west of the subject site through Lakelands Wetlands. These paths are detailed at Figure 40 in Section 3.5.3.

Canterbury Road East

The site's northern frontage to Canterbury Road East should be urbanised with kerb and channel and appropriate footpath/shared path being provided to connect the pedestrians/cyclists from the proposed land to existing footpaths within the residential catchment west of the site.

Rennie Street

Given that the site's eastern frontage will be largely occupied by the site access points for the industrial land, which is not a large generator of pedestrian or cyclist demands, dedicated footpaths/shared paths are not necessarily required along the site's frontage to Rennie Street. Footpaths/shared paths can be provided at the north-eastern section of the site's frontage, which is where the residential land sits.

To the north of Canterbury Road, a footpath or shared path will need to be provided on Rennie Street in order to connect the footpaths provided along Canterbury Road East to the existing shared paths along Hovells Creek and through Hovells Creek Reserve This could take the form of a kerbside shared path on the north or south side of Rennie Street, or via an off-road shared path through the Public Park and Recreation Zone on the north side Rennie Street or along the freeway reserve along the south side of Rennie Street.

Depending on the ultimate alignment of the shared path or footpath, raised shared path crossings could be provided to facilitate the crossing of Rennie Street either on the north side of the intersection with Canterbury Road east or closer to the Hovell Creek Crossing.

The proposed walking and cyclist network in relation to the existing network in provided in Figure 73.

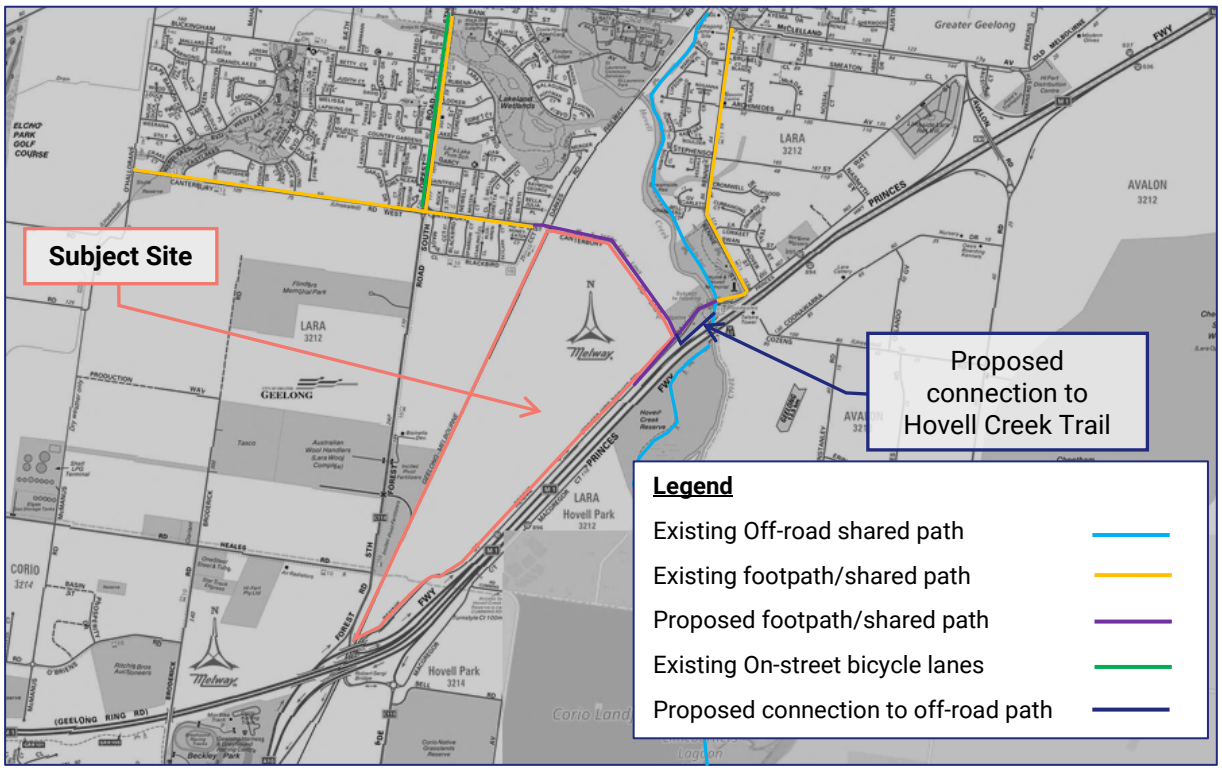


Figure 73: Proposed Bicycle and Pedestrian Network

4.16.2. Internal Network

Residential Component

There is the option for a shared path to traverse the railway line and interface between the residential/industrial areas to supplement the shared paths along Canterbury Road/Rennie Street.

Given that the potential regional sports reserve will serve the residents within the proposed residential land, the internal road network will need to provide pedestrian footpaths on both sides and bicycle traffic being accommodated within the 7.3m wide road reserve.

In addition to providing dedicated footpaths on both sides of the road, pedestrian cut-throughs can be introduced within a midblock or when street layouts are disconnected to promote pedestrian connectivity between the residential dwellings and the sports reserve. Multiple pedestrian access points to the reserve can also be provided to link residents from different sections of the residential land to the reserve.

Traffic calming measures can also be introduced near the sports reserve in order to improve the safety of pedestrians crossing and walking to the reserve, such as raised crossings, zebra crossings and speed humps.

Industrial Component

The internal road network within the industrial land will consist of accessways that will provide pedestrian and bicycle connections to the external network within the proposed industrial roads with 25m wide road reserve, including 1.5m pedestrian footpath on both sides and a 3m dedicated off-street bicycle path on one side.

As shown in Figure 73, a pedestrian connection to the industrial land will be provided as part of the development to link pedestrians from the industrial land to the existing network. The pedestrian road network layout would be dependent on the layout of the industrial land use and if a bus route extends further south to service the workers on-site.

5. Response to Issues Raised

5.1. Council Concerns

The City of Greater Geelong Council has expressed a number of items of concern in regards to both of the proposed planning scheme amendments (Amendment C444 and Amendment C453). These items are directly addressed in the table below.

Comment	Response
Design restrictions and vehicle volumes and loading over the Hovells Creek Structure *It is noted that the applicants have indicated that all heavy vehicle traffic will use Rennie St to the south for access to the freeway, however, it should be noted that this does not align with any validated operators likely to establish in the area. It is considered more reasonable that desire lines for transport to Melbourne or northern and western parts of the state will see operators seeking to use Rennie St to the north or networks west of the rail crossing on Canterbury Road East.*	Based on the Residential Location of Local Workers data from the ABS Census undertaken in 2021, we understand that a majority of workers live in work within the City of Greater Geelong LGA. Accordingly, we have adopted a traffic distribution where 70% of car-based vehicles travel south, 20% of vehicles travel west, 5% to the north, and the 5% will travel to and from Melbourne via the Rennie Street interchange in the south, which is significantly closer and more accessible than Avalon Road. We are of the opinion that heavy vehicles will travel southwards along Rennie Street and access Princes Freeway to travel to Geelong Port Precinct and Melbourne. This freeway connection is far more proximate than any travel route to the north or west to the arterial road network. There is also heavy vehicle restriction (10 tonne load limit) on the section of Rennie Street between Nasmyth Street and Canterbury Road East. Irrespective of this restriction, this route is unlikely to be used for the reasons set out above. The Rennie Street interchange is far more convenient. Even if the future urbanisation of Canterbury Road East improves its load limit, this route will still be more circuitous than simply travelling south on Rennie Street. Accordingly, we do not believe that trucks would travel to Princes Freeway via Nasmyth Street or Rennie Street via McClelland Avenue.

Comment	Response
Serviceability of Nasmyth St / Princes Highway Service Road *Nasmyth Street was constructed with a trial GATT seal surface in 2021 as part of addressing issue with a high pressure gas/oil transfer line located in very close proximity to the road which prevents reasonable maintenance access being available for the City. The treatment was determined based on traffic volumes of the time and did not consider increases associated with further subdivision of land. It is considered that use of this road by subdivision traffic will not be sustainable and result in a negative financial impact to the City. Upgrades to the road, including safety treatments would be required to address these impacts.*	In response to discussions with Council regarding this item, our traffic analysis and relevant traffic distribution has been updated where traffic accessing this development has been shifted from Nasymth Street to Archimedes Avenue, the next most direct sealed road. We have assumed Council either partially closes Nasymth Street or makes it unattractive to through traffic. This does not change the ultimate travel path of these drivers to the interchange, who will continue to use Watt Street. In our view, these drivers are not rat-running. They are local drivers making a local trip through to the arterial road network. Accordingly, no upgrades to Nasmyth Street are proposed.
Watt Street and alternative routes *Watt Street is currently only sealed to partial width with further construction allocated to rezoning and development of allotments on the western side of the road. Preliminary estimates place the cost of required work at approximately $1m. Alternatives to the Nasmyth Watt Street route have not been constructed for use as through connectors and retain lower service standards, excluding Rennie Street. Rennie St as a travel path is outside of the desire line for traffic heading towards/returning from Melbourne and planning for future grade separation of the rail line at McClelland Avenue does not support it being a higher order connector route.*	Accordingly to our analysis, only approximately 30% of the site generated traffic from the residential land is being distributed to the east via Watt Street/Archimedes Avenue and a short section of Watt Street between Archimedes Avenue and Avalon Road. The SIDRA analysis results also indicate that the Watt Street/Archimedes Avenue intersection will continue to operate under 'Excellent' conditions post development. The daily volume of Watt Street will remain under 3,000 vehicles per day, within its capacity as a collector road. Its cross section at over 6m wide allows a continuous traffic lane in each direction. We note that Council sees future development on the western side of Watt Street urbanising the west side of the road, and this is appropriate. This urbanisation is not required as a result of the traffic generated by this proposal. Accordingly, we are satisfied that Watt Street will be able to accommodate the anticipated traffic generated from the site.
Recommendations of LATM measures to manage undesirable vehicle movements, particularly along Watt Street, Nasmyth Street and Rennie Street.	As per above, given Council's views that Nasymth Street cannot be reasonably upgraded, it is recommended that Nasymth Street is either closed to through traffic or limited in its access to make it unattractive to through traffic.

Comment	Response
	No LATM measures are required for any other road, including Watt Street.
Rennie St closure due to flooding of Hovells Creek. Closed once or twice per year on average and duration of closure can be anywhere from 1-3 days.	There are three road links out of the immediate area: • Rennie Street to the north, • Rennie Street to the south, and • Canterbury Road East. Closing Rennie Street to the north only impacts one of the three links. This event is temporary. In an event where Rennie Street is closed due to the impacts of flooding of Hovells Creek, only vehicles wanting to travel northbound (to central Lara) and eastbound (to the Princes Freeway) will be affected (only residential dwellings and light vehicles from industrial development). All vehicles wanting to travel to Princes Freeway can travel south and utilise the Princes Freeway on-ramp via the Rennie Street intersection and only northbound movements will have to be diverted westbound past the railway crossing before continuing north. Northbound movements represents approximately 24% - 29% of the total traffic during each peak hour (or between 52-109 vehicles per peak hour), which can be sufficiently accommodated along Canterbury Road East, with the anticipated volumes still being under the characteristic volumes of 7,000 vpd (6,157 vpd) east of the railway line as detailed in Section 4.4. Given that this is an event that only occurs once or twice per year on average, we are satisfied that the additional traffic can be sufficiently accommodated.

5.2. DTP Submissions

The Department of Transport and Planning has provided submissions in regards to both of the proposed planning scheme amendments (Amendment C444 and Amendment C453). These items are directly addressed in the table below.

Table 18: Response to DTP Traffic Submissions

Submission	Response
Amendment C444GGEE – Lara Residential Rezoning	
2. *Planning for the Greater Avalon Employment Precinct (GAEP) is currently underway which will require significant reliance on the Avalon Road interchange.*	Jacobs prepared a Transport Assessment Memo (Version B, dated November 2025). This Transport Assessment Memo reviews the background policy and existing conditions of the GAEP and provides recommendations to guide the effective integration of the proposed development with the existing and planned transport network. This report identifies that the GAEP could result in Avalon Road (south of the Princes Freeway) changing from 2,100 vehicles per day in the 2056 base case to between 16,900-19,100 vehicles per day. It recommends Avalon Road be duplicated and the interchange at Princes Freeway upgraded to accommodate the GAEP. This level of traffic is approximately 10 times the traffic to be generated by C444Ggee through the Avalon Road interchange. The analysis in this report shows that there is minimal change to the operation of the interchange as a result of this Amendment. Accordingly no mitigating works are required at the interchange as a result of this Amendment.
3. *A cumulative impact assessment of the Amendment and the adjacent Lara Business Park to the south (Amendment C453ggee) is required to address; the potential capacity of the Avalon Road interchange to cater for future traffic demand, the performance of the Watt Street and Avalon Road intersection, and potential 'rat-running' on the local road network including Nasmyth and Watt streets.*	As identified above, the GAEP will: • Generate traffic through the interchange at an order of magnitude greater than Amendments C444/C453ggee. • Generate so much traffic that Avalon Road requires duplication, and an upgrade of the interchange. Our report has addressed the traffic impacts of C444 and C453 through the interchange and all intersections involved will operate with a 'Very Good' to 'Excellent' level of service. This includes an assessment of 10 years growth as detailed in Section 4.10.

Submission	Response
	Accordingly, we are satisfied that the Avalon Road interchange and its intersection with Watt Street does not require an upgrade as a result of this Amendment. In response to discussions with Council, this assessment has shifted the traffic accessing this development from Nasymth Street to Archimedes Avenue. This does not change the ultimate travel path of these drivers to the interchange, who will continue to use Watt Street. In our view, these drivers are not rat-running. They are local drivers making a local trip through to the arterial road network.
4. The Head, TfV requires further work to be undertaken as part of a revised traffic impact assessment, to determine any potential upgrades to the Canterbury Road East level crossing, due to combined traffic impacts of this amendment and C453ggee Lara Business Park and to determine the potential need for contributions towards upgrades from both these developments.	We understand that HTfV is requesting an ALCAM assessment of the safety of this crossing. This is a specialist level crossing safety assessment, and we are instructed that this is being completed by others. As discussed in Section 4.10 of this report, we are satisfied that from a traffic engineering perspective that this crossing is safe and fit for purpose as: • A formal, controlled pedestrian crossing will be constructed. • The intersection is already controlled by boom gates, lights and audible warning systems. • It is readily visible to drivers. • There are no nearby intersections that will cause traffic queues to spill back through this level crossing.
A3. The design of the internal road network must also support active transport connectivity and wider connecting networks to the proposed sports facility area part of Amendment C453ggee. This will need to include features such as active transport priority crossings, connection to entrances/exits, end-of-trip facilities such as bike parking, etc.	These items are matters of detail for future planning permit applications. The future shared path network is discussed at Section 4.16.
A4. Section 2.5 needs to be expanded to consider a more comprehensive shared path network	

Submission	Response
that provides greater connectivity for residents to surrounding key destinations.	
A5. Figure 7 shows an extract from the Lara Structure Plan which considers the provision of a freeway off-ramp connecting to Canterbury Road East. This is not supported.	The proposed amendment and this assessment does not rely on any provision of a freeway off-ramp connecting to Canterbury Road East to distribute traffic generated by the development.
Amendment C453GGEE – Lara Industrial Rezoning	
2. Planning for the Greater Avalon Employment Precinct (GAEP) is currently underway which will require significant reliance on the Avalon Road interchange.	Refer to the above responses.
3. A cumulative impact assessment of the Amendment and the adjacent Lara Residential Rezoning to the north (Amendment C444ggee) is required to address; the potential capacity of the Avalon Road interchange to cater for future traffic demand, the performance of the Watt Street and Avalon Road intersection, and potential 'rat-running' on the local road network including Nasmyth and Watt streets.	Refer to the above responses.
4. The Head, TfV requires further work to be undertaken as part of a revised traffic impact assessment, to determine any potential upgrades to the Canterbury Road East level crossing, due to combined traffic impacts of this amendment and C444ggee Lara Residential Rezoning and to determine the potential need for contributions towards upgrades from both these developments.	Refer to the above responses.
A3. Section 4.3 needs to state that all internal roads will provide pedestrian connectivity to the broader network, to align with Section 6.1.	This item is addressed in Section 4.16 of the report.
A4. Section 4.4 needs to be updated to be more specific about creating pedestrian connectivity to the regional sports facility and adjacent residential development.	This item is addressed in Section 4.16 of the report.
A5. Table 4-4 needs to include a summary of end-of-trip facilities for active transport users, including the number of bike parking spaces to be delivered.	This is a matter of detail for future planning permit stages.

Submission	Response
A6. Head TfV requests further information on the underlying assumptions for traffic distribution detailed in Section 5.3. It is unclear to what extent the TIA anticipates light or heavy vehicles using Avalon Road interchange, Watt Street and Nasmyth Street to access the development. There is as assumption that 100% of heavy vehicles will approach the site from the south-west, but it needs to be explained why no movements are expected to occur from the north-east. It is also noted that the possible regional sports reserve would be expected to have a wider catchment.	In our view, C444 will not generate traffic to the north, other than local trips by local residents travelling to/from work. The industrial land is substantially closer to the Rennie Street interchange than Avalon Road. Avalon Road involves travelling low speed, lower order roads and multiple intersections. For heavy vehicles, there is also a 10-tonne load limit on the Rennie Street bridge. We are satisfied that for both heavy and light vehicles, the Rennie Street interchange is far more accessible and convenient than Avalon Road and industrial trips to the interchange will be negligible.
A7. The freeway on-ramp assessment (at Rennie Street) is acceptable. For completeness, Table 5-31 should also consider a larger vehicle fleet, up to B-double, so that the deficiencies of the on-ramp are understood and documented for this vehicle type.	The Princes Freeway on-ramp assessment has been further expanded to include assessment of a B-double.
A8. Section 6.1 needs to discuss the provision of footpaths along the site frontage.	This item is addressed in Section 4.16 of the report.
A9. Section 6.2 should include an indicative map showing how the expansion of the bus network could service the business park and sporting reserve.	This item can be addressed once the framework plan for the industrial component of the development is formalised.
A10. Section 6.7 should note the opportunity to provide walking/riding paths along Rennie Street as part of anticipated upgrades.	This item is addressed in Section 4.16 of the report.

6. Conclusions

Having undertaken a detailed traffic engineering assessment of the proposed rezoning of 76-156 Canterbury Road East, 705-765 Princes Highway, 785-805 Princes Highway & 610 Rennie Street, Lara (C444ggee and C453ggee), we are of the opinion that:

a) A development of the land yielding 666 standard residential lots within the residentially zoned land and an industrial estate within the industrially zoned land can be accommodated by the surrounding road network, with some upgrades.

b) To accommodate the development traffic, the following mitigating works are required:
   i) The upgrade of the existing Canterbury Road East level crossing to include an active gated control to facilitate safe pedestrian and dismounted cyclist movements across the rail line (on the south side, the side of the development).
   ii) The provision of a short channelised right turn lane and a basic left turn treatment to be provided on Rennie Street at the Canterbury Road East/Rennie Street Intersection.
   iii) The upgrade of Canterbury Road East to a connector style road, consistent with the balance of Canterbury Road East to the west of the rail line.
   iv) Nasymth Street should be closed, or attractiveness reduced such that local traffic heading to the Avalon Road interchange Archimedes Avenue.

c) The traffic generated by the rezoning of the land can be accommodated by the surrounding road network, with only minor impacts to the operation of key intersections.

d) Sensitivity analysis was undertaken in this regard for a higher traffic generation rate.

e) The indicative site access points are considered appropriate.

f) The surrounding bus network is able to be extended along Canterbury Road East. This would ensure the vast majority of future dwellings, industrial land use, and the potential regional sports reserve would be adequately serviced by public transport.

g) The site is well serviced by quality off-road bicycle trails to the east of the subject site and to the north-west of the subject site. Footpath/shared paths should be introduced along the site's northern frontage to Canterbury Road East and the north-eastern section of Rennie Street to provide pedestrians with a connection to the existing pedestrian infrastructure surrounding the site. A pedestrian connection should also be proposed to connect the proposed paths along the site's frontages to the Hovell Creek Trail, located at the east of the site.

h) There are no traffic engineering reasons why the proposed rezoning of the land at 76-156 Canterbury Road East, 705-765 Princes Highway, 785-805 Princes Highway & 610 Rennie Street, Lara (C444ggee and C453ggee) should not be approved.

Appendix A

Proposed Masterplan

LEGEND

- Site Boundary
- 1000m Buffer to Geelong Ring Road Employment Precinct
- Existing Open Space
- High-pressure Gas Pipeline
- Existing At Grade Railway Crossing
- Sensitive Noise Interface
- Indicative Size and Location for Drainage Infrastructure
- Proposed Residential
- Indicative Location for Unencumbered Open Space
- Indicative Encumbered Open Space
- Unencumbered Linear Open Space Trail
- Indicative Internal Road Connections
- Indicative location for main entry from Canterbury Road
- Indicative locations for secondary access points from Rennie Street and Canterbury Road
- Potential Regional Sports Reserve (subject to Council purchase)
- Future Business Park

1. Mitigate noise impacts associated with Railway Line
2. Mitigate noise impacts associated with Princes Highway
3. Linear open space trail to provide buffer between residential and future business park (minimum 20m wide)
4. Promote single sided road interface between residential lots and open space.

CANTERBURY RD
GEELONG - MELBOURNE RAILWAY LINE
Creek Recreation Reserve
HOVELLS CREEK
CANTERBURY RD
RENNIE ST
PRINCES HWY

Tract

Drawing Title	Project Name	Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
South-East Lara Framework Plan	76-156 Canterbury Rd Princes Hwy Lara	322-0029-00-U-00-DR05	09	21.10.2024	MH	MN	MN	1:5,000 (A3) 0 50 100 200

Tract

LEGEND

- Site Boundary
- Freeway
- Existing Road
- Railway Line
- Future open space to be delivered through residential development
- Future linear corridor to be delivered through residential development
- Future residential area (Amendment C444)
- Business Park/Industrial
- Light Industrial
- High-pressure Gas Pipeline
- Indicative location for Retarding Basin
- High quality address to Rennie Street and the Princes Freeway
- Potential Regional Sports Reserve (subject to Council purchase)

GEELONG - MELBOURNE RAILWAY LINE

RENNIE ST

PRINCES HWY

Drawing Title	Project Name	Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Development Plan	76-156 Canterbury Rd Princes Hwy Lara	322-0029-00-U-00-DR07	03	23.10.2024	MH	MN	MN	1:6,000 (A3) 0 60 120 240

Appendix B

Tube Count Results

TRANS TRAFFIC SURVEY

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AUTOMATIC COUNT SUMMARY

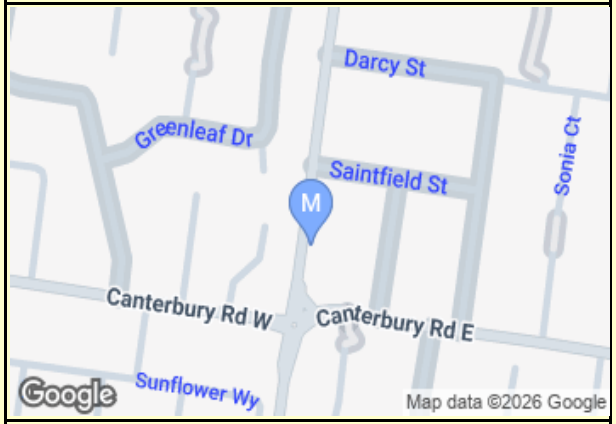
Street Name :	Forest Rd S	**Location :**	North of Canterbury Rd E
Suburb :	Lara	**Start Date :**	00:00 Wed 11/February/2026
Machine ID:	MD00QXA4	**Finish Date :**	00:00 Wed 18/February/2026
Site ID:	26426	**Speed Zone :**	60 km/h
Prepared By :	Vo Son Binh	**Email:**	binh@trafficsurvey.com.au

GPS information	Lat 38° 1' 59.70 South Long 144° 23' 40.43 East		Direction of Travel		
			Both directions	**Northbound**	**Southbound**
Traffic Volume :		Weekdays Average	12,807	6,165	6,642
(Vehicles/Day)		7 Day Average	12,015	5,801	6,214
Weekday	**AM**	08:00	1023	433	590
Peak hour starts	**PM**	15:00	1093	549	544
Speeds :		85th Percentile	51.9	53.6	50.3
(Km/Hr)		Average	46.7	48.5	44.8
Classification % :		Light Vehicles up to 5.5m	92.8%	93.1%	92.6%

Location

GPS Information Load Google Map (internet required)

(Latitude, Longitude) -38.033250, 144.394563



Speed Data | Speed Graph | Speed Bin

Volume Data | Volume Graph | Classification

QUALITY SYSTEM CERTIFICATION DNV ISO 9001

SAFETY SYSTEM CERTIFICATION DNV ISO 45001

ENVIRONMENTAL SYSTEM CERTIFICATION DNV ISO 14001

QUALITY ASSURED COMPANY BY ISO 9001:2015

OH&S SYSTEM CERTIFIED TO ISO 4801:2001

ENVIRONMENT MANAGEMENT SYSTEM CERTIFIED TO ISO14001:2015

TRANS TRAFFIC SURVEY

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Site Forest Rd S

Direction Both directions

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	08:00	11:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	16:00	17:00	15:00	15:00	15:00	12:00	12:00	N/A	15:00	N/A	15:00	N/A	12:00
00:00	35	37	32	47	43	98	85	377	54	194	39	183	92
01:00	28	29	25	17	23	54	73	249	36	122	24	127	64
02:00	26	16	9	13	16	28	35	143	20	80	16	63	32
03:00	34	38	26	23	28	27	29	205	29	149	30	56	28
04:00	94	100	106	99	103	32	45	579	83	502	100	77	39
05:00	215	251	262	248	230	84	57	1347	192	1206	241	141	71
06:00	441	507	488	495	460	165	119	2675	382	2391	478	284	142
07:00	699	711	706	705	687	301	186	3995	571	3508	702	487	244
08:00	1047	1029	1036	1021	989	563	323	6008	858	5122	1024	886	443
09:00	844	795	781	837	822	762	554	5395	771	4079	816	1316	658
10:00	737	703	741	723	772	902	704	5282	755	3676	735	1606	803
11:00	756	685	756	765	831	978	870	5641	806	3793	759	1848	924
12:00	816	745	813	782	796	941	912	5805	829	3952	790	1853	927
13:00	708	766	697	753	849	850	739	5362	766	3773	755	1589	795
14:00	791	832	866	863	864	798	763	5777	825	4216	843	1561	781
15:00	1066	1064	1066	1125	1146	813	692	6972	996	5467	1093	1505	753
16:00	1071	1164	1058	1069	1078	710	713	6863	980	5440	1088	1423	712
17:00	927	1221	1050	1068	1025	728	656	6675	954	5291	1058	1384	692
18:00	657	842	733	797	747	642	485	4903	700	3776	755	1127	564
19:00	497	598	525	527	537	512	430	3626	518	2684	537	942	471
20:00	370	459	352	431	446	342	306	2706	387	2058	412	648	324
21:00	235	296	248	330	342	300	214	1965	281	1451	290	514	257
22:00	157	130	138	152	206	189	117	1089	156	783	157	306	153
23:00	66	74	69	72	151	148	58	638	91	432	86	206	103
Total	**12317**	**13092**	**12583**	**12962**	**13191**	**10967**	**9165**	**84277**	**12040**	**64145**	**12829**	**20132**	**10066**
% Heavy	**7.71%**	**7.78%**	**7.65%**	**7.42%**	**7.63%**	**5.77%**	**5.79%**	**7.19%**		**7.64%**		**5.78%**	

TRANS TRAFFIC SURVEY

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Site Forest Rd S

Direction Northbound

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	08:00	11:00	11:00	N/A	11:00	N/A	08:00	N/A	11:00
PM Peak	15:00	17:00	17:00	16:00	16:00	12:00	12:00	N/A	15:00	N/A	17:00	N/A	12:00
00:00	17	21	19	27	23	44	46	197	28	107	21	90	45
01:00	19	19	12	10	9	28	32	129	18	69	14	60	30
02:00	15	5	1	5	7	16	20	69	10	33	7	36	18
03:00	12	13	9	10	10	16	17	87	12	54	11	33	17
04:00	34	40	39	43	43	14	22	235	34	199	40	36	18
05:00	83	87	99	79	68	41	21	478	68	416	83	62	31
06:00	152	177	172	183	173	55	60	972	139	857	171	115	58
07:00	247	278	280	271	257	145	99	1577	225	1333	267	244	122
08:00	455	425	425	437	426	215	138	2521	360	2168	434	353	177
09:00	343	350	333	365	324	313	232	2260	323	1715	343	545	273
10:00	331	337	352	344	348	408	322	2442	349	1712	342	730	365
11:00	372	330	358	370	419	444	373	2666	381	1849	370	817	409
12:00	420	361	430	432	400	491	424	2958	423	2043	409	915	458
13:00	352	384	351	330	412	419	381	2629	376	1829	366	800	400
14:00	429	492	473	507	490	427	388	3206	458	2391	478	815	408
15:00	543	534	560	548	555	439	393	3572	510	2740	548	832	416
16:00	541	576	523	566	561	360	362	3489	498	2767	553	722	361
17:00	513	585	565	561	547	346	345	3462	495	2771	554	691	346
18:00	353	400	404	422	352	301	231	2463	352	1931	386	532	266
19:00	242	298	283	271	285	248	217	1844	263	1379	276	465	233
20:00	197	232	193	230	223	174	161	1410	201	1075	215	335	168
21:00	134	127	114	190	187	157	109	1018	145	752	150	266	133
22:00	102	73	79	94	131	124	67	670	96	479	96	191	96
23:00	35	39	28	48	85	86	27	348	50	235	47	113	57
Total	**5941**	**6183**	**6102**	**6343**	**6335**	**5311**	**4487**	**40702**	**5815**	**30904**	**6181**	**9798**	**4899**
% Heavy	**7.46%**	**7.23%**	**7.42%**	**7.09%**	**7.34%**	**5.44%**	**5.82%**	**6.90%**		**7.31%**		**5.61%**	

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Site Forest Rd S

Direction Southbound

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	08:00	11:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	16:00	17:00	16:00	15:00	15:00	12:00	12:00	N/A	15:00	N/A	15:00	N/A	12:00
00:00	18	16	13	20	20	54	39	180	26	87	17	93	47
01:00	9	10	13	7	14	26	41	120	17	53	11	67	34
02:00	11	11	8	8	9	12	15	74	11	47	9	27	14
03:00	22	25	17	13	18	11	12	118	17	95	19	23	12
04:00	60	60	67	56	60	18	23	344	49	303	61	41	21
05:00	132	164	163	169	162	43	36	869	124	790	158	79	40
06:00	289	330	316	312	287	110	59	1703	243	1534	307	169	85
07:00	452	433	426	434	430	156	87	2418	345	2175	435	243	122
08:00	592	604	611	584	563	348	185	3487	498	2954	591	533	267
09:00	501	445	448	472	498	449	322	3135	448	2364	473	771	386
10:00	406	366	389	379	424	494	382	2840	406	1964	393	876	438
11:00	384	355	398	395	412	534	497	2975	425	1944	389	1031	516
12:00	396	384	383	350	396	450	488	2847	407	1909	382	938	469
13:00	356	382	346	423	437	431	358	2733	390	1944	389	789	395
14:00	362	340	393	356	374	371	375	2571	367	1825	365	746	373
15:00	523	530	506	577	591	374	299	3400	486	2727	545	673	337
16:00	530	588	535	503	517	350	351	3374	482	2673	535	701	351
17:00	414	636	485	507	478	382	311	3213	459	2520	504	693	347
18:00	304	442	329	375	395	341	254	2440	349	1845	369	595	298
19:00	255	300	242	256	252	264	213	1782	255	1305	261	477	239
20:00	173	227	159	201	223	168	145	1296	185	983	197	313	157
21:00	101	169	134	140	155	143	105	947	135	699	140	248	124
22:00	55	57	59	58	75	65	50	419	60	304	61	115	58
23:00	31	35	41	24	66	62	31	290	41	197	39	93	47
Total	**6376**	**6909**	**6481**	**6619**	**6856**	**5656**	**4678**	**43575**	**6225**	**33241**	**6648**	**10334**	**5167**
% Heavy	**7.95%**	**8.28%**	**7.85%**	**7.74%**	**7.89%**	**6.08%**	**5.77%**	**7.47%**		**7.95%**		**5.94%**	

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AUTOMATIC COUNT SUMMARY

Street Name :	Forest Rd S	**Location :**	South of Canterbury Rd E
Suburb :	Lara	**Start Date :**	00:00 Wed 11/February/2026
Machine ID:	MD12RWSA	**Finish Date :**	00:00 Wed 18/February/2026
Site ID:	26427	**Speed Zone :**	60 km/h
Prepared By :	Vo Son Binh	**Email:**	binh@trafficsurvey.com.au

GPS information		Lat 38° 2' 4.45 South Long 144° 23' 39.56 East	Direction of Travel		
			Both directions	**Northbound**	**Southbound**
Traffic Volume :		Weekdays Average	14,013	6,845	7,168
(Vehicles/Day)		7 Day Average	13,237	6,475	6,762
Weekday	**AM**	08:00	1073	340	733
Peak hour starts	**PM**	17:00	1178	706	472
Speeds :		85th Percentile	51.7	49.5	54.0
(Km/Hr)		Average	46.1	43.2	49.0
Classification % :		Light Vehicles up to 5.5m	96.6%	96.1%	97.0%

Location

GPS Information Load Google Map (internet required)

(Latitude, Longitude) -38.034569, 144.394323



Speed Data | Speed Graph | Speed Bin
Volume Data | Volume Graph | Classification

QUALITY SYSTEM CERTIFICATION DNV ISO 9001
SAFETY SYSTEM CERTIFICATION DNV ISO 45001
ENVIRONMENTAL SYSTEM CERTIFICATION DNV ISO 14001

QUALITY ASSURED COMPANY BY ISO 9001:2015
OH&S SYSTEM CERTIFIED TO ISO 4801:2001
ENVIRONMENT MANAGEMENT SYSTEM CERTIFIED TO ISO14001:2015

TRANS TRAFFIC SURVEY

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Site Forest Rd S

Direction Both directions

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	08:00	11:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	16:00	17:00	17:00	17:00	16:00	12:00	12:00	N/A	16:00	N/A	17:00	N/A	12:00
00:00	47	37	46	69	59	103	111	472	67	258	52	214	107
01:00	36	36	29	21	25	58	90	295	42	147	29	148	74
02:00	22	20	15	16	20	36	52	181	26	93	19	88	44
03:00	33	39	29	28	30	35	41	235	34	159	32	76	38
04:00	107	114	108	107	111	37	56	640	91	547	109	93	47
05:00	256	304	327	314	286	105	84	1676	239	1487	297	189	95
06:00	581	641	649	632	592	220	148	3463	495	3095	619	368	184
07:00	812	807	823	811	815	317	204	4589	656	4068	814	521	261
08:00	1054	1088	1095	1110	1021	635	371	6374	911	5368	1074	1006	503
09:00	883	843	853	873	867	861	628	5808	830	4319	864	1489	745
10:00	797	748	790	800	849	1017	842	5843	835	3984	797	1859	930
11:00	801	761	801	842	882	1138	972	6197	885	4087	817	2110	1055
12:00	885	809	849	829	880	1095	975	6322	903	4252	850	2070	1035
13:00	734	868	768	830	903	941	852	5896	842	4103	821	1793	897
14:00	876	904	906	919	940	903	843	6291	899	4545	909	1746	873
15:00	1039	1083	1137	1064	1140	910	752	7125	1018	5463	1093	1662	831
16:00	1083	1248	1148	1174	1197	833	786	7469	1067	5850	1170	1619	810
17:00	1073	1339	1158	1175	1149	780	672	7346	1049	5894	1179	1452	726
18:00	701	892	811	829	813	659	527	5232	747	4046	809	1186	593
19:00	549	638	563	568	604	483	446	3851	550	2922	584	929	465
20:00	396	477	419	487	483	395	363	3020	431	2262	452	758	379
21:00	295	322	267	370	420	352	248	2274	325	1674	335	600	300
22:00	192	182	179	210	254	246	147	1410	201	1017	203	393	197
23:00	78	91	74	94	184	181	78	780	111	521	104	259	130
Total	13330	14291	13844	14172	14524	12340	10288	92789	13256	70161	14032	22628	11314
% Heavy	3.77%	3.93%	3.89%	3.84%	3.57%	2.24%	2.19%	3.41%		3.80%		2.22%	

TRANS TRAFFIC SURVEY

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Site Forest Rd S

Direction Northbound

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	11:00	11:00	11:00	11:00	11:00	11:00	11:00	N/A	11:00	N/A	11:00	N/A	11:00
PM Peak	17:00	17:00	17:00	16:00	16:00	12:00	12:00	N/A	16:00	N/A	17:00	N/A	12:00
00:00	28	21	31	42	36	56	64	278	40	158	32	120	60
01:00	21	22	16	11	12	31	44	157	22	82	16	75	38
02:00	11	8	5	8	11	23	32	98	14	43	9	55	28
03:00	8	10	7	10	10	18	22	85	12	45	9	40	20
04:00	20	31	24	24	30	14	28	171	24	129	26	42	21
05:00	46	58	62	54	41	29	24	314	45	261	52	53	27
06:00	145	158	162	162	143	55	60	885	126	770	154	115	58
07:00	203	232	237	213	218	107	80	1290	184	1103	221	187	94
08:00	345	337	343	350	326	190	127	2018	288	1701	340	317	159
09:00	353	335	343	356	332	314	218	2251	322	1719	344	532	266
10:00	356	346	369	375	379	439	325	2589	370	1825	365	764	382
11:00	375	371	379	399	423	519	415	2881	412	1947	389	934	467
12:00	479	412	463	459	461	579	466	3319	474	2274	455	1045	523
13:00	376	456	422	376	470	480	454	3034	433	2100	420	934	467
14:00	498	538	524	531	532	514	464	3601	514	2623	525	978	489
15:00	626	637	688	612	648	514	447	4172	596	3211	642	961	481
16:00	629	698	631	737	711	467	447	4320	617	3406	681	914	457
17:00	684	742	712	696	692	382	391	4299	614	3526	705	773	387
18:00	403	463	493	497	416	327	267	2866	409	2272	454	594	297
19:00	304	352	345	326	347	251	229	2154	308	1674	335	480	240
20:00	240	275	266	293	276	214	211	1775	254	1350	270	425	213
21:00	188	169	151	249	274	210	150	1391	199	1031	206	360	180
22:00	141	120	117	138	175	170	94	955	136	691	138	264	132
23:00	48	57	44	59	112	114	41	475	68	320	64	155	78
Total	**6527**	**6848**	**6834**	**6977**	**7075**	**6017**	**5100**	**45378**	**6483**	**34261**	**6852**	**11117**	**5559**
% Heavy	**4.20%**	**4.09%**	**4.17%**	**4.19%**	**4.18%**	**3.11%**	**3.02%**	**3.90%**		**4.17%**		**3.07%**	

TRANS TRAFFIC SURVEY

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Site Forest Rd S

Direction Southbound

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	08:00	11:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	16:00	17:00	16:00	17:00	15:00	12:00	12:00	N/A	16:00	N/A	16:00	N/A	12:00
00:00	19	16	15	27	23	47	47	194	28	100	20	94	47
01:00	15	14	13	10	13	27	46	138	20	65	13	73	37
02:00	11	12	10	8	9	13	20	83	12	50	10	33	17
03:00	25	29	22	18	20	17	19	150	21	114	23	36	18
04:00	87	83	84	83	81	23	28	469	67	418	84	51	26
05:00	210	246	265	260	245	76	60	1362	195	1226	245	136	68
06:00	436	483	487	470	449	165	88	2578	368	2325	465	253	127
07:00	609	575	586	598	597	210	124	3299	471	2965	593	334	167
08:00	709	751	752	760	695	445	244	4356	622	3667	733	689	345
09:00	530	508	510	517	535	547	410	3557	508	2600	520	957	479
10:00	441	402	421	425	470	578	517	3254	465	2159	432	1095	548
11:00	426	390	422	443	459	619	557	3316	474	2140	428	1176	588
12:00	406	397	386	370	419	516	509	3003	429	1978	396	1025	513
13:00	358	412	346	454	433	461	398	2862	409	2003	401	859	430
14:00	378	366	382	388	408	389	379	2690	384	1922	384	768	384
15:00	413	446	449	452	492	396	305	2953	422	2252	450	701	351
16:00	454	550	517	437	486	366	339	3149	450	2444	489	705	353
17:00	389	597	446	479	457	398	281	3047	435	2368	474	679	340
18:00	298	429	318	332	397	332	260	2366	338	1774	355	592	296
19:00	245	286	218	242	257	232	217	1697	242	1248	250	449	225
20:00	156	202	153	194	207	181	152	1245	178	912	182	333	167
21:00	107	153	116	121	146	142	98	883	126	643	129	240	120
22:00	51	62	62	72	79	76	53	455	65	326	65	129	65
23:00	30	34	30	35	72	67	37	305	44	201	40	104	52
Total	**6803**	**7443**	**7010**	**7195**	**7449**	**6323**	**5188**	**47411**	**6773**	**35900**	**7180**	**11511**	**5756**
% Heavy	**3.35%**	**3.79%**	**3.62%**	**3.50%**	**2.99%**	**1.42%**	**1.37%**	**2.95%**		**3.45%**		**1.40%**	

TRANS TRAFFIC SURVEY

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AUTOMATIC COUNT SUMMARY

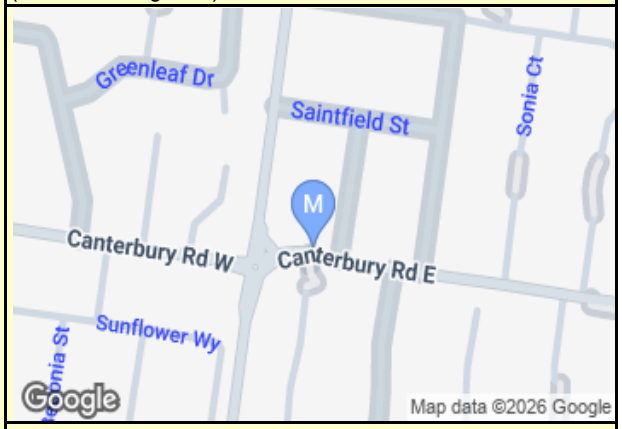
Street Name :	Canterbury Rd E	**Location :**	East of Forest Rd S
Suburb :	Lara	**Start Date :**	00:00 Wed 11/February/2026
Machine ID:	HR176KQD	**Finish Date :**	00:00 Wed 18/February/2026
Site ID:	26428	**Speed Zone :**	60 km/h
Prepared By :	Vo Son Binh	**Email:**	binh@trafficsurvey.com.au

GPS information		Lat 38° 2' 1.74 South Long 144° 23' 42.29 East	Direction of Travel		
			Both directions	**Westbound**	**Eastbound**
Traffic Volume :		Weekdays Average	3,633	1,678	1,955
(Vehicles/Day)		7 Day Average	3,392	1,577	1,815
Weekday	**AM**	08:00	352	163	189
Peak hour start	**PM**	15:00	376	165	211
Speeds :		85th Percentile	39.6	35.2	44.1
(Km/Hr)		Average	35.0	31.2	38.7
Classification % :		Light Vehicles up to 5.5m	95.5%	95.1%	95.8%

Location

GPS Information Load Google Map (internet required)

(Latitude, Longitude) -38.033817, 144.395081



Speed Data | Speed Graph | Speed Bin

Volume Data | Volume Graph | Classification

QUALITY ASSURED COMPANY BY ISO 9001:2015

OH&S SYSTEM CERTIFIED TO ISO 4801:2001

ENVIRONMENT MANAGEMENT SYSTEM CERTIFIED TO ISO14001:2015

TRANS TRAFFIC SURVEY

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Site Canterbury Rd E

Direction Both directions

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	08:00	11:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	15:00	16:00	15:00	15:00	15:00	12:00	16:00	N/A	15:00	N/A	15:00	N/A	12:00
00:00	10	19	3	20	13	31	22	118	17	65	13	53	27
01:00	7	2	5	3	12	24	19	72	10	29	6	43	22
02:00	9	2	3	2	2	4	8	30	4	18	4	12	6
03:00	4	6	5	6	4	4	5	34	5	25	5	9	5
04:00	20	20	24	21	24	6	6	121	17	109	22	12	6
05:00	81	85	80	71	71	23	11	422	60	388	78	34	17
06:00	121	131	140	124	119	39	23	697	100	635	127	62	31
07:00	212	204	208	217	201	90	46	1178	168	1042	208	136	68
08:00	371	348	337	362	345	154	77	1994	285	1763	353	231	116
09:00	216	213	179	213	240	216	141	1418	203	1061	212	357	179
10:00	161	149	163	173	193	218	196	1253	179	839	168	414	207
11:00	162	172	162	200	196	243	251	1386	198	892	178	494	247
12:00	186	175	181	193	201	260	212	1408	201	936	187	472	236
13:00	181	178	169	184	185	225	194	1316	188	897	179	419	210
14:00	190	209	197	202	202	218	206	1424	203	1000	200	424	212
15:00	358	359	373	393	402	224	215	2324	332	1885	377	439	220
16:00	350	426	351	389	332	205	227	2280	326	1848	370	432	216
17:00	300	330	342	328	296	205	185	1986	284	1596	319	390	195
18:00	223	228	204	259	214	178	171	1477	211	1128	226	349	175
19:00	170	153	150	169	159	159	121	1081	154	801	160	280	140
20:00	107	84	121	140	121	102	105	780	111	573	115	207	104
21:00	81	70	49	82	97	80	81	540	77	379	76	161	81
22:00	49	32	29	47	55	50	46	308	44	212	42	96	48
23:00	12	27	17	19	43	32	17	167	24	118	24	49	25
Total	**3581**	**3622**	**3492**	**3817**	**3727**	**2990**	**2585**	**23814**	**3402**	**18239**	**3648**	**5575**	**2788**
% Heavy	**4.89%**	**5.11%**	**4.87%**	**4.40%**	**4.56%**	**3.85%**	**3.64%**	**4.52%**		**4.76%**		**3.75%**	

TRANS TRAFFIC SURVEY

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Site Canterbury Rd E

Direction Westbound

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	08:00	09:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	16:00	16:00	16:00	16:00	15:00	12:00	12:00	N/A	16:00	N/A	16:00	N/A	12:00
00:00	5	8	2	10	4	15	10	54	8	29	6	25	13
01:00	5	1	2	2	4	10	9	33	5	14	3	19	10
02:00	5	1	1	0	1	1	2	11	2	8	2	3	2
03:00	1	2	0	2	1	1	3	10	1	6	1	4	2
04:00	16	10	15	13	8	1	3	66	9	62	12	4	2
05:00	39	46	44	40	34	18	9	230	33	203	41	27	14
06:00	61	60	70	64	63	27	13	358	51	318	64	40	20
07:00	103	90	98	102	99	57	29	578	83	492	98	86	43
08:00	172	164	159	163	162	78	43	941	134	820	164	121	61
09:00	100	117	101	113	117	115	75	738	105	548	110	190	95
10:00	83	74	80	80	90	105	103	615	88	407	81	208	104
11:00	87	76	82	90	95	115	123	668	95	430	86	238	119
12:00	80	73	87	95	90	124	100	649	93	425	85	224	112
13:00	87	82	71	77	75	101	85	578	83	392	78	186	93
14:00	86	99	87	98	92	112	97	671	96	462	92	209	105
15:00	147	162	160	171	188	96	99	1023	146	828	166	195	98
16:00	178	212	171	178	156	86	99	1080	154	895	179	185	93
17:00	140	167	160	140	135	85	85	912	130	742	148	170	85
18:00	106	113	85	109	90	85	77	665	95	503	101	162	81
19:00	78	71	50	75	71	71	60	476	68	345	69	131	66
20:00	44	28	44	59	55	48	43	321	46	230	46	91	46
21:00	35	27	18	28	34	32	34	208	30	142	28	66	33
22:00	19	12	12	25	25	23	17	133	19	93	19	40	20
23:00	5	12	8	9	18	15	10	77	11	52	10	25	13
Total	**1682**	**1707**	**1607**	**1743**	**1707**	**1421**	**1228**	**11095**	**1585**	**8446**	**1689**	**2649**	**1325**
% Heavy	**4.99%**	**5.62%**	**5.23%**	**5.22%**	**5.10%**	**4.08%**	**4.07%**	**4.96%**		**5.23%**		**4.08%**	

TRANS TRAFFIC SURVEY

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Site Canterbury Rd E

Direction Eastbound

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	08:00	11:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	15:00	16:00	15:00	15:00	15:00	12:00	16:00	N/A	15:00	N/A	15:00	N/A	12:00
00:00	5	11	1	10	9	16	12	64	9	36	7	28	14
01:00	2	1	3	1	8	14	10	39	6	15	3	24	12
02:00	4	1	2	2	1	3	6	19	3	10	2	9	5
03:00	3	4	5	4	3	3	2	24	3	19	4	5	3
04:00	4	10	9	8	16	5	3	55	8	47	9	8	4
05:00	42	39	36	31	37	5	2	192	27	185	37	7	4
06:00	60	71	70	60	56	12	10	339	48	317	63	22	11
07:00	109	114	110	115	102	33	17	600	86	550	110	50	25
08:00	199	184	178	199	183	76	34	1053	150	943	189	110	55
09:00	116	96	78	100	123	101	66	680	97	513	103	167	84
10:00	78	75	83	93	103	113	93	638	91	432	86	206	103
11:00	75	96	80	110	101	128	128	718	103	462	92	256	128
12:00	106	102	94	98	111	136	112	759	108	511	102	248	124
13:00	94	96	98	107	110	124	109	738	105	505	101	233	117
14:00	104	110	110	104	110	106	109	753	108	538	108	215	108
15:00	211	197	213	222	214	128	116	1301	186	1057	211	244	122
16:00	172	214	180	211	176	119	128	1200	171	953	191	247	124
17:00	160	163	182	188	161	120	100	1074	153	854	171	220	110
18:00	117	115	119	150	124	93	94	812	116	625	125	187	94
19:00	92	82	100	94	88	88	61	605	86	456	91	149	75
20:00	63	56	77	81	66	54	62	459	66	343	69	116	58
21:00	46	43	31	54	63	48	47	332	47	237	47	95	48
22:00	30	20	17	22	30	27	29	175	25	119	24	56	28
23:00	7	15	9	10	25	17	7	90	13	66	13	24	12
Total	**1899**	**1915**	**1885**	**2074**	**2020**	**1569**	**1357**	**12719**	**1817**	**9793**	**1959**	**2926**	**1463**
% Heavy	**4.79%**	**4.65%**	**4.56%**	**3.71%**	**4.11%**	**3.63%**	**3.24%**	**4.14%**		**4.35%**		**3.45%**	

TRANS TRAFFIC SURVEY

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AUTOMATIC COUNT SUMMARY

Street Name :	Canterbury Rd E	**Location :**	East of Railway Line
Suburb :	Lara	**Start Date :**	00:00 Wed 11/February/2026
Machine ID:	CX54HDHS	**Finish Date :**	00:00 Wed 18/February/2026
Site ID:	26429	**Speed Zone :**	60 km/h
Prepared By :	Vo Son Binh	**Email:**	binh@trafficsurvey.com.au

GPS information		Lat 38° 2' 5.90 South Long 144° 24' 11.46 East	Direction of Travel		
			Both directions	**Westbound**	**Eastbound**
Traffic Volume :		Weekdays Average	2,137	1,026	1,111
(Vehicles/Day)		7 Day Average	1,922	924	998
Weekday	**AM**	08:00	211	83	128
Peak hour start	**PM**	16:00	246	143	103
Speeds :		85th Percentile	64.8	63.2	66.3
(Km/Hr)		Average	57.9	56.5	59.3
Classification % :		Light Vehicles up to 5.5m	95.0%	95.4%	94.8%

Location

GPS Information Load Google Map (internet required)

(Latitude, Longitude) -38.034973, 144.403182



Speed Data | Speed Graph | Speed Bin
Volume Data | Volume Graph | Classification

QUALITY ASSURED COMPANY BY ISO 9001:2015
OH&S SYSTEM CERTIFIED TO ISO 4801:2001
ENVIRONMENT MANAGEMENT SYSTEM CERTIFIED TO ISO14001:2015

TRANS TRAFFIC SURVEY

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Site Canterbury Rd E

Direction Both directions

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	08:00	11:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	16:00	16:00	15:00	16:00	15:00	12:00	14:00	N/A	16:00	N/A	16:00	N/A	12:00
00:00	8	7	3	9	9	11	13	60	9	36	7	24	12
01:00	4	3	0	1	7	12	7	34	5	15	3	19	10
02:00	5	1	3	2	1	6	7	25	4	12	2	13	7
03:00	8	5	8	6	6	3	1	37	5	33	7	4	2
04:00	17	18	18	18	17	9	10	107	15	88	18	19	10
05:00	80	76	69	65	76	17	7	390	56	366	73	24	12
06:00	91	102	107	94	86	22	14	516	74	480	96	36	18
07:00	154	149	132	148	135	44	20	782	112	718	144	64	32
08:00	207	217	210	209	212	89	36	1180	169	1055	211	125	63
09:00	107	107	102	102	133	112	69	732	105	551	110	181	91
10:00	96	72	74	101	104	122	83	652	93	447	89	205	103
11:00	76	81	90	86	94	138	107	672	96	427	85	245	123
12:00	91	79	90	91	116	132	107	706	101	467	93	239	120
13:00	79	78	76	88	98	129	102	650	93	419	84	231	116
14:00	116	119	123	120	129	84	126	817	117	607	121	210	105
15:00	230	254	253	249	239	117	100	1442	206	1225	245	217	109
16:00	233	267	239	250	235	114	103	1441	206	1224	245	217	109
17:00	194	243	198	201	184	106	95	1221	174	1020	204	201	101
18:00	125	124	111	138	119	84	93	794	113	617	123	177	89
19:00	58	74	71	88	73	52	60	476	68	364	73	112	56
20:00	52	30	52	54	58	31	51	328	47	246	49	82	41
21:00	36	30	28	42	42	32	29	239	34	178	36	61	31
22:00	25	20	14	23	22	26	19	149	21	104	21	45	23
23:00	10	11	13	14	23	15	9	95	14	71	14	24	12
Total	2102	2167	2084	2199	2218	1507	1268	13545	1935	10770	2154	2775	1388
% Heavy	4.95%	5.35%	4.94%	6.14%	4.87%	4.05%	3.15%	4.92%		5.26%		3.64%	

TRANS TRAFFIC SURVEY

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Site Canterbury Rd E

Direction Westbound

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	08:00	11:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	16:00	17:00	16:00	16:00	16:00	13:00	14:00	N/A	16:00	N/A	16:00	N/A	13:00
00:00	5	5	2	7	6	9	10	44	6	25	5	19	10
01:00	2	3	0	1	4	7	4	21	3	10	2	11	6
02:00	2	1	1	0	1	3	3	11	2	5	1	6	3
03:00	3	1	1	1	1	1	1	9	1	7	1	2	1
04:00	3	3	3	3	1	2	2	17	2	13	3	4	2
05:00	15	14	12	10	12	7	3	73	10	63	13	10	5
06:00	24	23	28	22	20	8	5	130	19	117	23	13	7
07:00	35	35	26	40	38	17	7	198	28	174	35	24	12
08:00	86	77	74	81	91	34	13	456	65	409	82	47	24
09:00	37	49	54	41	46	46	19	292	42	227	45	65	33
10:00	42	35	41	46	52	55	34	305	44	216	43	89	45
11:00	33	36	45	48	43	72	44	321	46	205	41	116	58
12:00	39	39	45	46	64	58	50	341	49	233	47	108	54
13:00	45	41	46	41	46	64	54	337	48	219	44	118	59
14:00	59	62	52	69	66	49	56	413	59	308	62	105	53
15:00	124	126	133	120	128	60	53	744	106	631	126	113	57
16:00	138	161	139	147	129	60	50	824	118	714	143	110	55
17:00	123	168	125	115	97	52	53	733	105	628	126	105	53
18:00	84	85	69	82	64	42	51	477	68	384	77	93	47
19:00	34	48	36	58	38	28	38	280	40	214	43	66	33
20:00	31	15	26	25	42	20	26	185	26	139	28	46	23
21:00	20	20	17	26	23	20	18	144	21	106	21	38	19
22:00	14	10	8	17	14	17	8	88	13	63	13	25	13
23:00	7	10	10	11	15	11	7	71	10	53	11	18	9
Total	**1005**	**1067**	**993**	**1057**	**1041**	**742**	**609**	**6514**	**931**	**5163**	**1033**	**1351**	**676**
% Heavy	**4.38%**	**4.12%**	**4.03%**	**6.91%**	**5.28%**	**3.91%**	**2.13%**	**4.57%**		**4.96%**		**3.11%**	

TRANS TRAFFIC SURVEY

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Site Canterbury Rd E

Direction Eastbound

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	08:00	10:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	15:00	15:00	15:00	15:00	15:00	12:00	14:00	N/A	15:00	N/A	15:00	N/A	12:00
00:00	3	2	1	2	3	2	3	16	2	11	2	5	3
01:00	2	0	0	0	3	5	3	13	2	5	1	8	4
02:00	3	0	2	2	0	3	4	14	2	7	1	7	4
03:00	5	4	7	5	5	2	0	28	4	26	5	2	1
04:00	14	15	15	15	16	7	8	90	13	75	15	15	8
05:00	65	62	57	55	64	10	4	317	45	303	61	14	7
06:00	67	79	79	72	66	14	9	386	55	363	73	23	12
07:00	119	114	106	108	97	27	13	584	83	544	109	40	20
08:00	121	140	136	128	121	55	23	724	103	646	129	78	39
09:00	70	58	48	61	87	66	50	440	63	324	65	116	58
10:00	54	37	33	55	52	67	49	347	50	231	46	116	58
11:00	43	45	45	38	51	66	63	351	50	222	44	129	65
12:00	52	40	45	45	52	74	57	365	52	234	47	131	66
13:00	34	37	30	47	52	65	48	313	45	200	40	113	57
14:00	57	57	71	51	63	35	70	404	58	299	60	105	53
15:00	106	128	120	129	111	57	47	698	100	594	119	104	52
16:00	95	106	100	103	106	54	53	617	88	510	102	107	54
17:00	71	75	73	86	87	54	42	488	70	392	78	96	48
18:00	41	39	42	56	55	42	42	317	45	233	47	84	42
19:00	24	26	35	30	35	24	22	196	28	150	30	46	23
20:00	21	15	26	29	16	11	25	143	20	107	21	36	18
21:00	16	10	11	16	19	12	11	95	14	72	14	23	12
22:00	11	10	6	6	8	9	11	61	9	41	8	20	10
23:00	3	1	3	3	8	4	2	24	3	18	4	6	3
Total	**1097**	**1100**	**1091**	**1142**	**1177**	**765**	**659**	**7031**	**1004**	**5607**	**1121**	**1424**	**712**
% Heavy	**5.47%**	**6.55%**	**5.77%**	**5.43%**	**4.50%**	**4.18%**	**4.10%**	**5.25%**		**5.53%**		**4.14%**	

TRANS TRAFFIC SURVEY

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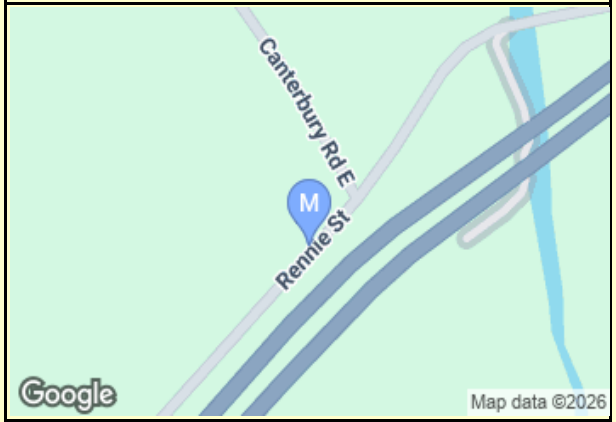
AUTOMATIC COUNT SUMMARY

Street Name :	Rennie St	**Location :**	South of Canterbury Rd E
Suburb :	Lara	**Start Date :**	00:00 Wed 11/February/2026
Machine ID:	JE59AS8S	**Finish Date :**	00:00 Wed 18/February/2026
Site ID:	26430	**Speed Zone :**	60 km/h
Prepared By :	Vo Son Binh	**Email:**	binh@trafficsurvey.com.au

GPS information		Lat 38° 2' 26.59 South Long 144° 24' 36.14 East	Direction of Travel		
			Both directions	**Northbound**	**Southbound**
Traffic Volume :		Weekdays Average	1,669	838	831
(Vehicles/Day)		7 Day Average	1,571	787	784
Weekday	**AM**	08:00	142	39	103
Peak hour starts	**PM**	16:00	187	126	61
Speeds :		85th Percentile	77.5	77.2	77.9
(Km/Hr)		Average	68.3	68.0	68.6
Classification % :		Light Vehicles up to 5.5m	95.7%	95.9%	95.4%

Location

GPS Information	Load Google Map (internet required)
(Latitude, Longitude)	-38.040719, 144.410039



Speed Data	Speed Graph	Speed Bin
Volume Data	Volume Graph	Classification

QUALITY ASSURED COMPANY BY ISO 9001:2015
OH&S SYSTEM CERTIFIED TO ISO 4801:2001
ENVIRONMENT MANAGEMENT SYSTEM CERTIFIED TO ISO14001:2015

TRANS TRAFFIC SURVEY

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Site Rennie St

Direction Both directions

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	08:00	11:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	16:00	16:00	16:00	16:00	16:00	15:00	14:00	N/A	16:00	N/A	16:00	N/A	15:00
00:00	5	6	6	6	10	16	9	58	8	33	7	25	13
01:00	4	2	2	2	1	9	9	29	4	11	2	18	9
02:00	1	0	2	0	1	3	8	15	2	4	1	11	6
03:00	3	2	0	1	1	1	2	10	1	7	1	3	2
04:00	8	6	5	2	7	3	8	39	6	28	6	11	6
05:00	27	30	31	35	26	10	0	159	23	149	30	10	5
06:00	66	83	72	58	59	12	6	356	51	338	68	18	9
07:00	99	106	89	110	100	37	21	562	80	504	101	58	29
08:00	142	156	139	139	133	57	49	815	116	709	142	106	53
09:00	85	90	81	81	69	84	66	556	79	406	81	150	75
10:00	91	77	74	92	97	123	75	629	90	431	86	198	99
11:00	92	80	79	91	100	130	111	683	98	442	88	241	121
12:00	94	85	87	85	103	131	109	694	99	454	91	240	120
13:00	83	90	102	97	113	132	106	723	103	485	97	238	119
14:00	94	137	100	128	116	113	126	814	116	575	115	239	120
15:00	141	139	133	152	173	133	110	981	140	738	148	243	122
16:00	175	190	199	182	191	108	110	1155	165	937	187	218	109
17:00	148	168	155	167	164	109	89	1000	143	802	160	198	99
18:00	74	103	88	100	95	82	75	617	88	460	92	157	79
19:00	76	72	46	59	65	60	45	423	60	318	64	105	53
20:00	51	46	39	56	54	45	37	328	47	246	49	82	41
21:00	32	30	24	31	43	29	16	205	29	160	32	45	23
22:00	20	16	9	18	21	25	13	122	17	84	17	38	19
23:00	8	12	8	6	24	23	8	89	13	58	12	31	16
Total	**1619**	**1726**	**1570**	**1698**	**1766**	**1475**	**1208**	**11062**	**1580**	**8379**	**1676**	**2683**	**1342**
% Heavy	**4.32%**	**4.52%**	**4.78%**	**5.54%**	**4.08%**	**3.73%**	**2.90%**	**4.33%**		**4.64%**		**3.35%**	

TRANS TRAFFIC SURVEY

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Site Rennie St

Direction Northbound

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	11:00	11:00	11:00	11:00	N/A	11:00	N/A	08:00	N/A	11:00
PM Peak	16:00	16:00	16:00	16:00	16:00	15:00	14:00	N/A	16:00	N/A	16:00	N/A	15:00
00:00	3	5	4	6	5	9	5	37	5	23	5	14	7
01:00	3	2	2	2	0	4	5	18	3	9	2	9	5
02:00	1	0	1	0	1	2	3	8	1	3	1	5	3
03:00	2	0	0	0	0	1	1	4	1	2	0	2	1
04:00	2	3	1	1	1	1	2	11	2	8	2	3	2
05:00	4	3	5	4	3	3	0	22	3	19	4	3	2
06:00	12	14	11	11	9	4	1	62	9	57	11	5	3
07:00	18	24	17	24	16	12	7	118	17	99	20	19	10
08:00	43	34	39	39	40	15	17	227	32	195	39	32	16
09:00	28	33	33	29	29	31	20	203	29	152	30	51	26
10:00	36	34	30	33	34	43	24	234	33	167	33	67	34
11:00	37	32	34	47	45	55	48	298	43	195	39	103	52
12:00	50	43	42	45	57	64	59	360	51	237	47	123	62
13:00	46	43	48	49	57	68	55	366	52	243	49	123	62
14:00	59	86	60	77	69	63	70	484	69	351	70	133	67
15:00	83	85	90	91	113	73	70	605	86	462	92	143	72
16:00	116	132	129	126	128	51	68	750	107	631	126	119	60
17:00	106	106	101	109	105	64	51	642	92	527	105	115	58
18:00	43	62	54	61	45	47	44	356	51	265	53	91	46
19:00	41	47	30	43	38	41	25	265	38	199	40	66	33
20:00	25	27	23	36	34	28	18	191	27	145	29	46	23
21:00	23	18	18	23	31	17	13	143	20	113	23	30	15
22:00	14	12	6	14	14	15	5	80	11	60	12	20	10
23:00	8	7	5	5	13	13	2	53	8	38	8	15	8
Total	**803**	**852**	**783**	**875**	**887**	**724**	**613**	**5537**	**791**	**4200**	**840**	**1337**	**669**
% Heavy	**4.48%**	**3.99%**	**4.98%**	**5.49%**	**4.06%**	**2.90%**	**2.45%**	**4.14%**		**4.60%**		**2.69%**	

TRANS TRAFFIC SURVEY

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Site Rennie St

Direction Southbound

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	08:00	10:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	16:00	17:00	16:00	15:00	16:00	12:00	14:00	N/A	16:00	N/A	16:00	N/A	12:00
00:00	2	1	2	0	5	7	4	21	3	10	2	11	6
01:00	1	0	0	0	1	5	4	11	2	2	0	9	5
02:00	0	0	1	0	0	1	5	7	1	1	0	6	3
03:00	1	2	0	1	1	0	1	6	1	5	1	1	1
04:00	6	3	4	1	6	2	6	28	4	20	4	8	4
05:00	23	27	26	31	23	7	0	137	20	130	26	7	4
06:00	54	69	61	47	50	8	5	294	42	281	56	13	7
07:00	81	82	72	86	84	25	14	444	63	405	81	39	20
08:00	99	122	100	100	93	42	32	588	84	514	103	74	37
09:00	57	57	48	52	40	53	46	353	50	254	51	99	50
10:00	55	43	44	59	63	80	51	395	56	264	53	131	66
11:00	55	48	45	44	55	75	63	385	55	247	49	138	69
12:00	44	42	45	40	46	67	50	334	48	217	43	117	59
13:00	37	47	54	48	56	64	51	357	51	242	48	115	58
14:00	35	51	40	51	47	50	56	330	47	224	45	106	53
15:00	58	54	43	61	60	60	40	376	54	276	55	100	50
16:00	59	58	70	56	63	57	42	405	58	306	61	99	50
17:00	42	62	54	58	59	45	38	358	51	275	55	83	42
18:00	31	41	34	39	50	35	31	261	37	195	39	66	33
19:00	35	25	16	16	27	19	20	158	23	119	24	39	20
20:00	26	19	16	20	20	17	19	137	20	101	20	36	18
21:00	9	12	6	8	12	12	3	62	9	47	9	15	8
22:00	6	4	3	4	7	10	8	42	6	24	5	18	9
23:00	0	5	3	1	11	10	6	36	5	20	4	16	8
Total	816	874	787	823	879	751	595	5525	789	4179	836	1346	673
% Heavy	4.17%	5.03%	4.57%	5.59%	4.10%	4.53%	3.36%	4.52%		4.69%		4.01%	

TRANS TRAFFIC SURVEY

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AUTOMATIC COUNT SUMMARY

Street Name :	Rennie St	**Location :**	North of Canterbury Rd E
Suburb :	Lara	**Start Date :**	00:00 Wed 11/February/2026
Machine ID:	MD629P9C	**Finish Date :**	00:00 Wed 18/February/2026
Site ID:	26431	**Speed Zone :**	60 km/h
Prepared By :	Vo Son Binh	**Email:**	binh@trafficsurvey.com.au

GPS information	Lat 38° 2' 23.86 South Long 144° 24' 39.41 East		Direction of Travel		
			Both directions	**Northbound**	**Southbound**
Traffic Volume :		Weekdays Average	3,134	1,615	1,519
(Vehicles/Day)		7 Day Average	2,875	1,477	1,398
Weekday	**AM**	08:00	297	141	156
Peak hour starts	**PM**	16:00	348	187	161
Speeds :		85th Percentile	67.8	69.9	65.6
(Km/Hr)		Average	60.1	61.1	59.1
Classification % :		Light Vehicles up to 5.5m	96.0%	95.8%	96.1%

Location

GPS Information Load Google Map (internet required)

(Latitude, Longitude) -38.039960, 144.410948



Speed Data | Speed Graph | Speed Bin

Volume Data | Volume Graph | Classification

QUALITY ASSURED COMPANY BY ISO 9001:2015

OH&S SYSTEM CERTIFIED TO ISO 4801:2001

ENVIRONMENT MANAGEMENT SYSTEM CERTIFIED TO ISO14001:2015

TRANS TRAFFIC SURVEY

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Site Rennie St

Direction Both directions

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	08:00	11:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	16:00	16:00	16:00	16:00	16:00	12:00	14:00	N/A	16:00	N/A	16:00	N/A	13:00
00:00	9	8	7	11	13	19	18	85	12	48	10	37	19
01:00	6	3	2	3	8	15	10	47	7	22	4	25	13
02:00	4	1	3	2	2	7	11	30	4	12	2	18	9
03:00	7	7	8	7	7	4	3	43	6	36	7	7	4
04:00	24	22	21	21	23	8	14	133	19	111	22	22	11
05:00	93	89	92	82	91	24	7	478	68	447	89	31	16
06:00	126	152	144	119	117	30	13	701	100	658	132	43	22
07:00	207	200	173	220	193	63	33	1089	156	993	199	96	48
08:00	284	313	300	305	284	134	71	1691	242	1486	297	205	103
09:00	157	172	150	163	169	165	107	1083	155	811	162	272	136
10:00	152	125	123	162	174	223	141	1100	157	736	147	364	182
11:00	131	129	141	147	165	229	170	1112	159	713	143	399	200
12:00	150	147	150	145	178	218	162	1150	164	770	154	380	190
13:00	128	156	148	146	166	205	179	1128	161	744	149	384	192
14:00	160	196	176	220	199	170	189	1310	187	951	190	359	180
15:00	316	343	317	328	339	197	168	2008	287	1643	329	365	183
16:00	334	366	351	348	343	193	173	2108	301	1742	348	366	183
17:00	260	336	267	293	296	187	155	1794	256	1452	290	342	171
18:00	151	167	167	172	180	137	135	1109	158	837	167	272	136
19:00	115	113	89	116	122	98	81	734	105	555	111	179	90
20:00	87	61	82	85	88	62	81	546	78	403	81	143	72
21:00	55	48	47	68	76	60	36	390	56	294	59	96	48
22:00	35	35	23	32	32	39	23	219	31	157	31	62	31
23:00	14	15	17	17	37	36	14	150	21	100	20	50	25
Total	**3005**	**3204**	**2998**	**3212**	**3302**	**2523**	**1994**	**20238**	**2891**	**15721**	**3144**	**4517**	**2259**
% Heavy	**3.76%**	**4.56%**	**4.17%**	**4.17%**	**4.33%**	**3.65%**	**3.41%**	**4.06%**		**4.20%**		**3.54%**	

TRANS TRAFFIC SURVEY

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Site Rennie St

Direction Northbound

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	08:00	11:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	16:00	16:00	16:00	16:00	16:00	12:00	14:00	N/A	16:00	N/A	16:00	N/A	12:00
00:00	4	4	4	6	5	7	6	36	5	23	5	13	7
01:00	4	1	2	2	3	6	5	23	3	12	2	11	6
02:00	3	0	2	2	1	4	5	17	2	8	2	9	5
03:00	5	4	7	5	5	3	1	30	4	26	5	4	2
04:00	15	17	14	16	17	6	8	93	13	79	16	14	7
05:00	62	55	58	50	61	12	4	302	43	286	57	16	8
06:00	63	78	74	65	61	16	6	363	52	341	68	22	11
07:00	115	112	97	111	91	28	16	570	81	526	105	44	22
08:00	135	141	152	147	132	65	33	805	115	707	141	98	49
09:00	79	83	65	80	98	82	55	542	77	405	81	137	69
10:00	73	58	52	72	73	98	66	492	70	328	66	164	82
11:00	62	61	65	71	79	103	83	524	75	338	68	186	93
12:00	84	73	72	74	90	117	93	603	86	393	79	210	105
13:00	65	73	65	76	86	104	86	555	79	365	73	190	95
14:00	88	112	107	112	107	87	109	722	103	526	105	196	98
15:00	160	188	173	185	188	105	97	1096	157	894	179	202	101
16:00	177	194	187	186	194	89	101	1128	161	938	188	190	95
17:00	136	145	131	158	168	104	78	920	131	738	148	182	91
18:00	63	72	80	86	84	74	72	531	76	385	77	146	73
19:00	56	57	50	57	66	59	36	381	54	286	57	95	48
20:00	38	34	45	53	38	32	39	279	40	208	42	71	36
21:00	33	22	27	37	45	28	18	210	30	164	33	46	23
22:00	20	21	12	15	16	18	15	117	17	84	17	33	17
23:00	9	4	6	7	17	16	3	62	9	43	9	19	10
Total	**1549**	**1609**	**1547**	**1673**	**1725**	**1263**	**1035**	**10401**	**1486**	**8103**	**1621**	**2298**	**1149**
% Heavy	**3.74%**	**4.72%**	**4.20%**	**4.36%**	**4.41%**	**3.80%**	**3.96%**	**4.20%**		**4.29%**		**3.87%**	

TRANS TRAFFIC SURVEY

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Site Rennie St

Direction Southbound

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	08:00	11:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	16:00	17:00	16:00	16:00	15:00	16:00	13:00	N/A	16:00	N/A	16:00	N/A	13:00
00:00	5	4	3	5	8	12	12	49	7	25	5	24	12
01:00	2	2	0	1	5	9	5	24	3	10	2	14	7
02:00	1	1	1	0	1	3	6	13	2	4	1	9	5
03:00	2	3	1	2	2	1	2	13	2	10	2	3	2
04:00	9	5	7	5	6	2	6	40	6	32	6	8	4
05:00	31	34	34	32	30	12	3	176	25	161	32	15	8
06:00	63	74	70	54	56	14	7	338	48	317	63	21	11
07:00	92	88	76	109	102	35	17	519	74	467	93	52	26
08:00	149	172	148	158	152	69	38	886	127	779	156	107	54
09:00	78	89	85	83	71	83	52	541	77	406	81	135	68
10:00	79	67	71	90	101	125	75	608	87	408	82	200	100
11:00	69	68	76	76	86	126	87	588	84	375	75	213	107
12:00	66	74	78	71	88	101	69	547	78	377	75	170	85
13:00	63	83	83	70	80	101	93	573	82	379	76	194	97
14:00	72	84	69	108	92	83	80	588	84	425	85	163	82
15:00	156	155	144	143	151	92	71	912	130	749	150	163	82
16:00	157	172	164	162	149	104	72	980	140	804	161	176	88
17:00	124	191	136	135	128	83	77	874	125	714	143	160	80
18:00	88	95	87	86	96	63	63	578	83	452	90	126	63
19:00	59	56	39	59	56	39	45	353	50	269	54	84	42
20:00	49	27	37	32	50	30	42	267	38	195	39	72	36
21:00	22	26	20	31	31	32	18	180	26	130	26	50	25
22:00	15	14	11	17	16	21	8	102	15	73	15	29	15
23:00	5	11	11	10	20	20	11	88	13	57	11	31	16
Total	1456	1595	1451	1539	1577	1260	959	9837	1405	7618	1524	2219	1110
% Heavy	3.78%	4.39%	4.14%	3.96%	4.25%	3.49%	2.82%	3.90%		4.11%		3.20%	

TRANS TRAFFIC SURVEY

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AUTOMATIC COUNT SUMMARY

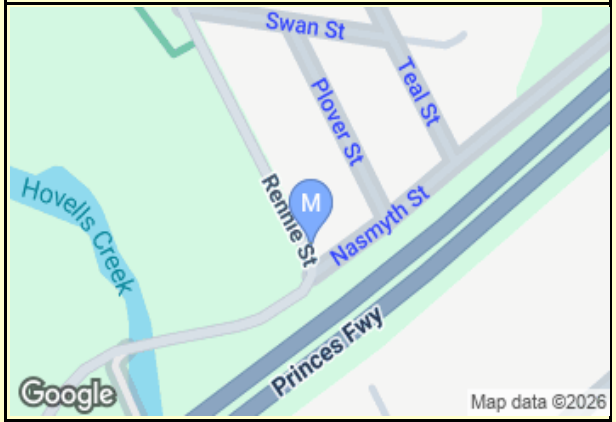
Street Name :	Rennie St	**Location :**	North of Nasmyth St
Suburb :	Lara	**Start Date :**	00:00 Wed 11/February/2026
Machine ID:	M6285VQ7	**Finish Date :**	00:00 Wed 18/February/2026
Site ID:	26432	**Speed Zone :**	60 km/h
Prepared By :	Vo Son Binh	**Email:**	binh@trafficsurvey.com.au

GPS information	Lat 38° 2' 15.76 South Long 144° 24' 53.49 East		Direction of Travel		
			Both directions	**Northbound**	**Southbound**
Traffic Volume :		Weekdays Average	2,535	1,300	1,235
(Vehicles/Day)		7 Day Average	2,333	1,191	1,142
Weekday	**AM**	08:00	257	114	143
Peak hour starts	**PM**	16:00	289	171	118
Speeds :		85th Percentile	48.2	47.0	49.4
(Km/Hr)		Average	44.0	42.9	45.1
Classification % :		Light Vehicles up to 5.5m	90.6%	90.7%	90.5%

Location

GPS Information Load Google Map (internet required)

(Latitude, Longitude) -38.037711, 144.414858



Speed Data | Speed Graph | Speed Bin

Volume Data | Volume Graph | Classification

QUALITY SYSTEM CERTIFICATION DNV ISO 9001

SAFETY SYSTEM CERTIFICATION DNV ISO 45001

ENVIRONMENTAL SYSTEM CERTIFICATION DNV ISO 14001

QUALITY ASSURED COMPANY BY ISO 9001:2015

OH&S SYSTEM CERTIFIED TO ISO 4801:2001

ENVIRONMENT MANAGEMENT SYSTEM CERTIFIED TO ISO14001:2015

TRANS TRAFFIC SURVEY

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Site Rennie St

Direction Both directions

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	08:00	11:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	16:00	16:00	16:00	16:00	15:00	12:00	13:00	N/A	16:00	N/A	16:00	N/A	15:00
00:00	5	3	6	7	8	15	15	59	8	29	6	30	15
01:00	5	2	2	3	7	12	7	38	5	19	4	19	10
02:00	3	1	2	0	2	5	10	23	3	8	2	15	8
03:00	3	4	1	3	2	3	3	19	3	13	3	6	3
04:00	13	11	7	6	8	2	9	56	8	45	9	11	6
05:00	48	52	48	48	45	19	6	266	38	241	48	25	13
06:00	91	108	99	81	81	17	9	486	69	460	92	26	13
07:00	158	165	135	176	153	45	24	856	122	787	157	69	35
08:00	250	261	248	264	258	102	51	1434	205	1281	256	153	77
09:00	134	149	125	145	146	135	89	923	132	699	140	224	112
10:00	125	109	113	123	151	169	109	899	128	621	124	278	139
11:00	104	111	112	124	145	189	138	923	132	596	119	327	164
12:00	121	130	118	120	152	180	142	963	138	641	128	322	161
13:00	108	118	128	118	134	158	154	918	131	606	121	312	156
14:00	127	159	153	189	160	139	150	1077	154	788	158	289	145
15:00	255	295	277	271	273	177	148	1696	242	1371	274	325	163
16:00	271	311	294	292	271	161	150	1750	250	1439	288	311	156
17:00	213	250	212	240	250	158	125	1448	207	1165	233	283	142
18:00	115	150	140	141	160	116	111	933	133	706	141	227	114
19:00	96	95	66	96	103	80	70	606	87	456	91	150	75
20:00	73	56	65	71	70	55	63	453	65	335	67	118	59
21:00	44	36	37	51	59	47	23	297	42	227	45	70	35
22:00	25	28	17	30	32	29	16	177	25	132	26	45	23
23:00	10	10	12	10	28	31	10	111	16	70	14	41	21
Total	**2397**	**2614**	**2417**	**2609**	**2698**	**2044**	**1632**	**16411**	**2344**	**12735**	**2547**	**3676**	**1838**
% Heavy	**9.80%**	**9.56%**	**9.93%**	**9.77%**	**9.67%**	**8.61%**	**7.97%**	**9.43%**		**9.74%**		**8.32%**	

TRANS TRAFFIC SURVEY

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Site Rennie St

Direction Northbound

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	08:00	11:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	16:00	16:00	16:00	16:00	16:00	12:00	16:00	N/A	16:00	N/A	16:00	N/A	15:00
00:00	4	2	4	4	4	6	8	32	5	18	4	14	7
01:00	3	1	2	2	3	5	4	20	3	11	2	9	5
02:00	2	0	1	0	1	3	5	12	2	4	1	8	4
03:00	1	0	0	0	0	2	1	4	1	1	0	3	2
04:00	4	5	2	3	3	1	5	23	3	17	3	6	3
05:00	17	20	17	18	16	7	2	97	14	88	18	9	5
06:00	37	40	38	31	29	8	3	186	27	175	35	11	6
07:00	71	82	70	79	66	17	12	397	57	368	74	29	15
08:00	111	106	115	122	113	43	21	631	90	567	113	64	32
09:00	65	65	55	64	82	64	42	437	62	331	66	106	53
10:00	59	51	53	51	64	68	42	388	55	278	56	110	55
11:00	48	50	48	59	69	88	63	425	61	274	55	151	76
12:00	65	66	52	66	78	98	77	502	72	327	65	175	88
13:00	55	54	62	60	72	80	73	456	65	303	61	153	77
14:00	73	95	96	97	93	76	82	612	87	454	91	158	79
15:00	134	172	167	162	161	91	87	974	139	796	159	178	89
16:00	162	177	172	174	164	71	89	1009	144	849	170	160	80
17:00	122	125	117	142	145	90	65	806	115	651	130	155	78
18:00	51	70	67	74	81	62	60	465	66	343	69	122	61
19:00	44	51	40	52	53	46	28	314	45	240	48	74	37
20:00	32	34	34	44	34	33	30	241	34	178	36	63	32
21:00	26	19	22	32	36	20	14	169	24	135	27	34	17
22:00	16	16	9	15	16	16	9	97	14	72	14	25	13
23:00	9	3	7	5	16	16	3	59	8	40	8	19	10
Total	**1211**	**1304**	**1250**	**1356**	**1399**	**1011**	**825**	**8356**	**1194**	**6520**	**1304**	**1836**	**918**
% Heavy	**9.66%**	**9.51%**	**10.40%**	**9.59%**	**9.58%**	**8.70%**	**7.52%**	**9.39%**		**9.74%**		**8.17%**	

TRANS TRAFFIC SURVEY

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Site Rennie St

Direction Southbound

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	08:00	10:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	15:00	16:00	16:00	16:00	15:00	16:00	13:00	N/A	16:00	N/A	16:00	N/A	13:00
00:00	1	1	2	3	4	9	7	27	4	11	2	16	8
01:00	2	1	0	1	4	7	3	18	3	8	2	10	5
02:00	1	1	1	0	1	2	5	11	2	4	1	7	4
03:00	2	4	1	3	2	1	2	15	2	12	2	3	2
04:00	9	6	5	3	5	1	4	33	5	28	6	5	3
05:00	31	32	31	30	29	12	4	169	24	153	31	16	8
06:00	54	68	61	50	52	9	6	300	43	285	57	15	8
07:00	87	83	65	97	87	28	12	459	66	419	84	40	20
08:00	139	155	133	142	145	59	30	803	115	714	143	89	45
09:00	69	84	70	81	64	71	47	486	69	368	74	118	59
10:00	66	58	60	72	87	101	67	511	73	343	69	168	84
11:00	56	61	64	65	76	101	75	498	71	322	64	176	88
12:00	56	64	66	54	74	82	65	461	66	314	63	147	74
13:00	53	64	66	58	62	78	81	462	66	303	61	159	80
14:00	54	64	57	92	67	63	68	465	66	334	67	131	66
15:00	121	123	110	109	112	86	61	722	103	575	115	147	74
16:00	109	134	122	118	107	90	61	741	106	590	118	151	76
17:00	91	125	95	98	105	68	60	642	92	514	103	128	64
18:00	64	80	73	67	79	54	51	468	67	363	73	105	53
19:00	52	44	26	44	50	34	42	292	42	216	43	76	38
20:00	41	22	31	27	36	22	33	212	30	157	31	55	28
21:00	18	17	15	19	23	27	9	128	18	92	18	36	18
22:00	9	12	8	15	16	13	7	80	11	60	12	20	10
23:00	1	7	5	5	12	15	7	52	7	30	6	22	11
Total	**1186**	**1310**	**1167**	**1253**	**1299**	**1033**	**807**	**8055**	**1151**	**6215**	**1243**	**1840**	**920**
% Heavy	**9.95%**	**9.62%**	**9.43%**	**9.98%**	**9.78%**	**8.52%**	**8.43%**	**9.46%**		**9.75%**		**8.48%**	

TRANS TRAFFIC SURVEY

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AUTOMATIC COUNT SUMMARY

Street Name :	Rennie St	**Location :**	South of McClelland Ave
Suburb :	Lara	**Start Date :**	00:00 Wed 11/February/2026
Machine ID:	K367BTNR	**Finish Date :**	00:00 Wed 18/February/2026
Site ID:	26433	**Speed Zone :**	60 km/h
Prepared By :	Vo Son Binh	**Email:**	binh@trafficsurvey.com.au

GPS information		Lat 38° 1' 29.98 South Long 144° 24' 49.57 East	Direction of Travel		
			Both directions	**Northbound**	**Southbound**
Traffic Volume :		Weekdays Average	4,344	2,215	2,129
(Vehicles/Day)		7 Day Average	4,087	2,077	2,010
Weekday	**AM**	08:00	372	230	142
Peak hour starts	**PM**	16:00	425	209	216
Speeds :		85th Percentile	54.0	53.9	54.1
(Km/Hr)		Average	47.0	48.0	46.0
Classification % :		Light Vehicles up to 5.5m	92.5%	92.8%	92.2%

Location

GPS Information Load Google Map (internet required)

(Latitude, Longitude) -38.024994, 144.413769



Speed Data | Speed Graph | Speed Bin

Volume Data | Volume Graph | Classification

QUALITY SYSTEM CERTIFICATION DNV ISO 9001

SAFETY SYSTEM CERTIFICATION DNV ISO 45001

ENVIRONMENTAL SYSTEM CERTIFICATION DNV ISO 14001

QUALITY ASSURED COMPANY BY ISO 9001:2015

OH&S SYSTEM CERTIFIED TO ISO 4801:2001

ENVIRONMENT MANAGEMENT SYSTEM CERTIFIED TO ISO14001:2015

TRANS TRAFFIC SURVEY

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Site Rennie St

Direction Both directions

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	08:00	10:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	16:00	15:00	16:00	16:00	16:00	13:00	14:00	N/A	16:00	N/A	16:00	N/A	13:00
00:00	7	6	9	7	8	32	19	88	13	37	7	51	26
01:00	4	5	3	3	3	16	16	50	7	18	4	32	16
02:00	6	6	3	1	1	6	5	28	4	17	3	11	6
03:00	6	8	7	6	9	6	8	50	7	36	7	14	7
04:00	15	22	12	11	11	3	15	89	13	71	14	18	9
05:00	65	64	60	67	54	23	10	343	49	310	62	33	17
06:00	111	127	131	112	108	52	26	667	95	589	118	78	39
07:00	260	265	261	247	247	101	55	1436	205	1280	256	156	78
08:00	349	370	376	413	363	163	107	2141	306	1871	374	270	135
09:00	250	249	231	270	274	258	189	1721	246	1274	255	447	224
10:00	248	213	244	280	252	320	231	1788	255	1237	247	551	276
11:00	247	210	225	233	258	301	291	1765	252	1173	235	592	296
12:00	248	249	273	269	284	310	255	1888	270	1323	265	565	283
13:00	239	234	258	266	257	324	264	1842	263	1254	251	588	294
14:00	290	250	270	292	297	246	270	1915	274	1399	280	516	258
15:00	390	407	402	442	432	287	244	2604	372	2073	415	531	266
16:00	424	374	425	456	447	317	252	2695	385	2126	425	569	285
17:00	338	382	384	382	376	276	257	2395	342	1862	372	533	267
18:00	198	300	279	254	312	232	213	1788	255	1343	269	445	223
19:00	203	208	189	230	246	172	167	1415	202	1076	215	339	170
20:00	113	148	117	116	169	150	117	930	133	663	133	267	134
21:00	64	79	69	101	99	78	56	546	78	412	82	134	67
22:00	24	44	32	36	50	77	29	292	42	186	37	106	53
23:00	28	25	23	24	64	40	20	224	32	164	33	60	30
Total	**4127**	**4245**	**4283**	**4518**	**4621**	**3790**	**3116**	**28700**	**4100**	**21794**	**4359**	**6906**	**3453**
% Heavy	**7.68%**	**8.27%**	**7.92%**	**7.64%**	**7.90%**	**5.96%**	**6.74%**	**7.50%**		**7.88%**		**6.31%**	

TRANS TRAFFIC SURVEY

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Site Rennie St

Direction Northbound

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	08:00	10:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	16:00	15:00	16:00	15:00	16:00	12:00	14:00	N/A	16:00	N/A	16:00	N/A	12:00
00:00	4	1	6	2	4	15	12	44	6	17	3	27	14
01:00	0	2	0	1	1	6	4	14	2	4	1	10	5
02:00	3	2	1	1	1	4	2	14	2	8	2	6	3
03:00	5	4	5	3	3	3	3	26	4	20	4	6	3
04:00	14	19	12	8	9	2	7	71	10	62	12	9	5
05:00	52	51	49	52	38	16	8	266	38	242	48	24	12
06:00	70	82	86	78	64	40	18	438	63	380	76	58	29
07:00	155	165	167	143	151	67	38	886	127	781	156	105	53
08:00	226	212	236	254	229	92	71	1320	189	1157	231	163	82
09:00	139	131	125	139	152	154	116	956	137	686	137	270	135
10:00	122	102	124	148	126	175	117	914	131	622	124	292	146
11:00	122	102	116	115	138	157	149	899	128	593	119	306	153
12:00	124	138	129	143	142	156	128	960	137	676	135	284	142
13:00	115	117	117	131	126	147	121	874	125	606	121	268	134
14:00	151	135	146	147	156	111	142	988	141	735	147	253	127
15:00	174	187	194	225	200	138	124	1242	177	980	196	262	131
16:00	209	175	204	224	234	145	130	1321	189	1046	209	275	138
17:00	157	153	164	185	200	140	112	1111	159	859	172	252	126
18:00	72	124	126	108	144	107	111	792	113	574	115	218	109
19:00	85	100	81	100	95	84	64	609	87	461	92	148	74
20:00	54	66	50	50	66	63	46	395	56	286	57	109	55
21:00	33	35	33	50	41	27	22	241	34	192	38	49	25
22:00	9	19	12	10	20	35	10	115	16	70	14	45	23
23:00	10	5	10	8	32	13	6	84	12	65	13	19	10
Total	**2105**	**2127**	**2193**	**2325**	**2372**	**1897**	**1561**	**14580**	**2083**	**11122**	**2224**	**3458**	**1729**
% Heavy	**7.74%**	**8.09%**	**7.66%**	**7.35%**	**7.63%**	**5.22%**	**6.34%**	**7.22%**		**7.69%**		**5.73%**	

TRANS TRAFFIC SURVEY

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Site Rennie St

Direction Southbound

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	10:00	08:00	08:00	08:00	08:00	10:00	11:00	N/A	10:00	N/A	08:00	N/A	11:00
PM Peak	15:00	17:00	16:00	16:00	15:00	13:00	17:00	N/A	16:00	N/A	15:00	N/A	13:00
00:00	3	5	3	5	4	17	7	44	6	20	4	24	12
01:00	4	3	3	2	2	10	12	36	5	14	3	22	11
02:00	3	4	2	0	0	2	3	14	2	9	2	5	3
03:00	1	4	2	3	6	3	5	24	3	16	3	8	4
04:00	1	3	0	3	2	1	8	18	3	9	2	9	5
05:00	13	13	11	15	16	7	2	77	11	68	14	9	5
06:00	41	45	45	34	44	12	8	229	33	209	42	20	10
07:00	105	100	94	104	96	34	17	550	79	499	100	51	26
08:00	123	158	140	159	134	71	36	821	117	714	143	107	54
09:00	111	118	106	131	122	104	73	765	109	588	118	177	89
10:00	126	111	120	132	126	145	114	874	125	615	123	259	130
11:00	125	108	109	118	120	144	142	866	124	580	116	286	143
12:00	124	111	144	126	142	154	127	928	133	647	129	281	141
13:00	124	117	141	135	131	177	143	968	138	648	130	320	160
14:00	139	115	124	145	141	135	128	927	132	664	133	263	132
15:00	216	220	208	217	232	149	120	1362	195	1093	219	269	135
16:00	215	199	221	232	213	172	122	1374	196	1080	216	294	147
17:00	181	229	220	197	176	136	145	1284	183	1003	201	281	141
18:00	126	176	153	146	168	125	102	996	142	769	154	227	114
19:00	118	108	108	130	151	88	103	806	115	615	123	191	96
20:00	59	82	67	66	103	87	71	535	76	377	75	158	79
21:00	31	44	36	51	58	51	34	305	44	220	44	85	43
22:00	15	25	20	26	30	42	19	177	25	116	23	61	31
23:00	18	20	13	16	32	27	14	140	20	99	20	41	21
Total	**2022**	**2118**	**2090**	**2193**	**2249**	**1893**	**1555**	**14120**	**2017**	**10672**	**2134**	**3448**	**1724**
% Heavy	**7.62%**	**8.45%**	**8.18%**	**7.93%**	**8.18%**	**6.71%**	**7.14%**	**7.79%**		**8.08%**		**6.90%**	

TRANS TRAFFIC SURVEY

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AUTOMATIC COUNT SUMMARY

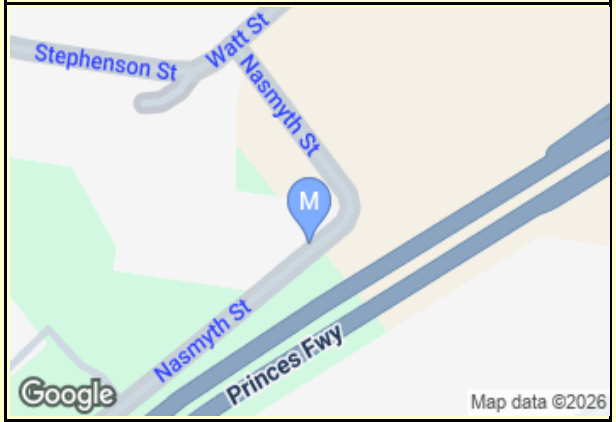
Street Name :	Nasmyth St	**Location :**	Southwest of the Bend
Suburb :	Lara	**Start Date :**	00:00 Wed 11/February/2026
Machine ID:	HR94NWPK	**Finish Date :**	00:00 Wed 18/February/2026
Site ID:	26434	**Speed Zone :**	60 km/h
Prepared By :	Vo Son Binh	**Email:**	binh@trafficsurvey.com.au

GPS information	Lat 38° 2' 1.25 South Long 144° 25' 19.03 East		Direction of Travel		
			Both directions	**Northbound**	**Southbound**
Traffic Volume :		Weekdays Average	742	389	353
(Vehicles/Day)		7 Day Average	698	368	330
Weekday	**AM**	07:00	52	41	11
Peak hour starts	**PM**	16:00	80	26	54
Speeds :		85th Percentile	56.7	60.3	53.4
(Km/Hr)		Average	51.6	54.6	48.7
Classification % :		Light Vehicles up to 5.5m	86.5%	86.5%	86.5%

Location

GPS Information Load Google Map (internet required)

(Latitude, Longitude) -38.033680, 144.421954



Speed Data | Speed Graph | Speed Bin

Volume Data | Volume Graph | Classification

QUALITY ASSURED COMPANY BY ISO 9001:2015

OH&S SYSTEM CERTIFIED TO ISO 4801:2001

ENVIRONMENT MANAGEMENT SYSTEM CERTIFIED TO ISO14001:2015

TRANS TRAFFIC SURVEY

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Site Nasmyth St

Direction Both directions

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	07:00	08:00	06:00	07:00	05:00	11:00	11:00	N/A	08:00	N/A	07:00	N/A	11:00
PM Peak	16:00	17:00	16:00	16:00	16:00	12:00	17:00	N/A	16:00	N/A	16:00	N/A	17:00
00:00	4	4	1	2	5	8	9	33	5	16	3	17	9
01:00	1	1	0	0	1	4	1	8	1	3	1	5	3
02:00	2	1	2	3	1	2	3	14	2	9	2	5	3
03:00	4	5	8	5	5	2	0	29	4	27	5	2	1
04:00	12	13	14	13	15	5	5	77	11	67	13	10	5
05:00	52	42	46	42	49	7	4	242	35	231	46	11	6
06:00	36	53	52	46	45	13	7	252	36	232	46	20	10
07:00	67	48	52	51	46	14	9	287	41	264	53	23	12
08:00	47	57	49	49	37	38	22	299	43	239	48	60	30
09:00	27	30	41	28	33	38	23	220	31	159	32	61	31
10:00	37	31	18	37	36	54	40	253	36	159	32	94	47
11:00	34	28	37	28	35	76	43	281	40	162	32	119	60
12:00	38	39	34	38	42	53	28	272	39	191	38	81	41
13:00	30	43	35	37	40	47	41	273	39	185	37	88	44
14:00	49	46	31	45	39	40	47	297	42	210	42	87	44
15:00	62	71	51	50	81	45	47	407	58	315	63	92	46
16:00	85	78	78	72	86	41	53	493	70	399	80	94	47
17:00	54	102	71	62	56	40	56	441	63	345	69	96	48
18:00	43	35	31	40	33	30	28	240	34	182	36	58	29
19:00	22	25	27	30	23	18	42	187	27	127	25	60	30
20:00	17	17	19	21	16	14	22	126	18	90	18	36	18
21:00	14	14	12	14	18	17	17	106	15	72	14	34	17
22:00	9	9	7	5	4	12	9	55	8	34	7	21	11
23:00	4	6	9	7	9	4	6	45	6	35	7	10	5
Total	**750**	**798**	**725**	**725**	**755**	**622**	**562**	**4937**	**705**	**3753**	**751**	**1184**	**592**
% Heavy	**15.47%**	**13.91%**	**14.34%**	**15.31%**	**16.69%**	**9.49%**	**7.65%**	**13.57%**		**15.13%**		**8.61%**	

TRANS TRAFFIC SURVEY

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Site Nasmyth St

Direction Northbound

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	07:00	06:00	05:00	06:00	05:00	11:00	10:00	N/A	05:00	N/A	05:00	N/A	11:00
PM Peak	15:00	16:00	16:00	14:00	16:00	12:00	19:00	N/A	16:00	N/A	16:00	N/A	16:00
00:00	1	0	0	1	1	3	2	8	1	3	1	5	3
01:00	1	0	0	0	0	1	0	2	0	1	0	1	1
02:00	2	1	2	3	1	1	0	10	1	9	2	1	1
03:00	4	5	8	5	5	2	0	29	4	27	5	2	1
04:00	12	13	12	13	15	4	3	72	10	65	13	7	4
05:00	51	41	45	38	49	7	4	235	34	224	45	11	6
06:00	31	47	43	42	39	9	4	215	31	202	40	13	7
07:00	54	40	36	42	34	11	6	223	32	206	41	17	9
08:00	30	39	35	36	29	26	16	211	30	169	34	42	21
09:00	15	22	17	19	22	24	14	133	19	95	19	38	19
10:00	22	13	9	20	15	30	28	137	20	79	16	58	29
11:00	16	15	20	13	16	35	27	142	20	80	16	62	31
12:00	19	22	17	14	16	27	19	134	19	88	18	46	23
13:00	17	19	14	19	18	27	21	135	19	87	17	48	24
14:00	23	20	15	21	15	16	26	136	19	94	19	42	21
15:00	25	23	10	16	32	22	22	150	21	106	21	44	22
16:00	24	26	26	17	35	25	25	178	25	128	26	50	25
17:00	14	23	18	19	26	15	20	135	19	100	20	35	18
18:00	12	10	12	16	11	14	12	87	12	61	12	26	13
19:00	11	8	13	8	12	10	35	97	14	52	10	45	23
20:00	7	6	7	10	3	3	13	49	7	33	7	16	8
21:00	7	3	4	3	9	9	5	40	6	26	5	14	7
22:00	4	8	2	2	2	5	7	30	4	18	4	12	6
23:00	0	1	2	1	1	1	0	6	1	5	1	1	1
Total	402	405	367	378	406	327	309	2594	371	1958	392	636	318
% Heavy	15.42%	14.57%	15.53%	12.96%	16.01%	9.17%	9.06%	13.49%		14.91%		9.12%	

TRANS TRAFFIC SURVEY

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Site Nasmyth St

Direction Southbound

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	11:00	08:00	09:00	10:00	10:00	11:00	11:00	N/A	11:00	N/A	11:00	N/A	11:00
PM Peak	16:00	17:00	17:00	16:00	16:00	12:00	17:00	N/A	16:00	N/A	16:00	N/A	17:00
00:00	3	4	1	1	4	5	7	25	4	13	3	12	6
01:00	0	1	0	0	1	3	1	6	1	2	0	4	2
02:00	0	0	0	0	0	1	3	4	1	0	0	4	2
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	2	0	0	1	2	5	1	2	0	3	2
05:00	1	1	1	4	0	0	0	7	1	7	1	0	0
06:00	5	6	9	4	6	4	3	37	5	30	6	7	4
07:00	13	8	16	9	12	3	3	64	9	58	12	6	3
08:00	17	18	14	13	8	12	6	88	13	70	14	18	9
09:00	12	8	24	9	11	14	9	87	12	64	13	23	12
10:00	15	18	9	17	21	24	12	116	17	80	16	36	18
11:00	18	13	17	15	19	41	16	139	20	82	16	57	29
12:00	19	17	17	24	26	26	9	138	20	103	21	35	18
13:00	13	24	21	18	22	20	20	138	20	98	20	40	20
14:00	26	26	16	24	24	24	21	161	23	116	23	45	23
15:00	37	48	41	34	49	23	25	257	37	209	42	48	24
16:00	61	52	52	55	51	16	28	315	45	271	54	44	22
17:00	40	79	53	43	30	25	36	306	44	245	49	61	31
18:00	31	25	19	24	22	16	16	153	22	121	24	32	16
19:00	11	17	14	22	11	8	7	90	13	75	15	15	8
20:00	10	11	12	11	13	11	9	77	11	57	11	20	10
21:00	7	11	8	11	9	8	12	66	9	46	9	20	10
22:00	5	1	5	3	2	7	2	25	4	16	3	9	5
23:00	4	5	7	6	8	3	6	39	6	30	6	9	5
Total	348	393	358	347	349	295	253	2343	335	1795	359	548	274
% Heavy	15.52%	13.23%	13.13%	17.87%	17.48%	9.83%	5.93%	13.66%		15.38%		8.03%	

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AUTOMATIC COUNT SUMMARY

Street Name :	Archimedes Ave	**Location :**	West of Watt St
Suburb :	Lara	**Start Date :**	00:00 Wed 11/February/2026
Machine ID:	HR94NWPK	**Finish Date :**	00:00 Wed 18/February/2026
Site ID:	26435	**Speed Zone :**	60 km/h
Prepared By :	Vo Son Binh	**Email:**	binh@trafficsurvey.com.au

			Direction of Travel		
GPS information	Lat	38° 1' 46.41 South	**Both directions**	**Westbound**	**Eastbound**
	Long	144° 25' 20.67 East			
Traffic Volume : (Vehicles/Day)		Weekdays Average	860	436	424
		7 Day Average	782	397	385
Weekday Peak hour start	**AM**	08:00	65	26	39
	PM	16:00	82	50	32
Speeds : (Km/Hr)		85th Percentile	60.1	59.6	60.9
		Average	55.0	54.2	55.8
Classification % :		Light Vehicles up to 5.5m	92.0%	92.5%	92.0%

Location

GPS Information Load Google Map (internet required)
(Latitude, Longitude) -38.029559, 144.422407



Speed Data | Speed Graph | Speed Bin
Volume Data | Volume Graph | Classification

QUALITY ASSURED COMPANY BY ISO 9001:2015
OH&S SYSTEM CERTIFIED TO ISO 4801:2001
ENVIRONMENT MANAGEMENT SYSTEM CERTIFIED TO ISO14001:2015

TRANS TRAFFIC SURVEY

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Site Archimedes Ave

Direction Both directions

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	09:00	08:00	08:00	07:00	08:00	10:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	16:00	16:00	16:00	17:00	16:00	12:00	12:00	N/A	16:00	N/A	16:00	N/A	12:00
00:00	3	5	2	2	1	4	10	27	4	13	3	14	7
01:00	3	1	1	1	2	3	4	15	2	8	2	7	4
02:00	0	3	3	1	3	2	1	13	2	10	2	3	2
03:00	1	2	0	1	1	1	1	7	1	5	1	2	1
04:00	12	8	9	11	8	1	5	54	8	48	10	6	3
05:00	24	23	26	24	25	13	6	141	20	122	24	19	10
06:00	27	23	31	26	37	10	8	162	23	144	29	18	9
07:00	55	62	59	74	57	15	20	342	49	307	61	35	18
08:00	58	72	66	65	66	35	11	373	53	327	65	46	23
09:00	61	40	50	52	55	42	27	327	47	258	52	69	35
10:00	54	51	48	48	50	58	41	350	50	251	50	99	50
11:00	55	50	46	53	61	55	52	372	53	265	53	107	54
12:00	50	63	68	64	37	64	52	398	57	282	56	116	58
13:00	52	58	52	50	56	38	36	342	49	268	54	74	37
14:00	54	56	44	63	66	49	50	382	55	283	57	99	50
15:00	66	72	75	73	70	52	43	451	64	356	71	95	48
16:00	73	90	96	74	84	49	48	514	73	417	83	97	49
17:00	69	82	67	80	84	46	41	469	67	382	76	87	44
18:00	36	47	36	46	44	28	32	269	38	209	42	60	30
19:00	21	30	16	27	28	17	22	161	23	122	24	39	20
20:00	15	24	25	28	23	18	24	157	22	115	23	42	21
21:00	13	21	13	19	17	14	8	105	15	83	17	22	11
22:00	6	8	11	8	11	18	4	66	9	44	9	22	11
23:00	5	2	3	2	5	15	2	34	5	17	3	17	9
Total	**813**	**893**	**847**	**892**	**891**	**647**	**548**	**5531**	**790**	**4336**	**867**	**1195**	**598**
% Heavy	**8.36%**	**9.18%**	**8.74%**	**7.51%**	**9.43%**	**5.26%**	**5.29%**	**7.92%**		**8.65%**		**5.27%**	

TRANS TRAFFIC SURVEY

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Site Archimedes Ave

Direction Westbound

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	09:00	11:00	08:00	07:00	11:00	11:00	11:00	N/A	10:00	N/A	09:00	N/A	11:00
PM Peak	16:00	16:00	16:00	17:00	16:00	15:00	16:00	N/A	16:00	N/A	16:00	N/A	15:00
00:00	3	3	1	1	0	4	8	20	3	8	2	12	6
01:00	1	0	1	1	2	2	3	10	1	5	1	5	3
02:00	0	3	3	1	3	2	1	13	2	10	2	3	2
03:00	0	1	0	1	0	0	1	3	0	2	0	1	1
04:00	3	1	0	1	2	0	2	9	1	7	1	2	1
05:00	4	2	3	5	4	3	1	22	3	18	4	4	2
06:00	3	3	4	7	8	3	1	29	4	25	5	4	2
07:00	20	24	27	28	16	8	12	135	19	115	23	20	10
08:00	24	24	30	26	29	14	3	150	21	133	27	17	9
09:00	37	24	24	24	27	13	13	162	23	136	27	26	13
10:00	28	23	20	25	26	25	18	165	24	122	24	43	22
11:00	25	26	19	23	30	28	22	173	25	123	25	50	25
12:00	22	37	39	32	17	25	30	202	29	147	29	55	28
13:00	24	28	27	27	23	24	17	170	24	129	26	41	21
14:00	28	27	23	24	40	26	20	188	27	142	28	46	23
15:00	40	40	39	44	47	31	26	267	38	210	42	57	29
16:00	50	53	60	41	51	26	31	312	45	255	51	57	29
17:00	46	53	43	54	49	28	20	293	42	245	49	48	24
18:00	21	29	22	29	25	17	17	160	23	126	25	34	17
19:00	12	17	10	19	14	3	10	85	12	72	14	13	7
20:00	11	18	11	20	15	10	12	97	14	75	15	22	11
21:00	10	18	10	14	11	10	4	77	11	63	13	14	7
22:00	3	7	9	7	9	12	3	50	7	35	7	15	8
23:00	4	1	3	2	1	9	1	21	3	11	2	10	5
Total	419	462	428	456	449	323	276	2813	402	2214	443	599	300
% Heavy	8.35%	9.74%	8.41%	8.33%	8.02%	3.41%	3.99%	7.54%		8.58%		3.67%	

TRANS TRAFFIC SURVEY

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Site Archimedes Ave

Direction Eastbound

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	07:00	08:00	08:00	07:00	07:00	10:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	12:00	16:00	15:00	14:00	17:00	12:00	14:00	N/A	12:00	N/A	16:00	N/A	12:00
00:00	0	2	1	1	1	0	2	7	1	5	1	2	1
01:00	2	1	0	0	0	1	1	5	1	3	1	2	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	1	1	0	0	1	1	0	4	1	3	1	1	1
04:00	9	7	9	10	6	1	3	45	6	41	8	4	2
05:00	20	21	23	19	21	10	5	119	17	104	21	15	8
06:00	24	20	27	19	29	7	7	133	19	119	24	14	7
07:00	35	38	32	46	41	7	8	207	30	192	38	15	8
08:00	34	48	36	39	37	21	8	223	32	194	39	29	15
09:00	24	16	26	28	28	29	14	165	24	122	24	43	22
10:00	26	28	28	23	24	33	23	185	26	129	26	56	28
11:00	30	24	27	30	31	27	30	199	28	142	28	57	29
12:00	28	26	29	32	20	39	22	196	28	135	27	61	31
13:00	28	30	25	23	33	14	19	172	25	139	28	33	17
14:00	26	29	21	39	26	23	30	194	28	141	28	53	27
15:00	26	32	36	29	23	21	17	184	26	146	29	38	19
16:00	23	37	36	33	33	23	17	202	29	162	32	40	20
17:00	23	29	24	26	35	18	21	176	25	137	27	39	20
18:00	15	18	14	17	19	11	15	109	16	83	17	26	13
19:00	9	13	6	8	14	14	12	76	11	50	10	26	13
20:00	4	6	14	8	8	8	12	60	9	40	8	20	10
21:00	3	3	3	5	6	4	4	28	4	20	4	8	4
22:00	3	1	2	1	2	6	1	16	2	9	2	7	4
23:00	1	1	0	0	4	6	1	13	2	6	1	7	4
Total	394	431	419	436	442	324	272	2718	388	2122	424	596	298
% Heavy	8.38%	8.58%	9.07%	6.65%	10.86%	7.10%	6.62%	8.31%		8.72%		6.88%	

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AUTOMATIC COUNT SUMMARY

Street Name :	Watt St	**Location :**	West of Avalon Rd
Suburb :	Lara	**Start Date :**	00:00 Wed 11/February/2026
Machine ID:	MD12RWSA	**Finish Date :**	00:00 Wed 18/February/2026
Site ID:	26436	**Speed Zone :**	60 km/h
Prepared By :	Vo Son Binh	**Email:**	binh@trafficsurvey.com.au

			Direction of Travel		
GPS information	Lat	38° 1' 37.40 South	**Both directions**	**Westbound**	**Eastbound**
	Long	144° 25' 43.60 East			
Traffic Volume :		Weekdays Average	2,214	1,127	1,087
(Vehicles/Day)		7 Day Average	2,037	1,037	1,000
Weekday	**AM**	07:00	155	48	107
Peak hour start	**PM**	16:00	214	145	69
Speeds :		85th Percentile	47.0	45.2	48.8
(Km/Hr)		Average	41.4	39.8	42.9
Classification % :		Light Vehicles up to 5.5m	95.2%	95.5%	94.9%

Location

GPS Information Load Google Map (internet required)
(Latitude, Longitude) -38.027056, 144.428777



Speed Data | Speed Graph | Speed Bin
Volume Data | Volume Graph | Classification

QUALITY ASSURED COMPANY BY ISO 9001:2015
OH&S SYSTEM CERTIFIED TO ISO 4801:2001
ENVIRONMENT MANAGEMENT SYSTEM CERTIFIED TO ISO14001:2015

TRANS TRAFFIC SURVEY

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Site Watt St

Direction Both directions

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	07:00	08:00	08:00	07:00	08:00	11:00	11:00	N/A	08:00	N/A	07:00	N/A	11:00
PM Peak	16:00	16:00	16:00	16:00	16:00	12:00	16:00	N/A	16:00	N/A	16:00	N/A	12:00
00:00	15	9	2	5	9	14	20	74	11	40	8	34	17
01:00	6	1	3	8	4	11	6	39	6	22	4	17	9
02:00	3	7	6	4	5	5	7	37	5	25	5	12	6
03:00	7	9	10	10	9	3	6	54	8	45	9	9	5
04:00	31	28	27	34	32	11	9	172	25	152	30	20	10
05:00	93	78	84	85	80	21	11	452	65	420	84	32	16
06:00	87	97	117	94	109	28	21	553	79	504	101	49	25
07:00	163	157	146	178	141	43	30	858	123	785	157	73	37
08:00	150	166	159	154	144	95	59	927	132	773	155	154	77
09:00	116	134	141	137	139	94	64	825	118	667	133	158	79
10:00	111	125	113	113	123	148	113	846	121	585	117	261	131
11:00	118	118	120	112	121	179	137	905	129	589	118	316	158
12:00	122	131	123	132	129	144	126	907	130	637	127	270	135
13:00	133	128	116	135	150	139	107	908	130	662	132	246	123
14:00	158	159	144	156	159	125	144	1045	149	776	155	269	135
15:00	153	193	171	168	196	136	130	1147	164	881	176	266	133
16:00	221	211	220	205	221	118	145	1341	192	1078	216	263	132
17:00	157	208	178	176	183	112	117	1131	162	902	180	229	115
18:00	93	112	101	111	111	72	74	674	96	528	106	146	73
19:00	57	73	70	73	70	53	76	472	67	343	69	129	65
20:00	52	55	44	51	65	41	56	364	52	267	53	97	49
21:00	48	47	43	53	56	42	33	322	46	247	49	75	38
22:00	22	21	25	27	29	45	21	190	27	124	25	66	33
23:00	8	11	19	14	28	25	11	116	17	80	16	36	18
Total	**2124**	**2278**	**2182**	**2235**	**2313**	**1704**	**1523**	**14359**	**2051**	**11132**	**2226**	**3227**	**1614**
% Heavy	**5.56%**	**5.31%**	**4.77%**	**5.10%**	**5.45%**	**3.17%**	**3.74%**	**4.83%**		**5.24%**		**3.44%**	

TRANS TRAFFIC SURVEY

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Site Watt St

Direction Westbound

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	11:00	11:00	09:00	09:00	09:00	11:00	11:00	N/A	11:00	N/A	09:00	N/A	11:00
PM Peak	16:00	17:00	16:00	16:00	16:00	15:00	16:00	N/A	16:00	N/A	16:00	N/A	15:00
00:00	11	7	2	1	7	11	16	55	8	28	6	27	14
01:00	2	1	1	6	4	9	5	28	4	14	3	14	7
02:00	0	5	4	2	4	4	5	24	3	15	3	9	5
03:00	0	2	1	2	2	0	4	11	2	7	1	4	2
04:00	4	2	3	4	3	3	4	23	3	16	3	7	4
05:00	7	5	5	10	4	3	2	36	5	31	6	5	3
06:00	12	15	26	16	19	11	6	105	15	88	18	17	9
07:00	50	50	51	55	42	16	14	278	40	248	50	30	15
08:00	56	50	59	54	52	32	16	319	46	271	54	48	24
09:00	58	60	66	59	65	22	16	346	49	308	62	38	19
10:00	53	49	51	51	62	62	37	365	52	266	53	99	50
11:00	60	64	47	53	59	85	52	420	60	283	57	137	69
12:00	55	62	65	70	68	66	65	451	64	320	64	131	66
13:00	66	63	68	72	79	72	58	478	68	348	70	130	65
14:00	92	83	82	77	98	74	68	574	82	432	86	142	71
15:00	100	127	110	110	123	84	84	738	105	570	114	168	84
16:00	159	135	148	138	149	63	85	877	125	729	146	148	74
17:00	118	159	127	120	108	73	73	778	111	632	126	146	73
18:00	67	73	65	74	64	44	46	433	62	343	69	90	45
19:00	37	49	41	52	45	25	33	282	40	224	45	58	29
20:00	31	40	27	35	44	29	27	233	33	177	35	56	28
21:00	32	39	32	37	35	23	21	219	31	175	35	44	22
22:00	13	14	20	21	17	32	13	130	19	85	17	45	23
23:00	8	10	16	13	18	17	10	92	13	65	13	27	14
Total	**1091**	**1164**	**1117**	**1132**	**1171**	**860**	**760**	**7295**	**1042**	**5675**	**1135**	**1620**	**810**
% Heavy	**5.77%**	**5.24%**	**4.21%**	**5.21%**	**4.95%**	**2.56%**	**3.16%**	**4.58%**		**5.07%**		**2.84%**	

TRANS TRAFFIC SURVEY

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Site Watt St

Direction Eastbound

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	07:00	08:00	08:00	07:00	07:00	11:00	11:00	N/A	08:00	N/A	07:00	N/A	11:00
PM Peak	12:00	14:00	16:00	14:00	17:00	12:00	14:00	N/A	14:00	N/A	14:00	N/A	12:00
00:00	4	2	0	4	2	3	4	19	3	12	2	7	4
01:00	4	0	2	2	0	2	1	11	2	8	2	3	2
02:00	3	2	2	2	1	1	2	13	2	10	2	3	2
03:00	7	7	9	8	7	3	2	43	6	38	8	5	3
04:00	27	26	24	30	29	8	5	149	21	136	27	13	7
05:00	86	73	79	75	76	18	9	416	59	389	78	27	14
06:00	75	82	91	78	90	17	15	448	64	416	83	32	16
07:00	113	107	95	123	99	27	16	580	83	537	107	43	22
08:00	94	116	100	100	92	63	43	608	87	502	100	106	53
09:00	58	74	75	78	74	72	48	479	68	359	72	120	60
10:00	58	76	62	62	61	86	76	481	69	319	64	162	81
11:00	58	54	73	59	62	94	85	485	69	306	61	179	90
12:00	67	69	58	62	61	78	61	456	65	317	63	139	70
13:00	67	65	48	63	71	67	49	430	61	314	63	116	58
14:00	66	76	62	79	61	51	76	471	67	344	69	127	64
15:00	53	66	61	58	73	52	46	409	58	311	62	98	49
16:00	62	76	72	67	72	55	60	464	66	349	70	115	58
17:00	39	49	51	56	75	39	44	353	50	270	54	83	42
18:00	26	39	36	37	47	28	28	241	34	185	37	56	28
19:00	20	24	29	21	25	28	43	190	27	119	24	71	36
20:00	21	15	17	16	21	12	29	131	19	90	18	41	21
21:00	16	8	11	16	21	19	12	103	15	72	14	31	16
22:00	9	7	5	6	12	13	8	60	9	39	8	21	11
23:00	0	1	3	1	10	8	1	24	3	15	3	9	5
Total	**1033**	**1114**	**1065**	**1103**	**1142**	**844**	**763**	**7064**	**1009**	**5457**	**1091**	**1607**	**804**
% Heavy	**5.32%**	**5.39%**	**5.35%**	**4.99%**	**5.95%**	**3.79%**	**4.33%**	**5.10%**		**5.41%**		**4.04%**	

TRANS TRAFFIC SURVEY

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AUTOMATIC COUNT SUMMARY

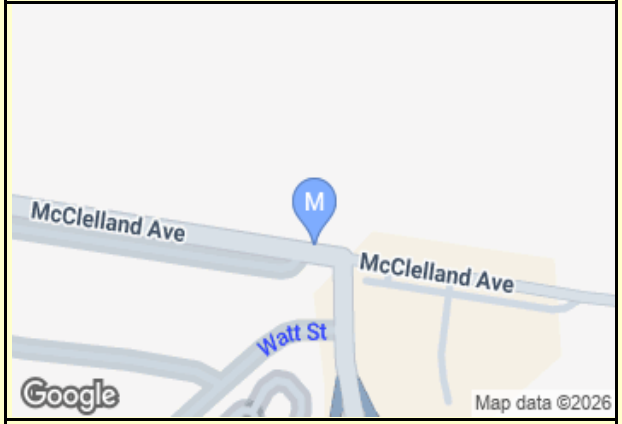
Street Name :	McClelland Ave	**Location :**	West of Avalon Rd
Suburb :	Lara	**Start Date :**	00:00 Wed 11/February/2026
Machine ID:	K365MK64	**Finish Date :**	00:00 Wed 18/February/2026
Site ID:	26437	**Speed Zone :**	70 km/h
Prepared By :	Vo Son Binh	**Email:**	binh@trafficsurvey.com.au

GPS information		Lat 38° 1' 34.70 South Long 144° 25' 42.95 East	Direction of Travel		
			Both directions	**Westbound**	**Eastbound**
Traffic Volume :		Weekdays Average	8,949	4,467	4,482
(Vehicles/Day)		7 Day Average	8,344	4,184	4,160
Weekday	**AM**	08:00	681	318	363
Peak hour start	**PM**	16:00	756	438	318
Speeds :		85th Percentile	67.2	64.2	70.3
(Km/Hr)		Average	60.7	57.1	64.2
Classification % :		Light Vehicles up to 5.5m	89.8%	90.0%	89.7%

Location

GPS Information Load Google Map (internet required)

(Latitude, Longitude) -38.026305, 144.428597



Speed Data | Speed Graph | Speed Bin

Volume Data | Volume Graph | Classification

QUALITY ASSURED COMPANY BY ISO 9001:2015

OH&S SYSTEM CERTIFIED TO ISO 4801:2001

ENVIRONMENT MANAGEMENT SYSTEM CERTIFIED TO ISO14001:2015

TRANS TRAFFIC SURVEY

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Site McClelland Ave

Direction Both directions

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	08:00	11:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	16:00	17:00	16:00	16:00	16:00	12:00	12:00	N/A	16:00	N/A	16:00	N/A	12:00
00:00	51	28	33	30	35	83	77	337	48	177	35	160	80
01:00	26	30	33	30	42	57	56	274	39	161	32	113	57
02:00	30	26	21	19	34	32	34	196	28	130	26	66	33
03:00	49	52	50	54	52	35	35	327	47	257	51	70	35
04:00	136	136	145	135	149	67	40	808	115	701	140	107	54
05:00	358	422	394	389	345	130	58	2096	299	1908	382	188	94
06:00	422	459	426	457	409	189	102	2464	352	2173	435	291	146
07:00	590	588	579	611	523	292	153	3336	477	2891	578	445	223
08:00	682	668	693	693	658	397	287	4078	583	3394	679	684	342
09:00	495	480	475	510	534	459	373	3326	475	2494	499	832	416
10:00	424	402	464	423	514	559	455	3241	463	2227	445	1014	507
11:00	476	379	479	438	492	589	528	3381	483	2264	453	1117	559
12:00	447	437	494	417	521	600	514	3430	490	2316	463	1114	557
13:00	492	431	494	492	505	569	456	3439	491	2414	483	1025	513
14:00	503	500	573	538	638	536	445	3733	533	2752	550	981	491
15:00	715	659	656	667	740	515	443	4395	628	3437	687	958	479
16:00	720	737	759	776	794	523	499	4808	687	3786	757	1022	511
17:00	622	740	674	753	767	486	449	4491	642	3556	711	935	468
18:00	463	567	515	549	592	358	339	3383	483	2686	537	697	349
19:00	293	330	309	356	386	288	271	2233	319	1674	335	559	280
20:00	199	272	209	251	307	249	233	1720	246	1238	248	482	241
21:00	169	220	179	213	221	219	151	1372	196	1002	200	370	185
22:00	108	124	115	121	170	160	127	925	132	638	128	287	144
23:00	103	88	92	93	167	148	80	771	110	543	109	228	114
Total	**8573**	**8775**	**8861**	**9015**	**9595**	**7540**	**6205**	**58564**	**8366**	**44819**	**8964**	**13745**	**6873**
% Heavy	**11.16%**	**11.60%**	**11.10%**	**10.92%**	**10.40%**	**7.68%**	**6.96%**	**10.16%**		**11.02%**		**7.36%**	

TRANS TRAFFIC SURVEY

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Site McClelland Ave

Direction Westbound

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	08:00	11:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	15:00	16:00	17:00	16:00	16:00	13:00	16:00	N/A	16:00	N/A	16:00	N/A	12:00
00:00	35	17	20	19	26	55	54	226	32	117	23	109	55
01:00	22	21	24	19	28	35	39	188	27	114	23	74	37
02:00	9	17	9	8	16	17	23	99	14	59	12	40	20
03:00	11	13	9	12	13	12	14	84	12	58	12	26	13
04:00	21	23	27	20	29	20	18	158	23	120	24	38	19
05:00	60	84	67	69	67	27	13	387	55	347	69	40	20
06:00	124	146	153	160	139	58	29	809	116	722	144	87	44
07:00	219	233	220	224	202	129	67	1294	185	1098	220	196	98
08:00	322	313	315	339	293	172	120	1874	268	1582	316	292	146
09:00	227	240	238	239	244	213	160	1561	223	1188	238	373	187
10:00	202	190	223	215	257	250	213	1550	221	1087	217	463	232
11:00	223	206	246	220	240	272	240	1647	235	1135	227	512	256
12:00	231	224	268	207	259	291	264	1744	249	1189	238	555	278
13:00	248	195	259	233	257	314	230	1736	248	1192	238	544	272
14:00	291	300	329	297	345	301	256	2119	303	1562	312	557	279
15:00	437	406	382	402	461	278	245	2611	373	2088	418	523	262
16:00	437	445	400	444	469	281	268	2744	392	2195	439	549	275
17:00	367	378	405	426	423	283	250	2532	362	1999	400	533	267
18:00	289	309	304	322	310	189	203	1926	275	1534	307	392	196
19:00	161	180	167	210	212	144	148	1222	175	930	186	292	146
20:00	98	148	119	153	179	139	133	969	138	697	139	272	136
21:00	96	129	101	115	133	117	89	780	111	574	115	206	103
22:00	69	78	73	76	112	103	73	584	83	408	82	176	88
23:00	66	59	72	67	108	96	56	524	75	372	74	152	76
Total	**4265**	**4354**	**4430**	**4496**	**4822**	**3796**	**3205**	**29368**	**4195**	**22367**	**4473**	**7001**	**3501**
% Heavy	**11.11%**	**11.67%**	**11.11%**	**11.10%**	**10.14%**	**7.32%**	**6.43%**	**10.03%**		**11.01%**		**6.91%**	

TRANS TRAFFIC SURVEY

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Site McClelland Ave

Direction Eastbound

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	07:00	07:00	08:00	07:00	08:00	11:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	16:00	17:00	16:00	16:00	17:00	12:00	12:00	N/A	16:00	N/A	16:00	N/A	12:00
00:00	16	11	13	11	9	28	23	111	16	60	12	51	26
01:00	4	9	9	11	14	22	17	86	12	47	9	39	20
02:00	21	9	12	11	18	15	11	97	14	71	14	26	13
03:00	38	39	41	42	39	23	21	243	35	199	40	44	22
04:00	115	113	118	115	120	47	22	650	93	581	116	69	35
05:00	298	338	327	320	278	103	45	1709	244	1561	312	148	74
06:00	298	313	273	297	270	131	73	1655	236	1451	290	204	102
07:00	371	355	359	387	321	163	86	2042	292	1793	359	249	125
08:00	360	355	378	354	365	225	167	2204	315	1812	362	392	196
09:00	268	240	237	271	290	246	213	1765	252	1306	261	459	230
10:00	222	212	241	208	257	309	242	1691	242	1140	228	551	276
11:00	253	173	233	218	252	317	288	1734	248	1129	226	605	303
12:00	216	213	226	210	262	309	250	1686	241	1127	225	559	280
13:00	244	236	235	259	248	255	226	1703	243	1222	244	481	241
14:00	212	200	244	241	293	235	189	1614	231	1190	238	424	212
15:00	278	253	274	265	279	237	198	1784	255	1349	270	435	218
16:00	283	292	359	332	325	242	231	2064	295	1591	318	473	237
17:00	255	362	269	327	344	203	199	1959	280	1557	311	402	201
18:00	174	258	211	227	282	169	136	1457	208	1152	230	305	153
19:00	132	150	142	146	174	144	123	1011	144	744	149	267	134
20:00	101	124	90	98	128	110	100	751	107	541	108	210	105
21:00	73	91	78	98	88	102	62	592	85	428	86	164	82
22:00	39	46	42	45	58	57	54	341	49	230	46	111	56
23:00	37	29	20	26	59	52	24	247	35	171	34	76	38
Total	**4308**	**4421**	**4431**	**4519**	**4773**	**3744**	**3000**	**29196**	**4171**	**22452**	**4490**	**6744**	**3372**
% Heavy	**11.21%**	**11.54%**	**11.10%**	**10.73%**	**10.66%**	**8.04%**	**7.53%**	**10.30%**		**11.04%**		**7.81%**	

TRANS TRAFFIC SURVEY

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AUTOMATIC COUNT SUMMARY

Street Name :	Rennie St	**Location :**	North of Princes Fwy On-Ramp
Suburb :	Lara	**Start Date :**	00:00 Wed 11/February/2026
Machine ID:	MD12RWSA	**Finish Date :**	00:00 Wed 18/February/2026
Site ID:	26438	**Speed Zone :**	60 km/h
Prepared By :	Vo Son Binh	**Email:**	binh@trafficsurvey.com.au

GPS information		Lat 38° 3' 19.56 South Long 144° 23' 25.38 East	Direction of Travel		
			Both directions	**Northbound**	**Southbound**
Traffic Volume :		Weekdays Average	1,676	836	840
(Vehicles/Day)		7 Day Average	1,584	788	796
Weekday	**AM**	08:00	140	39	101
Peak hour starts	**PM**	16:00	190	126	64
Speeds :		85th Percentile	66.0	73.7	58.3
(Km/Hr)		Average	60.2	67.0	53.3
Classification % :		Light Vehicles up to 5.5m	97.4%	97.0%	97.9%

Location

GPS Information Load Google Map (internet required)

(Latitude, Longitude) -38.055432, 144.390383



Speed Data | Speed Graph | Speed Bin

Volume Data | Volume Graph | Classification

QUALITY ASSURED COMPANY BY ISO 9001:2015

OH&S SYSTEM CERTIFIED TO ISO 4801:2001

ENVIRONMENT MANAGEMENT SYSTEM CERTIFIED TO ISO14001:2015

TRANS TRAFFIC SURVEY

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Site Rennie St

Direction Both directions

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	08:00	11:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	16:00	16:00	16:00	16:00	16:00	12:00	14:00	N/A	16:00	N/A	16:00	N/A	14:00
00:00	4	6	6	6	10	16	9	57	8	32	6	25	13
01:00	5	2	2	2	0	7	7	25	4	11	2	14	7
02:00	1	0	2	0	2	3	10	18	3	5	1	13	7
03:00	3	2	0	1	1	1	2	10	1	7	1	3	2
04:00	8	6	5	3	6	2	8	38	5	28	6	10	5
05:00	28	31	30	33	27	9	0	158	23	149	30	9	5
06:00	64	83	70	56	59	12	6	350	50	332	66	18	9
07:00	100	109	95	114	101	35	21	575	82	519	104	56	28
08:00	143	153	139	136	132	59	49	811	116	703	141	108	54
09:00	87	96	84	83	71	85	68	574	82	421	84	153	77
10:00	90	73	78	90	97	124	74	626	89	428	86	198	99
11:00	91	85	86	97	105	130	114	708	101	464	93	244	122
12:00	96	83	90	86	107	137	106	705	101	462	92	243	122
13:00	83	90	110	96	109	125	107	720	103	488	98	232	116
14:00	97	133	99	126	126	121	128	830	119	581	116	249	125
15:00	141	142	140	147	168	129	105	972	139	738	148	234	117
16:00	180	190	196	192	199	109	108	1174	168	957	191	217	109
17:00	146	168	154	160	154	110	93	985	141	782	156	203	102
18:00	69	102	84	106	99	84	72	616	88	460	92	156	78
19:00	80	75	48	61	66	62	45	437	62	330	66	107	54
20:00	50	47	37	57	54	44	39	328	47	245	49	83	42
21:00	33	30	25	30	41	28	18	205	29	159	32	46	23
22:00	19	13	10	18	23	25	13	121	17	83	17	38	19
23:00	8	12	7	6	23	23	7	86	12	56	11	30	15
Total	**1626**	**1731**	**1597**	**1706**	**1780**	**1480**	**1209**	**11129**	**1590**	**8440**	**1688**	**2689**	**1345**
% Heavy	**2.64%**	**2.72%**	**2.94%**	**3.46%**	**2.53%**	**2.09%**	**1.74%**	**2.63%**		**2.86%**		**1.93%**	

TRANS TRAFFIC SURVEY

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Site Rennie St

Direction Northbound

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	09:00	08:00	11:00	11:00	11:00	11:00	N/A	11:00	N/A	11:00	N/A	11:00
PM Peak	16:00	16:00	16:00	16:00	16:00	15:00	14:00	N/A	16:00	N/A	16:00	N/A	15:00
00:00	3	5	3	6	5	10	5	37	5	22	4	15	8
01:00	3	2	2	2	0	2	5	16	2	9	2	7	4
02:00	1	0	1	0	1	2	3	8	1	3	1	5	3
03:00	2	0	0	0	0	1	1	4	1	2	0	2	1
04:00	2	3	1	2	1	0	2	11	2	9	2	2	1
05:00	5	4	5	3	3	3	0	23	3	20	4	3	2
06:00	12	16	12	11	9	4	1	65	9	60	12	5	3
07:00	18	25	18	25	19	12	7	124	18	105	21	19	10
08:00	43	33	40	38	39	14	17	224	32	193	39	31	16
09:00	30	36	32	30	28	32	21	209	30	156	31	53	27
10:00	35	31	31	31	34	45	24	231	33	162	32	69	35
11:00	37	35	38	48	47	55	49	309	44	205	41	104	52
12:00	50	42	43	47	60	66	59	367	52	242	48	125	63
13:00	46	43	50	48	54	66	55	362	52	241	48	121	61
14:00	60	84	61	76	76	66	70	493	70	357	71	136	68
15:00	85	87	96	89	109	71	67	604	86	466	93	138	69
16:00	117	130	126	127	133	51	67	751	107	633	127	118	59
17:00	104	106	100	106	100	64	54	634	91	516	103	118	59
18:00	40	60	51	62	45	48	41	347	50	258	52	89	45
19:00	43	49	30	44	37	41	25	269	38	203	41	66	33
20:00	22	28	22	38	33	28	20	191	27	143	29	48	24
21:00	24	18	19	21	30	16	13	141	20	112	22	29	15
22:00	13	9	7	14	15	16	5	79	11	58	12	21	11
23:00	8	8	4	5	12	12	2	51	7	37	7	14	7
Total	**803**	**854**	**792**	**873**	**890**	**725**	**613**	**5550**	**793**	**4212**	**842**	**1338**	**669**
% Heavy	**2.99%**	**2.69%**	**3.16%**	**3.78%**	**3.37%**	**2.48%**	**2.12%**	**2.99%**		**3.21%**		**2.32%**	

TRANS TRAFFIC SURVEY

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Site Rennie St

Direction Southbound

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	16/02/2026	17/02/2026	11/02/2026	12/02/2026	13/02/2026	14/02/2026	15/02/2026	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	08:00	10:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	16:00	17:00	16:00	16:00	16:00	12:00	14:00	N/A	16:00	N/A	16:00	N/A	12:00
00:00	1	1	3	0	5	6	4	20	3	10	2	10	5
01:00	2	0	0	0	0	5	2	9	1	2	0	7	4
02:00	0	0	1	0	1	1	7	10	1	2	0	8	4
03:00	1	2	0	1	1	0	1	6	1	5	1	1	1
04:00	6	3	4	1	5	2	6	27	4	19	4	8	4
05:00	23	27	25	30	24	6	0	135	19	129	26	6	3
06:00	52	67	58	45	50	8	5	285	41	272	54	13	7
07:00	82	84	77	89	82	23	14	451	64	414	83	37	19
08:00	100	120	99	98	93	45	32	587	84	510	102	77	39
09:00	57	60	52	53	43	53	47	365	52	265	53	100	50
10:00	55	42	47	59	63	79	50	395	56	266	53	129	65
11:00	54	50	48	49	58	75	65	399	57	259	52	140	70
12:00	46	41	47	39	47	71	47	338	48	220	44	118	59
13:00	37	47	60	48	55	59	52	358	51	247	49	111	56
14:00	37	49	38	50	50	55	58	337	48	224	45	113	57
15:00	56	55	44	58	59	58	38	368	53	272	54	96	48
16:00	63	60	70	65	66	58	41	423	60	324	65	99	50
17:00	42	62	54	54	54	46	39	351	50	266	53	85	43
18:00	29	42	33	44	54	36	31	269	38	202	40	67	34
19:00	37	26	18	17	29	21	20	168	24	127	25	41	21
20:00	28	19	15	19	21	16	19	137	20	102	20	35	18
21:00	9	12	6	9	11	12	5	64	9	47	9	17	9
22:00	6	4	3	4	8	9	8	42	6	25	5	17	9
23:00	0	4	3	1	11	11	5	35	5	19	4	16	8
Total	**823**	**877**	**805**	**833**	**890**	**755**	**596**	**5579**	**797**	**4228**	**846**	**1351**	**676**
% Heavy	**2.31%**	**2.74%**	**2.73%**	**3.12%**	**1.69%**	**1.72%**	**1.34%**	**2.28%**		**2.51%**		**1.55%**	

Appendix C

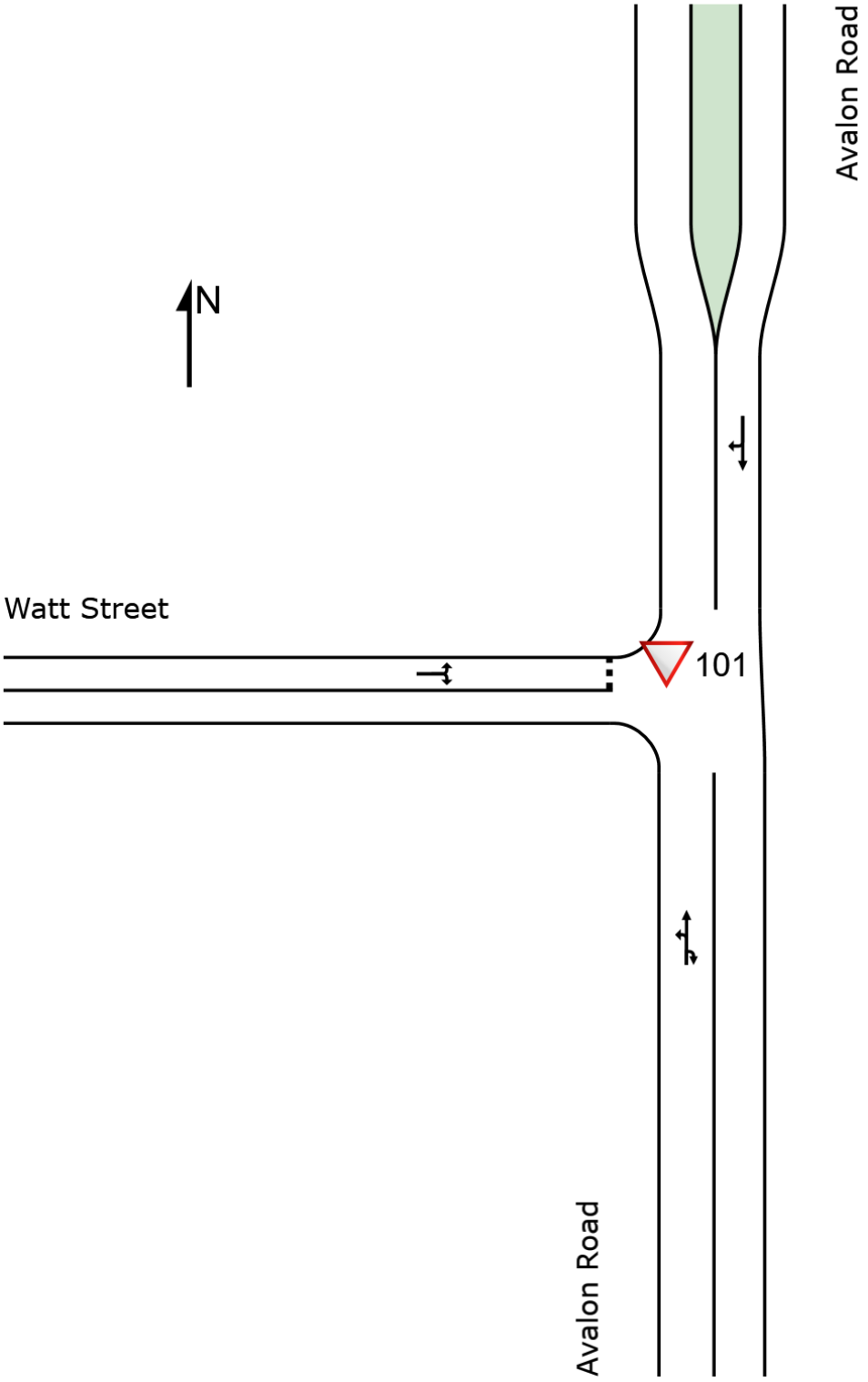
SIDRA Results – Existing Conditions

SITE LAYOUT

Site: 101 [Watt Street/Avalon Road (AM Peak) (Site Folder: Existing Conditions - Appendix C)]

Watt Street/Avalon Road
Site Category: (None)
Give-Way (Two-Way)

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



MOVEMENT SUMMARY

Site: 101 [Watt Street/Avalon Road (AM Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Watt Street/Avalon Road
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	45	2.3	45	2.3	0.216	6.4	LOS A	0.0	0.2	0.01	0.07	0.01	60.8
2	T1	All MCs	384	9.3	384	9.3	0.216	0.0	LOS A	0.0	0.2	0.01	0.07	0.01	69.0
3u	U	All MCs	1	0.0	1	0.0	0.216	8.3	LOS A	0.0	0.2	0.01	0.07	0.01	64.4
Approach			431	8.6	431	8.6	0.216	0.7	LOS A	0.0	0.2	0.01	0.07	0.01	68.0
North: Avalon Road															
8	T1	All MCs	402	7.9	402	7.9	0.222	0.1	LOS A	0.2	1.1	0.05	0.06	0.05	69.5
9	R2	All MCs	13	16.7	13	16.7	0.222	9.0	LOS A	0.2	1.1	0.05	0.06	0.05	60.2
Approach			415	8.1	415	8.1	0.222	0.4	LOS A	0.2	1.1	0.05	0.06	0.05	69.2
West: Watt Street															
10	L2	All MCs	6	0.0	6	0.0	0.201	7.1	LOS A	0.7	4.8	0.63	0.85	0.64	51.6
12	R2	All MCs	101	2.1	101	2.1	0.201	11.0	LOS A	0.7	4.8	0.63	0.85	0.64	51.0
Approach			107	2.0	107	2.0	0.201	10.8	LOS A	0.7	4.8	0.63	0.85	0.64	51.0
All Vehicles			953	7.6	953	7.6	0.222	1.7	LOS A	0.7	4.8	0.09	0.15	0.10	66.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Watt Street/Avalon Road (School Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Watt Street/Avalon Road
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	134	1.6	134	1.6	0.285	6.4	LOS A	0.0	0.0	0.00	0.15	0.00	63.3
2	T1	All MCs	445	6.1	445	6.1	0.285	0.1	LOS A	0.0	0.0	0.00	0.15	0.00	67.8
Approach			579	5.1	579	5.1	0.285	1.5	LOS A	0.0	0.0	0.00	0.15	0.00	66.7
North: Avalon Road															
8	T1	All MCs	328	3.8	328	3.8	0.174	0.1	LOS A	0.1	0.7	0.04	0.05	0.04	69.6
9	R2	All MCs	7	0.0	7	0.0	0.174	9.1	LOS A	0.1	0.7	0.04	0.05	0.04	61.3
Approach			336	3.8	336	3.8	0.174	0.3	LOS A	0.1	0.7	0.04	0.05	0.04	69.4
West: Watt Street															
10	L2	All MCs	9	0.0	9	0.0	0.124	7.3	LOS A	0.4	2.9	0.61	0.84	0.61	51.4
12	R2	All MCs	53	8.0	53	8.0	0.124	11.7	LOS A	0.4	2.9	0.61	0.84	0.61	49.6
Approach			62	6.8	62	6.8	0.124	11.0	LOS A	0.4	2.9	0.61	0.84	0.61	49.9
All Vehicles			977	4.7	977	4.7	0.285	1.7	LOS A	0.4	2.9	0.05	0.16	0.05	66.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Watt Street/Avalon Road (PM Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Watt Street/Avalon Road
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	128	2.5	128	2.5	0.291	6.5	LOS A	0.0	0.0	0.00	0.14	0.00	63.0
2	T1	All MCs	461	6.6	461	6.6	0.291	0.1	LOS A	0.0	0.0	0.00	0.14	0.00	68.0
Approach			589	5.7	589	5.7	0.291	1.5	LOS A	0.0	0.0	0.00	0.14	0.00	66.8
North: Avalon Road															
8	T1	All MCs	377	3.4	377	3.4	0.201	0.1	LOS A	0.1	0.9	0.04	0.05	0.04	69.5
9	R2	All MCs	9	0.0	9	0.0	0.201	9.2	LOS A	0.1	0.9	0.04	0.05	0.04	61.2
Approach			386	3.3	386	3.3	0.201	0.4	LOS A	0.1	0.9	0.04	0.05	0.04	69.3
West: Watt Street															
10	L2	All MCs	8	0.0	8	0.0	0.123	7.4	LOS A	0.4	2.8	0.64	0.85	0.64	51.2
12	R2	All MCs	51	4.2	51	4.2	0.123	12.0	LOS A	0.4	2.8	0.64	0.85	0.64	50.2
Approach			59	3.6	59	3.6	0.123	11.4	LOS A	0.4	2.8	0.64	0.85	0.64	50.3
All Vehicles			1035	4.7	1035	4.7	0.291	1.6	LOS A	0.4	2.8	0.05	0.15	0.05	66.5

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Watt Street/Avalon Road (Weekend Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Watt Street/Avalon Road
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	81	0.0	81	0.0	0.178	6.4	LOS A	0.0	0.0	0.00	0.14	0.00	63.9
2	T1	All MCs	286	2.9	286	2.9	0.178	0.0	LOS A	0.0	0.0	0.00	0.14	0.00	68.0
Approach			367	2.3	367	2.3	0.178	1.4	LOS A	0.0	0.0	0.00	0.14	0.00	67.1
North: Avalon Road															
8	T1	All MCs	323	1.6	323	1.6	0.170	0.1	LOS A	0.1	0.7	0.04	0.04	0.04	69.5
9	R2	All MCs	9	11.1	9	11.1	0.170	8.1	LOS A	0.1	0.7	0.04	0.04	0.04	60.6
Approach			333	1.9	333	1.9	0.170	0.3	LOS A	0.1	0.7	0.04	0.04	0.04	69.3
West: Watt Street															
10	L2	All MCs	11	10.0	11	10.0	0.136	6.8	LOS A	0.5	3.2	0.51	0.77	0.51	50.8
12	R2	All MCs	84	1.3	84	1.3	0.136	9.0	LOS A	0.5	3.2	0.51	0.77	0.51	52.7
Approach			95	2.2	95	2.2	0.136	8.8	LOS A	0.5	3.2	0.51	0.77	0.51	52.5
All Vehicles			795	2.1	795	2.1	0.178	1.8	LOS A	0.5	3.2	0.08	0.17	0.08	65.8

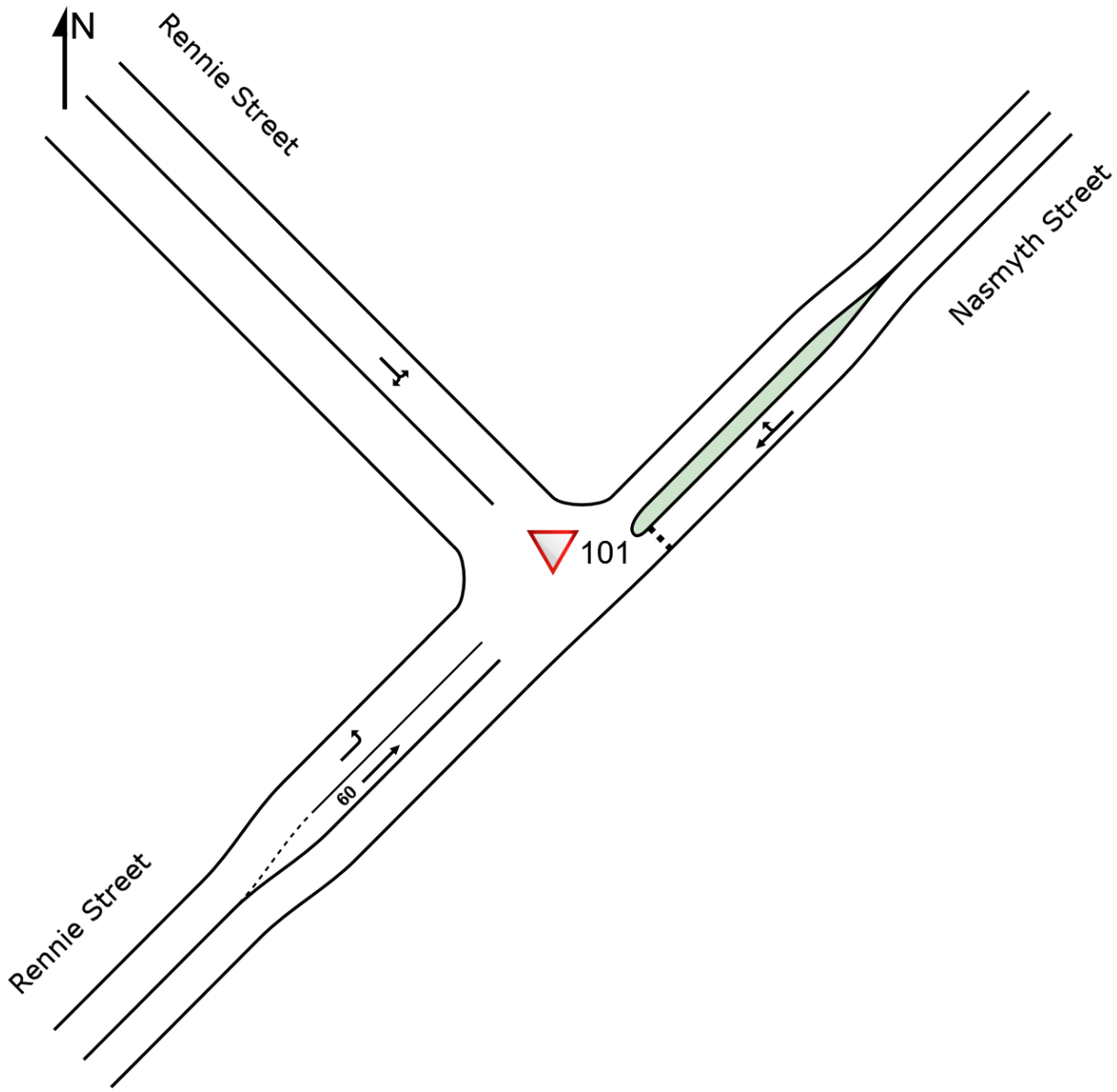
Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SITE LAYOUT

Site: 101 [Rennie Street/Nasmyth Street (AM Peak) (Site Folder: Existing Conditions - Appendix C)]

Rennie Street/Nasmyth Street
Site Category: (None)
Give-Way (Two-Way)

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



MOVEMENT SUMMARY

Site: 101 [Rennie Street/Nasmyth Street (AM Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Nasmyth Street
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Nasmyth Street															
25	T1	All MCs	20	10.5	20	10.5	0.024	5.5	LOS A	0.1	0.7	0.31	0.52	0.31	52.7
26	R2	All MCs	3	0.0	3	0.0	0.024	7.2	LOS A	0.1	0.7	0.31	0.52	0.31	52.6
Approach			23	9.1	23	9.1	0.024	5.7	LOS A	0.1	0.7	0.31	0.52	0.31	52.7
NorthWest: Rennie Street															
27	L2	All MCs	1	0.0	1	0.0	0.086	5.7	LOS A	0.4	2.9	0.11	0.54	0.11	52.5
29	R2	All MCs	146	2.9	146	2.9	0.086	5.7	LOS A	0.4	2.9	0.11	0.54	0.11	52.5
Approach			147	2.9	147	2.9	0.086	5.7	LOS A	0.4	2.9	0.11	0.54	0.11	52.5
SouthWest: Rennie Street															
30	L2	All MCs	125	1.7	125	1.7	0.066	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	52.8
31	T1	All MCs	33	3.2	33	3.2	0.018	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			158	2.0	158	2.0	0.066	4.4	LOS A	0.0	0.0	0.00	0.46	0.00	54.1
All Vehicles			328	2.9	328	2.9	0.086	5.1	LOS A	0.4	2.9	0.07	0.50	0.07	53.3

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Nasmyth Street (School Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Nasmyth Street
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Nasmyth Street															
25	T1	All MCs	51	0.0	51	0.0	0.050	5.1	LOS A	0.2	1.5	0.27	0.51	0.27	53.3
26	R2	All MCs	2	0.0	2	0.0	0.050	7.5	LOS A	0.2	1.5	0.27	0.51	0.27	52.8
Approach			53	0.0	53	0.0	0.050	5.2	LOS A	0.2	1.5	0.27	0.51	0.27	53.3
NorthWest: Rennie Street															
27	L2	All MCs	3	33.3	3	33.3	0.073	6.0	LOS A	0.3	2.5	0.07	0.54	0.07	51.3
29	R2	All MCs	119	5.3	119	5.3	0.073	5.7	LOS A	0.3	2.5	0.07	0.54	0.07	52.5
29u	U	All MCs	1	0.0	1	0.0	0.073	7.7	LOS A	0.3	2.5	0.07	0.54	0.07	52.3
Approach			123	6.0	123	6.0	0.073	5.7	LOS A	0.3	2.5	0.07	0.54	0.07	52.4
SouthWest: Rennie Street															
30	L2	All MCs	188	0.6	188	0.6	0.098	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	52.8
31	T1	All MCs	17	0.0	17	0.0	0.009	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			205	0.5	205	0.5	0.098	5.1	LOS A	0.0	0.0	0.00	0.53	0.00	53.4
All Vehicles			381	2.2	381	2.2	0.098	5.3	LOS A	0.3	2.5	0.06	0.53	0.06	53.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Nasmyth Street (PM Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Nasmyth Street
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Nasmyth Street															
25	T1	All MCs	51	0.0	51	0.0	0.051	5.1	LOS A	0.2	1.5	0.28	0.52	0.28	53.2
26	R2	All MCs	3	0.0	3	0.0	0.051	7.3	LOS A	0.2	1.5	0.28	0.52	0.28	52.7
Approach			54	0.0	54	0.0	0.051	5.3	LOS A	0.2	1.5	0.28	0.52	0.28	53.2
NorthWest: Rennie Street															
27	L2	All MCs	3	33.3	3	33.3	0.073	6.0	LOS A	0.3	2.6	0.06	0.55	0.06	51.4
29	R2	All MCs	123	5.1	123	5.1	0.073	5.6	LOS A	0.3	2.6	0.06	0.55	0.06	52.5
Approach			126	5.8	126	5.8	0.073	5.6	LOS A	0.3	2.6	0.06	0.55	0.06	52.5
SouthWest: Rennie Street															
30	L2	All MCs	168	2.5	168	2.5	0.089	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	52.8
31	T1	All MCs	12	0.0	12	0.0	0.006	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			180	2.3	180	2.3	0.089	5.2	LOS A	0.0	0.0	0.00	0.54	0.00	53.2
All Vehicles			360	3.2	360	3.2	0.089	5.4	LOS A	0.3	2.6	0.06	0.54	0.06	52.9

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Nasmyth Street (Weekend Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Nasmyth Street
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Nasmyth Street															
25	T1	All MCs	36	0.0	36	0.0	0.036	4.9	LOS A	0.2	1.1	0.23	0.50	0.23	53.4
26	R2	All MCs	4	0.0	4	0.0	0.036	6.6	LOS A	0.2	1.1	0.23	0.50	0.23	52.9
Approach			40	0.0	40	0.0	0.036	5.1	LOS A	0.2	1.1	0.23	0.50	0.23	53.3
NorthWest: Rennie Street															
27	L2	All MCs	8	0.0	8	0.0	0.055	5.6	LOS A	0.3	1.8	0.10	0.54	0.10	52.6
29	R2	All MCs	84	5.0	84	5.0	0.055	5.7	LOS A	0.3	1.8	0.10	0.54	0.10	52.4
Approach			93	4.5	93	4.5	0.055	5.7	LOS A	0.3	1.8	0.10	0.54	0.10	52.4
SouthWest: Rennie Street															
30	L2	All MCs	84	2.5	84	2.5	0.045	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	52.8
31	T1	All MCs	29	0.0	29	0.0	0.016	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			114	1.9	114	1.9	0.045	4.1	LOS A	0.0	0.0	0.00	0.43	0.00	54.5
All Vehicles			246	2.6	246	2.6	0.055	4.9	LOS A	0.3	1.8	0.07	0.48	0.07	53.5

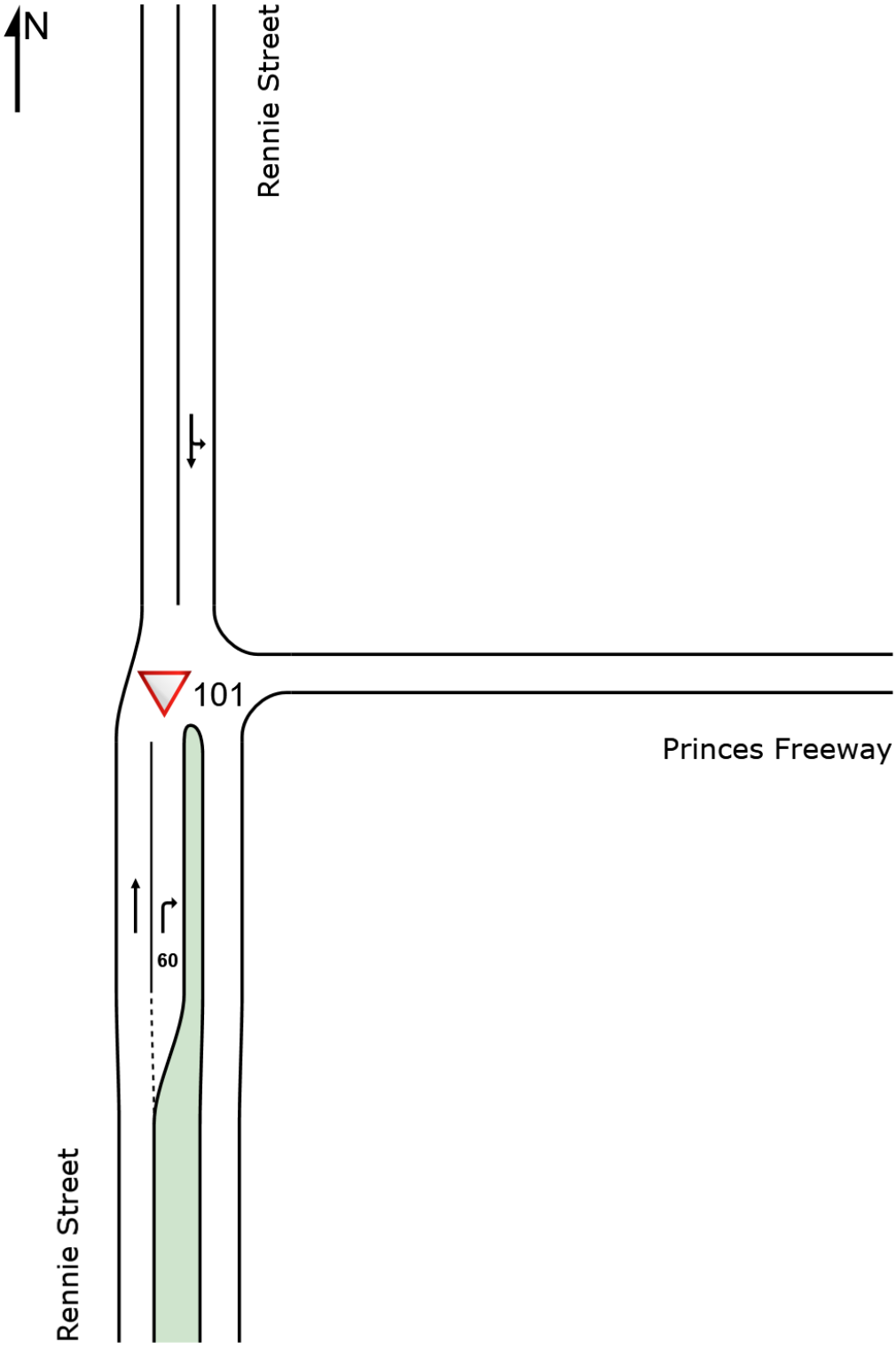
Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SITE LAYOUT

Site: 101 [Rennie Street/Princes Freeway (AM Peak) (Site Folder: Existing Conditions - Appendix C)]

Rennie Street/Princes Freeway
Site Category: (None)
Give-Way (Two-Way)

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



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MOVEMENT SUMMARY

Site: 101 [Rennie Street/Princes Freeway (AM Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Princes Freeway
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
2	T1	All MCs	39	2.7	39	2.7	0.020	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
3	R2	All MCs	99	26.6	99	26.6	0.070	6.2	LOS A	0.3	2.8	0.23	0.56	0.23	50.9
Approach			138	19.8	138	19.8	0.070	4.5	LOS A	0.3	2.8	0.17	0.40	0.17	53.2
North: Rennie Street															
7	L2	All MCs	1	0.0	1	0.0	0.056	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	57.4
8	T1	All MCs	106	4.0	106	4.0	0.056	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
Approach			107	3.9	107	3.9	0.056	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
All Vehicles			245	12.9	245	12.9	0.070	2.5	NA	0.3	2.8	0.09	0.23	0.09	55.9

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/Princes Freeway (School Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Princes Freeway
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
2	T1	All MCs	129	1.6	129	1.6	0.067	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
3	R2	All MCs	188	10.1	188	10.1	0.118	5.9	LOS A	0.6	4.4	0.19	0.56	0.19	51.7
Approach			318	6.6	318	6.6	0.118	3.5	LOS A	0.6	4.4	0.11	0.33	0.11	54.8
North: Rennie Street															
7	L2	All MCs	1	0.0	1	0.0	0.041	5.5	LOS A	0.0	0.0	0.00	0.01	0.00	57.4
8	T1	All MCs	75	8.5	75	8.5	0.041	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
Approach			76	8.3	76	8.3	0.041	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
All Vehicles			394	7.0	394	7.0	0.118	2.8	NA	0.6	4.4	0.09	0.27	0.09	55.7

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/Princes Freeway (PM Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Princes Freeway
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
2	T1	All MCs	120	3.5	120	3.5	0.063	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
3	R2	All MCs	148	14.2	148	14.2	0.093	5.8	LOS A	0.4	3.5	0.16	0.56	0.16	51.6
Approach			268	9.4	268	9.4	0.093	3.2	LOS A	0.4	3.5	0.09	0.31	0.09	55.0
North: Rennie Street															
7	L2	All MCs	1	0.0	1	0.0	0.031	5.5	LOS A	0.0	0.0	0.00	0.01	0.00	57.4
8	T1	All MCs	56	11.3	56	11.3	0.031	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
Approach			57	11.1	57	11.1	0.031	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
All Vehicles			325	9.7	325	9.7	0.093	2.7	NA	0.4	3.5	0.07	0.26	0.07	55.8

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/Princes Freeway (Weekend Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Princes Freeway
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
2	T1	All MCs	65	1.6	65	1.6	0.034	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
3	R2	All MCs	80	11.8	80	11.8	0.050	5.8	LOS A	0.2	1.8	0.18	0.56	0.18	51.7
Approach			145	7.2	145	7.2	0.050	3.2	LOS A	0.2	1.8	0.10	0.31	0.10	55.1
North: Rennie Street															
7	L2	All MCs	1	0.0	1	0.0	0.038	5.5	LOS A	0.0	0.0	0.00	0.01	0.00	57.4
8	T1	All MCs	72	2.9	72	2.9	0.038	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
Approach			73	2.9	73	2.9	0.038	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
All Vehicles			218	5.8	218	5.8	0.050	2.2	NA	0.2	1.8	0.06	0.21	0.06	56.6

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

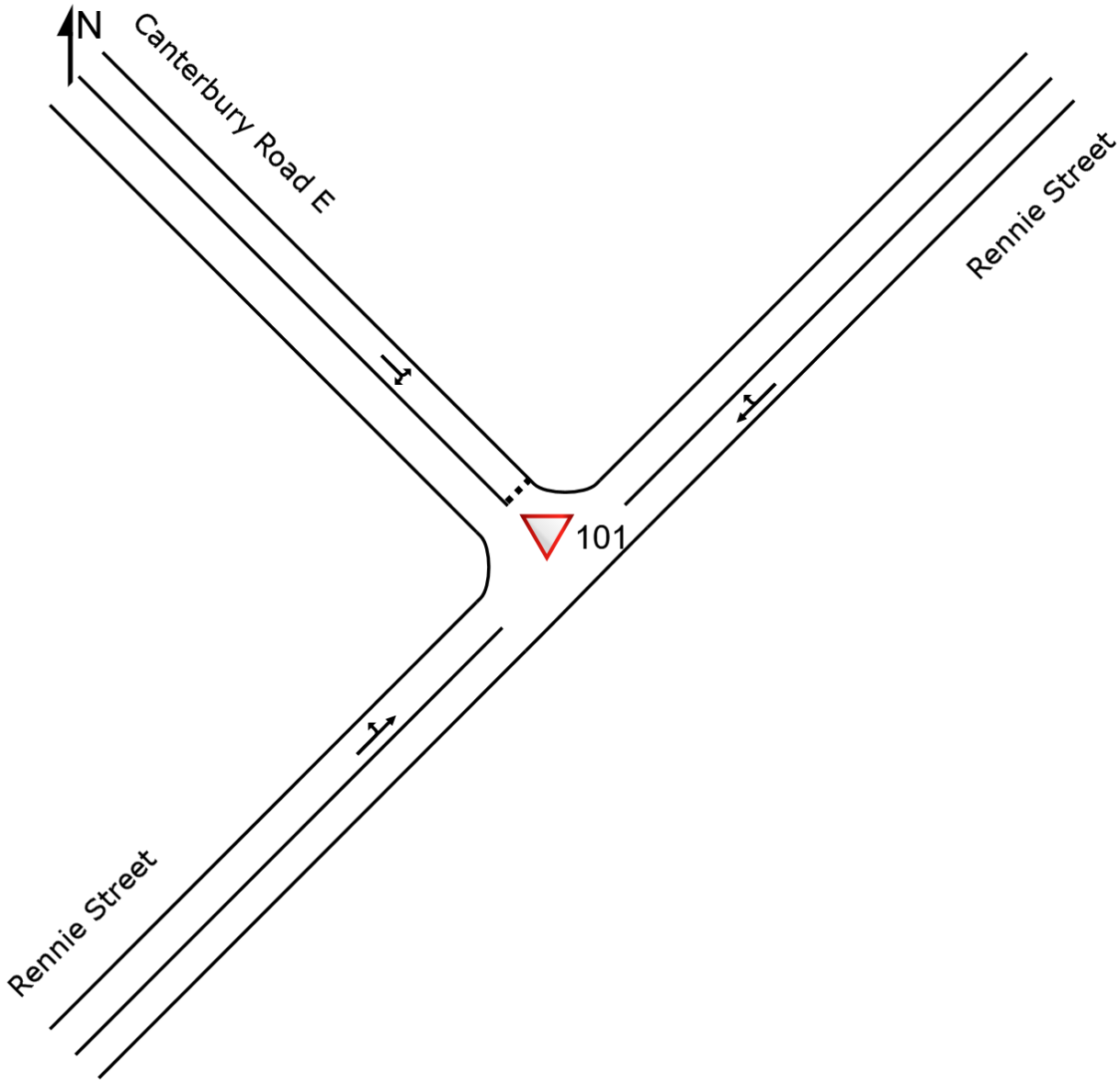
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SITE LAYOUT

Site: 101 [Rennie Street/Canterbury Road E (AM Peak) (Site Folder: Existing Conditions - Appendix C)]

Rennie Street/Canterbury Road E
Site Category: (None)
Give-Way (Two-Way)

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



MOVEMENT SUMMARY

Site: 101 [Rennie Street/Canterbury Road E (AM Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Canterbury Road E
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Rennie Street															
25	T1	All MCs	93	4.5	93	4.5	0.094	0.1	LOS A	0.4	2.7	0.10	0.27	0.10	57.3
26	R2	All MCs	74	2.9	74	2.9	0.094	5.6	LOS A	0.4	2.7	0.10	0.27	0.10	59.6
Approach			166	3.8	166	3.8	0.094	2.5	LOS A	0.4	2.7	0.10	0.27	0.10	58.3
NorthWest: Canterbury Road E															
27	L2	All MCs	129	1.6	129	1.6	0.094	7.1	LOS A	0.4	2.8	0.10	0.60	0.10	57.8
29	R2	All MCs	14	0.0	14	0.0	0.094	7.4	LOS A	0.4	2.8	0.10	0.60	0.10	57.6
Approach			143	1.5	143	1.5	0.094	7.1	LOS A	0.4	2.8	0.10	0.60	0.10	57.8
SouthWest: Rennie Street															
30	L2	All MCs	12	0.0	12	0.0	0.021	5.5	LOS A	0.0	0.0	0.00	0.18	0.00	56.0
31	T1	All MCs	27	3.8	27	3.8	0.021	0.0	LOS A	0.0	0.0	0.00	0.18	0.00	58.4
Approach			39	2.7	39	2.7	0.021	1.7	LOS A	0.0	0.0	0.00	0.18	0.00	57.6
All Vehicles			348	2.7	348	2.7	0.094	4.3	LOS A	0.4	2.8	0.09	0.39	0.09	58.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Canterbury Road E (School Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Canterbury Road E
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Rennie Street															
25	T1	All MCs	59	10.7	59	10.7	0.101	0.4	LOS A	0.5	3.5	0.24	0.41	0.24	55.8
26	R2	All MCs	111	0.0	111	0.0	0.101	5.9	LOS A	0.5	3.5	0.24	0.41	0.24	58.8
Approach			169	3.7	169	3.7	0.101	3.9	LOS A	0.5	3.5	0.24	0.41	0.24	57.7
NorthWest: Canterbury Road E															
27	L2	All MCs	105	0.0	105	0.0	0.086	7.3	LOS A	0.3	2.4	0.21	0.59	0.21	57.5
29	R2	All MCs	16	0.0	16	0.0	0.086	7.8	LOS A	0.3	2.4	0.21	0.59	0.21	57.2
Approach			121	0.0	121	0.0	0.086	7.3	LOS A	0.3	2.4	0.21	0.59	0.21	57.5
SouthWest: Rennie Street															
30	L2	All MCs	29	3.6	29	3.6	0.068	5.6	LOS A	0.0	0.0	0.00	0.14	0.00	56.2
31	T1	All MCs	100	1.1	100	1.1	0.068	0.0	LOS A	0.0	0.0	0.00	0.14	0.00	58.8
Approach			129	1.6	129	1.6	0.068	1.3	LOS A	0.0	0.0	0.00	0.14	0.00	58.2
All Vehicles			420	2.0	420	2.0	0.101	4.1	LOS A	0.5	3.5	0.16	0.38	0.16	57.8

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Canterbury Road E (PM Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Canterbury Road E
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Rennie Street															
25	T1	All MCs	44	14.3	44	14.3	0.105	0.4	LOS A	0.5	3.6	0.24	0.45	0.24	55.3
26	R2	All MCs	129	0.0	129	0.0	0.105	5.8	LOS A	0.5	3.6	0.24	0.45	0.24	58.3
Approach			174	3.6	174	3.6	0.105	4.4	LOS A	0.5	3.6	0.24	0.45	0.24	57.5
NorthWest: Canterbury Road E															
27	L2	All MCs	85	0.0	85	0.0	0.069	7.2	LOS A	0.3	1.9	0.20	0.59	0.20	57.5
29	R2	All MCs	13	0.0	13	0.0	0.069	7.7	LOS A	0.3	1.9	0.20	0.59	0.20	57.2
Approach			98	0.0	98	0.0	0.069	7.3	LOS A	0.3	1.9	0.20	0.59	0.20	57.5
SouthWest: Rennie Street															
30	L2	All MCs	25	0.0	25	0.0	0.064	5.6	LOS A	0.0	0.0	0.00	0.13	0.00	56.4
31	T1	All MCs	95	4.4	95	4.4	0.064	0.0	LOS A	0.0	0.0	0.00	0.13	0.00	58.8
Approach			120	3.5	120	3.5	0.064	1.2	LOS A	0.0	0.0	0.00	0.13	0.00	58.3
All Vehicles			392	2.7	392	2.7	0.105	4.2	LOS A	0.5	3.6	0.15	0.38	0.15	57.7

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Canterbury Road E (Weekend Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Canterbury Road E
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Rennie Street															
25	T1	All MCs	63	5.0	63	5.0	0.068	0.1	LOS A	0.3	2.0	0.14	0.29	0.14	57.0
26	R2	All MCs	57	1.9	57	1.9	0.068	5.7	LOS A	0.3	2.0	0.14	0.29	0.14	59.6
Approach			120	3.5	120	3.5	0.068	2.8	LOS A	0.3	2.0	0.14	0.29	0.14	58.2
NorthWest: Canterbury Road E															
27	L2	All MCs	60	0.0	60	0.0	0.047	7.1	LOS A	0.2	1.3	0.14	0.59	0.14	57.7
29	R2	All MCs	9	0.0	9	0.0	0.047	7.3	LOS A	0.2	1.3	0.14	0.59	0.14	57.4
Approach			69	0.0	69	0.0	0.047	7.1	LOS A	0.2	1.3	0.14	0.59	0.14	57.7
SouthWest: Rennie Street															
30	L2	All MCs	12	0.0	12	0.0	0.034	5.5	LOS A	0.0	0.0	0.00	0.11	0.00	56.6
31	T1	All MCs	54	3.9	54	3.9	0.034	0.0	LOS A	0.0	0.0	0.00	0.11	0.00	59.0
Approach			65	3.2	65	3.2	0.034	1.0	LOS A	0.0	0.0	0.00	0.11	0.00	58.6
All Vehicles			255	2.5	255	2.5	0.068	3.5	LOS A	0.3	2.0	0.10	0.33	0.10	58.2

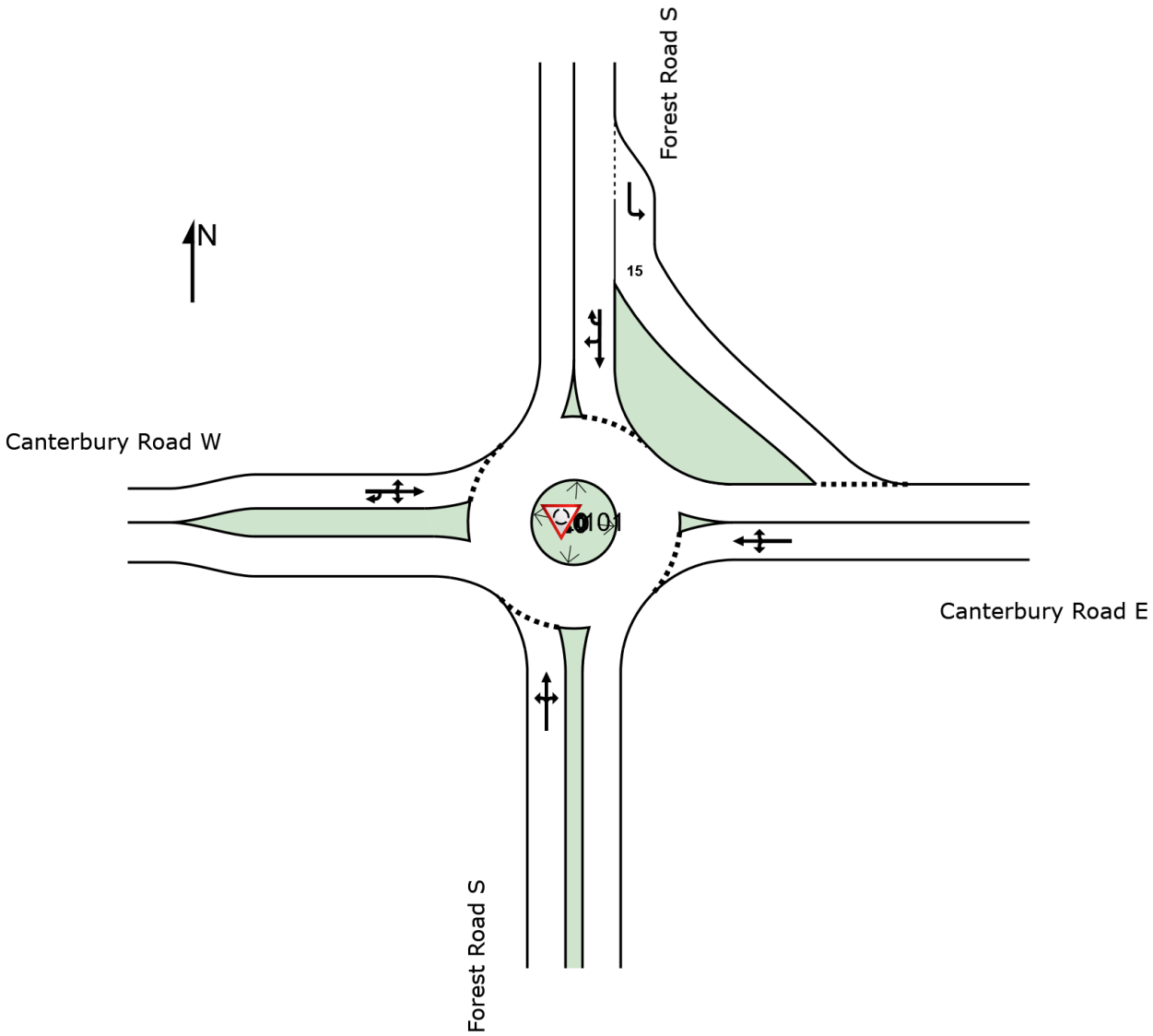
Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SITE LAYOUT

Site: 101 [Forest Road S/Canterbury Road W (AM Peak) (Site Folder: Existing Conditions - Appendix C)]

Forest Road S/Canterbury Road W
Site Category: (None)
Roundabout

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



MOVEMENT SUMMARY

Site: 101 [Forest Road S/Canterbury Road W (AM Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Forest Road S/Canterbury Road W
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Road S															
1	L2	All MCs	43	2.4	43	2.4	0.323	5.5	LOS A	1.9	14.2	0.38	0.52	0.38	52.0
2	T1	All MCs	297	6.0	297	6.0	0.323	5.6	LOS A	1.9	14.2	0.38	0.52	0.38	52.4
3	R2	All MCs	36	2.9	36	2.9	0.323	8.9	LOS A	1.9	14.2	0.38	0.52	0.38	51.7
Approach			376	5.3	376	5.3	0.323	5.9	LOS A	1.9	14.2	0.38	0.52	0.38	52.3
East: Canterbury Road E															
4	L2	All MCs	80	3.9	80	3.9	0.261	9.7	LOS A	1.6	11.5	0.76	0.76	0.76	49.0
5	T1	All MCs	25	4.2	25	4.2	0.261	9.9	LOS A	1.6	11.5	0.76	0.76	0.76	49.4
6	R2	All MCs	66	4.8	66	4.8	0.261	13.2	LOS A	1.6	11.5	0.76	0.76	0.76	48.7
Approach			172	4.3	172	4.3	0.261	11.1	LOS A	1.6	11.5	0.76	0.76	0.76	49.0
North: Forest Road S															
7	L2	All MCs	54	3.9	54	3.9	0.040	5.0	LOS A	0.2	1.3	0.25	0.53	0.25	52.9
8	T1	All MCs	489	4.5	489	4.5	0.460	6.4	LOS A	3.2	23.1	0.58	0.59	0.58	51.6
9	R2	All MCs	49	0.0	49	0.0	0.460	9.5	LOS A	3.2	23.1	0.58	0.59	0.58	51.0
9u	U	All MCs	6	16.7	6	16.7	0.460	11.6	LOS A	3.2	23.1	0.58	0.59	0.58	50.4
Approach			599	4.2	599	4.2	0.460	6.6	LOS A	3.2	23.1	0.55	0.59	0.55	51.7
West: Canterbury Road W															
10	L2	All MCs	94	1.1	94	1.1	0.423	7.7	LOS A	2.8	19.8	0.67	0.69	0.67	50.2
11	T1	All MCs	88	1.2	88	1.2	0.423	7.9	LOS A	2.8	19.8	0.67	0.69	0.67	50.5
12	R2	All MCs	197	0.5	197	0.5	0.423	11.1	LOS A	2.8	19.8	0.67	0.69	0.67	49.9
12u	U	All MCs	1	0.0	1	0.0	0.423	12.8	LOS A	2.8	19.8	0.67	0.69	0.67	49.9
Approach			380	0.8	380	0.8	0.423	9.5	LOS A	2.8	19.8	0.67	0.69	0.67	50.1
All Vehicles			1526	3.7	1526	3.7	0.460	7.7	LOS A	3.2	23.1	0.56	0.61	0.56	51.1

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Forest Road S/Canterbury Road W (School Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Forest Road S/Canterbury Road W
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Road S															
1	L2	All MCs	187	2.2	187	2.2	0.664	7.1	LOS B	6.3	44.8	0.66	0.62	0.70	51.0
2	T1	All MCs	463	3.0	463	3.0	0.664	7.3	LOS B	6.3	44.8	0.66	0.62	0.70	51.4
3	R2	All MCs	98	2.2	98	2.2	0.664	10.5	LOS B	6.3	44.8	0.66	0.62	0.70	50.7
Approach			748	2.7	748	2.7	0.664	7.7	LOS B	6.3	44.8	0.66	0.62	0.70	51.2
East: Canterbury Road E															
4	L2	All MCs	56	1.9	56	1.9	0.214	7.9	LOS A	1.2	8.6	0.64	0.69	0.64	50.5
5	T1	All MCs	63	3.3	63	3.3	0.214	8.1	LOS A	1.2	8.6	0.64	0.69	0.64	50.9
6	R2	All MCs	52	6.1	52	6.1	0.214	11.5	LOS A	1.2	8.6	0.64	0.69	0.64	50.0
Approach			171	3.7	171	3.7	0.214	9.1	LOS A	1.2	8.6	0.64	0.69	0.64	50.5
North: Forest Road S															
7	L2	All MCs	64	1.6	64	1.6	0.047	5.0	LOS A	0.2	1.5	0.26	0.53	0.26	52.9
8	T1	All MCs	344	2.1	344	2.1	0.358	5.8	LOS A	2.2	15.4	0.45	0.57	0.45	51.9
9	R2	All MCs	111	1.0	111	1.0	0.358	9.0	LOS A	2.2	15.4	0.45	0.57	0.45	51.3
9u	U	All MCs	6	16.7	6	16.7	0.358	11.0	LOS A	2.2	15.4	0.45	0.57	0.45	50.6
Approach			525	2.0	525	2.0	0.358	6.4	LOS A	2.2	15.4	0.42	0.56	0.42	51.9
West: Canterbury Road W															
10	L2	All MCs	54	3.9	54	3.9	0.281	9.1	LOS A	1.8	12.9	0.76	0.74	0.76	49.2
11	T1	All MCs	41	2.6	41	2.6	0.281	9.2	LOS A	1.8	12.9	0.76	0.74	0.76	49.7
12	R2	All MCs	100	2.1	100	2.1	0.281	12.4	LOS A	1.8	12.9	0.76	0.74	0.76	49.0
12u	U	All MCs	1	0.0	1	0.0	0.281	14.0	LOS A	1.8	12.9	0.76	0.74	0.76	49.1
Approach			196	2.7	196	2.7	0.281	10.8	LOS A	1.8	12.9	0.76	0.74	0.76	49.2
All Vehicles			1640	2.6	1640	2.6	0.664	7.8	LOS B	6.3	44.8	0.60	0.62	0.61	51.1

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Forest Road S/Canterbury Road W (PM Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Forest Road S/Canterbury Road W
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Road S															
1	L2	All MCs	183	0.6	183	0.6	0.656	6.8	LOS B	6.0	42.5	0.65	0.61	0.66	51.2
2	T1	All MCs	466	2.0	466	2.0	0.656	6.9	LOS B	6.0	42.5	0.65	0.61	0.66	51.6
3	R2	All MCs	103	2.0	103	2.0	0.656	10.2	LOS B	6.0	42.5	0.65	0.61	0.66	50.8
Approach			753	1.7	753	1.7	0.656	7.3	LOS B	6.0	42.5	0.65	0.61	0.66	51.4
East: Canterbury Road E															
4	L2	All MCs	75	1.4	75	1.4	0.236	7.9	LOS A	1.3	9.5	0.64	0.69	0.64	50.6
5	T1	All MCs	67	0.0	67	0.0	0.236	7.9	LOS A	1.3	9.5	0.64	0.69	0.64	51.1
6	R2	All MCs	51	6.3	51	6.3	0.236	11.5	LOS A	1.3	9.5	0.64	0.69	0.64	50.2
Approach			193	2.2	193	2.2	0.236	8.9	LOS A	1.3	9.5	0.64	0.69	0.64	50.7
North: Forest Road S															
7	L2	All MCs	81	3.9	81	3.9	0.060	5.0	LOS A	0.3	2.0	0.26	0.53	0.26	52.8
8	T1	All MCs	355	2.4	355	2.4	0.351	5.7	LOS A	2.1	14.9	0.43	0.56	0.43	52.0
9	R2	All MCs	98	2.2	98	2.2	0.351	9.0	LOS A	2.1	14.9	0.43	0.56	0.43	51.3
9u	U	All MCs	4	0.0	4	0.0	0.351	10.6	LOS A	2.1	14.9	0.43	0.56	0.43	51.4
Approach			538	2.5	538	2.5	0.351	6.2	LOS A	2.1	14.9	0.41	0.55	0.41	52.0
West: Canterbury Road W															
10	L2	All MCs	60	3.5	60	3.5	0.266	9.0	LOS A	1.7	12.1	0.75	0.74	0.75	49.3
11	T1	All MCs	31	3.4	31	3.4	0.266	9.2	LOS A	1.7	12.1	0.75	0.74	0.75	49.7
12	R2	All MCs	95	1.1	95	1.1	0.266	12.3	LOS A	1.7	12.1	0.75	0.74	0.75	49.1
12u	U	All MCs	1	0.0	1	0.0	0.266	14.0	LOS A	1.7	12.1	0.75	0.74	0.75	49.1
Approach			186	2.3	186	2.3	0.266	10.8	LOS A	1.7	12.1	0.75	0.74	0.75	49.2
All Vehicles			1669	2.1	1669	2.1	0.656	7.5	LOS B	6.0	42.5	0.58	0.61	0.59	51.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Forest Road S/Canterbury Road W (Weekend Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Forest Road S/Canterbury Road W
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Road S															
1	L2	All MCs	118	0.0	118	0.0	0.440	5.3	LOS A	3.0	20.9	0.37	0.51	0.37	52.2
2	T1	All MCs	392	0.3	392	0.3	0.440	5.5	LOS A	3.0	20.9	0.37	0.51	0.37	52.6
3	R2	All MCs	52	2.0	52	2.0	0.440	8.8	LOS A	3.0	20.9	0.37	0.51	0.37	51.8
Approach			561	0.4	561	0.4	0.440	5.7	LOS A	3.0	20.9	0.37	0.51	0.37	52.5
East: Canterbury Road E															
4	L2	All MCs	69	3.0	69	3.0	0.169	8.2	LOS A	0.9	6.7	0.65	0.71	0.65	50.3
5	T1	All MCs	24	0.0	24	0.0	0.169	8.2	LOS A	0.9	6.7	0.65	0.71	0.65	50.8
6	R2	All MCs	37	5.7	37	5.7	0.169	11.8	LOS A	0.9	6.7	0.65	0.71	0.65	49.9
Approach			131	3.2	131	3.2	0.169	9.2	LOS A	0.9	6.7	0.65	0.71	0.65	50.3
North: Forest Road S															
7	L2	All MCs	61	5.2	61	5.2	0.044	4.9	LOS A	0.2	1.3	0.19	0.52	0.19	53.0
8	T1	All MCs	427	0.5	427	0.5	0.366	5.6	LOS A	2.3	16.0	0.43	0.54	0.43	52.3
9	R2	All MCs	60	0.0	60	0.0	0.366	8.9	LOS A	2.3	16.0	0.43	0.54	0.43	51.6
9u	U	All MCs	1	0.0	1	0.0	0.366	10.6	LOS A	2.3	16.0	0.43	0.54	0.43	51.6
Approach			549	1.0	549	1.0	0.366	5.9	LOS A	2.3	16.0	0.40	0.54	0.40	52.3
West: Canterbury Road W															
10	L2	All MCs	48	0.0	48	0.0	0.250	7.7	LOS A	1.5	10.4	0.64	0.70	0.64	50.0
11	T1	All MCs	34	0.0	34	0.0	0.250	7.8	LOS A	1.5	10.4	0.64	0.70	0.64	50.4
12	R2	All MCs	129	0.8	129	0.8	0.250	11.1	LOS A	1.5	10.4	0.64	0.70	0.64	49.7
12u	U	All MCs	1	0.0	1	0.0	0.250	12.8	LOS A	1.5	10.4	0.64	0.70	0.64	49.7
Approach			213	0.5	213	0.5	0.250	9.8	LOS A	1.5	10.4	0.64	0.70	0.64	49.9
All Vehicles			1454	0.9	1454	0.9	0.440	6.7	LOS A	3.0	20.9	0.45	0.56	0.45	51.8

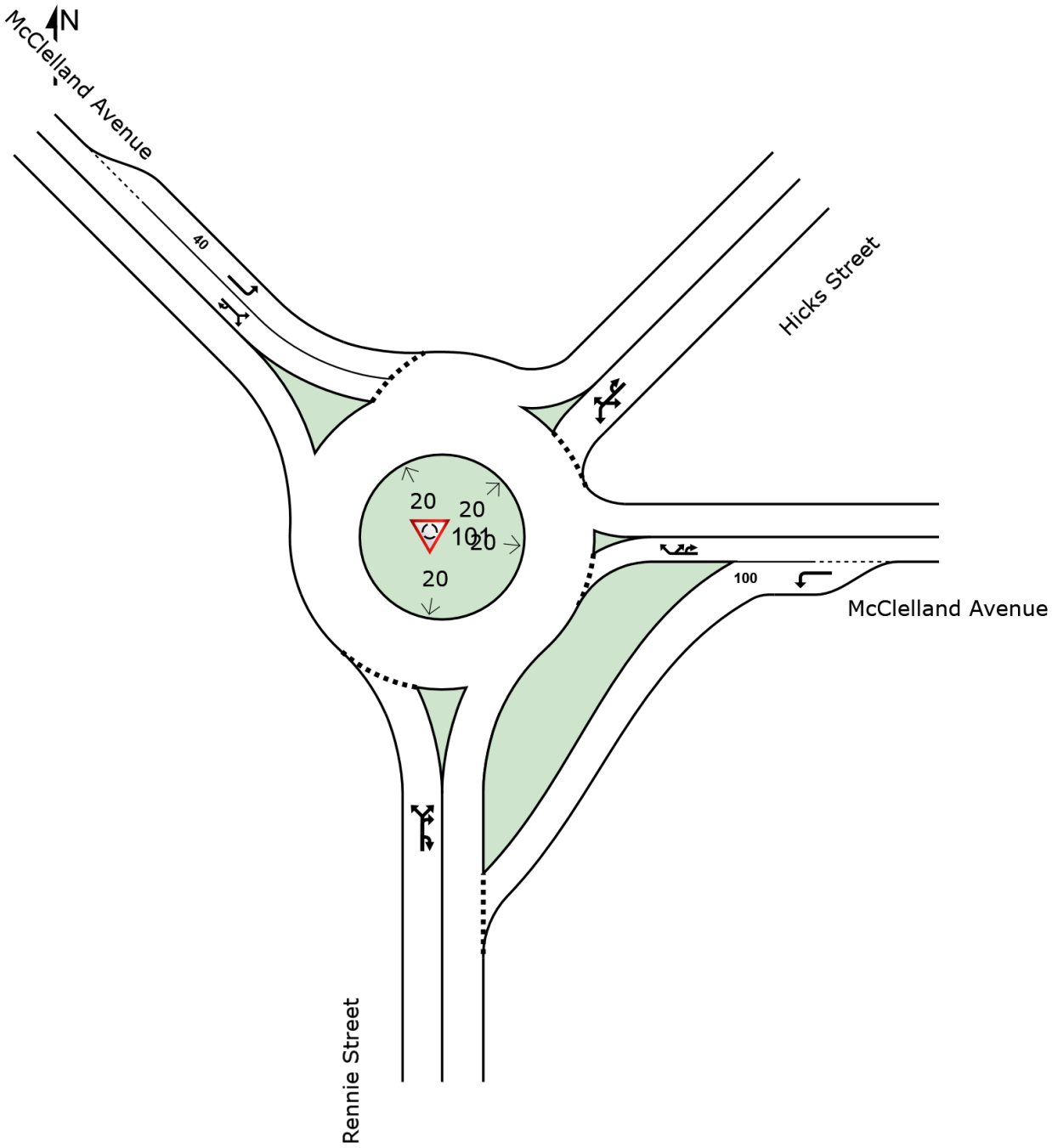
Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SITE LAYOUT

Site: 101 [Rennie Street/McClelland Avenue (AM Peak) (Site Folder: Existing Conditions - Appendix C)]

Rennie Street/McClelland Avenue
Site Category: (None)
Roundabout

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



MOVEMENT SUMMARY

Site: 101 [Rennie Street/McClelland Avenue (AM Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/McClelland Avenue
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
1a	L1	All MCs	174	3.0	174	3.0	0.271	6.0	LOS A	1.5	10.8	0.57	0.63	0.57	52.1
3a	R1	All MCs	42	2.5	42	2.5	0.271	9.9	LOS A	1.5	10.8	0.57	0.63	0.57	51.3
3	R2	All MCs	51	4.2	51	4.2	0.271	11.0	LOS A	1.5	10.8	0.57	0.63	0.57	53.0
3u	U	All MCs	1	0.0	1	0.0	0.271	13.0	LOS A	1.5	10.8	0.57	0.63	0.57	51.4
Approach			267	3.1	267	3.1	0.271	7.6	LOS A	1.5	10.8	0.57	0.63	0.57	52.1
East: McClelland Avenue															
4	L2	All MCs	9	0.0	9	0.0	0.006	5.1	LOS A	0.0	0.2	0.29	0.48	0.29	57.1
6a	R1	All MCs	314	5.4	314	5.4	0.276	10.0	LOS A	1.8	13.4	0.46	0.62	0.46	52.3
6b	R3	All MCs	45	2.3	45	2.3	0.276	12.2	LOS A	1.8	13.4	0.46	0.62	0.46	52.4
6u	U	All MCs	12	0.0	12	0.0	0.276	13.3	LOS A	1.8	13.4	0.46	0.62	0.46	52.5
Approach			380	4.7	380	4.7	0.276	10.3	LOS A	1.8	13.4	0.45	0.61	0.45	52.5
NorthEast: Hicks Street															
24b	L3	All MCs	26	0.0	26	0.0	0.133	6.0	LOS A	0.7	4.8	0.52	0.67	0.52	53.4
24a	L1	All MCs	18	5.9	18	5.9	0.133	5.8	LOS A	0.7	4.8	0.52	0.67	0.52	51.3
26	R2	All MCs	84	7.5	84	7.5	0.133	10.8	LOS A	0.7	4.8	0.52	0.67	0.52	50.4
26u	U	All MCs	1	0.0	1	0.0	0.133	12.7	LOS A	0.7	4.8	0.52	0.67	0.52	50.6
Approach			129	5.7	129	5.7	0.133	9.2	LOS A	0.7	4.8	0.52	0.67	0.52	51.1
NorthWest: McClelland Avenue															
27	L2	All MCs	96	8.8	96	8.8	0.107	5.5	LOS A	0.6	4.8	0.43	0.52	0.43	53.1
27a	L1	All MCs	309	4.4	309	4.4	0.297	4.6	LOS A	2.2	16.0	0.42	0.49	0.42	53.0
29a	R1	All MCs	109	0.0	109	0.0	0.297	8.5	LOS A	2.2	16.0	0.42	0.49	0.42	54.9
29u	U	All MCs	6	0.0	6	0.0	0.297	11.7	LOS A	2.2	16.0	0.42	0.49	0.42	52.2
Approach			521	4.2	521	4.2	0.297	5.7	LOS A	2.2	16.0	0.42	0.50	0.42	53.4
All Vehicles			1298	4.3	1298	4.3	0.297	7.8	LOS A	2.2	16.0	0.47	0.58	0.47	52.6

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/McClelland Avenue (School Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/McClelland Avenue
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
1a	L1	All MCs	143	0.0	143	0.0	0.251	6.2	LOS A	1.4	10.2	0.62	0.66	0.62	51.9
3a	R1	All MCs	52	4.1	52	4.1	0.251	10.3	LOS A	1.4	10.2	0.62	0.66	0.62	51.0
3	R2	All MCs	39	2.7	39	2.7	0.251	11.3	LOS A	1.4	10.2	0.62	0.66	0.62	53.1
3u	U	All MCs	2	0.0	2	0.0	0.251	13.3	LOS A	1.4	10.2	0.62	0.66	0.62	51.1
Approach			236	1.3	236	1.3	0.251	8.0	LOS A	1.4	10.2	0.62	0.66	0.62	51.9
East: McClelland Avenue															
4	L2	All MCs	63	0.0	63	0.0	0.046	5.5	LOS A	0.3	1.8	0.38	0.52	0.38	56.8
6a	R1	All MCs	394	2.1	394	2.1	0.334	10.6	LOS A	2.4	16.9	0.58	0.64	0.58	52.2
6b	R3	All MCs	19	5.6	19	5.6	0.334	13.0	LOS A	2.4	16.9	0.58	0.64	0.58	52.1
6u	U	All MCs	2	50.0	2	50.0	0.334	15.6	LOS A	2.4	16.9	0.58	0.64	0.58	50.5
Approach			478	2.2	478	2.2	0.334	10.1	LOS A	2.4	16.9	0.56	0.63	0.56	52.8
NorthEast: Hicks Street															
24b	L3	All MCs	37	5.7	37	5.7	0.218	6.5	LOS A	1.1	8.3	0.57	0.67	0.57	52.2
24a	L1	All MCs	53	4.0	53	4.0	0.218	6.0	LOS A	1.1	8.3	0.57	0.67	0.57	51.3
26	R2	All MCs	118	5.4	118	5.4	0.218	11.1	LOS A	1.1	8.3	0.57	0.67	0.57	50.5
26u	U	All MCs	1	0.0	1	0.0	0.218	13.0	LOS A	1.1	8.3	0.57	0.67	0.57	50.6
Approach			208	5.1	208	5.1	0.218	9.0	LOS A	1.1	8.3	0.57	0.67	0.57	51.0
NorthWest: McClelland Avenue															
27	L2	All MCs	85	6.2	85	6.2	0.090	5.2	LOS A	0.6	4.1	0.38	0.49	0.38	53.3
27a	L1	All MCs	318	3.3	318	3.3	0.319	4.4	LOS A	2.6	18.5	0.39	0.48	0.39	53.0
29a	R1	All MCs	155	4.1	155	4.1	0.319	8.4	LOS A	2.6	18.5	0.39	0.48	0.39	54.0
29u	U	All MCs	1	0.0	1	0.0	0.319	11.5	LOS A	2.6	18.5	0.39	0.48	0.39	52.2
Approach			559	4.0	559	4.0	0.319	5.6	LOS A	2.6	18.5	0.39	0.48	0.39	53.3
All Vehicles			1481	3.1	1481	3.1	0.334	7.9	LOS A	2.6	18.5	0.50	0.59	0.50	52.6

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/McClelland Avenue (PM Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/McClelland Avenue
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
1a	L1	All MCs	147	0.7	147	0.7	0.247	6.4	LOS A	1.4	10.1	0.63	0.66	0.63	51.9
3a	R1	All MCs	37	5.7	37	5.7	0.247	10.5	LOS A	1.4	10.1	0.63	0.66	0.63	50.9
3	R2	All MCs	40	2.6	40	2.6	0.247	11.5	LOS A	1.4	10.1	0.63	0.66	0.63	53.1
3u	U	All MCs	1	0.0	1	0.0	0.247	13.5	LOS A	1.4	10.1	0.63	0.66	0.63	51.1
Approach			225	1.9	225	1.9	0.247	8.0	LOS A	1.4	10.1	0.63	0.66	0.63	52.0
East: McClelland Avenue															
4	L2	All MCs	62	0.0	62	0.0	0.044	5.4	LOS A	0.2	1.7	0.35	0.52	0.35	56.9
6a	R1	All MCs	426	0.7	426	0.7	0.350	10.5	LOS A	2.5	17.7	0.57	0.64	0.57	52.3
6b	R3	All MCs	21	0.0	21	0.0	0.350	12.7	LOS A	2.5	17.7	0.57	0.64	0.57	52.4
6u	U	All MCs	1	0.0	1	0.0	0.350	13.8	LOS A	2.5	17.7	0.57	0.64	0.57	52.4
Approach			511	0.6	511	0.6	0.350	10.0	LOS A	2.5	17.7	0.54	0.62	0.54	52.8
NorthEast: Hicks Street															
24b	L3	All MCs	46	0.0	46	0.0	0.216	6.2	LOS A	1.1	8.0	0.54	0.66	0.54	53.7
24a	L1	All MCs	54	2.0	54	2.0	0.216	5.8	LOS A	1.1	8.0	0.54	0.66	0.54	51.7
26	R2	All MCs	113	6.5	113	6.5	0.216	11.0	LOS A	1.1	8.0	0.54	0.66	0.54	50.7
26u	U	All MCs	1	0.0	1	0.0	0.216	12.8	LOS A	1.1	8.0	0.54	0.66	0.54	50.9
Approach			214	3.9	214	3.9	0.216	8.6	LOS A	1.1	8.0	0.54	0.66	0.54	51.6
NorthWest: McClelland Avenue															
27	L2	All MCs	76	8.3	76	8.3	0.080	5.0	LOS A	0.5	3.6	0.35	0.49	0.35	53.3
27a	L1	All MCs	308	3.4	308	3.4	0.294	4.3	LOS A	2.3	16.6	0.36	0.47	0.36	53.2
29a	R1	All MCs	134	2.4	134	2.4	0.294	8.3	LOS A	2.3	16.6	0.36	0.47	0.36	54.5
29u	U	All MCs	2	0.0	2	0.0	0.294	11.4	LOS A	2.3	16.6	0.36	0.47	0.36	52.4
Approach			520	3.8	520	3.8	0.294	5.5	LOS A	2.3	16.6	0.36	0.48	0.36	53.5
All Vehicles			1469	2.4	1469	2.4	0.350	7.9	LOS A	2.5	17.7	0.49	0.58	0.49	52.8

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/McClelland Avenue (Weekend Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/McClelland Avenue
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
1a	L1	All MCs	133	0.8	133	0.8	0.161	5.3	LOS A	0.8	5.8	0.47	0.57	0.47	52.9
3a	R1	All MCs	6	33.3	6	33.3	0.161	10.1	LOS A	0.8	5.8	0.47	0.57	0.47	50.8
3	R2	All MCs	31	3.4	31	3.4	0.161	10.3	LOS A	0.8	5.8	0.47	0.57	0.47	53.9
3u	U	All MCs	1	100.0	1	100.0	0.161	15.0	LOS A	0.8	5.8	0.47	0.57	0.47	48.5
Approach			171	3.1	171	3.1	0.161	6.4	LOS A	0.8	5.8	0.47	0.57	0.47	53.0
East: McClelland Avenue															
4	L2	All MCs	49	0.0	49	0.0	0.034	5.2	LOS A	0.2	1.3	0.30	0.50	0.30	57.1
6a	R1	All MCs	296	2.1	296	2.1	0.225	9.8	LOS A	1.4	10.1	0.42	0.61	0.42	52.7
6b	R3	All MCs	13	0.0	13	0.0	0.225	12.0	LOS A	1.4	10.1	0.42	0.61	0.42	52.8
6u	U	All MCs	1	0.0	1	0.0	0.225	13.2	LOS A	1.4	10.1	0.42	0.61	0.42	52.8
Approach			359	1.8	359	1.8	0.225	9.3	LOS A	1.4	10.1	0.41	0.60	0.41	53.3
NorthEast: Hicks Street															
24b	L3	All MCs	5	0.0	5	0.0	0.083	6.0	LOS A	0.4	2.8	0.49	0.67	0.49	53.0
24a	L1	All MCs	13	0.0	13	0.0	0.083	5.6	LOS A	0.4	2.8	0.49	0.67	0.49	51.1
26	R2	All MCs	63	5.0	63	5.0	0.083	10.7	LOS A	0.4	2.8	0.49	0.67	0.49	50.1
26u	U	All MCs	1	0.0	1	0.0	0.083	12.7	LOS A	0.4	2.8	0.49	0.67	0.49	50.3
Approach			82	3.8	82	3.8	0.083	9.7	LOS A	0.4	2.8	0.49	0.67	0.49	50.5
NorthWest: McClelland Avenue															
27	L2	All MCs	77	2.7	77	2.7	0.073	4.5	LOS A	0.4	3.1	0.24	0.46	0.24	53.9
27a	L1	All MCs	341	1.2	341	1.2	0.290	4.0	LOS A	2.2	15.8	0.24	0.46	0.24	53.7
29a	R1	All MCs	129	0.0	129	0.0	0.290	8.0	LOS A	2.2	15.8	0.24	0.46	0.24	55.6
29u	U	All MCs	6	0.0	6	0.0	0.290	11.1	LOS A	2.2	15.8	0.24	0.46	0.24	52.8
Approach			554	1.1	554	1.1	0.290	5.1	LOS A	2.2	15.8	0.24	0.46	0.24	54.1
All Vehicles			1165	1.8	1165	1.8	0.290	6.9	LOS A	2.2	15.8	0.35	0.53	0.35	53.4

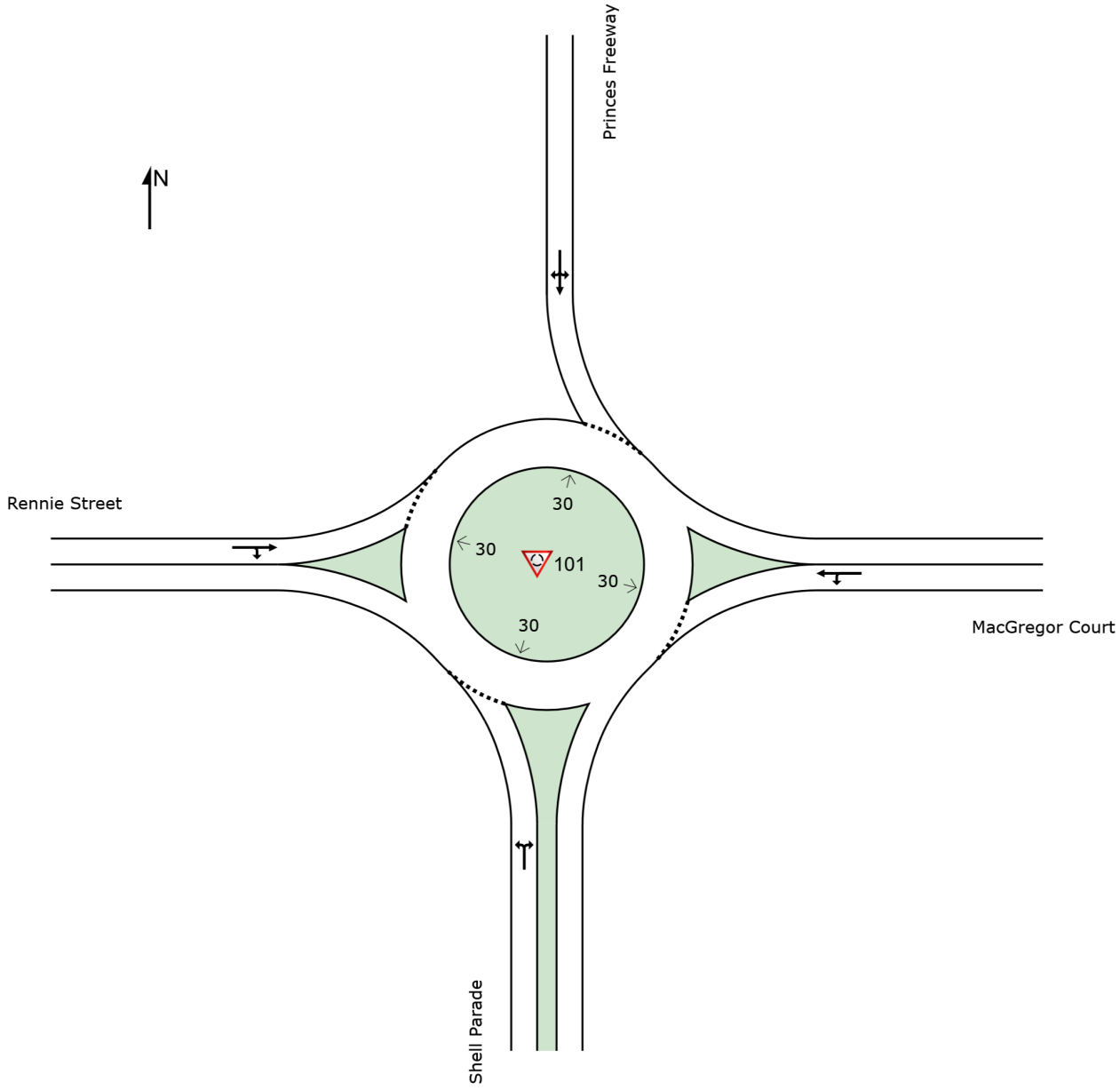
Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SITE LAYOUT

Site: 101 [Rennie Street/MacGregor Court (AM Peak) (Site Folder: Existing Conditions - Appendix C)]

Rennie Street/MacGregor Court/Shell Parade
Site Category: (None)
Roundabout

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



MOVEMENT SUMMARY

Site: 101 [Rennie Street/MacGregor Court (AM Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/MacGregor Court/Shell Parade
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Shell Parade															
1	L2	All MCs	126	21.7	126	21.7	0.089	3.6	LOS A	0.5	3.9	0.07	0.42	0.07	54.7
3	R2	All MCs	4	0.0	4	0.0	0.089	9.1	LOS A	0.5	3.9	0.07	0.42	0.07	54.6
Approach			131	21.0	131	21.0	0.089	3.8	LOS A	0.5	3.9	0.07	0.42	0.07	54.7
East: MacGregor Court															
4	L2	All MCs	3	0.0	3	0.0	0.010	4.6	LOS A	0.0	0.3	0.41	0.43	0.41	53.9
5	T1	All MCs	8	0.0	8	0.0	0.010	4.5	LOS A	0.0	0.3	0.41	0.43	0.41	54.3
Approach			12	0.0	12	0.0	0.010	4.5	LOS A	0.0	0.3	0.41	0.43	0.41	54.1
North: Princes Freeway															
7	L2	All MCs	1	0.0	1	0.0	0.144	3.9	LOS A	0.7	5.8	0.27	0.38	0.27	54.4
8	T1	All MCs	175	16.9	175	16.9	0.144	4.0	LOS A	0.7	5.8	0.27	0.38	0.27	54.5
9	R2	All MCs	3	0.0	3	0.0	0.144	9.6	LOS A	0.7	5.8	0.27	0.38	0.27	53.8
Approach			179	16.5	179	16.5	0.144	4.1	LOS A	0.7	5.8	0.27	0.38	0.27	54.5
West: Rennie Street															
11	T1	All MCs	1	0.0	1	0.0	0.065	3.4	LOS A	0.3	2.2	0.03	0.63	0.03	51.9
12	R2	All MCs	106	4.0	106	4.0	0.065	9.2	LOS A	0.3	2.2	0.03	0.63	0.03	50.9
Approach			107	3.9	107	3.9	0.065	9.1	LOS A	0.3	2.2	0.03	0.63	0.03	50.9
All Vehicles			428	14.3	428	14.3	0.144	5.3	LOS A	0.7	5.8	0.16	0.46	0.16	53.6

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/MacGregor Court (School Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/MacGregor Court/Shell Parade
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Shell Parade															
1	L2	All MCs	314	6.7	314	6.7	0.189	3.5	LOS A	1.1	7.8	0.04	0.42	0.04	55.3
3	R2	All MCs	4	0.0	4	0.0	0.189	9.1	LOS A	1.1	7.8	0.04	0.42	0.04	54.8
Approach			318	6.6	318	6.6	0.189	3.5	LOS A	1.1	7.8	0.04	0.42	0.04	55.3
East: MacGregor Court															
4	L2	All MCs	3	0.0	3	0.0	0.004	4.1	LOS A	0.0	0.1	0.32	0.40	0.32	54.4
5	T1	All MCs	2	0.0	2	0.0	0.004	4.1	LOS A	0.0	0.1	0.32	0.40	0.32	54.8
Approach			5	0.0	5	0.0	0.004	4.1	LOS A	0.0	0.1	0.32	0.40	0.32	54.5
North: Princes Freeway															
7	L2	All MCs	2	0.0	2	0.0	0.089	3.7	LOS A	0.4	3.5	0.22	0.36	0.22	54.6
8	T1	All MCs	108	18.4	108	18.4	0.089	3.9	LOS A	0.4	3.5	0.22	0.36	0.22	54.7
9	R2	All MCs	2	0.0	2	0.0	0.089	9.4	LOS A	0.4	3.5	0.22	0.36	0.22	54.0
Approach			113	17.8	113	17.8	0.089	4.0	LOS A	0.4	3.5	0.22	0.36	0.22	54.7
West: Rennie Street															
11	T1	All MCs	3	0.0	3	0.0	0.047	3.4	LOS A	0.2	1.6	0.03	0.62	0.03	52.0
12	R2	All MCs	72	8.8	72	8.8	0.047	9.2	LOS A	0.2	1.6	0.03	0.62	0.03	50.9
Approach			75	8.5	75	8.5	0.047	9.0	LOS A	0.2	1.6	0.03	0.62	0.03	50.9
All Vehicles			511	9.3	511	9.3	0.189	4.4	LOS A	1.1	7.8	0.08	0.44	0.08	54.5

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/MacGregor Court (PM Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/MacGregor Court/Shell Parade
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Shell Parade															
1	L2	All MCs	263	9.6	263	9.6	0.165	3.5	LOS A	0.9	6.6	0.04	0.43	0.04	55.2
3	R2	All MCs	7	0.0	7	0.0	0.165	9.1	LOS A	0.9	6.6	0.04	0.43	0.04	54.8
Approach			271	9.3	271	9.3	0.165	3.6	LOS A	0.9	6.6	0.04	0.43	0.04	55.1
East: MacGregor Court															
4	L2	All MCs	2	0.0	2	0.0	0.003	4.0	LOS A	0.0	0.1	0.29	0.38	0.29	54.5
5	T1	All MCs	2	0.0	2	0.0	0.003	3.9	LOS A	0.0	0.1	0.29	0.38	0.29	54.9
Approach			4	0.0	4	0.0	0.003	4.0	LOS A	0.0	0.1	0.29	0.38	0.29	54.7
North: Princes Freeway															
7	L2	All MCs	1	0.0	1	0.0	0.074	3.7	LOS A	0.3	2.9	0.20	0.36	0.20	54.7
8	T1	All MCs	87	24.1	87	24.1	0.074	3.8	LOS A	0.3	2.9	0.20	0.36	0.20	54.7
9	R2	All MCs	3	0.0	3	0.0	0.074	9.4	LOS A	0.3	2.9	0.20	0.36	0.20	54.0
Approach			92	23.0	92	23.0	0.074	4.0	LOS A	0.3	2.9	0.20	0.36	0.20	54.6
West: Rennie Street															
11	T1	All MCs	1	0.0	1	0.0	0.037	3.4	LOS A	0.2	1.3	0.05	0.62	0.05	51.9
12	R2	All MCs	55	11.5	55	11.5	0.037	9.2	LOS A	0.2	1.3	0.05	0.62	0.05	50.7
Approach			56	11.3	56	11.3	0.037	9.1	LOS A	0.2	1.3	0.05	0.62	0.05	50.7
All Vehicles			422	12.5	422	12.5	0.165	4.5	LOS A	0.9	6.6	0.08	0.44	0.08	54.4

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/MacGregor Court (Weekend Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/MacGregor Court/Shell Parade
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Shell Parade															
1	L2	All MCs	140	8.3	140	8.3	0.089	3.5	LOS A	0.4	3.4	0.04	0.43	0.04	55.2
3	R2	All MCs	4	0.0	4	0.0	0.089	9.1	LOS A	0.4	3.4	0.04	0.43	0.04	54.8
Approach			144	8.0	144	8.0	0.089	3.6	LOS A	0.4	3.4	0.04	0.43	0.04	55.2
East: MacGregor Court															
4	L2	All MCs	5	0.0	5	0.0	0.005	4.1	LOS A	0.0	0.2	0.32	0.42	0.32	54.5
5	T1	All MCs	1	0.0	1	0.0	0.005	4.0	LOS A	0.0	0.2	0.32	0.42	0.32	54.9
Approach			6	0.0	6	0.0	0.005	4.1	LOS A	0.0	0.2	0.32	0.42	0.32	54.5
North: Princes Freeway															
7	L2	All MCs	1	0.0	1	0.0	0.087	3.7	LOS A	0.4	3.2	0.21	0.37	0.21	54.6
8	T1	All MCs	109	10.6	109	10.6	0.087	3.8	LOS A	0.4	3.2	0.21	0.37	0.21	54.8
9	R2	All MCs	4	0.0	4	0.0	0.087	9.4	LOS A	0.4	3.2	0.21	0.37	0.21	54.0
Approach			115	10.1	115	10.1	0.087	4.0	LOS A	0.4	3.2	0.21	0.37	0.21	54.8
West: Rennie Street															
11	T1	All MCs	2	0.0	2	0.0	0.044	3.4	LOS A	0.2	1.5	0.03	0.63	0.03	52.0
12	R2	All MCs	69	3.0	69	3.0	0.044	9.1	LOS A	0.2	1.5	0.03	0.63	0.03	51.0
Approach			72	2.9	72	2.9	0.044	9.0	LOS A	0.2	1.5	0.03	0.63	0.03	51.0
All Vehicles			337	7.5	337	7.5	0.089	4.9	LOS A	0.4	3.4	0.10	0.45	0.10	54.1

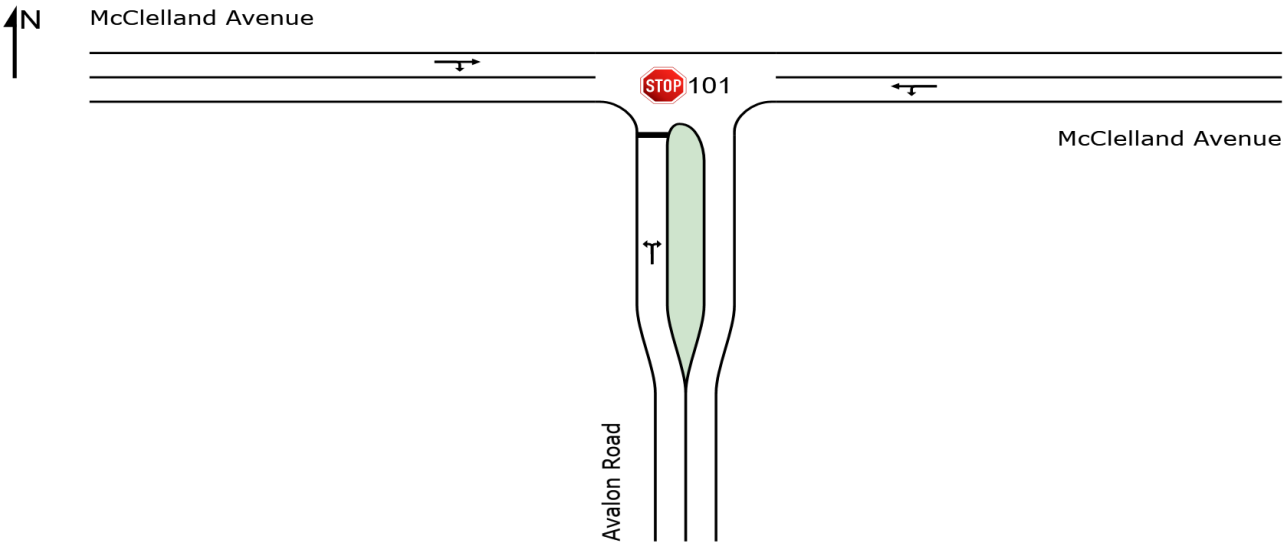
Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SITE LAYOUT

Site: 101 [Avalon Road/McClelland Avenue (AM Peak) (Site Folder: Existing Conditions - Appendix C)]

Avalon Road/McClelland Avenue
Site Category: (None)
Stop (Two-Way)

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



MOVEMENT SUMMARY

Site: 101 [Avalon Road/McClelland Avenue (AM Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/McClelland Avenue
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	312	5.4	312	5.4	0.381	8.6	LOS A	2.0	15.1	0.27	0.86	0.27	51.7
3	R2	All MCs	79	24.0	79	24.0	0.381	15.2	LOS A	2.0	15.1	0.27	0.86	0.27	47.7
Approach			391	9.2	391	9.2	0.381	9.9	LOS A	2.0	15.1	0.27	0.86	0.27	50.8
East: McClelland Avenue															
4	L2	All MCs	75	25.4	75	25.4	0.079	6.7	LOS A	0.0	0.0	0.00	0.43	0.00	54.2
5	T1	All MCs	55	17.3	55	17.3	0.079	1.1	LOS A	0.0	0.0	0.00	0.43	0.00	64.7
Approach			129	22.0	129	22.0	0.079	4.4	LOS A	0.0	0.0	0.00	0.43	0.00	58.2
West: McClelland Avenue															
11	T1	All MCs	52	10.2	52	10.2	0.248	0.6	LOS A	1.4	9.9	0.30	0.53	0.30	62.0
12	R2	All MCs	340	4.3	340	4.3	0.248	6.9	LOS A	1.4	9.9	0.30	0.53	0.30	55.2
Approach			392	5.1	392	5.1	0.248	6.1	LOS A	1.4	9.9	0.30	0.53	0.30	56.0
All Vehicles			912	9.2	912	9.2	0.381	7.5	LOS A	2.0	15.1	0.24	0.66	0.24	53.9

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/McClelland Avenue (School Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/McClelland Avenue
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	372	4.0	372	4.0	0.421	8.8	LOS A	2.3	17.0	0.33	0.85	0.33	52.2
3	R2	All MCs	83	15.2	83	15.2	0.421	13.7	LOS A	2.3	17.0	0.33	0.85	0.33	49.6
Approach			455	6.0	455	6.0	0.421	9.7	LOS A	2.3	17.0	0.33	0.85	0.33	51.7
East: McClelland Avenue															
4	L2	All MCs	77	9.6	77	9.6	0.091	6.5	LOS A	0.0	0.0	0.00	0.39	0.00	58.9
5	T1	All MCs	89	3.5	89	3.5	0.091	1.1	LOS A	0.0	0.0	0.00	0.39	0.00	65.4
Approach			166	6.3	166	6.3	0.091	3.6	LOS A	0.0	0.0	0.00	0.39	0.00	62.2
West: McClelland Avenue															
11	T1	All MCs	69	7.6	69	7.6	0.207	0.6	LOS A	1.1	7.8	0.32	0.50	0.32	62.5
12	R2	All MCs	259	2.0	259	2.0	0.207	7.0	LOS A	1.1	7.8	0.32	0.50	0.32	55.7
Approach			328	3.2	328	3.2	0.207	5.6	LOS A	1.1	7.8	0.32	0.50	0.32	57.0
All Vehicles			949	5.1	949	5.1	0.421	7.2	LOS A	2.3	17.0	0.27	0.65	0.27	55.1

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/McClelland Avenue (PM Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/McClelland Avenue
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	396	1.9	396	1.9	0.455	8.8	LOS A	2.6	18.9	0.38	0.83	0.38	52.5
3	R2	All MCs	73	31.9	73	31.9	0.455	17.2	LOS A	2.6	18.9	0.38	0.83	0.38	46.2
Approach			468	6.5	468	6.5	0.455	10.1	LOS A	2.6	18.9	0.38	0.83	0.38	51.4
East: McClelland Avenue															
4	L2	All MCs	98	7.5	98	7.5	0.111	6.5	LOS A	0.0	0.0	0.00	0.39	0.00	59.4
5	T1	All MCs	106	2.0	106	2.0	0.111	1.1	LOS A	0.0	0.0	0.00	0.39	0.00	65.3
Approach			204	4.6	204	4.6	0.111	3.7	LOS A	0.0	0.0	0.00	0.39	0.00	62.3
West: McClelland Avenue															
11	T1	All MCs	77	6.8	77	6.8	0.237	0.8	LOS A	1.3	9.1	0.36	0.52	0.36	62.3
12	R2	All MCs	287	1.8	287	1.8	0.237	7.1	LOS A	1.3	9.1	0.36	0.52	0.36	55.5
Approach			364	2.9	364	2.9	0.237	5.8	LOS A	1.3	9.1	0.36	0.52	0.36	56.8
All Vehicles			1037	4.9	1037	4.9	0.455	7.3	LOS A	2.6	18.9	0.30	0.64	0.30	55.1

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/McClelland Avenue (Weekend Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/McClelland Avenue
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	232	2.3	232	2.3	0.267	8.5	LOS A	1.2	8.8	0.25	0.87	0.25	52.8
3	R2	All MCs	65	4.8	65	4.8	0.267	11.4	LOS A	1.2	8.8	0.25	0.87	0.25	52.1
Approach			297	2.8	297	2.8	0.267	9.1	LOS A	1.2	8.8	0.25	0.87	0.25	52.6
East: McClelland Avenue															
4	L2	All MCs	55	3.8	55	3.8	0.069	6.4	LOS A	0.0	0.0	0.00	0.37	0.00	60.8
5	T1	All MCs	75	0.0	75	0.0	0.069	1.1	LOS A	0.0	0.0	0.00	0.37	0.00	65.7
Approach			129	1.6	129	1.6	0.069	3.3	LOS A	0.0	0.0	0.00	0.37	0.00	63.5
West: McClelland Avenue															
11	T1	All MCs	53	0.0	53	0.0	0.202	0.5	LOS A	1.1	7.5	0.27	0.51	0.27	62.4
12	R2	All MCs	278	0.8	278	0.8	0.202	6.8	LOS A	1.1	7.5	0.27	0.51	0.27	55.7
Approach			331	0.6	331	0.6	0.202	5.8	LOS A	1.1	7.5	0.27	0.51	0.27	56.6
All Vehicles			757	1.7	757	1.7	0.267	6.7	LOS A	1.2	8.8	0.22	0.63	0.22	56.0

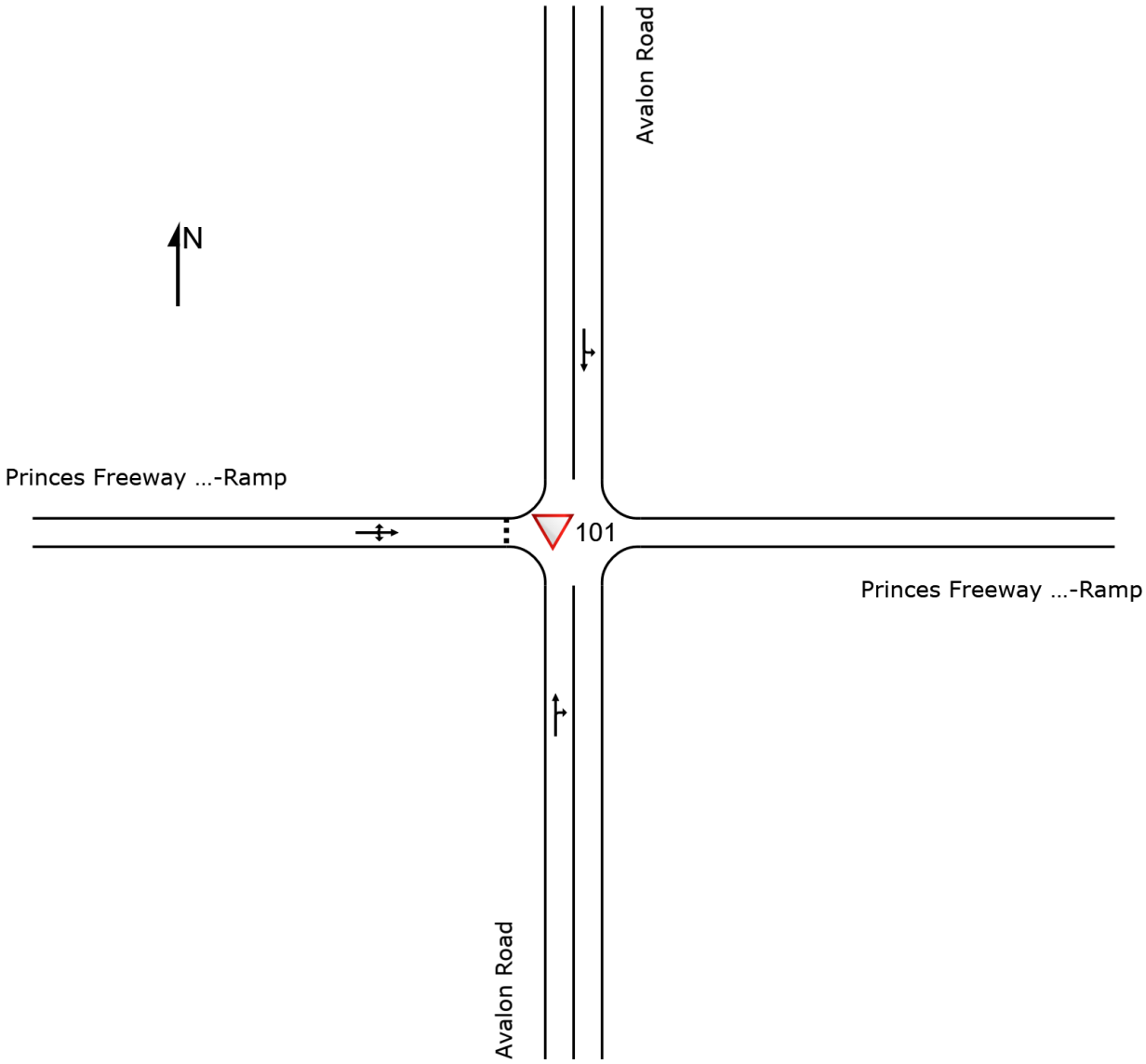
Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SITE LAYOUT

Site: 101 [Avalon Road/Princes Freeway North (AM Peak) (Site Folder: Existing Conditions - Appendix C)]

Avalon Road/Princes Freeway North
Site Category: (None)
Give-Way (Two-Way)

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



MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway North (AM Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway North
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
2	T1	All MCs	144	9.5	144	9.5	0.096	0.5	LOS A	0.2	1.3	0.13	0.16	0.13	68.4
3	R2	All MCs	14	23.1	14	23.1	0.096	9.6	LOS A	0.2	1.3	0.13	0.16	0.13	63.8
Approach			158	10.7	158	10.7	0.096	1.3	LOS A	0.2	1.3	0.13	0.16	0.13	68.0
North: Avalon Road															
7	L2	All MCs	215	5.4	215	5.4	0.275	6.5	LOS A	0.0	0.0	0.00	0.27	0.00	60.7
8	T1	All MCs	288	7.7	288	7.7	0.275	0.1	LOS A	0.0	0.0	0.00	0.27	0.00	66.3
Approach			503	6.7	503	6.7	0.275	2.8	LOS A	0.0	0.0	0.00	0.27	0.00	63.8
West: Princes Freeway Off-Ramp															
10	L2	All MCs	285	8.1	285	8.1	0.224	8.7	LOS A	1.0	7.7	0.30	0.63	0.30	61.7
11	T1	All MCs	1	0.0	1	0.0	0.224	11.6	LOS A	1.0	7.7	0.30	0.63	0.30	72.0
12	R2	All MCs	8	12.5	8	12.5	0.224	12.1	LOS A	1.0	7.7	0.30	0.63	0.30	59.8
Approach			295	8.2	295	8.2	0.224	8.8	LOS A	1.0	7.7	0.30	0.63	0.30	61.7
All Vehicles			956	7.8	956	7.8	0.275	4.4	LOS A	1.0	7.7	0.11	0.36	0.11	63.8

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway North (School Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway North
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
2	T1	All MCs	294	4.3	294	4.3	0.166	0.2	LOS A	0.1	0.9	0.05	0.05	0.05	69.6
3	R2	All MCs	7	71.4	7	71.4	0.166	10.7	LOS A	0.1	0.9	0.05	0.05	0.05	52.4
Approach			301	5.9	301	5.9	0.166	0.4	LOS A	0.1	0.9	0.05	0.05	0.05	69.1
North: Avalon Road															
7	L2	All MCs	120	6.1	120	6.1	0.204	6.5	LOS A	0.0	0.0	0.00	0.20	0.00	61.3
8	T1	All MCs	261	3.6	261	3.6	0.204	0.0	LOS A	0.0	0.0	0.00	0.20	0.00	67.3
Approach			381	4.4	381	4.4	0.204	2.1	LOS A	0.0	0.0	0.00	0.20	0.00	65.3
West: Princes Freeway Off-Ramp															
10	L2	All MCs	285	5.9	285	5.9	0.282	9.4	LOS A	1.3	9.3	0.45	0.69	0.45	61.8
11	T1	All MCs	2	50.0	2	50.0	0.282	17.4	LOS A	1.3	9.3	0.45	0.69	0.45	58.3
12	R2	All MCs	20	10.5	20	10.5	0.282	13.5	LOS A	1.3	9.3	0.45	0.69	0.45	59.8
Approach			307	6.5	307	6.5	0.282	9.7	LOS A	1.3	9.3	0.45	0.69	0.45	61.6
All Vehicles			989	5.5	989	5.5	0.282	3.9	LOS A	1.3	9.3	0.15	0.31	0.15	65.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway North (PM Peak)
(Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway North
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
2	T1	All MCs	328	4.5	328	4.5	0.184	0.1	LOS A	0.1	0.9	0.04	0.05	0.04	69.6
3	R2	All MCs	8	37.5	8	37.5	0.184	9.8	LOS A	0.1	0.9	0.04	0.05	0.04	60.5
Approach			337	5.3	337	5.3	0.184	0.4	LOS A	0.1	0.9	0.04	0.05	0.04	69.3
North: Avalon Road															
7	L2	All MCs	126	3.3	126	3.3	0.228	6.5	LOS A	0.0	0.0	0.00	0.19	0.00	62.3
8	T1	All MCs	301	3.5	301	3.5	0.228	0.1	LOS A	0.0	0.0	0.00	0.19	0.00	67.4
Approach			427	3.4	427	3.4	0.228	1.9	LOS A	0.0	0.0	0.00	0.19	0.00	65.8
West: Princes Freeway Off-Ramp															
10	L2	All MCs	261	7.3	261	7.3	0.276	9.6	LOS A	1.2	9.0	0.48	0.71	0.48	61.2
11	T1	All MCs	1	0.0	1	0.0	0.276	12.6	LOS A	1.2	9.0	0.48	0.71	0.48	70.9
12	R2	All MCs	20	15.8	20	15.8	0.276	15.3	LOS A	1.2	9.0	0.48	0.71	0.48	58.1
Approach			282	7.8	282	7.8	0.276	10.0	LOS A	1.2	9.0	0.48	0.71	0.48	61.0
All Vehicles			1046	5.2	1046	5.2	0.276	3.6	LOS A	1.2	9.0	0.14	0.28	0.14	65.5

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway North (Weekend Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway North
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
2	T1	All MCs	162	3.9	162	3.9	0.096	0.2	LOS A	0.1	0.8	0.08	0.10	0.08	68.9
3	R2	All MCs	13	0.0	13	0.0	0.096	7.8	LOS A	0.1	0.8	0.08	0.10	0.08	72.2
Approach			175	3.6	175	3.6	0.096	0.7	LOS A	0.1	0.8	0.08	0.10	0.08	69.1
North: Avalon Road															
7	L2	All MCs	160	0.7	160	0.7	0.215	6.4	LOS A	0.0	0.0	0.00	0.25	0.00	62.5
8	T1	All MCs	247	2.1	247	2.1	0.215	0.0	LOS A	0.0	0.0	0.00	0.25	0.00	66.7
Approach			407	1.6	407	1.6	0.215	2.5	LOS A	0.0	0.0	0.00	0.25	0.00	65.0
West: Princes Freeway Off-Ramp															
10	L2	All MCs	205	1.0	205	1.0	0.171	8.4	LOS A	0.7	5.2	0.30	0.63	0.30	64.1
11	T1	All MCs	1	0.0	1	0.0	0.171	10.2	LOS A	0.7	5.2	0.30	0.63	0.30	72.0
12	R2	All MCs	17	0.0	17	0.0	0.171	10.4	LOS A	0.7	5.2	0.30	0.63	0.30	64.1
Approach			223	0.9	223	0.9	0.171	8.6	LOS A	0.7	5.2	0.30	0.63	0.30	64.1
All Vehicles			805	1.8	805	1.8	0.215	3.8	LOS A	0.7	5.2	0.10	0.32	0.10	65.6

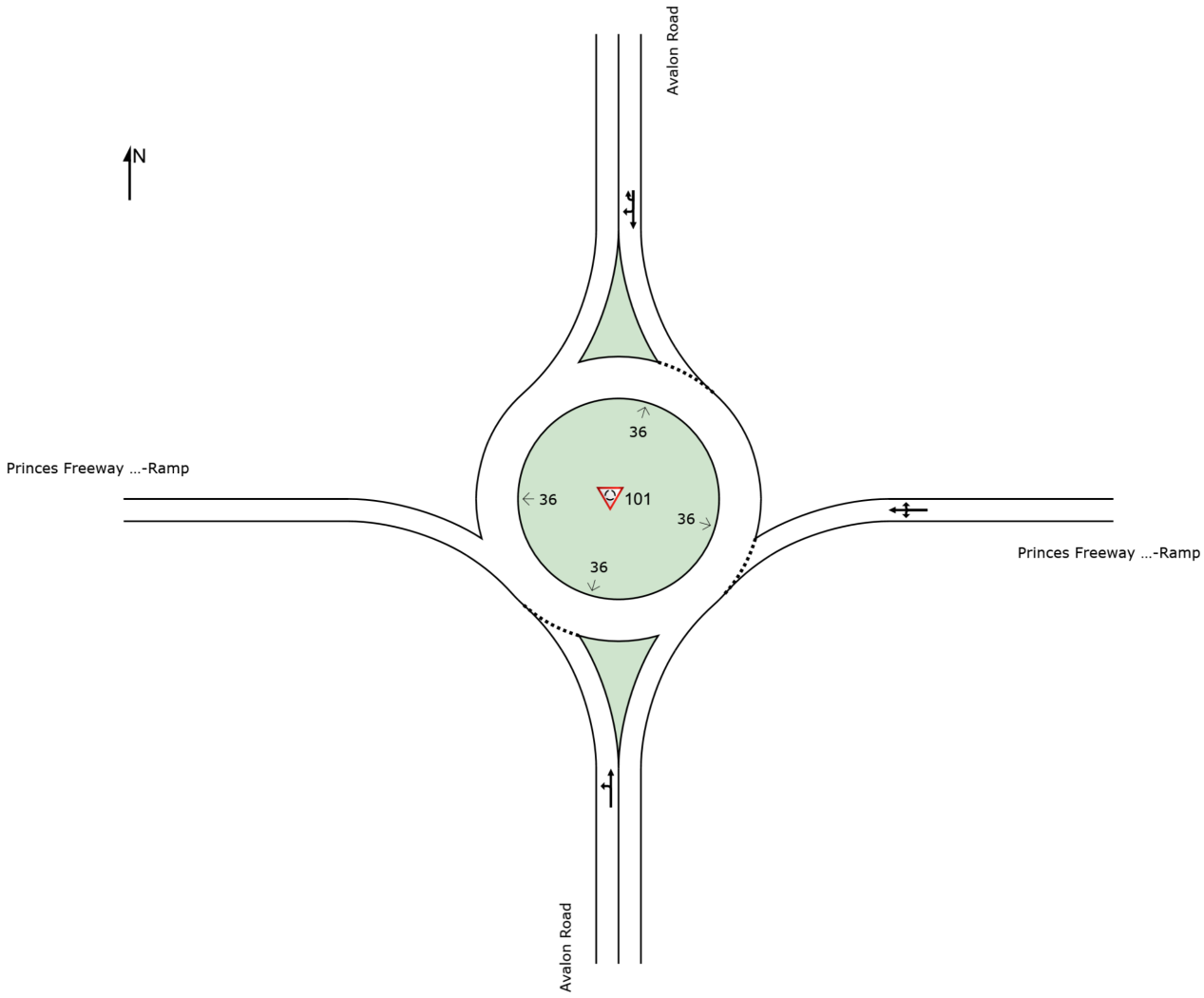
Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SITE LAYOUT

Site: 101 [Avalon Road/Princes Freeway South (AM Peak)
(Site Folder: Existing Conditions - Appendix C)]

Avalon Road/Princes Freeway South
Site Category: (None)
Roundabout

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



MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway South (AM Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway South
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	18	5.9	18	5.9	0.042	6.0	LOS A	0.2	1.7	0.49	0.53	0.49	63.6
2	T1	All MCs	25	20.8	25	20.8	0.042	6.4	LOS A	0.2	1.7	0.49	0.53	0.49	59.9
Approach			43	14.6	43	14.6	0.042	6.2	LOS A	0.2	1.7	0.49	0.53	0.49	61.3
East: Princes Freeway Off-Ramp															
4	L2	All MCs	6	0.0	6	0.0	0.107	7.9	LOS A	0.5	4.0	0.43	0.68	0.43	61.0
5	T1	All MCs	1	100.0	1	100.0	0.107	11.6	LOS A	0.5	4.0	0.43	0.68	0.43	44.8
6	R2	All MCs	116	7.3	116	7.3	0.107	15.2	LOS A	0.5	4.0	0.43	0.68	0.43	58.3
Approach			123	7.7	123	7.7	0.107	14.8	LOS A	0.5	4.0	0.43	0.68	0.43	58.3
North: Avalon Road															
8	T1	All MCs	25	12.5	25	12.5	0.171	4.3	LOS A	0.0	0.0	0.00	0.67	0.00	57.6
9	R2	All MCs	268	7.5	268	7.5	0.171	10.9	LOS A	0.0	0.0	0.00	0.67	0.00	59.9
9u	U	All MCs	3	0.0	3	0.0	0.171	13.5	LOS A	0.0	0.0	0.00	0.67	0.00	56.8
Approach			297	7.8	297	7.8	0.171	10.3	LOS A	0.0	0.0	0.00	0.67	0.00	59.6
All Vehicles			463	8.4	463	8.4	0.171	11.1	LOS A	0.5	4.0	0.16	0.66	0.16	59.4

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway South (School Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway South
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	14	0.0	14	0.0	0.037	6.4	LOS A	0.2	1.5	0.57	0.57	0.57	64.2
2	T1	All MCs	21	20.0	21	20.0	0.037	7.1	LOS A	0.2	1.5	0.57	0.57	0.57	59.4
Approach			35	12.1	35	12.1	0.037	6.8	LOS A	0.2	1.5	0.57	0.57	0.57	61.2
East: Princes Freeway Off-Ramp															
4	L2	All MCs	7	0.0	7	0.0	0.232	8.0	LOS A	1.3	9.2	0.45	0.67	0.45	60.7
5	T1	All MCs	1	0.0	1	0.0	0.232	8.7	LOS A	1.3	9.2	0.45	0.67	0.45	65.9
6	R2	All MCs	272	2.7	272	2.7	0.232	15.1	LOS A	1.3	9.2	0.45	0.67	0.45	59.2
Approach			280	2.6	280	2.6	0.232	14.9	LOS A	1.3	9.2	0.45	0.67	0.45	59.2
North: Avalon Road															
8	T1	All MCs	37	8.6	37	8.6	0.159	4.3	LOS A	0.0	0.0	0.00	0.66	0.00	58.0
9	R2	All MCs	243	3.0	243	3.0	0.159	10.8	LOS A	0.0	0.0	0.00	0.66	0.00	61.1
9u	U	All MCs	1	100.0	1	100.0	0.159	14.8	LOS A	0.0	0.0	0.00	0.66	0.00	47.3
Approach			281	4.1	281	4.1	0.159	10.0	LOS A	0.0	0.0	0.00	0.66	0.00	60.6
All Vehicles			596	3.9	596	3.9	0.232	12.1	LOS A	1.3	9.2	0.24	0.66	0.24	60.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway South (PM Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway South
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	14	7.7	14	7.7	0.041	7.1	LOS A	0.2	1.7	0.61	0.59	0.61	62.4
2	T1	All MCs	23	13.6	23	13.6	0.041	7.4	LOS A	0.2	1.7	0.61	0.59	0.61	59.3
Approach			37	11.4	37	11.4	0.041	7.3	LOS A	0.2	1.7	0.61	0.59	0.61	60.4
East: Princes Freeway Off-Ramp															
4	L2	All MCs	6	0.0	6	0.0	0.267	8.3	LOS A	1.5	10.9	0.49	0.68	0.49	60.5
5	T1	All MCs	1	0.0	1	0.0	0.267	9.0	LOS A	1.5	10.9	0.49	0.68	0.49	65.6
6	R2	All MCs	304	3.5	304	3.5	0.267	15.4	LOS A	1.5	10.9	0.49	0.68	0.49	58.8
Approach			312	3.4	312	3.4	0.267	15.2	LOS A	1.5	10.9	0.49	0.68	0.49	58.8
North: Avalon Road															
8	T1	All MCs	39	10.8	39	10.8	0.182	4.3	LOS A	0.0	0.0	0.00	0.66	0.00	57.8
9	R2	All MCs	281	3.0	281	3.0	0.182	10.8	LOS A	0.0	0.0	0.00	0.66	0.00	61.0
9u	U	All MCs	1	100.0	1	100.0	0.182	14.8	LOS A	0.0	0.0	0.00	0.66	0.00	47.3
Approach			321	4.3	321	4.3	0.182	10.0	LOS A	0.0	0.0	0.00	0.66	0.00	60.5
All Vehicles			669	4.2	669	4.2	0.267	12.3	LOS A	1.5	10.9	0.26	0.67	0.26	59.7

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway South (Sat Peak) (Site Folder: Existing Conditions - Appendix C)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway South
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	21	25.0	21	25.0	0.046	6.3	LOS A	0.2	1.8	0.47	0.52	0.47	60.1
2	T1	All MCs	28	0.0	28	0.0	0.046	5.7	LOS A	0.2	1.8	0.47	0.52	0.47	60.7
Approach			49	10.6	49	10.6	0.046	6.0	LOS A	0.2	1.8	0.47	0.52	0.47	60.4
East: Princes Freeway Off-Ramp															
4	L2	All MCs	4	0.0	4	0.0	0.113	7.7	LOS A	0.6	4.1	0.40	0.67	0.40	61.1
5	T1	All MCs	2	0.0	2	0.0	0.113	8.5	LOS A	0.6	4.1	0.40	0.67	0.40	66.3
6	R2	All MCs	132	3.2	132	3.2	0.113	14.9	LOS A	0.6	4.1	0.40	0.67	0.40	59.4
Approach			138	3.1	138	3.1	0.113	14.5	LOS A	0.6	4.1	0.40	0.67	0.40	59.5
North: Avalon Road															
8	T1	All MCs	31	10.3	31	10.3	0.149	4.3	LOS A	0.0	0.0	0.00	0.67	0.00	57.8
9	R2	All MCs	233	1.8	233	1.8	0.149	10.8	LOS A	0.0	0.0	0.00	0.67	0.00	61.2
9u	U	All MCs	1	0.0	1	0.0	0.149	13.5	LOS A	0.0	0.0	0.00	0.67	0.00	56.9
Approach			264	2.8	264	2.8	0.149	10.1	LOS A	0.0	0.0	0.00	0.67	0.00	60.8
All Vehicles			452	3.7	452	3.7	0.149	11.0	LOS A	0.6	4.1	0.17	0.65	0.17	60.4

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Appendix D

SIDRA Results – Post-Development Conditions

MOVEMENT SUMMARY

Site: 101 [Watt Street/Avalon Road (AM Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Watt Street/Avalon Road
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	84	1.3	84	1.3	0.236	3.1	LOS A	0.0	0.2	0.01	0.11	0.01	55.0
2	T1	All MCs	384	9.3	384	9.3	0.236	0.0	LOS A	0.0	0.2	0.01	0.11	0.01	62.2
3u	U	All MCs	1	0.0	1	0.0	0.236	4.9	LOS A	0.0	0.2	0.01	0.11	0.01	37.4
Approach			469	7.8	469	7.8	0.236	0.6	LOS A	0.0	0.2	0.01	0.11	0.01	57.9
North: Avalon Road															
8	T1	All MCs	402	7.9	402	7.9	0.227	0.2	LOS A	0.2	1.5	0.06	0.07	0.06	64.2
9	R2	All MCs	17	12.5	17	12.5	0.227	6.6	LOS A	0.2	1.5	0.06	0.07	0.06	54.5
Approach			419	8.0	419	8.0	0.227	0.4	LOS A	0.2	1.5	0.06	0.07	0.06	62.0
West: Watt Street															
10	L2	All MCs	17	0.0	17	0.0	0.394	8.3	LOS A	1.7	12.0	0.69	0.94	0.93	41.8
12	R2	All MCs	193	1.1	193	1.1	0.394	12.8	LOS A	1.7	12.0	0.69	0.94	0.93	41.5
Approach			209	1.0	209	1.0	0.394	12.5	LOS A	1.7	12.0	0.69	0.94	0.93	41.6
All Vehicles			1098	6.6	1098	6.6	0.394	2.8	LOS A	1.7	12.0	0.16	0.26	0.20	49.5

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Watt Street/Avalon Road (School Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Watt Street/Avalon Road
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	202	1.0	202	1.0	0.319	3.1	LOS A	0.0	0.0	0.00	0.18	0.00	59.7
2	T1	All MCs	445	6.1	445	6.1	0.319	0.0	LOS A	0.0	0.0	0.00	0.18	0.00	58.1
Approach			647	4.6	647	4.6	0.319	1.0	LOS A	0.0	0.0	0.00	0.18	0.00	59.2
North: Avalon Road															
8	T1	All MCs	328	3.8	328	3.8	0.184	0.3	LOS A	0.2	1.5	0.08	0.09	0.08	62.4
9	R2	All MCs	15	0.0	15	0.0	0.184	7.3	LOS A	0.2	1.5	0.08	0.09	0.08	55.4
Approach			343	3.7	343	3.7	0.184	0.6	LOS A	0.2	1.5	0.08	0.09	0.08	60.8
West: Watt Street															
10	L2	All MCs	17	0.0	17	0.0	0.281	8.0	LOS A	1.0	7.4	0.68	0.90	0.79	42.0
12	R2	All MCs	121	3.5	121	3.5	0.281	12.8	LOS A	1.0	7.4	0.68	0.90	0.79	41.8
Approach			138	3.1	138	3.1	0.281	12.2	LOS A	1.0	7.4	0.68	0.90	0.79	41.8
All Vehicles			1128	4.1	1128	4.1	0.319	2.2	LOS A	1.0	7.4	0.11	0.24	0.12	53.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Watt Street/Avalon Road (PM Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Watt Street/Avalon Road
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	222	1.4	222	1.4	0.338	3.1	LOS A	0.0	0.0	0.00	0.19	0.00	59.4
2	T1	All MCs	461	6.6	461	6.6	0.338	0.0	LOS A	0.0	0.0	0.00	0.19	0.00	57.6
Approach			683	4.9	683	4.9	0.338	1.0	LOS A	0.0	0.0	0.00	0.19	0.00	58.9
North: Avalon Road															
8	T1	All MCs	377	3.4	377	3.4	0.215	0.4	LOS A	0.3	2.1	0.09	0.12	0.09	60.5
9	R2	All MCs	20	0.0	20	0.0	0.215	7.7	LOS A	0.3	2.1	0.09	0.12	0.09	55.1
Approach			397	3.2	397	3.2	0.215	0.8	LOS A	0.3	2.1	0.09	0.12	0.09	59.1
West: Watt Street															
10	L2	All MCs	16	0.0	16	0.0	0.285	8.2	LOS A	1.0	7.3	0.71	0.92	0.83	41.3
12	R2	All MCs	113	1.9	113	1.9	0.285	13.8	LOS A	1.0	7.3	0.71	0.92	0.83	41.0
Approach			128	1.6	128	1.6	0.285	13.1	LOS A	1.0	7.3	0.71	0.92	0.83	41.1
All Vehicles			1208	4.0	1208	4.0	0.338	2.2	LOS A	1.0	7.3	0.11	0.24	0.12	53.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Watt Street/Avalon Road (Weekend Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Watt Street/Avalon Road
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	159	0.0	159	0.0	0.216	3.1	LOS A	0.0	0.0	0.00	0.21	0.00	60.1
2	T1	All MCs	286	2.9	286	2.9	0.216	0.0	LOS A	0.0	0.0	0.00	0.21	0.00	56.9
Approach			445	1.9	445	1.9	0.216	1.1	LOS A	0.0	0.0	0.00	0.21	0.00	59.3
North: Avalon Road															
8	T1	All MCs	323	1.6	323	1.6	0.179	0.2	LOS A	0.2	1.4	0.07	0.09	0.07	63.7
9	R2	All MCs	18	5.9	18	5.9	0.179	6.0	LOS A	0.2	1.4	0.07	0.09	0.07	55.0
Approach			341	1.9	341	1.9	0.179	0.5	LOS A	0.2	1.4	0.07	0.09	0.07	61.3
West: Watt Street															
10	L2	All MCs	19	5.6	19	5.6	0.273	7.0	LOS A	1.1	7.5	0.57	0.83	0.63	44.2
12	R2	All MCs	162	0.6	162	0.6	0.273	10.0	LOS A	1.1	7.5	0.57	0.83	0.63	44.2
Approach			181	1.2	181	1.2	0.273	9.7	LOS A	1.1	7.5	0.57	0.83	0.63	44.2
All Vehicles			967	1.7	967	1.7	0.273	2.5	LOS A	1.1	7.5	0.13	0.28	0.14	52.6

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Nasmyth Street (AM Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Nasmyth Street
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Nasmyth Street															
25	T1	All MCs	20	10.5	20	10.5	0.029	6.3	LOS A	0.1	0.9	0.42	0.58	0.42	52.1
26	R2	All MCs	3	0.0	3	0.0	0.029	9.6	LOS A	0.1	0.9	0.42	0.58	0.42	52.0
Approach			23	9.1	23	9.1	0.029	6.7	LOS A	0.1	0.9	0.42	0.58	0.42	52.1
NorthWest: Rennie Street															
27	L2	All MCs	1	0.0	1	0.0	0.145	5.7	LOS A	0.7	5.2	0.12	0.54	0.12	52.5
29	R2	All MCs	251	1.7	251	1.7	0.145	5.7	LOS A	0.7	5.2	0.12	0.54	0.12	52.5
Approach			252	1.7	252	1.7	0.145	5.7	LOS A	0.7	5.2	0.12	0.54	0.12	52.5
SouthWest: Rennie Street															
30	L2	All MCs	294	0.7	294	0.7	0.153	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	52.8
31	T1	All MCs	33	3.2	33	3.2	0.018	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			326	1.0	326	1.0	0.153	5.0	LOS A	0.0	0.0	0.00	0.52	0.00	53.5
All Vehicles			601	1.6	601	1.6	0.153	5.4	LOS A	0.7	5.2	0.06	0.53	0.06	53.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Nasmyth Street (School Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Nasmyth Street
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Nasmyth Street															
25	T1	All MCs	51	0.0	51	0.0	0.063	6.3	LOS A	0.3	1.8	0.44	0.60	0.44	52.6
26	R2	All MCs	2	0.0	2	0.0	0.063	10.3	LOS A	0.3	1.8	0.44	0.60	0.44	52.1
Approach			53	0.0	53	0.0	0.063	6.5	LOS A	0.3	1.8	0.44	0.60	0.44	52.6
NorthWest: Rennie Street															
27	L2	All MCs	3	33.3	3	33.3	0.166	6.0	LOS A	0.9	6.2	0.08	0.54	0.08	51.3
29	R2	All MCs	285	2.2	285	2.2	0.166	5.6	LOS A	0.9	6.2	0.08	0.54	0.08	52.6
29u	U	All MCs	1	0.0	1	0.0	0.166	8.7	LOS A	0.9	6.2	0.08	0.54	0.08	52.3
Approach			289	2.5	289	2.5	0.166	5.6	LOS A	0.9	6.2	0.08	0.54	0.08	52.6
SouthWest: Rennie Street															
30	L2	All MCs	320	0.3	320	0.3	0.167	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	52.8
31	T1	All MCs	17	0.0	17	0.0	0.009	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			337	0.3	337	0.3	0.167	5.3	LOS A	0.0	0.0	0.00	0.55	0.00	53.1
All Vehicles			679	1.2	679	1.2	0.167	5.5	LOS A	0.9	6.2	0.07	0.55	0.07	52.9

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Nasmyth Street (PM Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Nasmyth Street
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Nasmyth Street															
25	T1	All MCs	51	0.0	51	0.0	0.067	6.6	LOS A	0.3	1.9	0.46	0.62	0.46	52.3
26	R2	All MCs	3	0.0	3	0.0	0.067	10.1	LOS A	0.3	1.9	0.46	0.62	0.46	51.8
Approach			54	0.0	54	0.0	0.067	6.8	LOS A	0.3	1.9	0.46	0.62	0.46	52.3
NorthWest: Rennie Street															
27	L2	All MCs	3	33.3	3	33.3	0.182	6.0	LOS A	1.0	6.9	0.06	0.55	0.06	51.3
29	R2	All MCs	317	2.0	317	2.0	0.182	5.6	LOS A	1.0	6.9	0.06	0.55	0.06	52.6
Approach			320	2.3	320	2.3	0.182	5.6	LOS A	1.0	6.9	0.06	0.55	0.06	52.6
SouthWest: Rennie Street															
30	L2	All MCs	275	1.5	275	1.5	0.144	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	52.8
31	T1	All MCs	12	0.0	12	0.0	0.006	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			286	1.5	286	1.5	0.144	5.4	LOS A	0.0	0.0	0.00	0.55	0.00	53.0
All Vehicles			660	1.8	660	1.8	0.182	5.6	LOS A	1.0	6.9	0.07	0.56	0.07	52.8

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Nasmyth Street (Weekend Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Nasmyth Street
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Nasmyth Street															
25	T1	All MCs	36	0.0	36	0.0	0.045	5.9	LOS A	0.2	1.3	0.40	0.57	0.40	52.8
26	R2	All MCs	4	0.0	4	0.0	0.045	8.6	LOS A	0.2	1.3	0.40	0.57	0.40	52.3
Approach			40	0.0	40	0.0	0.045	6.2	LOS A	0.2	1.3	0.40	0.57	0.40	52.7
NorthWest: Rennie Street															
27	L2	All MCs	8	0.0	8	0.0	0.143	5.7	LOS A	0.7	5.1	0.11	0.54	0.11	52.6
29	R2	All MCs	239	1.8	239	1.8	0.143	5.7	LOS A	0.7	5.1	0.11	0.54	0.11	52.5
Approach			247	1.7	247	1.7	0.143	5.7	LOS A	0.7	5.1	0.11	0.54	0.11	52.5
SouthWest: Rennie Street															
30	L2	All MCs	200	1.1	200	1.1	0.105	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	52.8
31	T1	All MCs	29	0.0	29	0.0	0.016	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			229	0.9	229	0.9	0.105	4.9	LOS A	0.0	0.0	0.00	0.50	0.00	53.6
All Vehicles			517	1.2	517	1.2	0.143	5.4	LOS A	0.7	5.1	0.08	0.52	0.08	53.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Princes Freeway (AM Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Princes Freeway
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
2	T1	All MCs	288	0.4	288	0.4	0.149	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	All MCs	99	26.6	99	26.6	0.088	7.3	LOS A	0.4	3.3	0.42	0.63	0.42	50.4
Approach			387	7.1	387	7.1	0.149	1.9	LOS A	0.4	3.3	0.11	0.16	0.11	57.2
North: Rennie Street															
7	L2	All MCs	19	0.0	19	0.0	0.159	5.6	LOS A	0.0	0.0	0.00	0.04	0.00	57.1
8	T1	All MCs	287	1.5	287	1.5	0.159	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	59.6
Approach			306	1.4	306	1.4	0.159	0.4	LOS A	0.0	0.0	0.00	0.04	0.00	59.4
All Vehicles			694	4.6	694	4.6	0.159	1.2	NA	0.4	3.3	0.06	0.11	0.06	58.1

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/Princes Freeway (School Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Princes Freeway
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
2	T1	All MCs	316	0.7	316	0.7	0.163	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	All MCs	188	10.1	188	10.1	0.156	7.1	LOS A	0.7	5.4	0.45	0.66	0.45	51.0
Approach			504	4.2	504	4.2	0.163	2.7	LOS A	0.7	5.4	0.17	0.25	0.17	56.3
North: Rennie Street															
7	L2	All MCs	28	0.0	28	0.0	0.176	5.6	LOS A	0.0	0.0	0.00	0.05	0.00	57.0
8	T1	All MCs	309	2.0	309	2.0	0.176	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	59.4
Approach			338	1.9	338	1.9	0.176	0.5	LOS A	0.0	0.0	0.00	0.05	0.00	59.2
All Vehicles			842	3.3	842	3.3	0.176	1.8	NA	0.7	5.4	0.10	0.17	0.10	57.4

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/Princes Freeway (PM Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Princes Freeway
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
2	T1	All MCs	320	1.3	320	1.3	0.166	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	All MCs	148	14.2	148	14.2	0.124	7.0	LOS A	0.6	4.4	0.43	0.64	0.43	50.9
Approach			468	5.4	468	5.4	0.166	2.3	LOS A	0.6	4.4	0.14	0.20	0.14	56.7
North: Rennie Street															
7	L2	All MCs	29	0.0	29	0.0	0.166	5.6	LOS A	0.0	0.0	0.00	0.06	0.00	57.0
8	T1	All MCs	288	2.2	288	2.2	0.166	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	59.4
Approach			318	2.0	318	2.0	0.166	0.6	LOS A	0.0	0.0	0.00	0.06	0.00	59.2
All Vehicles			786	4.0	786	4.0	0.166	1.6	NA	0.6	4.4	0.08	0.14	0.08	57.7

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/Princes Freeway (Weekend Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Princes Freeway
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
2	T1	All MCs	104	1.0	104	1.0	0.054	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
3	R2	All MCs	80	11.8	80	11.8	0.052	6.0	LOS A	0.2	1.8	0.23	0.56	0.23	51.5
Approach			184	5.7	184	5.7	0.054	2.6	LOS A	0.2	1.8	0.10	0.24	0.10	56.0
North: Rennie Street															
7	L2	All MCs	1	0.0	1	0.0	0.058	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	57.4
8	T1	All MCs	111	1.9	111	1.9	0.058	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
Approach			112	1.9	112	1.9	0.058	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
All Vehicles			296	4.3	296	4.3	0.058	1.6	NA	0.2	1.8	0.06	0.15	0.06	57.4

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/Canterbury Road E (AM Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Canterbury Road E
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Rennie Street															
25	T1	All MCs	128	3.3	128	3.3	0.164	0.5	LOS A	0.8	5.6	0.29	0.38	0.29	56.3
26	R2	All MCs	142	1.5	142	1.5	0.164	6.1	LOS A	0.8	5.6	0.29	0.38	0.29	58.9
Approach			271	2.3	271	2.3	0.164	3.5	LOS A	0.8	5.6	0.29	0.38	0.29	57.6
NorthWest: Canterbury Road E															
27	L2	All MCs	288	0.7	288	0.7	0.323	7.3	LOS A	1.6	11.0	0.28	0.60	0.28	57.2
29	R2	All MCs	117	0.0	117	0.0	0.323	9.1	LOS A	1.6	11.0	0.28	0.60	0.28	57.0
Approach			405	0.5	405	0.5	0.323	7.8	LOS A	1.6	11.0	0.28	0.60	0.28	57.2
SouthWest: Rennie Street															
30	L2	All MCs	96	0.0	96	0.0	0.098	5.6	LOS A	0.0	0.0	0.00	0.31	0.00	55.0
31	T1	All MCs	89	1.2	89	1.2	0.098	0.0	LOS A	0.0	0.0	0.00	0.31	0.00	57.2
Approach			185	0.6	185	0.6	0.098	2.9	LOS A	0.0	0.0	0.00	0.31	0.00	56.0
All Vehicles			861	1.1	861	1.1	0.323	5.4	LOS A	1.6	11.0	0.22	0.46	0.22	57.1

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Canterbury Road E (School Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Canterbury Road E
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Rennie Street															
25	T1	All MCs	107	5.9	107	5.9	0.224	1.0	LOS A	1.2	8.3	0.41	0.51	0.41	55.2
26	R2	All MCs	228	0.0	228	0.0	0.224	6.6	LOS A	1.2	8.3	0.41	0.51	0.41	58.1
Approach			336	1.9	336	1.9	0.224	4.8	LOS A	1.2	8.3	0.41	0.51	0.41	57.1
NorthWest: Canterbury Road E															
27	L2	All MCs	223	0.0	223	0.0	0.287	7.5	LOS A	1.3	8.9	0.37	0.63	0.37	56.9
29	R2	All MCs	99	0.0	99	0.0	0.287	10.0	LOS A	1.3	8.9	0.37	0.63	0.37	56.7
Approach			322	0.0	322	0.0	0.287	8.3	LOS A	1.3	8.9	0.37	0.63	0.37	56.9
SouthWest: Rennie Street															
30	L2	All MCs	131	0.8	131	0.8	0.149	5.6	LOS A	0.0	0.0	0.00	0.27	0.00	55.2
31	T1	All MCs	153	0.7	153	0.7	0.149	0.0	LOS A	0.0	0.0	0.00	0.27	0.00	57.5
Approach			283	0.7	283	0.7	0.149	2.6	LOS A	0.0	0.0	0.00	0.27	0.00	56.4
All Vehicles			941	0.9	941	0.9	0.287	5.3	LOS A	1.3	8.9	0.27	0.48	0.27	56.8

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Canterbury Road E (PM Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Canterbury Road E
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Rennie Street															
25	T1	All MCs	99	6.4	99	6.4	0.246	1.0	LOS A	1.3	9.3	0.41	0.53	0.41	54.9
26	R2	All MCs	268	0.0	268	0.0	0.246	6.5	LOS A	1.3	9.3	0.41	0.53	0.41	57.9
Approach			367	1.7	367	1.7	0.246	5.1	LOS A	1.3	9.3	0.41	0.53	0.41	57.0
NorthWest: Canterbury Road E															
27	L2	All MCs	178	0.0	178	0.0	0.256	7.5	LOS A	1.1	7.6	0.36	0.63	0.36	56.9
29	R2	All MCs	98	0.0	98	0.0	0.256	10.1	LOS A	1.1	7.6	0.36	0.63	0.36	56.6
Approach			276	0.0	276	0.0	0.256	8.4	LOS A	1.1	7.6	0.36	0.63	0.36	56.8
SouthWest: Rennie Street															
30	L2	All MCs	132	0.0	132	0.0	0.144	5.6	LOS A	0.0	0.0	0.00	0.29	0.00	55.1
31	T1	All MCs	139	3.0	139	3.0	0.144	0.0	LOS A	0.0	0.0	0.00	0.29	0.00	57.4
Approach			271	1.6	271	1.6	0.144	2.7	LOS A	0.0	0.0	0.00	0.29	0.00	56.2
All Vehicles			914	1.2	914	1.2	0.256	5.4	LOS A	1.3	9.3	0.27	0.49	0.27	56.7

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Canterbury Road E (Weekend Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Canterbury Road E
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Rennie Street															
25	T1	All MCs	102	3.1	102	3.1	0.166	0.5	LOS A	0.8	5.9	0.28	0.41	0.28	55.8
26	R2	All MCs	173	0.6	173	0.6	0.166	6.0	LOS A	0.8	5.9	0.28	0.41	0.28	58.7
Approach			275	1.5	275	1.5	0.166	4.0	LOS A	0.8	5.9	0.28	0.41	0.28	57.6
NorthWest: Canterbury Road E															
27	L2	All MCs	176	0.0	176	0.0	0.185	7.3	LOS A	0.8	5.5	0.24	0.60	0.24	57.4
29	R2	All MCs	61	0.0	61	0.0	0.185	8.6	LOS A	0.8	5.5	0.24	0.60	0.24	57.1
Approach			237	0.0	237	0.0	0.185	7.6	LOS A	0.8	5.5	0.24	0.60	0.24	57.3
SouthWest: Rennie Street															
30	L2	All MCs	63	0.0	63	0.0	0.082	5.6	LOS A	0.0	0.0	0.00	0.24	0.00	55.5
31	T1	All MCs	93	2.3	93	2.3	0.082	0.0	LOS A	0.0	0.0	0.00	0.24	0.00	57.8
Approach			156	1.4	156	1.4	0.082	2.3	LOS A	0.0	0.0	0.00	0.24	0.00	56.8
All Vehicles			667	0.9	667	0.9	0.185	4.9	LOS A	0.8	5.9	0.20	0.44	0.20	57.3

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Forest Road S/Canterbury Road W (AM Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Forest Road S/Canterbury Road W
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Road S															
1	L2	All MCs	43	2.4	43	2.4	0.409	6.1	LOS A	2.7	19.8	0.53	0.58	0.53	51.3
2	T1	All MCs	297	6.0	297	6.0	0.409	6.3	LOS A	2.7	19.8	0.53	0.58	0.53	51.7
3	R2	All MCs	92	1.1	92	1.1	0.409	9.4	LOS A	2.7	19.8	0.53	0.58	0.53	51.1
Approach			432	4.6	432	4.6	0.409	6.9	LOS A	2.7	19.8	0.53	0.58	0.53	51.5
East: Canterbury Road E															
4	L2	All MCs	164	1.9	164	1.9	0.517	12.3	LOS A	4.2	29.8	0.87	0.86	1.04	47.4
5	T1	All MCs	42	2.5	42	2.5	0.517	12.5	LOS A	4.2	29.8	0.87	0.86	1.04	47.8
6	R2	All MCs	134	2.4	134	2.4	0.517	15.8	LOS A	4.2	29.8	0.87	0.86	1.04	47.2
Approach			340	2.2	340	2.2	0.517	13.7	LOS A	4.2	29.8	0.87	0.86	1.04	47.4
North: Forest Road S															
7	L2	All MCs	98	2.2	98	2.2	0.075	5.2	LOS A	0.3	2.5	0.31	0.55	0.31	52.8
8	T1	All MCs	489	4.5	489	4.5	0.487	6.8	LOS A	3.4	25.0	0.65	0.63	0.65	51.4
9	R2	All MCs	49	0.0	49	0.0	0.487	9.9	LOS A	3.4	25.0	0.65	0.63	0.65	50.8
9u	U	All MCs	6	16.7	6	16.7	0.487	12.1	LOS A	3.4	25.0	0.65	0.63	0.65	50.1
Approach			643	3.9	643	3.9	0.487	6.8	LOS A	3.4	25.0	0.60	0.61	0.60	51.5
West: Canterbury Road W															
10	L2	All MCs	94	1.1	94	1.1	0.490	9.6	LOS A	3.7	26.4	0.78	0.77	0.86	49.0
11	T1	All MCs	100	1.1	100	1.1	0.490	9.8	LOS A	3.7	26.4	0.78	0.77	0.86	49.3
12	R2	All MCs	197	0.5	197	0.5	0.490	13.0	LOS A	3.7	26.4	0.78	0.77	0.86	48.7
12u	U	All MCs	1	0.0	1	0.0	0.490	14.7	LOS A	3.7	26.4	0.78	0.77	0.86	48.7
Approach			392	0.8	392	0.8	0.490	11.4	LOS A	3.7	26.4	0.78	0.77	0.86	48.9
All Vehicles			1806	3.1	1806	3.1	0.517	9.1	LOS A	4.2	29.8	0.67	0.69	0.72	50.1

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Forest Road S/Canterbury Road W (School Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Forest Road S/Canterbury Road W
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Road S															
1	L2	All MCs	187	2.2	187	2.2	0.774	10.6	LOS C	10.4	74.2	0.87	0.80	1.08	48.9
2	T1	All MCs	463	3.0	463	3.0	0.774	10.8	LOS C	10.4	74.2	0.87	0.80	1.08	49.3
3	R2	All MCs	142	1.5	142	1.5	0.774	14.0	LOS C	10.4	74.2	0.87	0.80	1.08	48.7
Approach			793	2.5	793	2.5	0.774	11.3	LOS C	10.4	74.2	0.87	0.80	1.08	49.1
East: Canterbury Road E															
4	L2	All MCs	109	1.0	109	1.0	0.392	8.4	LOS A	2.5	17.6	0.72	0.72	0.72	50.0
5	T1	All MCs	78	2.7	78	2.7	0.392	8.6	LOS A	2.5	17.6	0.72	0.72	0.72	50.3
6	R2	All MCs	126	2.5	126	2.5	0.392	11.8	LOS A	2.5	17.6	0.72	0.72	0.72	49.6
Approach			314	2.0	314	2.0	0.392	9.8	LOS A	2.5	17.6	0.72	0.72	0.72	49.9
North: Forest Road S															
7	L2	All MCs	133	0.8	133	0.8	0.102	5.2	LOS A	0.5	3.6	0.34	0.55	0.34	52.7
8	T1	All MCs	344	2.1	344	2.1	0.375	6.1	LOS A	2.3	16.4	0.50	0.59	0.50	51.8
9	R2	All MCs	111	1.0	111	1.0	0.375	9.3	LOS A	2.3	16.4	0.50	0.59	0.50	51.1
9u	U	All MCs	6	16.7	6	16.7	0.375	11.4	LOS A	2.3	16.4	0.50	0.59	0.50	50.4
Approach			594	1.8	594	1.8	0.375	6.5	LOS A	2.3	16.4	0.47	0.58	0.47	51.8
West: Canterbury Road W															
10	L2	All MCs	54	3.9	54	3.9	0.353	10.4	LOS A	2.4	17.4	0.86	0.78	0.86	48.4
11	T1	All MCs	54	2.0	54	2.0	0.353	10.5	LOS A	2.4	17.4	0.86	0.78	0.86	48.8
12	R2	All MCs	100	2.1	100	2.1	0.353	13.8	LOS A	2.4	17.4	0.86	0.78	0.86	48.2
12u	U	All MCs	1	0.0	1	0.0	0.353	15.3	LOS A	2.4	17.4	0.86	0.78	0.86	48.3
Approach			208	2.5	208	2.5	0.353	12.1	LOS A	2.4	17.4	0.86	0.78	0.86	48.4
All Vehicles			1908	2.2	1908	2.2	0.774	9.7	LOS C	10.4	74.2	0.72	0.72	0.80	50.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Forest Road S/Canterbury Road W (PM Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Forest Road S/Canterbury Road W
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Road S															
1	L2	All MCs	183	0.6	183	0.6	0.765	9.5	LOS C	10.0	70.7	0.83	0.74	0.98	49.6
2	T1	All MCs	466	2.0	466	2.0	0.765	9.7	LOS C	10.0	70.7	0.83	0.74	0.98	50.0
3	R2	All MCs	173	1.2	173	1.2	0.765	12.9	LOS C	10.0	70.7	0.83	0.74	0.98	49.3
Approach			822	1.5	822	1.5	0.765	10.3	LOS C	10.0	70.7	0.83	0.74	0.98	49.8
East: Canterbury Road E															
4	L2	All MCs	136	0.8	136	0.8	0.390	8.3	LOS A	2.5	17.4	0.72	0.72	0.72	50.3
5	T1	All MCs	80	0.0	80	0.0	0.390	8.4	LOS A	2.5	17.4	0.72	0.72	0.72	50.7
6	R2	All MCs	100	3.2	100	3.2	0.390	11.8	LOS A	2.5	17.4	0.72	0.72	0.72	49.9
Approach			316	1.3	316	1.3	0.390	9.4	LOS A	2.5	17.4	0.72	0.72	0.72	50.2
North: Forest Road S															
7	L2	All MCs	137	2.3	137	2.3	0.108	5.3	LOS A	0.6	3.9	0.36	0.55	0.36	52.6
8	T1	All MCs	355	2.4	355	2.4	0.377	6.1	LOS A	2.3	16.6	0.52	0.59	0.52	51.7
9	R2	All MCs	98	2.2	98	2.2	0.377	9.4	LOS A	2.3	16.6	0.52	0.59	0.52	51.0
9u	U	All MCs	4	0.0	4	0.0	0.377	11.0	LOS A	2.3	16.6	0.52	0.59	0.52	51.1
Approach			594	2.3	594	2.3	0.377	6.5	LOS A	2.3	16.6	0.48	0.58	0.48	51.8
West: Canterbury Road W															
10	L2	All MCs	60	3.5	60	3.5	0.339	10.4	LOS A	2.3	16.6	0.85	0.78	0.85	48.5
11	T1	All MCs	44	2.4	44	2.4	0.339	10.5	LOS A	2.3	16.6	0.85	0.78	0.85	48.9
12	R2	All MCs	95	1.1	95	1.1	0.339	13.7	LOS A	2.3	16.6	0.85	0.78	0.85	48.3
12u	U	All MCs	1	0.0	1	0.0	0.339	15.3	LOS A	2.3	16.6	0.85	0.78	0.85	48.3
Approach			200	2.1	200	2.1	0.339	12.0	LOS A	2.3	16.6	0.85	0.78	0.85	48.5
All Vehicles			1932	1.8	1932	1.8	0.765	9.2	LOS C	10.0	70.7	0.71	0.69	0.77	50.3

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Forest Road S/Canterbury Road W (Weekend Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Forest Road S/Canterbury Road W
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Road S															
1	L2	All MCs	118	0.0	118	0.0	0.500	5.7	LOS A	3.7	25.8	0.48	0.55	0.48	51.7
2	T1	All MCs	392	0.3	392	0.3	0.500	5.8	LOS A	3.7	25.8	0.48	0.55	0.48	52.2
3	R2	All MCs	95	1.1	95	1.1	0.500	9.1	LOS A	3.7	25.8	0.48	0.55	0.48	51.4
Approach			604	0.3	604	0.3	0.500	6.3	LOS A	3.7	25.8	0.48	0.55	0.48	52.0
East: Canterbury Road E															
4	L2	All MCs	113	1.9	113	1.9	0.281	8.5	LOS A	1.7	11.8	0.70	0.72	0.70	50.0
5	T1	All MCs	33	0.0	33	0.0	0.281	8.5	LOS A	1.7	11.8	0.70	0.72	0.70	50.5
6	R2	All MCs	72	2.9	72	2.9	0.281	12.0	LOS A	1.7	11.8	0.70	0.72	0.70	49.7
Approach			217	1.9	217	1.9	0.281	9.6	LOS A	1.7	11.8	0.70	0.72	0.70	50.0
North: Forest Road S															
7	L2	All MCs	96	3.3	96	3.3	0.071	5.1	LOS A	0.3	2.3	0.25	0.53	0.25	52.9
8	T1	All MCs	427	0.5	427	0.5	0.382	5.9	LOS A	2.4	16.7	0.48	0.56	0.48	52.1
9	R2	All MCs	60	0.0	60	0.0	0.382	9.1	LOS A	2.4	16.7	0.48	0.56	0.48	51.4
9u	U	All MCs	1	0.0	1	0.0	0.382	10.8	LOS A	2.4	16.7	0.48	0.56	0.48	51.4
Approach			584	0.9	584	0.9	0.382	6.1	LOS A	2.4	16.7	0.44	0.56	0.44	52.1
West: Canterbury Road W															
10	L2	All MCs	48	0.0	48	0.0	0.282	8.3	LOS A	1.7	12.2	0.70	0.72	0.70	49.6
11	T1	All MCs	42	0.0	42	0.0	0.282	8.5	LOS A	1.7	12.2	0.70	0.72	0.70	50.0
12	R2	All MCs	129	0.8	129	0.8	0.282	11.8	LOS A	1.7	12.2	0.70	0.72	0.70	49.3
12u	U	All MCs	1	0.0	1	0.0	0.282	13.4	LOS A	1.7	12.2	0.70	0.72	0.70	49.3
Approach			221	0.5	221	0.5	0.282	10.4	LOS A	1.7	12.2	0.70	0.72	0.70	49.5
All Vehicles			1626	0.8	1626	0.8	0.500	7.2	LOS A	3.7	25.8	0.52	0.60	0.52	51.4

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/McClelland Avenue (AM Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/McClelland Avenue
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
1a	L1	All MCs	189	2.8	189	2.8	0.392	6.2	LOS A	2.4	17.1	0.63	0.67	0.63	51.5
3a	R1	All MCs	96	1.1	96	1.1	0.392	10.2	LOS A	2.4	17.1	0.63	0.67	0.63	50.7
3	R2	All MCs	100	2.1	100	2.1	0.392	11.2	LOS A	2.4	17.1	0.63	0.67	0.63	52.9
3u	U	All MCs	1	0.0	1	0.0	0.392	13.2	LOS A	2.4	17.1	0.63	0.67	0.63	50.8
Approach			386	2.2	386	2.2	0.392	8.5	LOS A	2.4	17.1	0.63	0.67	0.63	51.7
East: McClelland Avenue															
4	L2	All MCs	14	0.0	14	0.0	0.010	5.3	LOS A	0.1	0.4	0.35	0.49	0.35	56.9
6a	R1	All MCs	314	5.4	314	5.4	0.290	10.3	LOS A	2.0	14.4	0.52	0.63	0.52	52.1
6b	R3	All MCs	45	2.3	45	2.3	0.290	12.5	LOS A	2.0	14.4	0.52	0.63	0.52	52.2
6u	U	All MCs	12	0.0	12	0.0	0.290	13.6	LOS A	2.0	14.4	0.52	0.63	0.52	52.3
Approach			384	4.7	384	4.7	0.290	10.5	LOS A	2.0	14.4	0.51	0.63	0.51	52.3
NorthEast: Hicks Street															
24b	L3	All MCs	26	0.0	26	0.0	0.173	6.5	LOS A	0.9	6.7	0.59	0.68	0.59	53.4
24a	L1	All MCs	45	2.3	45	2.3	0.173	6.1	LOS A	0.9	6.7	0.59	0.68	0.59	51.4
26	R2	All MCs	84	7.5	84	7.5	0.173	11.3	LOS A	0.9	6.7	0.59	0.68	0.59	50.4
26u	U	All MCs	1	0.0	1	0.0	0.173	13.2	LOS A	0.9	6.7	0.59	0.68	0.59	50.6
Approach			157	4.7	157	4.7	0.173	9.0	LOS A	0.9	6.7	0.59	0.68	0.59	51.2
NorthWest: McClelland Avenue															
27	L2	All MCs	96	8.8	96	8.8	0.120	6.5	LOS A	0.7	5.5	0.54	0.57	0.54	52.6
27a	L1	All MCs	309	4.4	309	4.4	0.353	5.3	LOS A	2.8	20.0	0.57	0.55	0.57	52.3
29a	R1	All MCs	137	0.0	137	0.0	0.353	9.2	LOS A	2.8	20.0	0.57	0.55	0.57	54.2
29u	U	All MCs	6	0.0	6	0.0	0.353	12.3	LOS A	2.8	20.0	0.57	0.55	0.57	51.6
Approach			548	4.0	548	4.0	0.353	6.6	LOS A	2.8	20.0	0.57	0.55	0.57	52.8
All Vehicles			1476	3.8	1476	3.8	0.392	8.4	LOS A	2.8	20.0	0.57	0.62	0.57	52.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/McClelland Avenue (School Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/McClelland Avenue
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
1a	L1	All MCs	158	0.0	158	0.0	0.355	6.5	LOS A	2.2	15.5	0.67	0.68	0.67	51.4
3a	R1	All MCs	83	2.5	83	2.5	0.355	10.5	LOS A	2.2	15.5	0.67	0.68	0.67	50.5
3	R2	All MCs	87	1.2	87	1.2	0.355	11.5	LOS A	2.2	15.5	0.67	0.68	0.67	52.8
3u	U	All MCs	2	0.0	2	0.0	0.355	13.6	LOS A	2.2	15.5	0.67	0.68	0.67	50.6
Approach			331	1.0	331	1.0	0.355	8.9	LOS A	2.2	15.5	0.67	0.68	0.67	51.5
East: McClelland Avenue															
4	L2	All MCs	63	0.0	63	0.0	0.049	5.8	LOS A	0.3	2.0	0.46	0.55	0.46	56.5
6a	R1	All MCs	394	2.1	394	2.1	0.356	11.2	LOS A	2.6	18.5	0.65	0.67	0.65	52.0
6b	R3	All MCs	19	5.6	19	5.6	0.356	13.6	LOS A	2.6	18.5	0.65	0.67	0.65	51.9
6u	U	All MCs	2	50.0	2	50.0	0.356	16.3	LOS A	2.6	18.5	0.65	0.67	0.65	50.3
Approach			478	2.2	478	2.2	0.356	10.6	LOS A	2.6	18.5	0.63	0.65	0.63	52.5
NorthEast: Hicks Street															
24b	L3	All MCs	37	5.7	37	5.7	0.273	7.3	LOS A	1.6	11.4	0.66	0.70	0.66	51.9
24a	L1	All MCs	81	2.6	81	2.6	0.273	6.7	LOS A	1.6	11.4	0.66	0.70	0.66	51.1
26	R2	All MCs	118	5.4	118	5.4	0.273	11.8	LOS A	1.6	11.4	0.66	0.70	0.66	50.2
26u	U	All MCs	1	0.0	1	0.0	0.273	13.7	LOS A	1.6	11.4	0.66	0.70	0.66	50.4
Approach			237	4.4	237	4.4	0.273	9.4	LOS A	1.6	11.4	0.66	0.70	0.66	50.8
NorthWest: McClelland Avenue															
27	L2	All MCs	85	6.2	85	6.2	0.100	5.9	LOS A	0.6	4.5	0.49	0.54	0.49	53.0
27a	L1	All MCs	318	3.3	318	3.3	0.388	5.0	LOS A	3.3	23.6	0.54	0.53	0.54	52.3
29a	R1	All MCs	208	3.0	208	3.0	0.388	9.0	LOS A	3.3	23.6	0.54	0.53	0.54	53.5
29u	U	All MCs	1	0.0	1	0.0	0.388	12.0	LOS A	3.3	23.6	0.54	0.53	0.54	51.6
Approach			613	3.6	613	3.6	0.388	6.5	LOS A	3.3	23.6	0.53	0.53	0.53	52.8
All Vehicles			1658	2.8	1658	2.8	0.388	8.6	LOS A	3.3	23.6	0.60	0.62	0.60	52.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/McClelland Avenue (PM Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/McClelland Avenue
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
1a	L1	All MCs	159	0.7	159	0.7	0.322	6.6	LOS A	2.0	13.9	0.67	0.68	0.67	51.5
3a	R1	All MCs	67	3.1	67	3.1	0.322	10.6	LOS A	2.0	13.9	0.67	0.68	0.67	50.6
3	R2	All MCs	64	1.6	64	1.6	0.322	11.6	LOS A	2.0	13.9	0.67	0.68	0.67	52.9
3u	U	All MCs	1	0.0	1	0.0	0.322	13.6	LOS A	2.0	13.9	0.67	0.68	0.67	50.7
Approach			292	1.4	292	1.4	0.322	8.6	LOS A	2.0	13.9	0.67	0.68	0.67	51.6
East: McClelland Avenue															
4	L2	All MCs	62	0.0	62	0.0	0.047	5.7	LOS A	0.3	1.9	0.43	0.54	0.43	56.6
6a	R1	All MCs	426	0.7	426	0.7	0.373	11.0	LOS A	2.8	19.4	0.64	0.66	0.64	52.1
6b	R3	All MCs	21	0.0	21	0.0	0.373	13.2	LOS A	2.8	19.4	0.64	0.66	0.64	52.1
6u	U	All MCs	1	0.0	1	0.0	0.373	14.4	LOS A	2.8	19.4	0.64	0.66	0.64	52.1
Approach			511	0.6	511	0.6	0.373	10.5	LOS A	2.8	19.4	0.62	0.65	0.62	52.6
NorthEast: Hicks Street															
24b	L3	All MCs	46	0.0	46	0.0	0.273	6.6	LOS A	1.5	11.0	0.61	0.68	0.61	53.6
24a	L1	All MCs	95	1.1	95	1.1	0.273	6.3	LOS A	1.5	11.0	0.61	0.68	0.61	51.6
26	R2	All MCs	113	6.5	113	6.5	0.273	11.4	LOS A	1.5	11.0	0.61	0.68	0.61	50.6
26u	U	All MCs	1	0.0	1	0.0	0.273	13.3	LOS A	1.5	11.0	0.61	0.68	0.61	50.9
Approach			255	3.3	255	3.3	0.273	8.6	LOS A	1.5	11.0	0.61	0.68	0.61	51.5
NorthWest: McClelland Avenue															
27	L2	All MCs	76	8.3	76	8.3	0.086	5.5	LOS A	0.5	3.9	0.44	0.52	0.44	53.0
27a	L1	All MCs	308	3.4	308	3.4	0.342	4.7	LOS A	2.8	20.1	0.47	0.51	0.47	52.6
29a	R1	All MCs	175	1.8	175	1.8	0.342	8.6	LOS A	2.8	20.1	0.47	0.51	0.47	54.1
29u	U	All MCs	2	0.0	2	0.0	0.342	11.7	LOS A	2.8	20.1	0.47	0.51	0.47	51.9
Approach			561	3.6	561	3.6	0.342	6.1	LOS A	2.8	20.1	0.46	0.51	0.46	53.1
All Vehicles			1618	2.2	1618	2.2	0.373	8.3	LOS A	2.8	20.1	0.57	0.61	0.57	52.4

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/McClelland Avenue (Weekend Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/McClelland Avenue
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
1a	L1	All MCs	139	0.8	139	0.8	0.226	5.4	LOS A	1.2	8.5	0.50	0.61	0.50	52.3
3a	R1	All MCs	37	5.7	37	5.7	0.226	9.5	LOS A	1.2	8.5	0.50	0.61	0.50	51.3
3	R2	All MCs	61	1.7	61	1.7	0.226	10.4	LOS A	1.2	8.5	0.50	0.61	0.50	53.7
3u	U	All MCs	1	100.0	1	100.0	0.226	15.2	LOS A	1.2	8.5	0.50	0.61	0.50	48.1
Approach			238	2.2	238	2.2	0.226	7.3	LOS A	1.2	8.5	0.50	0.61	0.50	52.5
East: McClelland Avenue															
4	L2	All MCs	49	0.0	49	0.0	0.036	5.4	LOS A	0.2	1.4	0.37	0.52	0.37	56.8
6a	R1	All MCs	296	2.1	296	2.1	0.237	10.2	LOS A	1.5	10.9	0.49	0.63	0.49	52.5
6b	R3	All MCs	13	0.0	13	0.0	0.237	12.4	LOS A	1.5	10.9	0.49	0.63	0.49	52.6
6u	U	All MCs	1	0.0	1	0.0	0.237	13.5	LOS A	1.5	10.9	0.49	0.63	0.49	52.6
Approach			359	1.8	359	1.8	0.237	9.6	LOS A	1.5	10.9	0.47	0.61	0.47	53.1
NorthEast: Hicks Street															
24b	L3	All MCs	5	0.0	5	0.0	0.120	6.4	LOS A	0.6	4.3	0.56	0.67	0.56	53.4
24a	L1	All MCs	43	0.0	43	0.0	0.120	6.0	LOS A	0.6	4.3	0.56	0.67	0.56	51.5
26	R2	All MCs	63	5.0	63	5.0	0.120	11.2	LOS A	0.6	4.3	0.56	0.67	0.56	50.5
26u	U	All MCs	1	0.0	1	0.0	0.120	13.1	LOS A	0.6	4.3	0.56	0.67	0.56	50.7
Approach			113	2.8	113	2.8	0.120	9.0	LOS A	0.6	4.3	0.56	0.67	0.56	51.0
NorthWest: McClelland Avenue															
27	L2	All MCs	77	2.7	77	2.7	0.080	5.1	LOS A	0.5	3.4	0.37	0.49	0.37	53.5
27a	L1	All MCs	341	1.2	341	1.2	0.335	4.4	LOS A	2.7	19.0	0.39	0.48	0.39	53.0
29a	R1	All MCs	160	0.0	160	0.0	0.335	8.3	LOS A	2.7	19.0	0.39	0.48	0.39	54.9
29u	U	All MCs	6	0.0	6	0.0	0.335	11.5	LOS A	2.7	19.0	0.39	0.48	0.39	52.2
Approach			584	1.1	584	1.1	0.335	5.6	LOS A	2.7	19.0	0.38	0.49	0.38	53.6
All Vehicles			1294	1.6	1294	1.6	0.335	7.3	LOS A	2.7	19.0	0.45	0.56	0.45	53.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/MacGregor Court (AM Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/MacGregor Court/Shell Parade
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Shell Parade															
1	L2	All MCs	348	7.9	348	7.9	0.237	3.7	LOS A	1.5	11.0	0.18	0.41	0.18	54.8
3	R2	All MCs	4	0.0	4	0.0	0.237	9.3	LOS A	1.5	11.0	0.18	0.41	0.18	54.4
Approach			353	7.8	353	7.8	0.237	3.7	LOS A	1.5	11.0	0.18	0.41	0.18	54.8
East: MacGregor Court															
4	L2	All MCs	3	0.0	3	0.0	0.012	5.6	LOS A	0.1	0.4	0.54	0.49	0.54	53.3
5	T1	All MCs	8	0.0	8	0.0	0.012	5.5	LOS A	0.1	0.4	0.54	0.49	0.54	53.6
Approach			12	0.0	12	0.0	0.012	5.5	LOS A	0.1	0.4	0.54	0.49	0.54	53.5
North: Princes Freeway															
7	L2	All MCs	1	0.0	1	0.0	0.194	4.8	LOS A	1.0	8.0	0.46	0.51	0.46	52.9
8	T1	All MCs	175	16.9	175	16.9	0.194	5.1	LOS A	1.0	8.0	0.46	0.51	0.46	53.1
9	R2	All MCs	32	0.0	32	0.0	0.194	10.5	LOS A	1.0	8.0	0.46	0.51	0.46	52.4
Approach			207	14.2	207	14.2	0.194	6.0	LOS A	1.0	8.0	0.46	0.51	0.46	52.9
West: Rennie Street															
11	T1	All MCs	1	0.0	1	0.0	0.168	3.4	LOS A	0.9	6.5	0.04	0.63	0.04	51.8
12	R2	All MCs	287	1.5	287	1.5	0.168	9.1	LOS A	0.9	6.5	0.04	0.63	0.04	50.9
Approach			288	1.5	288	1.5	0.168	9.1	LOS A	0.9	6.5	0.04	0.63	0.04	50.9
All Vehicles			860	7.1	860	7.1	0.237	6.1	LOS A	1.5	11.0	0.20	0.51	0.20	52.9

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/MacGregor Court (School Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/MacGregor Court/Shell Parade
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Shell Parade															
1	L2	All MCs	482	4.4	482	4.4	0.304	3.5	LOS A	2.1	15.2	0.14	0.41	0.14	55.0
3	R2	All MCs	4	0.0	4	0.0	0.304	9.2	LOS A	2.1	15.2	0.14	0.41	0.14	54.5
Approach			486	4.3	486	4.3	0.304	3.6	LOS A	2.1	15.2	0.14	0.41	0.14	55.0
East: MacGregor Court															
4	L2	All MCs	3	0.0	3	0.0	0.005	5.2	LOS A	0.0	0.2	0.50	0.46	0.50	53.7
5	T1	All MCs	2	0.0	2	0.0	0.005	5.2	LOS A	0.0	0.2	0.50	0.46	0.50	54.0
Approach			5	0.0	5	0.0	0.005	5.2	LOS A	0.0	0.2	0.50	0.46	0.50	53.8
North: Princes Freeway															
7	L2	All MCs	2	0.0	2	0.0	0.126	4.8	LOS A	0.6	5.0	0.45	0.51	0.45	52.9
8	T1	All MCs	108	18.4	108	18.4	0.126	5.2	LOS A	0.6	5.0	0.45	0.51	0.45	53.0
9	R2	All MCs	21	0.0	21	0.0	0.126	10.5	LOS A	0.6	5.0	0.45	0.51	0.45	52.4
Approach			132	15.2	132	15.2	0.126	6.0	LOS A	0.6	5.0	0.45	0.51	0.45	52.9
West: Rennie Street															
11	T1	All MCs	3	0.0	3	0.0	0.180	3.4	LOS A	1.0	7.0	0.04	0.63	0.04	51.9
12	R2	All MCs	306	2.1	306	2.1	0.180	9.1	LOS A	1.0	7.0	0.04	0.63	0.04	50.9
Approach			309	2.0	309	2.0	0.180	9.1	LOS A	1.0	7.0	0.04	0.63	0.04	50.9
All Vehicles			933	5.1	933	5.1	0.304	5.8	LOS A	2.1	15.2	0.15	0.50	0.15	53.3

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/MacGregor Court (PM Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/MacGregor Court/Shell Parade
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Shell Parade															
1	L2	All MCs	444	5.7	444	5.7	0.285	3.6	LOS A	1.9	14.0	0.14	0.41	0.14	55.0
3	R2	All MCs	7	0.0	7	0.0	0.285	9.2	LOS A	1.9	14.0	0.14	0.41	0.14	54.5
Approach			452	5.6	452	5.6	0.285	3.7	LOS A	1.9	14.0	0.14	0.41	0.14	55.0
East: MacGregor Court															
4	L2	All MCs	2	0.0	2	0.0	0.004	5.0	LOS A	0.0	0.1	0.47	0.44	0.47	53.7
5	T1	All MCs	2	0.0	2	0.0	0.004	5.0	LOS A	0.0	0.1	0.47	0.44	0.47	54.1
Approach			4	0.0	4	0.0	0.004	5.0	LOS A	0.0	0.1	0.47	0.44	0.47	53.9
North: Princes Freeway															
7	L2	All MCs	1	0.0	1	0.0	0.107	4.7	LOS A	0.5	4.3	0.44	0.52	0.44	52.8
8	T1	All MCs	87	24.1	87	24.1	0.107	5.2	LOS A	0.5	4.3	0.44	0.52	0.44	52.8
9	R2	All MCs	22	0.0	22	0.0	0.107	10.4	LOS A	0.5	4.3	0.44	0.52	0.44	52.2
Approach			111	19.0	111	19.0	0.107	6.2	LOS A	0.5	4.3	0.44	0.52	0.44	52.7
West: Rennie Street															
11	T1	All MCs	1	0.0	1	0.0	0.171	3.4	LOS A	0.9	6.6	0.05	0.62	0.05	51.8
12	R2	All MCs	287	2.2	287	2.2	0.171	9.1	LOS A	0.9	6.6	0.05	0.62	0.05	50.9
Approach			288	2.2	288	2.2	0.171	9.1	LOS A	0.9	6.6	0.05	0.62	0.05	50.9
All Vehicles			855	6.2	855	6.2	0.285	5.8	LOS A	1.9	14.0	0.15	0.50	0.15	53.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/MacGregor Court (Weekend Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/MacGregor Court/Shell Parade
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Shell Parade															
1	L2	All MCs	179	6.5	179	6.5	0.111	3.5	LOS A	0.6	4.3	0.04	0.43	0.04	55.3
3	R2	All MCs	4	0.0	4	0.0	0.111	9.1	LOS A	0.6	4.3	0.04	0.43	0.04	54.8
Approach			183	6.3	183	6.3	0.111	3.6	LOS A	0.6	4.3	0.04	0.43	0.04	55.3
East: MacGregor Court															
4	L2	All MCs	5	0.0	5	0.0	0.005	4.3	LOS A	0.0	0.2	0.35	0.43	0.35	54.3
5	T1	All MCs	1	0.0	1	0.0	0.005	4.2	LOS A	0.0	0.2	0.35	0.43	0.35	54.7
Approach			6	0.0	6	0.0	0.005	4.2	LOS A	0.0	0.2	0.35	0.43	0.35	54.4
North: Princes Freeway															
7	L2	All MCs	1	0.0	1	0.0	0.091	3.9	LOS A	0.4	3.3	0.26	0.39	0.26	54.3
8	T1	All MCs	109	10.6	109	10.6	0.091	4.0	LOS A	0.4	3.3	0.26	0.39	0.26	54.6
9	R2	All MCs	4	0.0	4	0.0	0.091	9.6	LOS A	0.4	3.3	0.26	0.39	0.26	53.7
Approach			115	10.1	115	10.1	0.091	4.2	LOS A	0.4	3.3	0.26	0.39	0.26	54.5
West: Rennie Street															
11	T1	All MCs	2	0.0	2	0.0	0.066	3.4	LOS A	0.3	2.2	0.03	0.63	0.03	51.9
12	R2	All MCs	108	1.9	108	1.9	0.066	9.1	LOS A	0.3	2.2	0.03	0.63	0.03	51.0
Approach			111	1.9	111	1.9	0.066	9.0	LOS A	0.3	2.2	0.03	0.63	0.03	51.0
All Vehicles			415	6.1	415	6.1	0.111	5.2	LOS A	0.6	4.3	0.11	0.47	0.11	53.8

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Avalon Road/McClelland Avenue (AM Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/McClelland Avenue
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	312	5.4	312	5.4	0.399	7.0	LOS A	2.1	16.0	0.29	0.85	0.29	48.2
3	R2	All MCs	89	21.2	89	21.2	0.399	13.2	LOS A	2.1	16.0	0.29	0.85	0.29	43.1
Approach			401	8.9	401	8.9	0.399	8.4	LOS A	2.1	16.0	0.29	0.85	0.29	47.0
East: McClelland Avenue															
4	L2	All MCs	79	24.0	79	24.0	0.083	6.7	LOS A	0.0	0.0	0.00	0.43	0.00	55.9
5	T1	All MCs	59	16.1	59	16.1	0.083	1.1	LOS A	0.0	0.0	0.00	0.43	0.00	64.7
Approach			138	20.6	138	20.6	0.083	4.3	LOS A	0.0	0.0	0.00	0.43	0.00	60.6
West: McClelland Avenue															
11	T1	All MCs	52	10.2	52	10.2	0.250	0.6	LOS A	1.4	10.0	0.31	0.53	0.31	62.0
12	R2	All MCs	340	4.3	340	4.3	0.250	7.0	LOS A	1.4	10.0	0.31	0.53	0.31	52.4
Approach			392	5.1	392	5.1	0.250	6.1	LOS A	1.4	10.0	0.31	0.53	0.31	54.2
All Vehicles			931	9.0	931	9.0	0.399	6.8	LOS A	2.1	16.0	0.26	0.66	0.26	52.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/McClelland Avenue (School Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/McClelland Avenue
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	372	4.0	372	4.0	0.437	7.2	LOS A	2.4	17.8	0.36	0.84	0.36	49.0
3	R2	All MCs	91	14.0	91	14.0	0.437	12.0	LOS A	2.4	17.8	0.36	0.84	0.36	45.5
Approach			462	5.9	462	5.9	0.437	8.2	LOS A	2.4	17.8	0.36	0.84	0.36	48.3
East: McClelland Avenue															
4	L2	All MCs	84	8.8	84	8.8	0.099	6.5	LOS A	0.0	0.0	0.00	0.39	0.00	57.3
5	T1	All MCs	98	3.2	98	3.2	0.099	1.1	LOS A	0.0	0.0	0.00	0.39	0.00	65.4
Approach			182	5.8	182	5.8	0.099	3.6	LOS A	0.0	0.0	0.00	0.39	0.00	62.5
West: McClelland Avenue															
11	T1	All MCs	69	7.6	69	7.6	0.210	0.7	LOS A	1.1	7.9	0.33	0.51	0.33	62.4
12	R2	All MCs	259	2.0	259	2.0	0.210	7.0	LOS A	1.1	7.9	0.33	0.51	0.33	53.0
Approach			328	3.2	328	3.2	0.210	5.7	LOS A	1.1	7.9	0.33	0.51	0.33	55.7
All Vehicles			973	5.0	973	5.0	0.437	6.5	LOS A	2.4	17.8	0.28	0.64	0.28	53.6

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/McClelland Avenue (PM Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/McClelland Avenue
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	396	1.9	396	1.9	0.472	7.4	LOS A	2.8	20.9	0.41	0.84	0.41	49.3
3	R2	All MCs	80	28.9	80	28.9	0.472	15.2	LOS A	2.8	20.9	0.41	0.84	0.41	40.9
Approach			476	6.4	476	6.4	0.472	8.7	LOS A	2.8	20.9	0.41	0.84	0.41	47.7
East: McClelland Avenue															
4	L2	All MCs	108	6.8	108	6.8	0.121	6.5	LOS A	0.0	0.0	0.00	0.40	0.00	57.2
5	T1	All MCs	115	1.8	115	1.8	0.121	1.1	LOS A	0.0	0.0	0.00	0.40	0.00	65.3
Approach			223	4.2	223	4.2	0.121	3.7	LOS A	0.0	0.0	0.00	0.40	0.00	62.2
West: McClelland Avenue															
11	T1	All MCs	77	6.8	77	6.8	0.241	0.9	LOS A	1.3	9.2	0.38	0.53	0.38	62.2
12	R2	All MCs	287	1.8	287	1.8	0.241	7.2	LOS A	1.3	9.2	0.38	0.53	0.38	52.8
Approach			364	2.9	364	2.9	0.241	5.9	LOS A	1.3	9.2	0.38	0.53	0.38	55.5
All Vehicles			1063	4.8	1063	4.8	0.472	6.7	LOS A	2.8	20.9	0.31	0.64	0.31	53.5

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/McClelland Avenue (Weekend Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/McClelland Avenue
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	232	2.3	232	2.3	0.281	6.9	LOS A	1.3	9.3	0.27	0.87	0.27	50.0
3	R2	All MCs	74	4.3	74	4.3	0.281	9.9	LOS A	1.3	9.3	0.27	0.87	0.27	49.1
Approach			305	2.8	305	2.8	0.281	7.6	LOS A	1.3	9.3	0.27	0.87	0.27	49.8
East: McClelland Avenue															
4	L2	All MCs	63	3.3	63	3.3	0.076	6.4	LOS A	0.0	0.0	0.00	0.38	0.00	57.7
5	T1	All MCs	81	0.0	81	0.0	0.076	1.1	LOS A	0.0	0.0	0.00	0.38	0.00	65.6
Approach			144	1.5	144	1.5	0.076	3.4	LOS A	0.0	0.0	0.00	0.38	0.00	62.9
West: McClelland Avenue															
11	T1	All MCs	53	0.0	53	0.0	0.204	0.5	LOS A	1.1	7.6	0.29	0.51	0.29	62.3
12	R2	All MCs	278	0.8	278	0.8	0.204	6.8	LOS A	1.1	7.6	0.29	0.51	0.29	52.9
Approach			331	0.6	331	0.6	0.204	5.8	LOS A	1.1	7.6	0.29	0.51	0.29	55.0
All Vehicles			780	1.6	780	1.6	0.281	6.1	LOS A	1.3	9.3	0.23	0.63	0.23	54.6

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway North (AM Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway North
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
2	T1	All MCs	183	7.5	183	7.5	0.118	0.6	LOS A	0.2	1.6	0.13	0.15	0.13	67.2
3	R2	All MCs	14	23.1	14	23.1	0.118	10.6	LOS A	0.2	1.6	0.13	0.15	0.13	63.8
Approach			197	8.6	197	8.6	0.118	1.3	LOS A	0.2	1.6	0.13	0.15	0.13	66.7
North: Avalon Road															
7	L2	All MCs	306	3.8	306	3.8	0.325	3.1	LOS A	0.0	0.0	0.00	0.29	0.00	57.1
8	T1	All MCs	288	7.7	288	7.7	0.325	0.0	LOS A	0.0	0.0	0.00	0.29	0.00	65.9
Approach			595	5.7	595	5.7	0.325	1.6	LOS A	0.0	0.0	0.00	0.29	0.00	61.1
West: Princes Freeway Off-Ramp															
10	L2	All MCs	285	8.1	285	8.1	0.233	8.9	LOS A	1.1	7.9	0.34	0.64	0.34	50.4
11	T1	All MCs	1	0.0	1	0.0	0.233	13.4	LOS A	1.1	7.9	0.34	0.64	0.34	71.7
12	R2	All MCs	8	12.5	8	12.5	0.233	12.6	LOS A	1.1	7.9	0.34	0.64	0.34	59.7
Approach			295	8.2	295	8.2	0.233	9.0	LOS A	1.1	7.9	0.34	0.64	0.34	51.0
All Vehicles			1086	6.9	1086	6.9	0.325	3.5	LOS A	1.1	7.9	0.11	0.36	0.11	58.8

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway North (School Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway North
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
2	T1	All MCs	362	3.5	362	3.5	0.203	0.2	LOS A	0.1	1.1	0.04	0.05	0.04	69.2
3	R2	All MCs	7	71.4	7	71.4	0.203	11.6	LOS A	0.1	1.1	0.04	0.05	0.04	52.3
Approach			369	4.8	369	4.8	0.203	0.4	LOS A	0.1	1.1	0.04	0.05	0.04	68.4
North: Avalon Road															
7	L2	All MCs	188	3.9	188	3.9	0.241	3.1	LOS A	0.0	0.0	0.00	0.24	0.00	57.6
8	T1	All MCs	261	3.6	261	3.6	0.241	0.0	LOS A	0.0	0.0	0.00	0.24	0.00	66.7
Approach			449	3.7	449	3.7	0.241	1.3	LOS A	0.0	0.0	0.00	0.24	0.00	62.6
West: Princes Freeway Off-Ramp															
10	L2	All MCs	285	5.9	285	5.9	0.307	9.8	LOS A	1.4	10.4	0.50	0.73	0.52	49.3
11	T1	All MCs	2	50.0	2	50.0	0.307	21.4	LOS A	1.4	10.4	0.50	0.73	0.52	57.9
12	R2	All MCs	20	10.5	20	10.5	0.307	14.8	LOS A	1.4	10.4	0.50	0.73	0.52	59.4
Approach			307	6.5	307	6.5	0.307	10.2	LOS A	1.4	10.4	0.50	0.73	0.52	50.4
All Vehicles			1126	4.9	1126	4.9	0.307	3.5	LOS A	1.4	10.4	0.15	0.31	0.16	60.1

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway North (PM Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway North
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
2	T1	All MCs	422	3.5	422	3.5	0.233	0.1	LOS A	0.1	1.0	0.04	0.04	0.04	69.4
3	R2	All MCs	8	37.5	8	37.5	0.233	6.6	LOS A	0.1	1.0	0.04	0.04	0.04	54.1
Approach			431	4.2	431	4.2	0.233	0.3	LOS A	0.1	1.0	0.04	0.04	0.04	69.0
North: Avalon Road															
7	L2	All MCs	188	2.2	188	2.2	0.261	6.4	LOS A	0.0	0.0	0.00	0.24	0.00	62.0
8	T1	All MCs	301	3.5	301	3.5	0.261	0.1	LOS A	0.0	0.0	0.00	0.24	0.00	64.2
Approach			489	3.0	489	3.0	0.261	2.5	LOS A	0.0	0.0	0.00	0.24	0.00	63.0
West: Princes Freeway Off-Ramp															
10	L2	All MCs	261	7.3	261	7.3	0.312	10.4	LOS A	1.5	10.9	0.54	0.78	0.60	60.2
11	T1	All MCs	1	0.0	1	0.0	0.312	15.0	LOS A	1.5	10.9	0.54	0.78	0.60	69.6
12	R2	All MCs	20	15.8	20	15.8	0.312	17.7	LOS A	1.5	10.9	0.54	0.78	0.60	58.3
Approach			282	7.8	282	7.8	0.312	11.0	LOS A	1.5	10.9	0.54	0.78	0.60	60.2
All Vehicles			1202	4.6	1202	4.6	0.312	3.7	LOS A	1.5	10.9	0.14	0.30	0.15	63.5

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway North (Weekend Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway North
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
2	T1	All MCs	240	2.6	240	2.6	0.137	0.2	LOS A	0.1	0.9	0.07	0.08	0.07	69.0
3	R2	All MCs	13	0.0	13	0.0	0.137	5.0	LOS A	0.1	0.9	0.07	0.08	0.07	75.5
Approach			253	2.5	253	2.5	0.137	0.4	LOS A	0.1	0.9	0.07	0.08	0.07	69.3
North: Avalon Road															
7	L2	All MCs	238	0.4	238	0.4	0.257	6.4	LOS A	0.0	0.0	0.00	0.31	0.00	61.9
8	T1	All MCs	247	2.1	247	2.1	0.257	0.1	LOS A	0.0	0.0	0.00	0.31	0.00	62.8
Approach			485	1.3	485	1.3	0.257	3.2	LOS A	0.0	0.0	0.00	0.31	0.00	62.2
West: Princes Freeway Off-Ramp															
10	L2	All MCs	205	1.0	205	1.0	0.184	8.8	LOS A	0.8	5.5	0.37	0.66	0.37	63.8
11	T1	All MCs	1	0.0	1	0.0	0.184	11.9	LOS A	0.8	5.5	0.37	0.66	0.37	71.6
12	R2	All MCs	17	0.0	17	0.0	0.184	11.1	LOS A	0.8	5.5	0.37	0.66	0.37	61.4
Approach			223	0.9	223	0.9	0.184	9.0	LOS A	0.8	5.5	0.37	0.66	0.37	63.7
All Vehicles			961	1.5	961	1.5	0.257	3.8	LOS A	0.8	5.5	0.10	0.33	0.10	63.9

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway South (AM Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway South
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	18	5.9	18	5.9	0.043	6.2	LOS A	0.2	1.7	0.51	0.55	0.51	63.4
2	T1	All MCs	25	20.8	25	20.8	0.043	6.6	LOS A	0.2	1.7	0.51	0.55	0.51	59.7
Approach			43	14.6	43	14.6	0.043	6.4	LOS A	0.2	1.7	0.51	0.55	0.51	61.2
East: Princes Freeway Off-Ramp															
4	L2	All MCs	6	0.0	6	0.0	0.139	8.0	LOS A	0.7	5.2	0.43	0.68	0.43	60.9
5	T1	All MCs	1	100.0	1	100.0	0.139	11.7	LOS A	0.7	5.2	0.43	0.68	0.43	44.8
6	R2	All MCs	155	5.4	155	5.4	0.139	15.2	LOS A	0.7	5.2	0.43	0.68	0.43	58.6
Approach			162	5.8	162	5.8	0.139	14.9	LOS A	0.7	5.2	0.43	0.68	0.43	58.6
North: Avalon Road															
8	T1	All MCs	25	12.5	25	12.5	0.171	4.3	LOS A	0.0	0.0	0.00	0.67	0.00	57.6
9	R2	All MCs	268	7.5	268	7.5	0.171	10.9	LOS A	0.0	0.0	0.00	0.67	0.00	59.9
9u	U	All MCs	3	0.0	3	0.0	0.171	13.5	LOS A	0.0	0.0	0.00	0.67	0.00	56.8
Approach			297	7.8	297	7.8	0.171	10.3	LOS A	0.0	0.0	0.00	0.67	0.00	59.6
All Vehicles			502	7.8	502	7.8	0.171	11.5	LOS A	0.7	5.2	0.18	0.66	0.18	59.4

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway South (School Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway South
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	14	0.0	14	0.0	0.039	6.8	LOS A	0.2	1.7	0.61	0.59	0.61	63.9
2	T1	All MCs	21	20.0	21	20.0	0.039	7.5	LOS A	0.2	1.7	0.61	0.59	0.61	59.2
Approach			35	12.1	35	12.1	0.039	7.2	LOS A	0.2	1.7	0.61	0.59	0.61	60.9
East: Princes Freeway Off-Ramp															
4	L2	All MCs	7	0.0	7	0.0	0.287	8.1	LOS A	1.7	11.8	0.47	0.67	0.47	60.6
5	T1	All MCs	1	0.0	1	0.0	0.287	8.8	LOS A	1.7	11.8	0.47	0.67	0.47	65.8
6	R2	All MCs	340	2.2	340	2.2	0.287	15.2	LOS A	1.7	11.8	0.47	0.67	0.47	59.2
Approach			348	2.1	348	2.1	0.287	15.0	LOS A	1.7	11.8	0.47	0.67	0.47	59.2
North: Avalon Road															
8	T1	All MCs	37	8.6	37	8.6	0.159	4.3	LOS A	0.0	0.0	0.00	0.66	0.00	58.0
9	R2	All MCs	243	3.0	243	3.0	0.159	10.8	LOS A	0.0	0.0	0.00	0.66	0.00	61.1
9u	U	All MCs	1	100.0	1	100.0	0.159	14.8	LOS A	0.0	0.0	0.00	0.66	0.00	47.3
Approach			281	4.1	281	4.1	0.159	10.0	LOS A	0.0	0.0	0.00	0.66	0.00	60.6
All Vehicles			664	3.5	664	3.5	0.287	12.5	LOS A	1.7	11.8	0.28	0.67	0.28	59.9

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway South (PM Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway South
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	14	7.7	14	7.7	0.045	7.8	LOS A	0.3	2.0	0.67	0.63	0.67	61.8
2	T1	All MCs	23	13.6	23	13.6	0.045	8.1	LOS A	0.3	2.0	0.67	0.63	0.67	58.9
Approach			37	11.4	37	11.4	0.045	8.0	LOS A	0.3	2.0	0.67	0.63	0.67	59.9
East: Princes Freeway Off-Ramp															
4	L2	All MCs	6	0.0	6	0.0	0.344	8.4	LOS A	2.1	15.0	0.52	0.68	0.52	60.3
5	T1	All MCs	1	0.0	1	0.0	0.344	9.1	LOS A	2.1	15.0	0.52	0.68	0.52	65.4
6	R2	All MCs	398	2.6	398	2.6	0.344	15.5	LOS A	2.1	15.0	0.52	0.68	0.52	58.8
Approach			405	2.6	405	2.6	0.344	15.4	LOS A	2.1	15.0	0.52	0.68	0.52	58.8
North: Avalon Road															
8	T1	All MCs	39	10.8	39	10.8	0.182	4.3	LOS A	0.0	0.0	0.00	0.66	0.00	57.8
9	R2	All MCs	281	3.0	281	3.0	0.182	10.8	LOS A	0.0	0.0	0.00	0.66	0.00	61.0
9u	U	All MCs	1	100.0	1	100.0	0.182	14.8	LOS A	0.0	0.0	0.00	0.66	0.00	47.3
Approach			321	4.3	321	4.3	0.182	10.0	LOS A	0.0	0.0	0.00	0.66	0.00	60.5
All Vehicles			763	3.7	763	3.7	0.344	12.8	LOS A	2.1	15.0	0.31	0.67	0.31	59.6

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway South (Sat Peak) (Site Folder: Post Development - Appendix D)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway South
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	21	25.0	21	25.0	0.049	6.8	LOS A	0.3	1.9	0.52	0.55	0.52	59.8
2	T1	All MCs	28	0.0	28	0.0	0.049	6.1	LOS A	0.3	1.9	0.52	0.55	0.52	60.4
Approach			49	10.6	49	10.6	0.049	6.4	LOS A	0.3	1.9	0.52	0.55	0.52	60.1
East: Princes Freeway Off-Ramp															
4	L2	All MCs	4	0.0	4	0.0	0.176	7.8	LOS A	0.9	6.6	0.41	0.67	0.41	60.9
5	T1	All MCs	2	0.0	2	0.0	0.176	8.5	LOS A	0.9	6.6	0.41	0.67	0.41	66.1
6	R2	All MCs	209	2.0	209	2.0	0.176	14.9	LOS A	0.9	6.6	0.41	0.67	0.41	59.5
Approach			216	2.0	216	2.0	0.176	14.7	LOS A	0.9	6.6	0.41	0.67	0.41	59.6
North: Avalon Road															
8	T1	All MCs	31	10.3	31	10.3	0.149	4.3	LOS A	0.0	0.0	0.00	0.67	0.00	57.8
9	R2	All MCs	233	1.8	233	1.8	0.149	10.8	LOS A	0.0	0.0	0.00	0.67	0.00	61.2
9u	U	All MCs	1	0.0	1	0.0	0.149	13.5	LOS A	0.0	0.0	0.00	0.67	0.00	56.9
Approach			264	2.8	264	2.8	0.149	10.1	LOS A	0.0	0.0	0.00	0.67	0.00	60.8
All Vehicles			529	3.2	529	3.2	0.176	11.6	LOS A	0.9	6.6	0.22	0.66	0.22	60.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Appendix E

Analysis of Post Development Conditions with Future Development at Northern parcel of Land

Analysis of the Future Residential Development at the Northern Parcel of Land

As detailed in Section 2.3, the northern parcel of land is envisioned to have a development yield of 134 residential lots; resulting in a total sum of 800 residential lots across the two land parcels.

The vehicle traffic generated from the northern land parcel will be distributed similarly to the subject site as detailed in Section 4.2.1.

The figures below illustrate the traffic volumes generated from both developments and the post-development traffic volumes as a result.

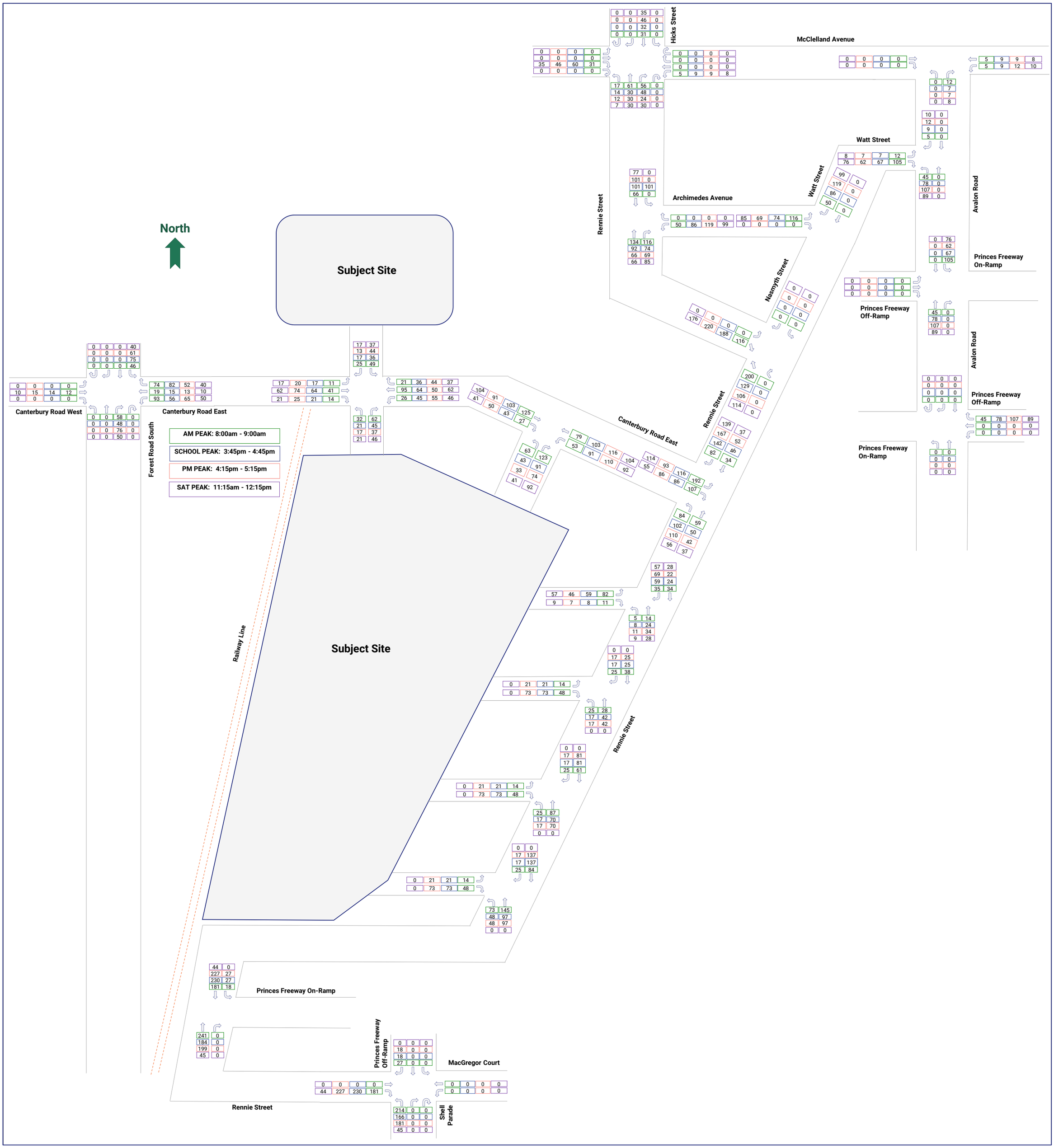


Figure 74: Development Traffic Volumes with Northern Land Parcel Developed

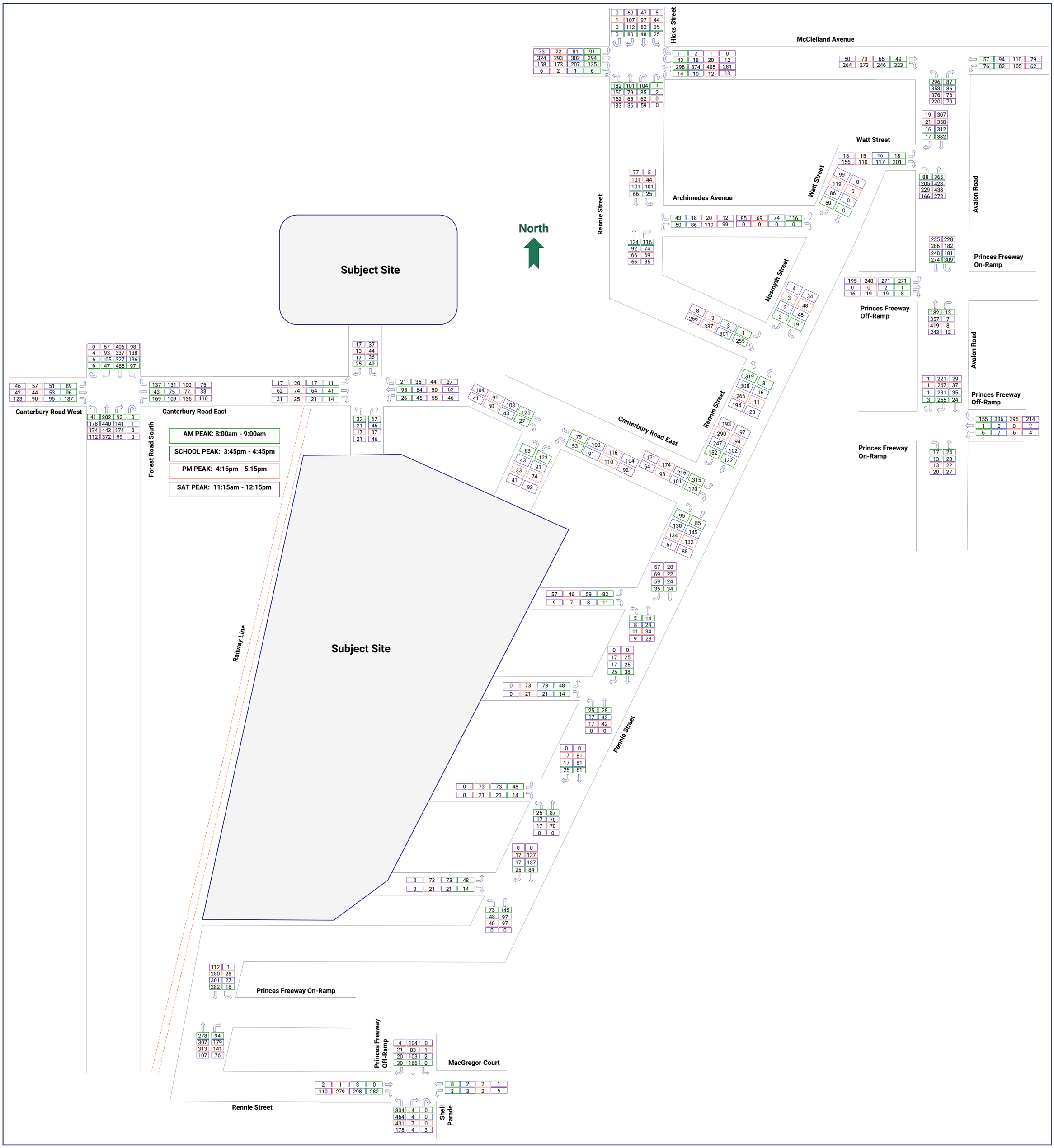


Figure 75: Post-Development Traffic Volumes with Northern Land Parcel Developed

Traffic Analysis

Similarly, SIDRA 9.1 has been used to assess the performance of each of the relevant intersections, based on the post-development traffic volumes presented at Figure 75. The methodology and assumptions adopted for our analysis of the existing conditions at Section 3.4.3 has been reflected within this analysis. The detailed SIDRA outputs are provided at Appendix D.

Our analysis indicates that the majority of the intersections will remain operating under a Level of Service A ('Excellent') at AM Peak, PM Peak and school pick-up time, except for the intersections discussed below which experience minor decreases to their performance.

Forest Road South/Canterbury Road East/Canterbury Road West Intersection

During the School pick-up times and the PM peak period at the Forest Road South/Canterbury Road East/Canterbury Road West intersection, a decrease to the level of performance is identified at the roundabout. The changes to the operation of the roundabout are detailed in the following figures and table.

Existing Conditions



Figure 76: Forest Road South/Canterbury Road East School Peak (Existing)

Post-Development Conditions



Figure 77: Forest Road South/Canterbury Road East School Peak (Post-Development)



Figure 78: Forest Road South/Canterbury Road East PM Peak (Existing)



Figure 79: Forest Road South/Canterbury Road East PM Peak (Post-Development)

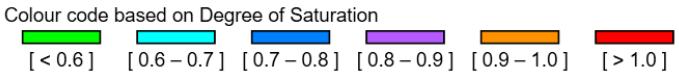


Table 19: Impact to Forest Road South/Canterbury Road East/Canterbury Road West Intersection

Critical Movement on Approach	Existing Conditions			Post-Development Conditions			*Difference*		
	DoS (LoS)	Average Delay (sec)	95th %ile Queues (m)	DoS (LoS)	Average Delay (sec)	95th %ile Queues (m)	*DoS (LoS)*	*Average Delay (sec)*	*95th %ile Queues (m)*
School Peak Hour									
South Approach	0.664 (B)	7.7	44.8	0.791 (C)	12.0	79.7	*+0.127*	*+4.3*	*+34.9*
PM Peak Hour									
South Approach	0.656 (B)	7.3	42.5	0.780 (C)	10.8	75.5	*+0.124*	*+3.5*	*+33.0*

We are satisfied that this level of impact to the operation of the Forest Road South/Canterbury Road East/Canterbury Road West roundabout is acceptable and will not have a detrimental impact to its operation during either peak hours.

Mid-Block Daily Traffic Volumes

Based on the traffic distribution detailed above, the daily traffic volumes generated by the development of the land are expected to increase traffic volumes to the levels in the following figure. The table following the figure sets out the relative increase in traffic volumes of these roads and compares to the target traffic volumes set out within the Greater Geelong Road Management Plan.

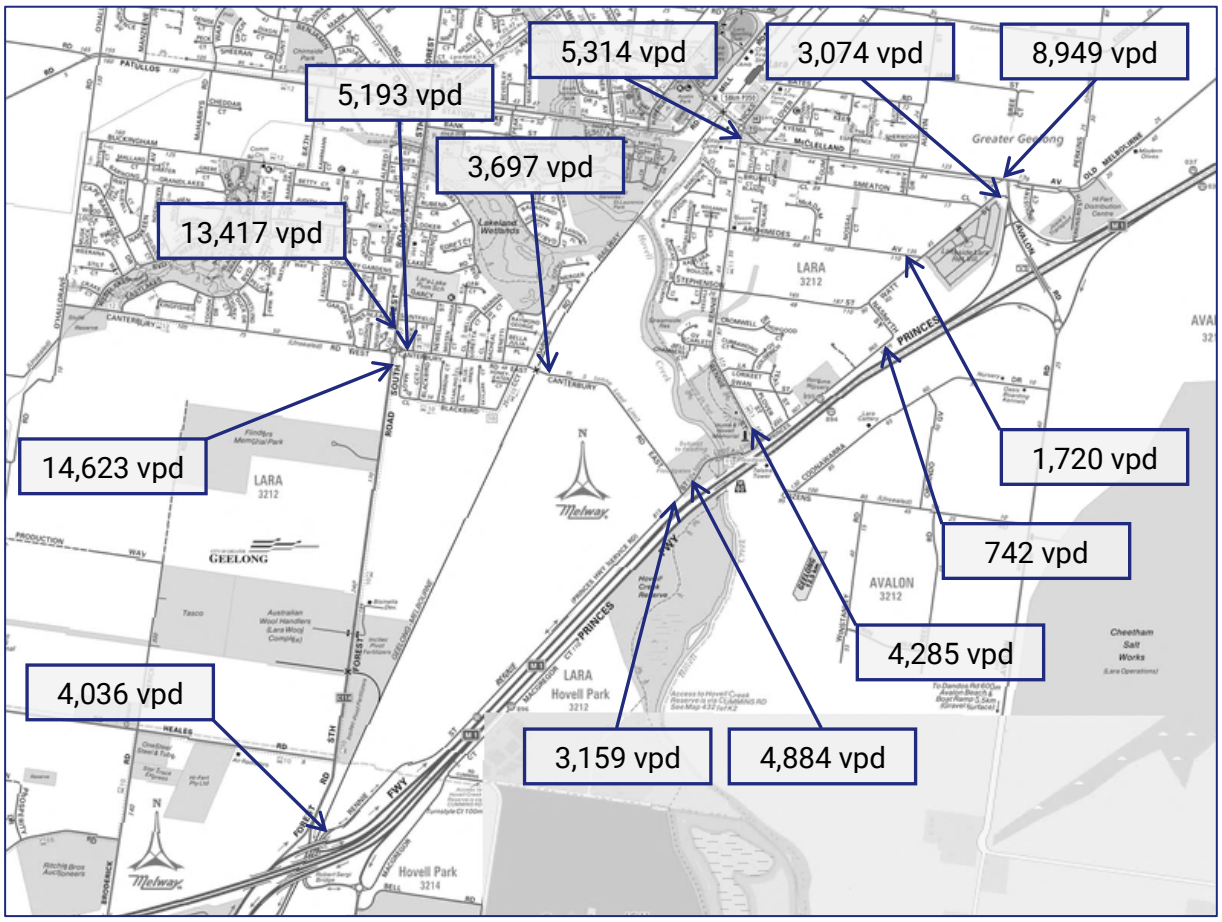


Figure 62: Estimated Weekday Daily Average – Two-Way Volumes

Table 20: Daily Traffic Volumes and Road Characteristic Volume

Road Name	Location	Classification	Recorded Weekday Average (vpd)	Key Characteristic Volume[1] (vpd)	Within Characteristic Volume?
Canterbury Road East	East of Train Line	Category 2 – Local Access – Urban	3,697	1,000 – 2,000	No
Canterbury Road East	East of Forest Road South	Category 3 – Secondary Distributor	5,193	3,000-5,000	No
Forest Road South	North of Canterbury Road East	Transport Zone 2	13,417	<18,000[2]	Yes
	South of Canterbury Road East		14,623		Yes

Rennie Street	North of Canterbury Road East	Category 3 – Collector Road Rural	4,884	3,000-5,000[3]	Yes
	South of Canterbury Road East		3,159		Yes
	North of Princes Freeway On-Ramp		4,036		Yes
	South of McClelland Avenue	Category 3 – Secondary Distributor	5,314	3,000-5,000	No
	North of Nasmyth Street		4,285		Yes
Nasmyth Street	Southwest of Bend	Category 2 – Local Access – Urban	742	<2,000	Yes
Archimedes Avenue	West of Watt Street	Category 2 – Local Access – Urban	1,720	<2,000	Yes
Watt Street	West of Avalon Road	Category 3 – Collector Road Rural	3,074	3,000-5,000[3]	Yes
McClelland Avenue	West of Avalon Road	Category 4 – Main Distributor – Urban & Transport Zone 3	8,949	5,000-10,000	Yes

Notes:
1. The previous version of The City of Greater Geelong Municipal Road Management Plan (dated 25th May, 2021) included key characteristic volumes for the different type of roads under Attachment 1. However, it has been removed within the latest version of the plan (Version 9.0, adopted 28th October, 2025).
2. It is generally accepted that a traffic volume of less than 18,000 vehicles per day is acceptable for an arterial road with one lane in each direction. Beyond this threshold, duplication would be considered.
3. Not specifically stated in the Road Management Plan. However, have assumed based on other Category 3 roads.

The above indicates that the impact of the northern land parcel being developed in the future will not fundamentally change the impact to the wider area compared with the development of the subject site in isolation.

Appendix F

SIDRA Results – Post-Development Conditions (with Future Development at Northern Parcel of Land)

MOVEMENT SUMMARY

Site: 101 [Watt Street/Avalon Road (AM Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Watt Street/Avalon Road
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	93	1.1	93	1.1	0.240	6.4	LOS A	0.0	0.2	0.01	0.13	0.01	60.3
2	T1	All MCs	384	9.3	384	9.3	0.240	0.0	LOS A	0.0	0.2	0.01	0.13	0.01	68.2
3u	U	All MCs	1	0.0	1	0.0	0.240	8.3	LOS A	0.0	0.2	0.01	0.13	0.01	63.7
Approach			478	7.7	478	7.7	0.240	1.3	LOS A	0.0	0.2	0.01	0.13	0.01	66.5
North: Avalon Road															
8	T1	All MCs	402	7.9	402	7.9	0.228	0.2	LOS A	0.2	1.6	0.07	0.08	0.07	69.2
9	R2	All MCs	18	11.8	18	11.8	0.228	9.1	LOS A	0.2	1.6	0.07	0.08	0.07	60.3
Approach			420	8.0	420	8.0	0.228	0.6	LOS A	0.2	1.6	0.07	0.08	0.07	68.8
West: Watt Street															
10	L2	All MCs	19	0.0	19	0.0	0.436	8.6	LOS A	2.0	13.9	0.71	0.97	1.00	50.1
12	R2	All MCs	212	1.0	212	1.0	0.436	13.3	LOS A	2.0	13.9	0.71	0.97	1.00	49.7
Approach			231	0.9	231	0.9	0.436	12.9	LOS A	2.0	13.9	0.71	0.97	1.00	49.8
All Vehicles			1128	6.4	1128	6.4	0.436	3.4	LOS A	2.0	13.9	0.17	0.28	0.23	63.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Watt Street/Avalon Road (School Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Watt Street/Avalon Road
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	216	1.0	216	1.0	0.326	6.4	LOS A	0.0	0.0	0.00	0.21	0.00	62.7
2	T1	All MCs	445	6.1	445	6.1	0.326	0.1	LOS A	0.0	0.0	0.00	0.21	0.00	67.0
Approach			661	4.5	661	4.5	0.326	2.2	LOS A	0.0	0.0	0.00	0.21	0.00	65.6
North: Avalon Road															
8	T1	All MCs	328	3.8	328	3.8	0.187	0.3	LOS A	0.2	1.7	0.09	0.11	0.09	68.9
9	R2	All MCs	17	0.0	17	0.0	0.187	9.7	LOS A	0.2	1.7	0.09	0.11	0.09	60.8
Approach			345	3.7	345	3.7	0.187	0.8	LOS A	0.2	1.7	0.09	0.11	0.09	68.5
West: Watt Street															
10	L2	All MCs	17	0.0	17	0.0	0.289	8.0	LOS A	1.1	7.6	0.68	0.91	0.81	50.4
12	R2	All MCs	123	3.4	123	3.4	0.289	13.0	LOS A	1.1	7.6	0.68	0.91	0.81	49.6
Approach			140	3.0	140	3.0	0.289	12.4	LOS A	1.1	7.6	0.68	0.91	0.81	49.7
All Vehicles			1146	4.0	1146	4.0	0.326	3.0	LOS A	1.1	7.6	0.11	0.26	0.12	63.9

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Watt Street/Avalon Road (PM Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Watt Street/Avalon Road
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	241	1.3	241	1.3	0.347	6.5	LOS A	0.0	0.0	0.00	0.22	0.00	62.5
2	T1	All MCs	461	6.6	461	6.6	0.347	0.1	LOS A	0.0	0.0	0.00	0.22	0.00	66.9
Approach			702	4.8	702	4.8	0.347	2.3	LOS A	0.0	0.0	0.00	0.22	0.00	65.3
North: Avalon Road															
8	T1	All MCs	377	3.4	377	3.4	0.219	0.5	LOS A	0.3	2.4	0.10	0.13	0.10	68.7
9	R2	All MCs	22	0.0	22	0.0	0.219	10.2	LOS A	0.3	2.4	0.10	0.13	0.10	60.6
Approach			399	3.2	399	3.2	0.219	1.0	LOS A	0.3	2.4	0.10	0.13	0.10	68.2
West: Watt Street															
10	L2	All MCs	16	0.0	16	0.0	0.298	8.3	LOS A	1.1	7.7	0.72	0.92	0.86	49.8
12	R2	All MCs	116	1.8	116	1.8	0.298	14.1	LOS A	1.1	7.7	0.72	0.92	0.86	49.3
Approach			132	1.6	132	1.6	0.298	13.4	LOS A	1.1	7.7	0.72	0.92	0.86	49.3
All Vehicles			1233	3.9	1233	3.9	0.347	3.0	LOS A	1.1	7.7	0.11	0.26	0.13	64.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Watt Street/Avalon Road (Weekend Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Watt Street/Avalon Road
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	175	0.0	175	0.0	0.224	6.4	LOS A	0.0	0.0	0.00	0.24	0.00	62.8
2	T1	All MCs	286	2.9	286	2.9	0.224	0.0	LOS A	0.0	0.0	0.00	0.24	0.00	66.7
Approach			461	1.8	461	1.8	0.224	2.5	LOS A	0.0	0.0	0.00	0.24	0.00	65.2
North: Avalon Road															
8	T1	All MCs	323	1.6	323	1.6	0.181	0.2	LOS A	0.2	1.5	0.08	0.10	0.08	69.0
9	R2	All MCs	20	5.3	20	5.3	0.181	8.5	LOS A	0.2	1.5	0.08	0.10	0.08	60.5
Approach			343	1.8	343	1.8	0.181	0.7	LOS A	0.2	1.5	0.08	0.10	0.08	68.5
West: Watt Street															
10	L2	All MCs	19	5.6	19	5.6	0.280	7.1	LOS A	1.1	7.7	0.57	0.83	0.65	51.0
12	R2	All MCs	164	0.6	164	0.6	0.280	10.1	LOS A	1.1	7.7	0.57	0.83	0.65	52.0
Approach			183	1.1	183	1.1	0.280	9.8	LOS A	1.1	7.7	0.57	0.83	0.65	51.9
All Vehicles			987	1.7	987	1.7	0.280	3.2	LOS A	1.1	7.7	0.14	0.30	0.15	63.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Nasmyth Street (AM Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Nasmyth Street
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Nasmyth Street															
25	T1	All MCs	20	10.5	20	10.5	0.030	6.5	LOS A	0.1	0.9	0.44	0.59	0.44	51.9
26	R2	All MCs	3	0.0	3	0.0	0.030	10.3	LOS A	0.1	0.9	0.44	0.59	0.44	51.8
Approach			23	9.1	23	9.1	0.030	7.0	LOS A	0.1	0.9	0.44	0.59	0.44	51.9
NorthWest: Rennie Street															
27	L2	All MCs	1	0.0	1	0.0	0.155	5.7	LOS A	0.8	5.6	0.12	0.54	0.12	52.5
29	R2	All MCs	268	1.6	268	1.6	0.155	5.7	LOS A	0.8	5.6	0.12	0.54	0.12	52.5
Approach			269	1.6	269	1.6	0.155	5.7	LOS A	0.8	5.6	0.12	0.54	0.12	52.5
SouthWest: Rennie Street															
30	L2	All MCs	336	0.6	336	0.6	0.175	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	52.8
31	T1	All MCs	33	3.2	33	3.2	0.018	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			368	0.9	368	0.9	0.175	5.1	LOS A	0.0	0.0	0.00	0.52	0.00	53.4
All Vehicles			661	1.4	661	1.4	0.175	5.4	LOS A	0.8	5.6	0.06	0.53	0.06	53.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Nasmyth Street (School Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Nasmyth Street
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Nasmyth Street															
25	T1	All MCs	51	0.0	51	0.0	0.066	6.6	LOS A	0.3	1.9	0.46	0.62	0.46	52.4
26	R2	All MCs	2	0.0	2	0.0	0.066	10.7	LOS A	0.3	1.9	0.46	0.62	0.46	51.9
Approach			53	0.0	53	0.0	0.066	6.8	LOS A	0.3	1.9	0.46	0.62	0.46	52.3
NorthWest: Rennie Street															
27	L2	All MCs	3	33.3	3	33.3	0.184	6.0	LOS A	1.0	6.9	0.08	0.54	0.08	51.3
29	R2	All MCs	317	2.0	317	2.0	0.184	5.6	LOS A	1.0	6.9	0.08	0.54	0.08	52.6
29u	U	All MCs	1	0.0	1	0.0	0.184	8.8	LOS A	1.0	6.9	0.08	0.54	0.08	52.3
Approach			321	2.3	321	2.3	0.184	5.6	LOS A	1.0	6.9	0.08	0.54	0.08	52.6
SouthWest: Rennie Street															
30	L2	All MCs	324	0.3	324	0.3	0.169	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	52.8
31	T1	All MCs	17	0.0	17	0.0	0.009	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			341	0.3	341	0.3	0.169	5.3	LOS A	0.0	0.0	0.00	0.55	0.00	53.1
All Vehicles			715	1.2	715	1.2	0.184	5.6	LOS A	1.0	6.9	0.07	0.55	0.07	52.8

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Nasmyth Street (PM Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Nasmyth Street
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Nasmyth Street															
25	T1	All MCs	51	0.0	51	0.0	0.071	7.0	LOS A	0.3	2.0	0.49	0.65	0.49	52.1
26	R2	All MCs	3	0.0	3	0.0	0.071	10.7	LOS A	0.3	2.0	0.49	0.65	0.49	51.6
Approach			54	0.0	54	0.0	0.071	7.2	LOS A	0.3	2.0	0.49	0.65	0.49	52.0
NorthWest: Rennie Street															
27	L2	All MCs	3	33.3	3	33.3	0.203	6.0	LOS A	1.1	7.8	0.07	0.55	0.07	51.3
29	R2	All MCs	355	1.8	355	1.8	0.203	5.6	LOS A	1.1	7.8	0.07	0.55	0.07	52.7
Approach			358	2.1	358	2.1	0.203	5.6	LOS A	1.1	7.8	0.07	0.55	0.07	52.6
SouthWest: Rennie Street															
30	L2	All MCs	280	1.5	280	1.5	0.147	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	52.8
31	T1	All MCs	12	0.0	12	0.0	0.006	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			292	1.4	292	1.4	0.147	5.4	LOS A	0.0	0.0	0.00	0.55	0.00	53.0
All Vehicles			703	1.6	703	1.6	0.203	5.6	LOS A	1.1	7.8	0.07	0.56	0.07	52.8

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Nasmyth Street (Weekend Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Nasmyth Street
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Nasmyth Street															
25	T1	All MCs	36	0.0	36	0.0	0.047	6.2	LOS A	0.2	1.3	0.43	0.59	0.43	52.6
26	R2	All MCs	4	0.0	4	0.0	0.047	9.0	LOS A	0.2	1.3	0.43	0.59	0.43	52.1
Approach			40	0.0	40	0.0	0.047	6.5	LOS A	0.2	1.3	0.43	0.59	0.43	52.5
NorthWest: Rennie Street															
27	L2	All MCs	8	0.0	8	0.0	0.161	5.7	LOS A	0.8	5.8	0.11	0.54	0.11	52.5
29	R2	All MCs	269	1.6	269	1.6	0.161	5.7	LOS A	0.8	5.8	0.11	0.54	0.11	52.5
Approach			278	1.5	278	1.5	0.161	5.7	LOS A	0.8	5.8	0.11	0.54	0.11	52.5
SouthWest: Rennie Street															
30	L2	All MCs	204	1.0	204	1.0	0.107	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	52.8
31	T1	All MCs	29	0.0	29	0.0	0.016	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			234	0.9	234	0.9	0.107	4.9	LOS A	0.0	0.0	0.00	0.50	0.00	53.6
All Vehicles			552	1.1	552	1.1	0.161	5.4	LOS A	0.8	5.8	0.09	0.53	0.09	53.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Princes Freeway (AM Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Princes Freeway
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
2	T1	All MCs	293	0.4	293	0.4	0.151	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	All MCs	99	26.6	99	26.6	0.089	7.3	LOS A	0.4	3.3	0.43	0.64	0.43	50.4
Approach			392	7.0	392	7.0	0.151	1.9	LOS A	0.4	3.3	0.11	0.16	0.11	57.2
North: Rennie Street															
7	L2	All MCs	19	0.0	19	0.0	0.164	5.6	LOS A	0.0	0.0	0.00	0.04	0.00	57.1
8	T1	All MCs	297	1.4	297	1.4	0.164	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	59.6
Approach			316	1.3	316	1.3	0.164	0.4	LOS A	0.0	0.0	0.00	0.04	0.00	59.4
All Vehicles			707	4.5	707	4.5	0.164	1.2	NA	0.4	3.3	0.06	0.11	0.06	58.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/Princes Freeway (School Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Princes Freeway
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
2	T1	All MCs	323	0.7	323	0.7	0.167	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	All MCs	188	10.1	188	10.1	0.157	7.1	LOS A	0.7	5.5	0.45	0.66	0.45	51.0
Approach			512	4.1	512	4.1	0.167	2.6	LOS A	0.7	5.5	0.17	0.24	0.17	56.3
North: Rennie Street															
7	L2	All MCs	28	0.0	28	0.0	0.180	5.6	LOS A	0.0	0.0	0.00	0.05	0.00	57.0
8	T1	All MCs	317	2.0	317	2.0	0.180	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	59.5
Approach			345	1.8	345	1.8	0.180	0.5	LOS A	0.0	0.0	0.00	0.05	0.00	59.2
All Vehicles			857	3.2	857	3.2	0.180	1.8	NA	0.7	5.5	0.10	0.16	0.10	57.5

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Princes Freeway (PM Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Princes Freeway
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
2	T1	All MCs	329	1.3	329	1.3	0.171	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	All MCs	148	14.2	148	14.2	0.125	7.1	LOS A	0.6	4.4	0.44	0.65	0.44	50.9
Approach			478	5.3	478	5.3	0.171	2.2	LOS A	0.6	4.4	0.14	0.20	0.14	56.8
North: Rennie Street															
7	L2	All MCs	29	0.0	29	0.0	0.169	5.6	LOS A	0.0	0.0	0.00	0.05	0.00	57.0
8	T1	All MCs	295	2.1	295	2.1	0.169	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	59.4
Approach			324	1.9	324	1.9	0.169	0.5	LOS A	0.0	0.0	0.00	0.05	0.00	59.2
All Vehicles			802	3.9	802	3.9	0.171	1.5	NA	0.6	4.4	0.08	0.14	0.08	57.7

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/Princes Freeway (Weekend Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Princes Freeway
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
2	T1	All MCs	113	0.9	113	0.9	0.058	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
3	R2	All MCs	80	11.8	80	11.8	0.053	6.0	LOS A	0.2	1.8	0.24	0.56	0.24	51.5
Approach			193	5.5	193	5.5	0.058	2.5	LOS A	0.2	1.8	0.10	0.23	0.10	56.1
North: Rennie Street															
7	L2	All MCs	1	0.0	1	0.0	0.062	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	57.4
8	T1	All MCs	118	1.8	118	1.8	0.062	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
Approach			119	1.8	119	1.8	0.062	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
All Vehicles			312	4.1	312	4.1	0.062	1.6	NA	0.2	1.8	0.06	0.15	0.06	57.5

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/Canterbury Road E (AM Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Canterbury Road E
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Rennie Street															
25	T1	All MCs	128	3.3	128	3.3	0.176	0.6	LOS A	0.9	6.2	0.30	0.39	0.30	56.1
26	R2	All MCs	160	1.3	160	1.3	0.176	6.2	LOS A	0.9	6.2	0.30	0.39	0.30	58.8
Approach			288	2.2	288	2.2	0.176	3.7	LOS A	0.9	6.2	0.30	0.39	0.30	57.5
NorthWest: Canterbury Road E															
27	L2	All MCs	332	0.6	332	0.6	0.366	7.4	LOS A	1.9	13.1	0.29	0.60	0.29	57.2
29	R2	All MCs	126	0.0	126	0.0	0.366	9.4	LOS A	1.9	13.1	0.29	0.60	0.29	56.9
Approach			458	0.5	458	0.5	0.366	7.9	LOS A	1.9	13.1	0.29	0.60	0.29	57.1
SouthWest: Rennie Street															
30	L2	All MCs	100	0.0	100	0.0	0.100	5.6	LOS A	0.0	0.0	0.00	0.31	0.00	54.9
31	T1	All MCs	89	1.2	89	1.2	0.100	0.0	LOS A	0.0	0.0	0.00	0.31	0.00	57.2
Approach			189	0.6	189	0.6	0.100	2.9	LOS A	0.0	0.0	0.00	0.31	0.00	56.0
All Vehicles			936	1.0	936	1.0	0.366	5.6	LOS A	1.9	13.1	0.24	0.48	0.24	57.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Canterbury Road E (School Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Canterbury Road E
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Rennie Street															
25	T1	All MCs	107	5.9	107	5.9	0.248	1.1	LOS A	1.3	9.4	0.42	0.53	0.42	55.0
26	R2	All MCs	260	0.0	260	0.0	0.248	6.6	LOS A	1.3	9.4	0.42	0.53	0.42	57.9
Approach			367	1.7	367	1.7	0.248	5.0	LOS A	1.3	9.4	0.42	0.53	0.42	57.0
NorthWest: Canterbury Road E															
27	L2	All MCs	227	0.0	227	0.0	0.305	7.6	LOS A	1.4	9.6	0.38	0.63	0.38	56.8
29	R2	All MCs	106	0.0	106	0.0	0.305	10.4	LOS A	1.4	9.6	0.38	0.63	0.38	56.5
Approach			334	0.0	334	0.0	0.305	8.5	LOS A	1.4	9.6	0.38	0.63	0.38	56.7
SouthWest: Rennie Street															
30	L2	All MCs	137	0.8	137	0.8	0.153	5.6	LOS A	0.0	0.0	0.00	0.28	0.00	55.1
31	T1	All MCs	153	0.7	153	0.7	0.153	0.0	LOS A	0.0	0.0	0.00	0.28	0.00	57.5
Approach			289	0.7	289	0.7	0.153	2.7	LOS A	0.0	0.0	0.00	0.28	0.00	56.3
All Vehicles			991	0.9	991	0.9	0.305	5.5	LOS A	1.4	9.6	0.28	0.49	0.28	56.7

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Canterbury Road E (PM Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Canterbury Road E
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Rennie Street															
25	T1	All MCs	99	6.4	99	6.4	0.275	1.1	LOS A	1.5	10.6	0.43	0.55	0.43	54.8
26	R2	All MCs	305	0.0	305	0.0	0.275	6.6	LOS A	1.5	10.6	0.43	0.55	0.43	57.7
Approach			404	1.6	404	1.6	0.275	5.3	LOS A	1.5	10.6	0.43	0.55	0.43	57.0
NorthWest: Canterbury Road E															
27	L2	All MCs	183	0.0	183	0.0	0.274	7.5	LOS A	1.2	8.3	0.37	0.63	0.37	56.7
29	R2	All MCs	103	0.0	103	0.0	0.274	10.5	LOS A	1.2	8.3	0.37	0.63	0.37	56.4
Approach			286	0.0	286	0.0	0.274	8.6	LOS A	1.2	8.3	0.37	0.63	0.37	56.6
SouthWest: Rennie Street															
30	L2	All MCs	141	0.0	141	0.0	0.149	5.6	LOS A	0.0	0.0	0.00	0.30	0.00	55.0
31	T1	All MCs	139	3.0	139	3.0	0.149	0.0	LOS A	0.0	0.0	0.00	0.30	0.00	57.3
Approach			280	1.5	280	1.5	0.149	2.8	LOS A	0.0	0.0	0.00	0.30	0.00	56.1
All Vehicles			971	1.1	971	1.1	0.275	5.5	LOS A	1.5	10.6	0.29	0.50	0.29	56.6

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Canterbury Road E (Weekend Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Canterbury Road E
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Rennie Street															
25	T1	All MCs	102	3.1	102	3.1	0.187	0.5	LOS A	1.0	6.8	0.29	0.43	0.29	55.6
26	R2	All MCs	203	0.5	203	0.5	0.187	6.0	LOS A	1.0	6.8	0.29	0.43	0.29	58.5
Approach			305	1.4	305	1.4	0.187	4.2	LOS A	1.0	6.8	0.29	0.43	0.29	57.5
NorthWest: Canterbury Road E															
27	L2	All MCs	180	0.0	180	0.0	0.198	7.3	LOS A	0.8	5.9	0.25	0.60	0.25	57.4
29	R2	All MCs	67	0.0	67	0.0	0.198	8.9	LOS A	0.8	5.9	0.25	0.60	0.25	57.1
Approach			247	0.0	247	0.0	0.198	7.7	LOS A	0.8	5.9	0.25	0.60	0.25	57.3
SouthWest: Rennie Street															
30	L2	All MCs	71	0.0	71	0.0	0.086	5.6	LOS A	0.0	0.0	0.00	0.26	0.00	55.4
31	T1	All MCs	93	2.3	93	2.3	0.086	0.0	LOS A	0.0	0.0	0.00	0.26	0.00	57.7
Approach			163	1.3	163	1.3	0.086	2.4	LOS A	0.0	0.0	0.00	0.26	0.00	56.6
All Vehicles			716	0.9	716	0.9	0.198	5.0	LOS A	1.0	6.8	0.21	0.45	0.21	57.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Forest Road S/Canterbury Road W (AM Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Forest Road S/Canterbury Road W
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Road S															
1	L2	All MCs	43	2.4	43	2.4	0.421	6.2	LOS A	2.8	20.7	0.55	0.59	0.55	51.2
2	T1	All MCs	297	6.0	297	6.0	0.421	6.4	LOS A	2.8	20.7	0.55	0.59	0.55	51.6
3	R2	All MCs	97	1.1	97	1.1	0.421	9.5	LOS A	2.8	20.7	0.55	0.59	0.55	51.0
Approach			437	4.6	437	4.6	0.421	7.1	LOS A	2.8	20.7	0.55	0.59	0.55	51.4
East: Canterbury Road E															
4	L2	All MCs	178	1.8	178	1.8	0.558	13.1	LOS A	4.8	34.3	0.89	0.89	1.12	46.9
5	T1	All MCs	45	2.3	45	2.3	0.558	13.3	LOS A	4.8	34.3	0.89	0.89	1.12	47.3
6	R2	All MCs	144	2.2	144	2.2	0.558	16.6	LOS A	4.8	34.3	0.89	0.89	1.12	46.7
Approach			367	2.0	367	2.0	0.558	14.5	LOS A	4.8	34.3	0.89	0.89	1.12	46.9
North: Forest Road S															
7	L2	All MCs	102	2.1	102	2.1	0.078	5.2	LOS A	0.4	2.6	0.32	0.55	0.32	52.8
8	T1	All MCs	489	4.5	489	4.5	0.490	6.8	LOS A	3.5	25.2	0.65	0.63	0.65	51.3
9	R2	All MCs	49	0.0	49	0.0	0.490	10.0	LOS A	3.5	25.2	0.65	0.63	0.65	50.8
9u	U	All MCs	6	16.7	6	16.7	0.490	12.2	LOS A	3.5	25.2	0.65	0.63	0.65	50.1
Approach			647	3.9	647	3.9	0.490	6.9	LOS A	3.5	25.2	0.60	0.62	0.60	51.5
West: Canterbury Road W															
10	L2	All MCs	94	1.1	94	1.1	0.499	9.9	LOS A	3.9	27.5	0.79	0.78	0.89	48.8
11	T1	All MCs	101	1.0	101	1.0	0.499	10.1	LOS A	3.9	27.5	0.79	0.78	0.89	49.1
12	R2	All MCs	197	0.5	197	0.5	0.499	13.3	LOS A	3.9	27.5	0.79	0.78	0.89	48.5
12u	U	All MCs	1	0.0	1	0.0	0.499	15.0	LOS A	3.9	27.5	0.79	0.78	0.89	48.5
Approach			393	0.8	393	0.8	0.499	11.7	LOS A	3.9	27.5	0.79	0.78	0.89	48.7
All Vehicles			1844	3.0	1844	3.0	0.558	9.5	LOS A	4.8	34.3	0.69	0.70	0.75	49.9

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Forest Road S/Canterbury Road W (School Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Forest Road S/Canterbury Road W
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Road S															
1	L2	All MCs	187	2.2	187	2.2	0.791	11.3	LOS C	11.1	79.7	0.89	0.83	1.15	48.5
2	T1	All MCs	463	3.0	463	3.0	0.791	11.4	LOS C	11.1	79.7	0.89	0.83	1.15	48.8
3	R2	All MCs	148	1.4	148	1.4	0.791	14.7	LOS C	11.1	79.7	0.89	0.83	1.15	48.2
Approach			799	2.5	799	2.5	0.791	12.0	LOS C	11.1	79.7	0.89	0.83	1.15	48.6
East: Canterbury Road E															
4	L2	All MCs	115	0.9	115	0.9	0.415	8.5	LOS A	2.7	19.0	0.73	0.73	0.74	49.9
5	T1	All MCs	79	2.7	79	2.7	0.415	8.7	LOS A	2.7	19.0	0.73	0.73	0.74	50.2
6	R2	All MCs	138	2.3	138	2.3	0.415	12.0	LOS A	2.7	19.0	0.73	0.73	0.74	49.5
Approach			332	1.9	332	1.9	0.415	10.0	LOS A	2.7	19.0	0.73	0.73	0.74	49.8
North: Forest Road S															
7	L2	All MCs	143	0.7	143	0.7	0.111	5.3	LOS A	0.6	4.0	0.35	0.55	0.35	52.7
8	T1	All MCs	344	2.1	344	2.1	0.377	6.1	LOS A	2.3	16.6	0.51	0.59	0.51	51.7
9	R2	All MCs	111	1.0	111	1.0	0.377	9.3	LOS A	2.3	16.6	0.51	0.59	0.51	51.0
9u	U	All MCs	6	16.7	6	16.7	0.377	11.4	LOS A	2.3	16.6	0.51	0.59	0.51	50.4
Approach			604	1.7	604	1.7	0.377	6.5	LOS A	2.3	16.6	0.47	0.58	0.47	51.8
West: Canterbury Road W															
10	L2	All MCs	54	3.9	54	3.9	0.366	10.7	LOS A	2.5	18.2	0.87	0.78	0.87	48.3
11	T1	All MCs	56	1.9	56	1.9	0.366	10.7	LOS A	2.5	18.2	0.87	0.78	0.87	48.7
12	R2	All MCs	100	2.1	100	2.1	0.366	14.0	LOS A	2.5	18.2	0.87	0.78	0.87	48.1
12u	U	All MCs	1	0.0	1	0.0	0.366	15.5	LOS A	2.5	18.2	0.87	0.78	0.87	48.1
Approach			211	2.5	211	2.5	0.366	12.3	LOS A	2.5	18.2	0.87	0.78	0.87	48.3
All Vehicles			1945	2.2	1945	2.2	0.791	10.0	LOS C	11.1	79.7	0.73	0.73	0.84	49.7

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Forest Road S/Canterbury Road W (PM Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Forest Road S/Canterbury Road W
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Road S															
1	L2	All MCs	183	0.6	183	0.6	0.780	10.0	LOS C	10.6	75.5	0.85	0.76	1.03	49.3
2	T1	All MCs	466	2.0	466	2.0	0.780	10.1	LOS C	10.6	75.5	0.85	0.76	1.03	49.7
3	R2	All MCs	183	1.1	183	1.1	0.780	13.4	LOS C	10.6	75.5	0.85	0.76	1.03	49.0
Approach			833	1.5	833	1.5	0.780	10.8	LOS C	10.6	75.5	0.85	0.76	1.03	49.4
East: Canterbury Road E															
4	L2	All MCs	143	0.7	143	0.7	0.408	8.3	LOS A	2.6	18.5	0.73	0.72	0.73	50.2
5	T1	All MCs	81	0.0	81	0.0	0.408	8.4	LOS A	2.6	18.5	0.73	0.72	0.73	50.6
6	R2	All MCs	105	3.0	105	3.0	0.408	11.8	LOS A	2.6	18.5	0.73	0.72	0.73	49.8
Approach			329	1.3	329	1.3	0.408	9.5	LOS A	2.6	18.5	0.73	0.72	0.73	50.2
North: Forest Road S															
7	L2	All MCs	145	2.2	145	2.2	0.116	5.4	LOS A	0.6	4.3	0.38	0.56	0.38	52.6
8	T1	All MCs	355	2.4	355	2.4	0.381	6.2	LOS A	2.4	17.0	0.53	0.60	0.53	51.7
9	R2	All MCs	98	2.2	98	2.2	0.381	9.5	LOS A	2.4	17.0	0.53	0.60	0.53	51.0
9u	U	All MCs	4	0.0	4	0.0	0.381	11.1	LOS A	2.4	17.0	0.53	0.60	0.53	51.1
Approach			602	2.3	602	2.3	0.381	6.6	LOS A	2.4	17.0	0.49	0.59	0.49	51.8
West: Canterbury Road W															
10	L2	All MCs	60	3.5	60	3.5	0.351	10.6	LOS A	2.4	17.3	0.87	0.78	0.87	48.4
11	T1	All MCs	46	2.3	46	2.3	0.351	10.7	LOS A	2.4	17.3	0.87	0.78	0.87	48.8
12	R2	All MCs	95	1.1	95	1.1	0.351	13.9	LOS A	2.4	17.3	0.87	0.78	0.87	48.1
12u	U	All MCs	1	0.0	1	0.0	0.351	15.5	LOS A	2.4	17.3	0.87	0.78	0.87	48.2
Approach			202	2.1	202	2.1	0.351	12.2	LOS A	2.4	17.3	0.87	0.78	0.87	48.3
All Vehicles			1966	1.8	1966	1.8	0.780	9.4	LOS C	10.6	75.5	0.72	0.70	0.80	50.1

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Forest Road S/Canterbury Road W (Weekend Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Forest Road S/Canterbury Road W
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Road S															
1	L2	All MCs	118	0.0	118	0.0	0.513	5.8	LOS A	3.8	27.0	0.50	0.55	0.50	51.7
2	T1	All MCs	392	0.3	392	0.3	0.513	5.9	LOS A	3.8	27.0	0.50	0.55	0.50	52.1
3	R2	All MCs	104	1.0	104	1.0	0.513	9.2	LOS A	3.8	27.0	0.50	0.55	0.50	51.3
Approach			614	0.3	614	0.3	0.513	6.5	LOS A	3.8	27.0	0.50	0.55	0.50	51.9
East: Canterbury Road E															
4	L2	All MCs	122	1.7	122	1.7	0.306	8.6	LOS A	1.8	13.1	0.71	0.72	0.71	50.0
5	T1	All MCs	35	0.0	35	0.0	0.306	8.6	LOS A	1.8	13.1	0.71	0.72	0.71	50.4
6	R2	All MCs	79	2.7	79	2.7	0.306	12.0	LOS A	1.8	13.1	0.71	0.72	0.71	49.7
Approach			236	1.8	236	1.8	0.306	9.7	LOS A	1.8	13.1	0.71	0.72	0.71	50.0
North: Forest Road S															
7	L2	All MCs	103	3.1	103	3.1	0.077	5.1	LOS A	0.3	2.5	0.27	0.54	0.27	52.9
8	T1	All MCs	427	0.5	427	0.5	0.386	5.9	LOS A	2.4	16.9	0.49	0.56	0.49	52.1
9	R2	All MCs	60	0.0	60	0.0	0.386	9.2	LOS A	2.4	16.9	0.49	0.56	0.49	51.4
9u	U	All MCs	1	0.0	1	0.0	0.386	10.9	LOS A	2.4	16.9	0.49	0.56	0.49	51.4
Approach			592	0.9	592	0.9	0.386	6.1	LOS A	2.4	16.9	0.45	0.56	0.45	52.1
West: Canterbury Road W															
10	L2	All MCs	48	0.0	48	0.0	0.289	8.5	LOS A	1.8	12.7	0.71	0.72	0.71	49.6
11	T1	All MCs	44	0.0	44	0.0	0.289	8.7	LOS A	1.8	12.7	0.71	0.72	0.71	49.9
12	R2	All MCs	129	0.8	129	0.8	0.289	12.0	LOS A	1.8	12.7	0.71	0.72	0.71	49.2
12u	U	All MCs	1	0.0	1	0.0	0.289	13.6	LOS A	1.8	12.7	0.71	0.72	0.71	49.3
Approach			223	0.5	223	0.5	0.289	10.6	LOS A	1.8	12.7	0.71	0.72	0.71	49.4
All Vehicles			1664	0.8	1664	0.8	0.513	7.4	LOS A	3.8	27.0	0.54	0.60	0.54	51.3

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/McClelland Avenue (AM Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/McClelland Avenue
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
1a	L1	All MCs	189	2.8	189	2.8	0.413	6.3	LOS A	2.6	18.3	0.64	0.67	0.64	51.4
3a	R1	All MCs	106	1.0	106	1.0	0.413	10.2	LOS A	2.6	18.3	0.64	0.67	0.64	50.7
3	R2	All MCs	109	1.9	109	1.9	0.413	11.3	LOS A	2.6	18.3	0.64	0.67	0.64	52.8
3u	U	All MCs	1	0.0	1	0.0	0.413	13.3	LOS A	2.6	18.3	0.64	0.67	0.64	50.7
Approach			406	2.1	406	2.1	0.413	8.7	LOS A	2.6	18.3	0.64	0.67	0.64	51.6
East: McClelland Avenue															
4	L2	All MCs	15	0.0	15	0.0	0.011	5.4	LOS A	0.1	0.4	0.36	0.49	0.36	56.8
6a	R1	All MCs	314	5.4	314	5.4	0.293	10.4	LOS A	2.0	14.6	0.53	0.63	0.53	52.1
6b	R3	All MCs	45	2.3	45	2.3	0.293	12.6	LOS A	2.0	14.6	0.53	0.63	0.53	52.2
6u	U	All MCs	12	0.0	12	0.0	0.293	13.6	LOS A	2.0	14.6	0.53	0.63	0.53	52.3
Approach			385	4.6	385	4.6	0.293	10.6	LOS A	2.0	14.6	0.52	0.63	0.52	52.3
NorthEast: Hicks Street															
24b	L3	All MCs	26	0.0	26	0.0	0.181	6.6	LOS A	1.0	7.1	0.61	0.68	0.61	53.4
24a	L1	All MCs	51	2.1	51	2.1	0.181	6.2	LOS A	1.0	7.1	0.61	0.68	0.61	51.4
26	R2	All MCs	84	7.5	84	7.5	0.181	11.4	LOS A	1.0	7.1	0.61	0.68	0.61	50.4
26u	U	All MCs	1	0.0	1	0.0	0.181	13.3	LOS A	1.0	7.1	0.61	0.68	0.61	50.6
Approach			162	4.5	162	4.5	0.181	9.0	LOS A	1.0	7.1	0.61	0.68	0.61	51.2
NorthWest: McClelland Avenue															
27	L2	All MCs	96	8.8	96	8.8	0.123	6.7	LOS A	0.7	5.6	0.56	0.58	0.56	52.5
27a	L1	All MCs	309	4.4	309	4.4	0.364	5.5	LOS A	2.9	20.8	0.60	0.56	0.60	52.2
29a	R1	All MCs	142	0.0	142	0.0	0.364	9.3	LOS A	2.9	20.8	0.60	0.56	0.60	54.1
29u	U	All MCs	6	0.0	6	0.0	0.364	12.5	LOS A	2.9	20.8	0.60	0.56	0.60	51.5
Approach			554	4.0	554	4.0	0.364	6.8	LOS A	2.9	20.8	0.59	0.57	0.59	52.7
All Vehicles			1507	3.7	1507	3.7	0.413	8.5	LOS A	2.9	20.8	0.59	0.62	0.59	52.1

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/McClelland Avenue (School Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/McClelland Avenue
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
1a	L1	All MCs	158	0.0	158	0.0	0.358	6.5	LOS A	2.2	15.7	0.67	0.69	0.67	51.4
3a	R1	All MCs	83	2.5	83	2.5	0.358	10.5	LOS A	2.2	15.7	0.67	0.69	0.67	50.5
3	R2	All MCs	89	1.2	89	1.2	0.358	11.5	LOS A	2.2	15.7	0.67	0.69	0.67	52.8
3u	U	All MCs	2	0.0	2	0.0	0.358	13.6	LOS A	2.2	15.7	0.67	0.69	0.67	50.6
Approach			333	0.9	333	0.9	0.358	8.9	LOS A	2.2	15.7	0.67	0.69	0.67	51.5
East: McClelland Avenue															
4	L2	All MCs	63	0.0	63	0.0	0.050	5.9	LOS A	0.3	2.0	0.47	0.55	0.47	56.4
6a	R1	All MCs	394	2.1	394	2.1	0.360	11.3	LOS A	2.6	18.8	0.66	0.67	0.66	52.0
6b	R3	All MCs	19	5.6	19	5.6	0.360	13.7	LOS A	2.6	18.8	0.66	0.67	0.66	51.8
6u	U	All MCs	2	50.0	2	50.0	0.360	16.5	LOS A	2.6	18.8	0.66	0.67	0.66	50.2
Approach			478	2.2	478	2.2	0.360	10.7	LOS A	2.6	18.8	0.64	0.65	0.64	52.5
NorthEast: Hicks Street															
24b	L3	All MCs	37	5.7	37	5.7	0.281	7.4	LOS A	1.6	11.9	0.67	0.70	0.67	51.9
24a	L1	All MCs	86	2.4	86	2.4	0.281	6.8	LOS A	1.6	11.9	0.67	0.70	0.67	51.1
26	R2	All MCs	118	5.4	118	5.4	0.281	11.9	LOS A	1.6	11.9	0.67	0.70	0.67	50.2
26u	U	All MCs	1	0.0	1	0.0	0.281	13.8	LOS A	1.6	11.9	0.67	0.70	0.67	50.4
Approach			242	4.3	242	4.3	0.281	9.4	LOS A	1.6	11.9	0.67	0.70	0.67	50.8
NorthWest: McClelland Avenue															
27	L2	All MCs	85	6.2	85	6.2	0.100	5.9	LOS A	0.6	4.5	0.49	0.54	0.49	52.9
27a	L1	All MCs	318	3.3	318	3.3	0.396	5.0	LOS A	3.4	24.2	0.55	0.54	0.55	52.3
29a	R1	All MCs	218	2.9	218	2.9	0.396	9.0	LOS A	3.4	24.2	0.55	0.54	0.55	53.5
29u	U	All MCs	1	0.0	1	0.0	0.396	12.0	LOS A	3.4	24.2	0.55	0.54	0.55	51.5
Approach			622	3.6	622	3.6	0.396	6.5	LOS A	3.4	24.2	0.54	0.54	0.54	52.8
All Vehicles			1675	2.8	1675	2.8	0.396	8.6	LOS A	3.4	24.2	0.61	0.62	0.61	52.1

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/McClelland Avenue (PM Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/McClelland Avenue
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
1a	L1	All MCs	160	0.7	160	0.7	0.326	6.6	LOS A	2.0	14.2	0.67	0.68	0.67	51.5
3a	R1	All MCs	68	3.1	68	3.1	0.326	10.6	LOS A	2.0	14.2	0.67	0.68	0.67	50.6
3	R2	All MCs	65	1.6	65	1.6	0.326	11.6	LOS A	2.0	14.2	0.67	0.68	0.67	52.9
3u	U	All MCs	1	0.0	1	0.0	0.326	13.7	LOS A	2.0	14.2	0.67	0.68	0.67	50.7
Approach			295	1.4	295	1.4	0.326	8.7	LOS A	2.0	14.2	0.67	0.68	0.67	51.6
East: McClelland Avenue															
4	L2	All MCs	62	0.0	62	0.0	0.048	5.8	LOS A	0.3	1.9	0.44	0.54	0.44	56.5
6a	R1	All MCs	426	0.7	426	0.7	0.377	11.1	LOS A	2.8	19.7	0.65	0.66	0.65	52.0
6b	R3	All MCs	21	0.0	21	0.0	0.377	13.3	LOS A	2.8	19.7	0.65	0.66	0.65	52.1
6u	U	All MCs	1	0.0	1	0.0	0.377	14.5	LOS A	2.8	19.7	0.65	0.66	0.65	52.1
Approach			511	0.6	511	0.6	0.377	10.5	LOS A	2.8	19.7	0.63	0.65	0.63	52.5
NorthEast: Hicks Street															
24b	L3	All MCs	46	0.0	46	0.0	0.282	6.7	LOS A	1.6	11.5	0.62	0.68	0.62	53.6
24a	L1	All MCs	102	1.0	102	1.0	0.282	6.3	LOS A	1.6	11.5	0.62	0.68	0.62	51.6
26	R2	All MCs	113	6.5	113	6.5	0.282	11.5	LOS A	1.6	11.5	0.62	0.68	0.62	50.6
26u	U	All MCs	1	0.0	1	0.0	0.282	13.4	LOS A	1.6	11.5	0.62	0.68	0.62	50.8
Approach			262	3.2	262	3.2	0.282	8.7	LOS A	1.6	11.5	0.62	0.68	0.62	51.5
NorthWest: McClelland Avenue															
27	L2	All MCs	76	8.3	76	8.3	0.086	5.5	LOS A	0.5	3.9	0.44	0.52	0.44	53.0
27a	L1	All MCs	308	3.4	308	3.4	0.348	4.7	LOS A	2.9	20.5	0.47	0.51	0.47	52.6
29a	R1	All MCs	182	1.7	182	1.7	0.348	8.6	LOS A	2.9	20.5	0.47	0.51	0.47	54.1
29u	U	All MCs	2	0.0	2	0.0	0.348	11.7	LOS A	2.9	20.5	0.47	0.51	0.47	51.8
Approach			568	3.5	568	3.5	0.348	6.1	LOS A	2.9	20.5	0.47	0.51	0.47	53.1
All Vehicles			1636	2.2	1636	2.2	0.377	8.4	LOS A	2.9	20.5	0.58	0.61	0.58	52.4

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/McClelland Avenue (Weekend Peak)
(Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/McClelland Avenue
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
1a	L1	All MCs	140	0.8	140	0.8	0.229	5.4	LOS A	1.2	8.6	0.50	0.61	0.50	52.3
3a	R1	All MCs	38	5.6	38	5.6	0.229	9.5	LOS A	1.2	8.6	0.50	0.61	0.50	51.3
3	R2	All MCs	62	1.7	62	1.7	0.229	10.4	LOS A	1.2	8.6	0.50	0.61	0.50	53.7
3u	U	All MCs	1	100.0	1	100.0	0.229	15.2	LOS A	1.2	8.6	0.50	0.61	0.50	48.1
Approach			241	2.2	241	2.2	0.229	7.3	LOS A	1.2	8.6	0.50	0.61	0.50	52.5
East: McClelland Avenue															
4	L2	All MCs	49	0.0	49	0.0	0.036	5.5	LOS A	0.2	1.4	0.38	0.52	0.38	56.8
6a	R1	All MCs	296	2.1	296	2.1	0.239	10.2	LOS A	1.5	11.0	0.50	0.63	0.50	52.5
6b	R3	All MCs	13	0.0	13	0.0	0.239	12.4	LOS A	1.5	11.0	0.50	0.63	0.50	52.6
6u	U	All MCs	1	0.0	1	0.0	0.239	13.6	LOS A	1.5	11.0	0.50	0.63	0.50	52.6
Approach			359	1.8	359	1.8	0.239	9.7	LOS A	1.5	11.0	0.48	0.61	0.48	53.0
NorthEast: Hicks Street															
24b	L3	All MCs	5	0.0	5	0.0	0.127	6.5	LOS A	0.6	4.6	0.57	0.67	0.57	53.5
24a	L1	All MCs	49	0.0	49	0.0	0.127	6.0	LOS A	0.6	4.6	0.57	0.67	0.57	51.5
26	R2	All MCs	63	5.0	63	5.0	0.127	11.2	LOS A	0.6	4.6	0.57	0.67	0.57	50.5
26u	U	All MCs	1	0.0	1	0.0	0.127	13.1	LOS A	0.6	4.6	0.57	0.67	0.57	50.7
Approach			119	2.7	119	2.7	0.127	8.9	LOS A	0.6	4.6	0.57	0.67	0.57	51.1
NorthWest: McClelland Avenue															
27	L2	All MCs	77	2.7	77	2.7	0.080	5.1	LOS A	0.5	3.4	0.37	0.49	0.37	53.4
27a	L1	All MCs	341	1.2	341	1.2	0.340	4.4	LOS A	2.8	19.4	0.39	0.49	0.39	53.0
29a	R1	All MCs	166	0.0	166	0.0	0.340	8.4	LOS A	2.8	19.4	0.39	0.49	0.39	54.9
29u	U	All MCs	6	0.0	6	0.0	0.340	11.5	LOS A	2.8	19.4	0.39	0.49	0.39	52.2
Approach			591	1.1	591	1.1	0.340	5.7	LOS A	2.8	19.4	0.39	0.49	0.39	53.6
All Vehicles			1309	1.6	1309	1.6	0.340	7.4	LOS A	2.8	19.4	0.45	0.56	0.45	53.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/MacGregor Court (AM Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/MacGregor Court/Shell Parade
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Shell Parade															
1	L2	All MCs	352	7.8	352	7.8	0.238	3.7	LOS A	1.5	11.1	0.18	0.41	0.18	54.8
3	R2	All MCs	4	0.0	4	0.0	0.238	9.3	LOS A	1.5	11.1	0.18	0.41	0.18	54.4
Approach			356	7.7	356	7.7	0.238	3.7	LOS A	1.5	11.1	0.18	0.41	0.18	54.8
East: MacGregor Court															
4	L2	All MCs	3	0.0	3	0.0	0.012	5.6	LOS A	0.1	0.4	0.55	0.49	0.55	53.3
5	T1	All MCs	8	0.0	8	0.0	0.012	5.6	LOS A	0.1	0.4	0.55	0.49	0.55	53.6
Approach			12	0.0	12	0.0	0.012	5.6	LOS A	0.1	0.4	0.55	0.49	0.55	53.5
North: Princes Freeway															
7	L2	All MCs	1	0.0	1	0.0	0.195	4.9	LOS A	1.0	8.1	0.47	0.51	0.47	52.9
8	T1	All MCs	175	16.9	175	16.9	0.195	5.2	LOS A	1.0	8.1	0.47	0.51	0.47	53.0
9	R2	All MCs	32	0.0	32	0.0	0.195	10.6	LOS A	1.0	8.1	0.47	0.51	0.47	52.3
Approach			207	14.2	207	14.2	0.195	6.0	LOS A	1.0	8.1	0.47	0.51	0.47	52.9
West: Rennie Street															
11	T1	All MCs	1	0.0	1	0.0	0.173	3.4	LOS A	1.0	6.8	0.04	0.63	0.04	51.8
12	R2	All MCs	297	1.4	297	1.4	0.173	9.1	LOS A	1.0	6.8	0.04	0.63	0.04	50.9
Approach			298	1.4	298	1.4	0.173	9.1	LOS A	1.0	6.8	0.04	0.63	0.04	50.9
All Vehicles			873	7.0	873	7.0	0.238	6.1	LOS A	1.5	11.1	0.20	0.51	0.20	52.9

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/MacGregor Court (School Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/MacGregor Court/Shell Parade
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Shell Parade															
1	L2	All MCs	488	4.3	488	4.3	0.307	3.5	LOS A	2.1	15.5	0.14	0.41	0.14	55.0
3	R2	All MCs	4	0.0	4	0.0	0.307	9.2	LOS A	2.1	15.5	0.14	0.41	0.14	54.5
Approach			493	4.3	493	4.3	0.307	3.6	LOS A	2.1	15.5	0.14	0.41	0.14	55.0
East: MacGregor Court															
4	L2	All MCs	3	0.0	3	0.0	0.005	5.3	LOS A	0.0	0.2	0.50	0.47	0.50	53.6
5	T1	All MCs	2	0.0	2	0.0	0.005	5.2	LOS A	0.0	0.2	0.50	0.47	0.50	54.0
Approach			5	0.0	5	0.0	0.005	5.2	LOS A	0.0	0.2	0.50	0.47	0.50	53.8
North: Princes Freeway															
7	L2	All MCs	2	0.0	2	0.0	0.126	4.9	LOS A	0.6	5.0	0.46	0.52	0.46	52.9
8	T1	All MCs	108	18.4	108	18.4	0.126	5.2	LOS A	0.6	5.0	0.46	0.52	0.46	53.0
9	R2	All MCs	21	0.0	21	0.0	0.126	10.6	LOS A	0.6	5.0	0.46	0.52	0.46	52.3
Approach			132	15.2	132	15.2	0.126	6.1	LOS A	0.6	5.0	0.46	0.52	0.46	52.9
West: Rennie Street															
11	T1	All MCs	3	0.0	3	0.0	0.184	3.4	LOS A	1.0	7.2	0.04	0.63	0.04	51.9
12	R2	All MCs	314	2.0	314	2.0	0.184	9.1	LOS A	1.0	7.2	0.04	0.63	0.04	50.9
Approach			317	2.0	317	2.0	0.184	9.1	LOS A	1.0	7.2	0.04	0.63	0.04	50.9
All Vehicles			946	5.0	946	5.0	0.307	5.8	LOS A	2.1	15.5	0.15	0.50	0.15	53.3

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/MacGregor Court (PM Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/MacGregor Court/Shell Parade
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Shell Parade															
1	L2	All MCs	454	5.6	454	5.6	0.291	3.6	LOS A	2.0	14.4	0.14	0.41	0.14	55.0
3	R2	All MCs	7	0.0	7	0.0	0.291	9.2	LOS A	2.0	14.4	0.14	0.41	0.14	54.5
Approach			461	5.5	461	5.5	0.291	3.7	LOS A	2.0	14.4	0.14	0.41	0.14	55.0
East: MacGregor Court															
4	L2	All MCs	2	0.0	2	0.0	0.004	5.1	LOS A	0.0	0.1	0.48	0.45	0.48	53.7
5	T1	All MCs	2	0.0	2	0.0	0.004	5.0	LOS A	0.0	0.1	0.48	0.45	0.48	54.1
Approach			4	0.0	4	0.0	0.004	5.0	LOS A	0.0	0.1	0.48	0.45	0.48	53.9
North: Princes Freeway															
7	L2	All MCs	1	0.0	1	0.0	0.107	4.8	LOS A	0.5	4.3	0.44	0.52	0.44	52.8
8	T1	All MCs	87	24.1	87	24.1	0.107	5.2	LOS A	0.5	4.3	0.44	0.52	0.44	52.8
9	R2	All MCs	22	0.0	22	0.0	0.107	10.5	LOS A	0.5	4.3	0.44	0.52	0.44	52.2
Approach			111	19.0	111	19.0	0.107	6.3	LOS A	0.5	4.3	0.44	0.52	0.44	52.7
West: Rennie Street															
11	T1	All MCs	1	0.0	1	0.0	0.175	3.4	LOS A	0.9	6.7	0.05	0.62	0.05	51.8
12	R2	All MCs	294	2.2	294	2.2	0.175	9.1	LOS A	0.9	6.7	0.05	0.62	0.05	50.9
Approach			295	2.1	295	2.1	0.175	9.1	LOS A	0.9	6.7	0.05	0.62	0.05	50.9
All Vehicles			871	6.0	871	6.0	0.291	5.8	LOS A	2.0	14.4	0.15	0.50	0.15	53.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/MacGregor Court (Weekend Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/MacGregor Court/Shell Parade
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Shell Parade															
1	L2	All MCs	187	6.2	187	6.2	0.116	3.5	LOS A	0.6	4.5	0.04	0.43	0.04	55.3
3	R2	All MCs	4	0.0	4	0.0	0.116	9.1	LOS A	0.6	4.5	0.04	0.43	0.04	54.8
Approach			192	6.0	192	6.0	0.116	3.6	LOS A	0.6	4.5	0.04	0.43	0.04	55.3
East: MacGregor Court															
4	L2	All MCs	5	0.0	5	0.0	0.005	4.3	LOS A	0.0	0.2	0.36	0.43	0.36	54.3
5	T1	All MCs	1	0.0	1	0.0	0.005	4.2	LOS A	0.0	0.2	0.36	0.43	0.36	54.7
Approach			6	0.0	6	0.0	0.005	4.3	LOS A	0.0	0.2	0.36	0.43	0.36	54.4
North: Princes Freeway															
7	L2	All MCs	1	0.0	1	0.0	0.092	3.9	LOS A	0.4	3.4	0.27	0.39	0.27	54.3
8	T1	All MCs	109	10.6	109	10.6	0.092	4.0	LOS A	0.4	3.4	0.27	0.39	0.27	54.5
9	R2	All MCs	4	0.0	4	0.0	0.092	9.6	LOS A	0.4	3.4	0.27	0.39	0.27	53.7
Approach			115	10.1	115	10.1	0.092	4.2	LOS A	0.4	3.4	0.27	0.39	0.27	54.5
West: Rennie Street															
11	T1	All MCs	2	0.0	2	0.0	0.071	3.4	LOS A	0.3	2.4	0.03	0.63	0.03	51.9
12	R2	All MCs	116	1.8	116	1.8	0.071	9.1	LOS A	0.3	2.4	0.03	0.63	0.03	51.0
Approach			118	1.8	118	1.8	0.071	9.0	LOS A	0.3	2.4	0.03	0.63	0.03	51.0
All Vehicles			431	5.9	431	5.9	0.116	5.3	LOS A	0.6	4.5	0.11	0.47	0.11	53.8

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Avalon Road/McClelland Avenue (AM Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/McClelland Avenue
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	312	5.4	312	5.4	0.403	8.6	LOS A	2.1	16.2	0.30	0.85	0.30	51.6
3	R2	All MCs	92	20.7	92	20.7	0.403	15.1	LOS A	2.1	16.2	0.30	0.85	0.30	48.3
Approach			403	8.9	403	8.9	0.403	10.1	LOS A	2.1	16.2	0.30	0.85	0.30	50.8
East: McClelland Avenue															
4	L2	All MCs	80	23.7	80	23.7	0.084	6.7	LOS A	0.0	0.0	0.00	0.43	0.00	54.6
5	T1	All MCs	60	15.8	60	15.8	0.084	1.1	LOS A	0.0	0.0	0.00	0.43	0.00	64.7
Approach			140	20.3	140	20.3	0.084	4.3	LOS A	0.0	0.0	0.00	0.43	0.00	58.5
West: McClelland Avenue															
11	T1	All MCs	52	10.2	52	10.2	0.251	0.6	LOS A	1.4	10.0	0.31	0.53	0.31	62.0
12	R2	All MCs	340	4.3	340	4.3	0.251	7.0	LOS A	1.4	10.0	0.31	0.53	0.31	55.2
Approach			392	5.1	392	5.1	0.251	6.1	LOS A	1.4	10.0	0.31	0.53	0.31	56.0
All Vehicles			935	9.0	935	9.0	0.403	7.6	LOS A	2.1	16.2	0.26	0.65	0.26	53.9

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/McClelland Avenue (School Peak)
(Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/McClelland Avenue
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	372	4.0	372	4.0	0.437	8.8	LOS A	2.4	17.8	0.36	0.84	0.36	52.1
3	R2	All MCs	91	14.0	91	14.0	0.437	13.9	LOS A	2.4	17.8	0.36	0.84	0.36	49.8
Approach			462	5.9	462	5.9	0.437	9.8	LOS A	2.4	17.8	0.36	0.84	0.36	51.7
East: McClelland Avenue															
4	L2	All MCs	86	8.5	86	8.5	0.101	6.5	LOS A	0.0	0.0	0.00	0.39	0.00	59.2
5	T1	All MCs	99	3.2	99	3.2	0.101	1.1	LOS A	0.0	0.0	0.00	0.39	0.00	65.4
Approach			185	5.7	185	5.7	0.101	3.6	LOS A	0.0	0.0	0.00	0.39	0.00	62.3
West: McClelland Avenue															
11	T1	All MCs	69	7.6	69	7.6	0.211	0.7	LOS A	1.1	8.0	0.33	0.51	0.33	62.4
12	R2	All MCs	259	2.0	259	2.0	0.211	7.0	LOS A	1.1	8.0	0.33	0.51	0.33	55.6
Approach			328	3.2	328	3.2	0.211	5.7	LOS A	1.1	8.0	0.33	0.51	0.33	56.9
All Vehicles			976	5.0	976	5.0	0.437	7.3	LOS A	2.4	17.8	0.28	0.64	0.28	55.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/McClelland Avenue (PM Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/McClelland Avenue
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	396	1.9	396	1.9	0.473	9.0	LOS A	2.9	21.3	0.41	0.83	0.42	52.3
3	R2	All MCs	80	28.9	80	28.9	0.473	17.4	LOS A	2.9	21.3	0.41	0.83	0.42	46.6
Approach			476	6.4	476	6.4	0.473	10.4	LOS A	2.9	21.3	0.41	0.83	0.42	51.2
East: McClelland Avenue															
4	L2	All MCs	111	6.7	111	6.7	0.122	6.5	LOS A	0.0	0.0	0.00	0.40	0.00	59.6
5	T1	All MCs	116	1.8	116	1.8	0.122	1.1	LOS A	0.0	0.0	0.00	0.40	0.00	65.2
Approach			226	4.2	226	4.2	0.122	3.7	LOS A	0.0	0.0	0.00	0.40	0.00	62.4
West: McClelland Avenue															
11	T1	All MCs	77	6.8	77	6.8	0.241	0.9	LOS A	1.3	9.2	0.38	0.53	0.38	62.2
12	R2	All MCs	287	1.8	287	1.8	0.241	7.2	LOS A	1.3	9.2	0.38	0.53	0.38	55.5
Approach			364	2.9	364	2.9	0.241	5.9	LOS A	1.3	9.2	0.38	0.53	0.38	56.8
All Vehicles			1066	4.7	1066	4.7	0.473	7.4	LOS A	2.9	21.3	0.31	0.64	0.32	55.1

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/McClelland Avenue (Weekend Peak)
(Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/McClelland Avenue
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	232	2.3	232	2.3	0.282	8.5	LOS A	1.3	9.4	0.28	0.86	0.28	52.7
3	R2	All MCs	74	4.3	74	4.3	0.282	11.5	LOS A	1.3	9.4	0.28	0.86	0.28	52.2
Approach			305	2.8	305	2.8	0.282	9.3	LOS A	1.3	9.4	0.28	0.86	0.28	52.6
East: McClelland Avenue															
4	L2	All MCs	65	3.2	65	3.2	0.079	6.4	LOS A	0.0	0.0	0.00	0.38	0.00	60.9
5	T1	All MCs	83	0.0	83	0.0	0.079	1.1	LOS A	0.0	0.0	0.00	0.38	0.00	65.5
Approach			148	1.4	148	1.4	0.079	3.4	LOS A	0.0	0.0	0.00	0.38	0.00	63.4
West: McClelland Avenue															
11	T1	All MCs	53	0.0	53	0.0	0.205	0.5	LOS A	1.1	7.6	0.29	0.51	0.29	62.3
12	R2	All MCs	278	0.8	278	0.8	0.205	6.8	LOS A	1.1	7.6	0.29	0.51	0.29	55.6
Approach			331	0.6	331	0.6	0.205	5.8	LOS A	1.1	7.6	0.29	0.51	0.29	56.6
All Vehicles			784	1.6	784	1.6	0.282	6.7	LOS A	1.3	9.4	0.23	0.62	0.23	56.1

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway North (AM Peak)
(Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway North
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
2	T1	All MCs	192	7.1	192	7.1	0.123	0.6	LOS A	0.2	1.6	0.12	0.15	0.12	68.4
3	R2	All MCs	14	23.1	14	23.1	0.123	10.9	LOS A	0.2	1.6	0.12	0.15	0.12	63.8
Approach			205	8.2	205	8.2	0.123	1.3	LOS A	0.2	1.6	0.12	0.15	0.12	68.1
North: Avalon Road															
7	L2	All MCs	325	3.6	325	3.6	0.335	6.5	LOS A	0.0	0.0	0.00	0.33	0.00	60.6
8	T1	All MCs	288	7.7	288	7.7	0.335	0.1	LOS A	0.0	0.0	0.00	0.33	0.00	65.5
Approach			614	5.5	614	5.5	0.335	3.5	LOS A	0.0	0.0	0.00	0.33	0.00	62.8
West: Princes Freeway Off-Ramp															
10	L2	All MCs	285	8.1	285	8.1	0.235	8.9	LOS A	1.1	8.0	0.35	0.64	0.35	61.5
11	T1	All MCs	1	0.0	1	0.0	0.235	13.9	LOS A	1.1	8.0	0.35	0.64	0.35	71.7
12	R2	All MCs	8	12.5	8	12.5	0.235	12.7	LOS A	1.1	8.0	0.35	0.64	0.35	59.6
Approach			295	8.2	295	8.2	0.235	9.0	LOS A	1.1	8.0	0.35	0.64	0.35	61.5
All Vehicles			1114	6.7	1114	6.7	0.335	4.5	LOS A	1.1	8.0	0.11	0.38	0.11	63.3

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway North (School Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway North
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
2	T1	All MCs	376	3.4	376	3.4	0.210	0.2	LOS A	0.1	1.1	0.04	0.05	0.04	69.6
3	R2	All MCs	7	71.4	7	71.4	0.210	11.7	LOS A	0.1	1.1	0.04	0.05	0.04	52.3
Approach			383	4.7	383	4.7	0.210	0.4	LOS A	0.1	1.1	0.04	0.05	0.04	69.2
North: Avalon Road															
7	L2	All MCs	191	3.9	191	3.9	0.242	6.5	LOS A	0.0	0.0	0.00	0.26	0.00	61.3
8	T1	All MCs	261	3.6	261	3.6	0.242	0.1	LOS A	0.0	0.0	0.00	0.26	0.00	66.4
Approach			452	3.7	452	3.7	0.242	2.8	LOS A	0.0	0.0	0.00	0.26	0.00	64.2
West: Princes Freeway Off-Ramp															
10	L2	All MCs	285	5.9	285	5.9	0.312	10.0	LOS A	1.5	10.8	0.51	0.75	0.54	61.2
11	T1	All MCs	2	50.0	2	50.0	0.312	22.0	LOS A	1.5	10.8	0.51	0.75	0.54	57.8
12	R2	All MCs	20	10.5	20	10.5	0.312	15.1	LOS A	1.5	10.8	0.51	0.75	0.54	59.3
Approach			307	6.5	307	6.5	0.312	10.4	LOS A	1.5	10.8	0.51	0.75	0.54	61.0
All Vehicles			1142	4.8	1142	4.8	0.312	4.0	LOS A	1.5	10.8	0.15	0.32	0.16	64.8

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway North (PM Peak)
(Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway North
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
2	T1	All MCs	441	3.3	441	3.3	0.243	0.1	LOS A	0.1	1.0	0.04	0.04	0.04	69.6
3	R2	All MCs	8	37.5	8	37.5	0.243	10.6	LOS A	0.1	1.0	0.04	0.04	0.04	60.5
Approach			449	4.0	449	4.0	0.243	0.3	LOS A	0.1	1.0	0.04	0.04	0.04	69.4
North: Avalon Road															
7	L2	All MCs	192	2.2	192	2.2	0.263	6.4	LOS A	0.0	0.0	0.00	0.24	0.00	62.0
8	T1	All MCs	301	3.5	301	3.5	0.263	0.1	LOS A	0.0	0.0	0.00	0.24	0.00	66.7
Approach			493	3.0	493	3.0	0.263	2.5	LOS A	0.0	0.0	0.00	0.24	0.00	64.8
West: Princes Freeway Off-Ramp															
10	L2	All MCs	261	7.3	261	7.3	0.320	10.6	LOS A	1.5	11.3	0.56	0.79	0.63	60.0
11	T1	All MCs	1	0.0	1	0.0	0.320	15.4	LOS A	1.5	11.3	0.56	0.79	0.63	69.3
12	R2	All MCs	20	15.8	20	15.8	0.320	18.2	LOS A	1.5	11.3	0.56	0.79	0.63	57.0
Approach			282	7.8	282	7.8	0.320	11.2	LOS A	1.5	11.3	0.56	0.79	0.63	59.8
All Vehicles			1224	4.5	1224	4.5	0.320	3.7	LOS A	1.5	11.3	0.14	0.30	0.16	65.1

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway North (Weekend Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway North
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
2	T1	All MCs	256	2.5	256	2.5	0.145	0.2	LOS A	0.1	0.9	0.06	0.08	0.06	69.2
3	R2	All MCs	13	0.0	13	0.0	0.145	8.4	LOS A	0.1	0.9	0.06	0.08	0.06	72.6
Approach			268	2.4	268	2.4	0.145	0.6	LOS A	0.1	0.9	0.06	0.08	0.06	69.3
North: Avalon Road															
7	L2	All MCs	240	0.4	240	0.4	0.258	6.4	LOS A	0.0	0.0	0.00	0.31	0.00	61.9
8	T1	All MCs	247	2.1	247	2.1	0.258	0.1	LOS A	0.0	0.0	0.00	0.31	0.00	65.9
Approach			487	1.3	487	1.3	0.258	3.2	LOS A	0.0	0.0	0.00	0.31	0.00	63.8
West: Princes Freeway Off-Ramp															
10	L2	All MCs	205	1.0	205	1.0	0.188	8.8	LOS A	0.8	5.6	0.38	0.67	0.38	63.7
11	T1	All MCs	1	0.0	1	0.0	0.188	12.1	LOS A	0.8	5.6	0.38	0.67	0.38	71.5
12	R2	All MCs	17	0.0	17	0.0	0.188	11.3	LOS A	0.8	5.6	0.38	0.67	0.38	63.7
Approach			223	0.9	223	0.9	0.188	9.0	LOS A	0.8	5.6	0.38	0.67	0.38	63.8
All Vehicles			979	1.5	979	1.5	0.258	3.8	LOS A	0.8	5.6	0.11	0.33	0.11	65.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway South (AM Peak)
(Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway South
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	18	5.9	18	5.9	0.044	6.2	LOS A	0.2	1.8	0.52	0.55	0.52	63.4
2	T1	All MCs	25	20.8	25	20.8	0.044	6.7	LOS A	0.2	1.8	0.52	0.55	0.52	59.7
Approach			43	14.6	43	14.6	0.044	6.5	LOS A	0.2	1.8	0.52	0.55	0.52	61.2
East: Princes Freeway Off-Ramp															
4	L2	All MCs	6	0.0	6	0.0	0.146	8.0	LOS A	0.8	5.5	0.44	0.68	0.44	60.9
5	T1	All MCs	1	100.0	1	100.0	0.146	11.7	LOS A	0.8	5.5	0.44	0.68	0.44	44.8
6	R2	All MCs	163	5.2	163	5.2	0.146	15.2	LOS A	0.8	5.5	0.44	0.68	0.44	58.7
Approach			171	5.6	171	5.6	0.146	14.9	LOS A	0.8	5.5	0.44	0.68	0.44	58.6
North: Avalon Road															
8	T1	All MCs	25	12.5	25	12.5	0.171	4.3	LOS A	0.0	0.0	0.00	0.67	0.00	57.6
9	R2	All MCs	268	7.5	268	7.5	0.171	10.9	LOS A	0.0	0.0	0.00	0.67	0.00	59.9
9u	U	All MCs	3	0.0	3	0.0	0.171	13.5	LOS A	0.0	0.0	0.00	0.67	0.00	56.8
Approach			297	7.8	297	7.8	0.171	10.3	LOS A	0.0	0.0	0.00	0.67	0.00	59.6
All Vehicles			511	7.6	511	7.6	0.171	11.5	LOS A	0.8	5.5	0.19	0.66	0.19	59.4

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway South (School Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway South
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	14	0.0	14	0.0	0.040	6.9	LOS A	0.2	1.7	0.62	0.60	0.62	63.8
2	T1	All MCs	21	20.0	21	20.0	0.040	7.6	LOS A	0.2	1.7	0.62	0.60	0.62	59.1
Approach			35	12.1	35	12.1	0.040	7.3	LOS A	0.2	1.7	0.62	0.60	0.62	60.9
East: Princes Freeway Off-Ramp															
4	L2	All MCs	7	0.0	7	0.0	0.298	8.1	LOS A	1.7	12.4	0.47	0.67	0.47	60.6
5	T1	All MCs	1	0.0	1	0.0	0.298	8.8	LOS A	1.7	12.4	0.47	0.67	0.47	65.7
6	R2	All MCs	354	2.1	354	2.1	0.298	15.2	LOS A	1.7	12.4	0.47	0.67	0.47	59.2
Approach			362	2.0	362	2.0	0.298	15.0	LOS A	1.7	12.4	0.47	0.67	0.47	59.2
North: Avalon Road															
8	T1	All MCs	37	8.6	37	8.6	0.159	4.3	LOS A	0.0	0.0	0.00	0.66	0.00	58.0
9	R2	All MCs	243	3.0	243	3.0	0.159	10.8	LOS A	0.0	0.0	0.00	0.66	0.00	61.1
9u	U	All MCs	1	100.0	1	100.0	0.159	14.8	LOS A	0.0	0.0	0.00	0.66	0.00	47.3
Approach			281	4.1	281	4.1	0.159	10.0	LOS A	0.0	0.0	0.00	0.66	0.00	60.6
All Vehicles			678	3.4	678	3.4	0.298	12.5	LOS A	1.7	12.4	0.28	0.67	0.28	59.9

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway South (PM Peak)
(Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway South
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	14	7.7	14	7.7	0.046	8.0	LOS A	0.3	2.1	0.68	0.64	0.68	61.7
2	T1	All MCs	23	13.6	23	13.6	0.046	8.2	LOS A	0.3	2.1	0.68	0.64	0.68	58.8
Approach			37	11.4	37	11.4	0.046	8.1	LOS A	0.3	2.1	0.68	0.64	0.68	59.8
East: Princes Freeway Off-Ramp															
4	L2	All MCs	6	0.0	6	0.0	0.359	8.4	LOS A	2.2	15.8	0.53	0.68	0.53	60.3
5	T1	All MCs	1	0.0	1	0.0	0.359	9.1	LOS A	2.2	15.8	0.53	0.68	0.53	65.4
6	R2	All MCs	417	2.5	417	2.5	0.359	15.5	LOS A	2.2	15.8	0.53	0.68	0.53	58.8
Approach			424	2.5	424	2.5	0.359	15.4	LOS A	2.2	15.8	0.53	0.68	0.53	58.8
North: Avalon Road															
8	T1	All MCs	39	10.8	39	10.8	0.182	4.3	LOS A	0.0	0.0	0.00	0.66	0.00	57.8
9	R2	All MCs	281	3.0	281	3.0	0.182	10.8	LOS A	0.0	0.0	0.00	0.66	0.00	61.0
9u	U	All MCs	1	100.0	1	100.0	0.182	14.8	LOS A	0.0	0.0	0.00	0.66	0.00	47.3
Approach			321	4.3	321	4.3	0.182	10.0	LOS A	0.0	0.0	0.00	0.66	0.00	60.5
All Vehicles			782	3.6	782	3.6	0.359	12.9	LOS A	2.2	15.8	0.32	0.67	0.32	59.6

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway South (Sat Peak) (Site Folder: Post Development (800) - Appendix F)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway South
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	21	25.0	21	25.0	0.050	6.9	LOS A	0.3	2.0	0.53	0.56	0.53	59.8
2	T1	All MCs	28	0.0	28	0.0	0.050	6.2	LOS A	0.3	2.0	0.53	0.56	0.53	60.3
Approach			49	10.6	49	10.6	0.050	6.5	LOS A	0.3	2.0	0.53	0.56	0.53	60.1
East: Princes Freeway Off-Ramp															
4	L2	All MCs	4	0.0	4	0.0	0.189	7.8	LOS A	1.0	7.1	0.42	0.67	0.42	60.9
5	T1	All MCs	2	0.0	2	0.0	0.189	8.6	LOS A	1.0	7.1	0.42	0.67	0.42	66.1
6	R2	All MCs	225	1.9	225	1.9	0.189	14.9	LOS A	1.0	7.1	0.42	0.67	0.42	59.5
Approach			232	1.8	232	1.8	0.189	14.7	LOS A	1.0	7.1	0.42	0.67	0.42	59.6
North: Avalon Road															
8	T1	All MCs	31	10.3	31	10.3	0.149	4.3	LOS A	0.0	0.0	0.00	0.67	0.00	57.8
9	R2	All MCs	233	1.8	233	1.8	0.149	10.8	LOS A	0.0	0.0	0.00	0.67	0.00	61.2
9u	U	All MCs	1	0.0	1	0.0	0.149	13.5	LOS A	0.0	0.0	0.00	0.67	0.00	56.9
Approach			264	2.8	264	2.8	0.149	10.1	LOS A	0.0	0.0	0.00	0.67	0.00	60.8
All Vehicles			545	3.1	545	3.1	0.189	11.7	LOS A	1.0	7.1	0.23	0.66	0.23	60.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Appendix G

Analysis of Post-Development Conditions (Sensitivity Analysis)

Sensitivity Testing

Sensitivity analysis has been undertaken by adopting the following key traffic generation estimates for the indicative 800 dwellings located across the subject site and the parcel of land to the north of the subject site with the following traffic generation rates:

- 1 vehicle trip per dwelling per peak hour
- 10 vehicle trips per dwelling per day

Based on the above, a total of 8,000 vehicle movements would be expected to be generated by the rezoning of the land, including 800 vehicle movements during the AM and PM peak hours.

The directional distribution assumptions remain consistent with the methodology outlined at Section 4.2, which results in the post-development traffic volumes presented below at Figure 50.

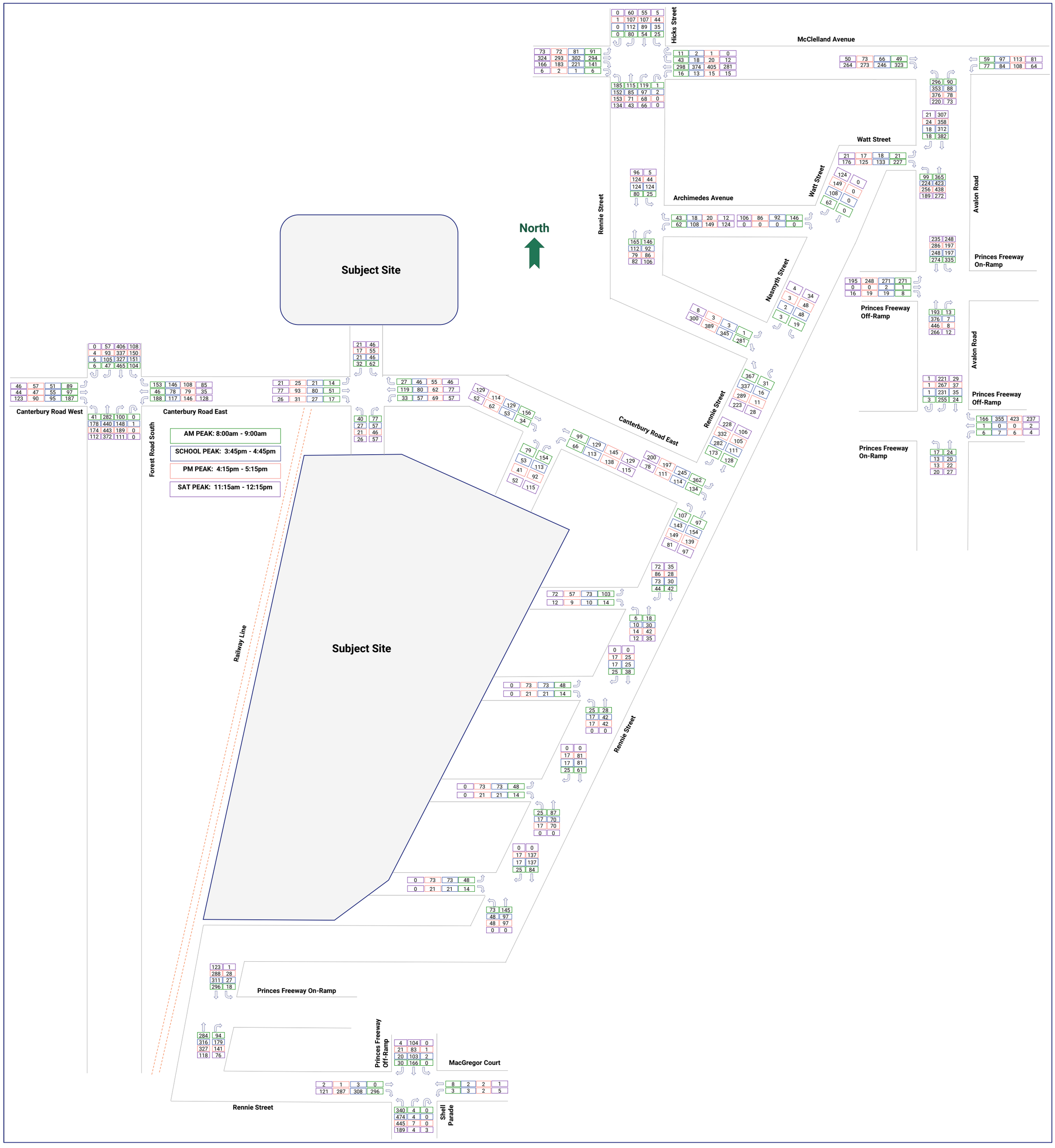


Figure 80: Post-Development Traffic Volumes with Northern Land Parcel Developed (Sensitivity Testing)

SIDRA 9.1 has been used to assess the performance of each of the relevant intersections. The methodology and assumptions adopted for our analysis of the existing conditions at Section 3.4.3 and post-development conditions at Section 4.3 has been retained for this analysis. The detailed SIDRA outputs are provided at Appendix E.

Our analysis indicates that the majority of the intersections will remain operating under a Level of Service A ('Excellent') at AM Peak, PM Peak, school pick-up time and during the weekend, except for the intersections discussed below which experience minor decreases to their performance.

Forest Road South/Canterbury Road East/Canterbury Road West Intersection

At the Forest Road South/Canterbury Road East/Canterbury Road West intersection, a decrease to the level of performance is identified at the roundabout. The changes to the operation of the roundabout are detailed in the following figures and table.

Existing Conditions



Figure 81: Forest Road South/Canterbury Road West AM Peak

Post-Development Conditions

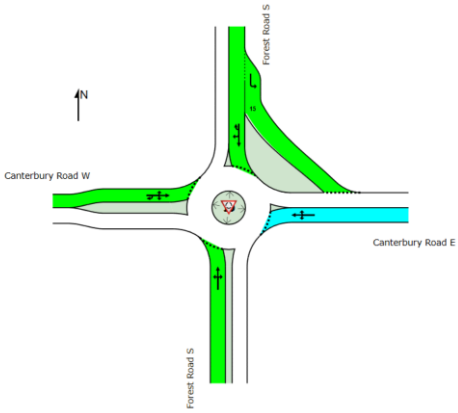


Figure 82: Forest Road South/Canterbury Road West AM Peak



Figure 83: Forest Road South/Canterbury Road West School Peak



Figure 84: Forest Road South/Canterbury Road West School Peak



Figure 85: Forest Road South/Canterbury Road West PM Peak



Figure 86: Forest Road South/Canterbury Road West PM Peak

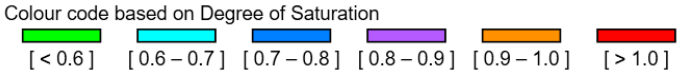


Table 21: Impact to Forest Road South/Canterbury Road East/Canterbury Road West Intersection

Critical Movement on Approach	Existing Conditions			Post-Development Conditions			*Difference*		
	DoS (LoS)	Average Delay (sec)	95th %ile Queues (m)	DoS (LoS)	Average Delay (sec)	95th %ile Queues (m)	*DoS (LoS)*	*Average Delay (sec)*	*95th %ile Queues (m)*
AM Peak Hour									
East Approach	0.261 (A)	11.1	11.5	0.619 (B)	15.9	42.0	*+0.358*	*+4.8*	*+30.5*
School Peak Hour									
South Approach	0.664 (B)	7.7	44.8	0.815 (C)	13.2	88.4	*+0.151*	*+5.5*	*+43.6*
PM Peak Hour									
South Approach	0.656 (B)	7.3	42.5	0.804 (C)	11.7	84.0	*+0.148*	*+4.4*	*+41.5*

We are satisfied that this level of impact to the operation of the Forest Road South/Canterbury Road East/Canterbury Road West roundabout is acceptable and will not have a detrimental impact to its operation. Each approach to the intersection at key operating times remain within acceptable limits, noting that a DoS of less than 0.9 indicates an appropriate level of service for an intersection.

Overall we are satisfied that the traffic impact of the rezoning of the subject land will not have a detrimental impact to the operation of the surrounding intersections based on the sensitivity analysis undertaken based on the higher traffic generation rates of 1 vehicle movement per dwelling per peak hour and 10 vehicle movements per dwelling per day.

Mid-Block Daily Traffic Volumes – Sensitivity Analysis

Based on the traffic distribution detailed above, the daily traffic volumes generated by the development of the land are expected to increase traffic volumes to the levels in the following figure. The table following the figure sets out the relative increase in traffic volumes of these roads and compares to the target traffic volumes set out within the Greater Geelong Road Management Plan.

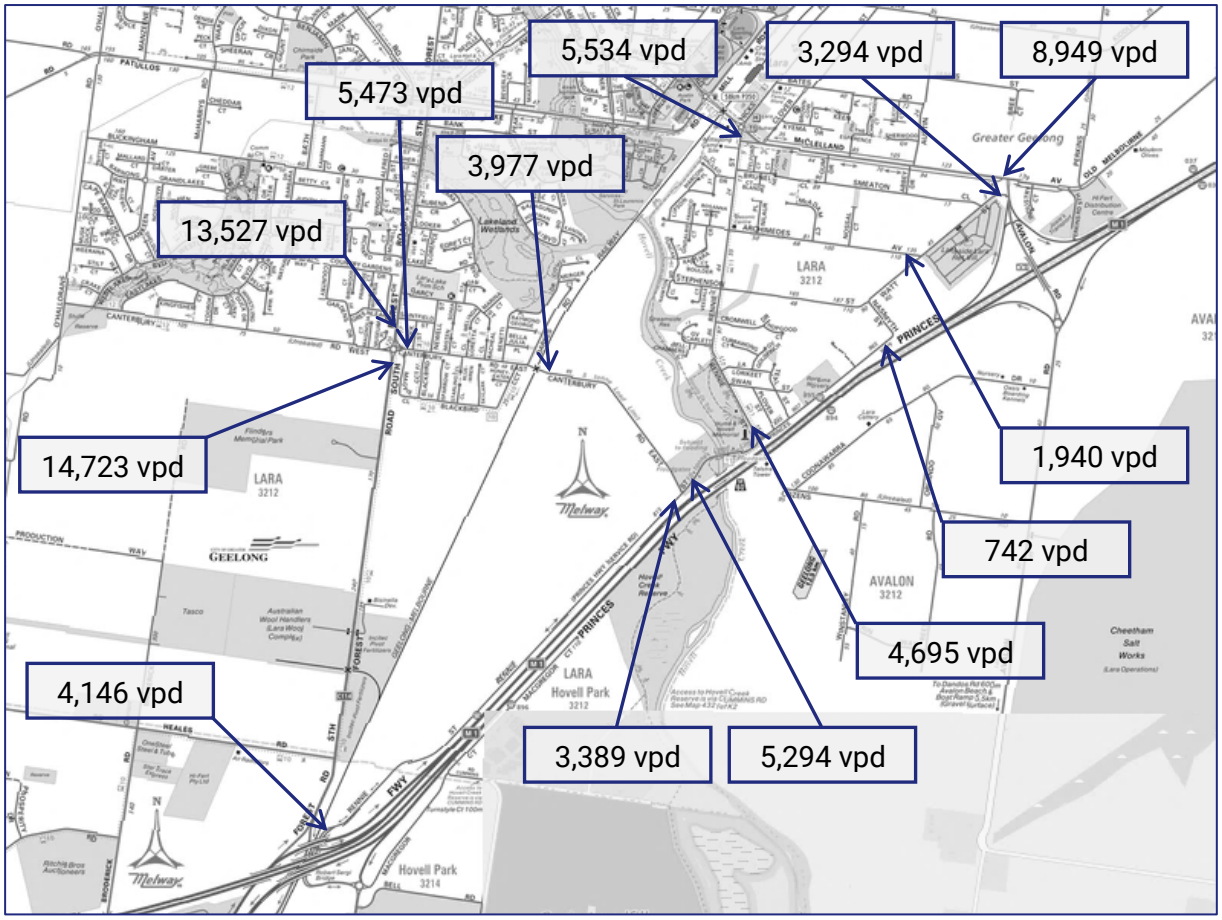


Figure 87: 7-Day Tube Count Results – Weekday Daily Average Two-Way Volumes (February, 2026)

The detailed results of the tube counts undertaken by Traffix Group have been provided at Appendix B. The table below summarises the results in the context of their respective key characteristic volume based on their classifications under the Greater Geelong Road Management Plan.

Table 22: Post-Development Daily Traffic Volumes and Road Characteristic Volume

Road Name	Location	Classification	Recorded Weekday Average (vpd)	Key Characteristic Volume[1] (vpd)	Within Characteristic Volume?
Canterbury Road East	East of Train Line	Category 2 – Local Access – Urban	3,977	1,000 – 2,000	No
Canterbury Road East	East of Forest Road South	Category 3 – Secondary Distributor	5,473	3,000-5,000	No
Forest Road South	North of Canterbury Road East	Transport Zone 2	13,527	<18,000[2]	Yes
	South of Canterbury Road East		14,723		Yes
Rennie Street	North of Canterbury Road East	Category 3 – Collector Road Rural	5,294	3,000-5,000[3]	No
	South of Canterbury Road East		3,389		Yes
	North of Princes Freeway On-Ramp		4,146		Yes
	South of McClelland Avenue	Category 3 – Secondary Distributor	5,534	3,000-5,000	No
	North of Nasmyth Street		4,695		Yes
Nasmyth Street	Southwest of Bend	Category 2 – Local Access – Urban	742	<2,000	Yes
Archimedes Avenue	West of Watt Street	Category 2 – Local Access – Urban	1,940	<2,000	Yes
Watt Street	West of Avalon Road	Category 3 – Collector Road Rural	3,294	3,000-5,000[3]	Yes
McClelland Avenue	West of Avalon Road	Category 4 – Main Distributor – Urban & Transport Zone 3	8,949	5,000-10,000	Yes

Notes:
1. The previous version of The City of Greater Geelong Municipal Road Management Plan (dated 25th May, 2021) included key characteristic volumes for the different type of roads under Attachment 1. However, it has been removed within the latest version of the plan (Version 9.0, adopted 28th October, 2025).
2. It is generally accepted that a traffic volume of less than 18,000 vehicles per day is acceptable for an arterial road with one lane in each direction. Beyond this threshold, duplication would be considered.
3. Not specifically stated in the Road Management Plan. However, have assumed based on other Category 3 roads.

Consistent with our conclusion at Section 4.4, we are satisfied that each of the Category 3 – Secondary Distributor roads would have a maximum daily traffic volume of 7,000 vehicles.

Based on the above traffic estimations, we are satisfied that the level of traffic which the roads are expected to carry is acceptable.

In any case, we remain satisfied that a traffic generation rate of 0.8 vehicle movements per dwelling per peak hour and 8 vehicle movements per dwelling per day, and the extent of traffic impacts detailed above to be overly conservative.

Based on the above, we do not recommend any upgrades to the surrounding road cross sections, outside of the alterations to Canterbury Road East, east of train line, to be upgraded to a Category 3 – Secondary Distributor road standard.

Appendix H

SIDRA Results – Post-Development Conditions (Sensitivity Analysis)

MOVEMENT SUMMARY

Site: 101 [Watt Street/Avalon Road (AM Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Watt Street/Avalon Road
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	104	1.0	104	1.0	0.246	6.4	LOS A	0.0	0.2	0.01	0.14	0.01	60.2
2	T1	All MCs	384	9.3	384	9.3	0.246	0.0	LOS A	0.0	0.2	0.01	0.14	0.01	68.0
3u	U	All MCs	1	0.0	1	0.0	0.246	8.2	LOS A	0.0	0.2	0.01	0.14	0.01	63.5
Approach			489	7.5	489	7.5	0.246	1.4	LOS A	0.0	0.2	0.01	0.14	0.01	66.2
North: Avalon Road															
8	T1	All MCs	402	7.9	402	7.9	0.229	0.2	LOS A	0.2	1.8	0.07	0.09	0.07	69.2
9	R2	All MCs	19	11.1	19	11.1	0.229	9.2	LOS A	0.2	1.8	0.07	0.09	0.07	60.3
Approach			421	8.0	421	8.0	0.229	0.6	LOS A	0.2	1.8	0.07	0.09	0.07	68.7
West: Watt Street															
10	L2	All MCs	22	0.0	22	0.0	0.497	9.1	LOS A	2.4	17.1	0.73	1.00	1.11	49.6
12	R2	All MCs	239	0.9	239	0.9	0.497	14.1	LOS A	2.4	17.1	0.73	1.00	1.11	49.3
Approach			261	0.8	261	0.8	0.497	13.6	LOS A	2.4	17.1	0.73	1.00	1.11	49.3
All Vehicles			1172	6.2	1172	6.2	0.497	3.8	LOS A	2.4	17.1	0.19	0.31	0.28	62.3

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Watt Street/Avalon Road (School Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Watt Street/Avalon Road
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	236	0.9	236	0.9	0.336	6.4	LOS A	0.0	0.0	0.00	0.22	0.00	62.6
2	T1	All MCs	445	6.1	445	6.1	0.336	0.1	LOS A	0.0	0.0	0.00	0.22	0.00	66.9
Approach			681	4.3	681	4.3	0.336	2.3	LOS A	0.0	0.0	0.00	0.22	0.00	65.3
North: Avalon Road															
8	T1	All MCs	328	3.8	328	3.8	0.190	0.4	LOS A	0.3	2.0	0.10	0.13	0.10	68.8
9	R2	All MCs	19	0.0	19	0.0	0.190	9.9	LOS A	0.3	2.0	0.10	0.13	0.10	60.6
Approach			347	3.6	347	3.6	0.190	0.9	LOS A	0.3	2.0	0.10	0.13	0.10	68.3
West: Watt Street															
10	L2	All MCs	19	0.0	19	0.0	0.333	8.3	LOS A	1.3	9.2	0.70	0.93	0.88	50.1
12	R2	All MCs	140	3.0	140	3.0	0.333	13.5	LOS A	1.3	9.2	0.70	0.93	0.88	49.3
Approach			159	2.6	159	2.6	0.333	12.9	LOS A	1.3	9.2	0.70	0.93	0.88	49.4
All Vehicles			1187	3.9	1187	3.9	0.336	3.3	LOS A	1.3	9.2	0.12	0.29	0.15	63.4

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Watt Street/Avalon Road (PM Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Watt Street/Avalon Road
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	269	1.2	269	1.2	0.361	6.5	LOS A	0.0	0.0	0.00	0.23	0.00	62.4
2	T1	All MCs	461	6.6	461	6.6	0.361	0.1	LOS A	0.0	0.0	0.00	0.23	0.00	66.7
Approach			731	4.6	731	4.6	0.361	2.4	LOS A	0.0	0.0	0.00	0.23	0.00	65.0
North: Avalon Road															
8	T1	All MCs	377	3.4	377	3.4	0.224	0.6	LOS A	0.4	2.9	0.12	0.16	0.12	68.4
9	R2	All MCs	25	0.0	25	0.0	0.224	10.5	LOS A	0.4	2.9	0.12	0.16	0.12	60.4
Approach			402	3.1	402	3.1	0.224	1.2	LOS A	0.4	2.9	0.12	0.16	0.12	67.8
West: Watt Street															
10	L2	All MCs	18	0.0	18	0.0	0.346	8.6	LOS A	1.3	9.4	0.74	0.95	0.93	49.3
12	R2	All MCs	132	1.6	132	1.6	0.346	14.8	LOS A	1.3	9.4	0.74	0.95	0.93	48.9
Approach			149	1.4	149	1.4	0.346	14.1	LOS A	1.3	9.4	0.74	0.95	0.93	48.9
All Vehicles			1282	3.8	1282	3.8	0.361	3.4	LOS A	1.3	9.4	0.12	0.29	0.15	63.4

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Watt Street/Avalon Road (Weekend Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Watt Street/Avalon Road
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	199	0.0	199	0.0	0.236	6.4	LOS A	0.0	0.0	0.00	0.26	0.00	62.6
2	T1	All MCs	286	2.9	286	2.9	0.236	0.1	LOS A	0.0	0.0	0.00	0.26	0.00	66.5
Approach			485	1.7	485	1.7	0.236	2.7	LOS A	0.0	0.0	0.00	0.26	0.00	64.8
North: Avalon Road															
8	T1	All MCs	323	1.6	323	1.6	0.183	0.3	LOS A	0.2	1.8	0.09	0.11	0.09	68.9
9	R2	All MCs	22	4.8	22	4.8	0.183	8.6	LOS A	0.2	1.8	0.09	0.11	0.09	60.5
Approach			345	1.8	345	1.8	0.183	0.8	LOS A	0.2	1.8	0.09	0.11	0.09	68.3
West: Watt Street															
10	L2	All MCs	22	4.8	22	4.8	0.321	7.3	LOS A	1.3	9.4	0.59	0.86	0.71	50.9
12	R2	All MCs	185	0.6	185	0.6	0.321	10.6	LOS A	1.3	9.4	0.59	0.86	0.71	51.7
Approach			207	1.0	207	1.0	0.321	10.2	LOS A	1.3	9.4	0.59	0.86	0.71	51.6
All Vehicles			1038	1.6	1038	1.6	0.321	3.6	LOS A	1.3	9.4	0.15	0.33	0.17	62.7

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Nasmyth Street (AM Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Nasmyth Street
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Nasmyth Street															
25	T1	All MCs	20	10.5	20	10.5	0.032	6.7	LOS A	0.1	0.9	0.47	0.60	0.47	51.6
26	R2	All MCs	3	0.0	3	0.0	0.032	11.3	LOS A	0.1	0.9	0.47	0.60	0.47	51.5
Approach			23	9.1	23	9.1	0.032	7.3	LOS A	0.1	0.9	0.47	0.60	0.47	51.6
NorthWest: Rennie Street															
27	L2	All MCs	1	0.0	1	0.0	0.171	5.7	LOS A	0.9	6.3	0.12	0.54	0.12	52.5
29	R2	All MCs	296	1.4	296	1.4	0.171	5.7	LOS A	0.9	6.3	0.12	0.54	0.12	52.5
Approach			297	1.4	297	1.4	0.171	5.7	LOS A	0.9	6.3	0.12	0.54	0.12	52.5
SouthWest: Rennie Street															
30	L2	All MCs	386	0.5	386	0.5	0.201	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	52.8
31	T1	All MCs	33	3.2	33	3.2	0.018	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			419	0.8	419	0.8	0.201	5.2	LOS A	0.0	0.0	0.00	0.53	0.00	53.3
All Vehicles			739	1.3	739	1.3	0.201	5.4	LOS A	0.9	6.3	0.06	0.54	0.06	52.9

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Nasmyth Street (School Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Nasmyth Street
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Nasmyth Street															
25	T1	All MCs	51	0.0	51	0.0	0.070	7.0	LOS A	0.3	2.0	0.49	0.65	0.49	52.0
26	R2	All MCs	2	0.0	2	0.0	0.070	11.8	LOS A	0.3	2.0	0.49	0.65	0.49	51.5
Approach			53	0.0	53	0.0	0.070	7.2	LOS A	0.3	2.0	0.49	0.65	0.49	52.0
NorthWest: Rennie Street															
27	L2	All MCs	3	33.3	3	33.3	0.210	6.0	LOS A	1.1	8.1	0.08	0.54	0.08	51.3
29	R2	All MCs	363	1.7	363	1.7	0.210	5.6	LOS A	1.1	8.1	0.08	0.54	0.08	52.6
29u	U	All MCs	1	0.0	1	0.0	0.210	9.1	LOS A	1.1	8.1	0.08	0.54	0.08	52.3
Approach			367	2.0	367	2.0	0.210	5.6	LOS A	1.1	8.1	0.08	0.54	0.08	52.6
SouthWest: Rennie Street															
30	L2	All MCs	355	0.3	355	0.3	0.185	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	52.8
31	T1	All MCs	17	0.0	17	0.0	0.009	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			372	0.3	372	0.3	0.185	5.3	LOS A	0.0	0.0	0.00	0.55	0.00	53.1
All Vehicles			792	1.1	792	1.1	0.210	5.6	LOS A	1.1	8.1	0.07	0.55	0.07	52.8

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Nasmyth Street (PM Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Nasmyth Street
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Nasmyth Street															
25	T1	All MCs	51	0.0	51	0.0	0.078	7.5	LOS A	0.3	2.2	0.53	0.68	0.53	51.6
26	R2	All MCs	3	0.0	3	0.0	0.078	11.8	LOS A	0.3	2.2	0.53	0.68	0.53	51.1
Approach			54	0.0	54	0.0	0.078	7.8	LOS A	0.3	2.2	0.53	0.68	0.53	51.6
NorthWest: Rennie Street															
27	L2	All MCs	3	33.3	3	33.3	0.234	6.0	LOS A	1.3	9.3	0.07	0.55	0.07	51.3
29	R2	All MCs	409	1.5	409	1.5	0.234	5.6	LOS A	1.3	9.3	0.07	0.55	0.07	52.7
Approach			413	1.8	413	1.8	0.234	5.6	LOS A	1.3	9.3	0.07	0.55	0.07	52.6
SouthWest: Rennie Street															
30	L2	All MCs	304	1.4	304	1.4	0.160	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	52.8
31	T1	All MCs	12	0.0	12	0.0	0.006	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			316	1.3	316	1.3	0.160	5.4	LOS A	0.0	0.0	0.00	0.55	0.00	53.0
All Vehicles			782	1.5	782	1.5	0.234	5.7	LOS A	1.3	9.3	0.07	0.56	0.07	52.7

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Nasmyth Street (Weekend Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Nasmyth Street
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Nasmyth Street															
25	T1	All MCs	36	0.0	36	0.0	0.051	6.6	LOS A	0.2	1.4	0.46	0.62	0.46	52.3
26	R2	All MCs	4	0.0	4	0.0	0.051	9.8	LOS A	0.2	1.4	0.46	0.62	0.46	51.8
Approach			40	0.0	40	0.0	0.051	6.9	LOS A	0.2	1.4	0.46	0.62	0.46	52.2
NorthWest: Rennie Street															
27	L2	All MCs	8	0.0	8	0.0	0.187	5.7	LOS A	1.0	7.0	0.11	0.54	0.11	52.5
29	R2	All MCs	316	1.3	316	1.3	0.187	5.7	LOS A	1.0	7.0	0.11	0.54	0.11	52.5
Approach			324	1.3	324	1.3	0.187	5.7	LOS A	1.0	7.0	0.11	0.54	0.11	52.5
SouthWest: Rennie Street															
30	L2	All MCs	235	0.9	235	0.9	0.123	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	52.8
31	T1	All MCs	29	0.0	29	0.0	0.016	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			264	0.8	264	0.8	0.123	5.0	LOS A	0.0	0.0	0.00	0.51	0.00	53.5
All Vehicles			628	1.0	628	1.0	0.187	5.4	LOS A	1.0	7.0	0.09	0.53	0.09	52.9

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Princes Freeway (AM Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Princes Freeway
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
2	T1	All MCs	299	0.4	299	0.4	0.154	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	All MCs	99	26.6	99	26.6	0.091	7.4	LOS A	0.4	3.4	0.44	0.65	0.44	50.3
Approach			398	6.9	398	6.9	0.154	1.9	LOS A	0.4	3.4	0.11	0.16	0.11	57.2
North: Rennie Street															
7	L2	All MCs	19	0.0	19	0.0	0.171	5.6	LOS A	0.0	0.0	0.00	0.03	0.00	57.1
8	T1	All MCs	312	1.4	312	1.4	0.171	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	59.6
Approach			331	1.3	331	1.3	0.171	0.4	LOS A	0.0	0.0	0.00	0.03	0.00	59.5
All Vehicles			728	4.3	728	4.3	0.171	1.2	NA	0.4	3.4	0.06	0.10	0.06	58.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/Princes Freeway (School Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Princes Freeway
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
2	T1	All MCs	333	0.6	333	0.6	0.172	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	All MCs	188	10.1	188	10.1	0.159	7.2	LOS A	0.7	5.5	0.46	0.67	0.46	51.0
Approach			521	4.0	521	4.0	0.172	2.6	LOS A	0.7	5.5	0.17	0.24	0.17	56.4
North: Rennie Street															
7	L2	All MCs	28	0.0	28	0.0	0.185	5.6	LOS A	0.0	0.0	0.00	0.05	0.00	57.0
8	T1	All MCs	327	1.9	327	1.9	0.185	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	59.5
Approach			356	1.8	356	1.8	0.185	0.5	LOS A	0.0	0.0	0.00	0.05	0.00	59.3
All Vehicles			877	3.1	877	3.1	0.185	1.8	NA	0.7	5.5	0.10	0.16	0.10	57.5

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Princes Freeway (PM Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Princes Freeway
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
2	T1	All MCs	344	1.2	344	1.2	0.179	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	All MCs	148	14.2	148	14.2	0.126	7.1	LOS A	0.6	4.4	0.44	0.65	0.44	50.9
Approach			493	5.1	493	5.1	0.179	2.2	LOS A	0.6	4.4	0.13	0.20	0.13	56.9
North: Rennie Street															
7	L2	All MCs	29	0.0	29	0.0	0.173	5.6	LOS A	0.0	0.0	0.00	0.05	0.00	57.0
8	T1	All MCs	303	2.1	303	2.1	0.173	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	59.4
Approach			333	1.9	333	1.9	0.173	0.5	LOS A	0.0	0.0	0.00	0.05	0.00	59.2
All Vehicles			825	3.8	825	3.8	0.179	1.5	NA	0.6	4.4	0.08	0.14	0.08	57.8

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/Princes Freeway (Weekend Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Princes Freeway
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
2	T1	All MCs	124	0.8	124	0.8	0.064	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
3	R2	All MCs	80	11.8	80	11.8	0.053	6.0	LOS A	0.2	1.9	0.25	0.56	0.25	51.5
Approach			204	5.2	204	5.2	0.064	2.4	LOS A	0.2	1.9	0.10	0.22	0.10	56.3
North: Rennie Street															
7	L2	All MCs	1	0.0	1	0.0	0.068	5.6	LOS A	0.0	0.0	0.00	0.00	0.00	57.4
8	T1	All MCs	129	1.6	129	1.6	0.068	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach			131	1.6	131	1.6	0.068	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
All Vehicles			335	3.8	335	3.8	0.068	1.5	NA	0.2	1.9	0.06	0.14	0.06	57.7

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Canterbury Road E (AM Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Canterbury Road E
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Rennie Street															
25	T1	All MCs	135	3.1	135	3.1	0.197	0.7	LOS A	1.0	7.1	0.33	0.42	0.33	55.9
26	R2	All MCs	182	1.2	182	1.2	0.197	6.3	LOS A	1.0	7.1	0.33	0.42	0.33	58.6
Approach			317	2.0	317	2.0	0.197	3.9	LOS A	1.0	7.1	0.33	0.42	0.33	57.4
NorthWest: Canterbury Road E															
27	L2	All MCs	381	0.6	381	0.6	0.427	7.4	LOS A	2.3	16.3	0.34	0.60	0.34	57.0
29	R2	All MCs	141	0.0	141	0.0	0.427	10.0	LOS A	2.3	16.3	0.34	0.60	0.34	56.8
Approach			522	0.4	522	0.4	0.427	8.1	LOS A	2.3	16.3	0.34	0.60	0.34	56.9
SouthWest: Rennie Street															
30	L2	All MCs	113	0.0	113	0.0	0.113	5.6	LOS A	0.0	0.0	0.00	0.31	0.00	54.9
31	T1	All MCs	102	1.0	102	1.0	0.113	0.0	LOS A	0.0	0.0	0.00	0.31	0.00	57.2
Approach			215	0.5	215	0.5	0.113	2.9	LOS A	0.0	0.0	0.00	0.31	0.00	56.0
All Vehicles			1054	0.9	1054	0.9	0.427	5.8	LOS A	2.3	16.3	0.27	0.49	0.27	56.9

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/Canterbury Road E (School Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Canterbury Road E
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Rennie Street															
25	T1	All MCs	117	5.4	117	5.4	0.285	1.3	LOS A	1.6	11.0	0.45	0.55	0.45	54.9
26	R2	All MCs	297	0.0	297	0.0	0.285	6.8	LOS A	1.6	11.0	0.45	0.55	0.45	57.8
Approach			414	1.5	414	1.5	0.285	5.2	LOS A	1.6	11.0	0.45	0.55	0.45	56.9
NorthWest: Canterbury Road E															
27	L2	All MCs	258	0.0	258	0.0	0.360	7.6	LOS A	1.7	11.9	0.42	0.64	0.42	56.5
29	R2	All MCs	120	0.0	120	0.0	0.360	11.3	LOS A	1.7	11.9	0.42	0.64	0.42	56.3
Approach			378	0.0	378	0.0	0.360	8.8	LOS A	1.7	11.9	0.42	0.64	0.42	56.4
SouthWest: Rennie Street															
30	L2	All MCs	151	0.7	151	0.7	0.165	5.6	LOS A	0.0	0.0	0.00	0.28	0.00	55.1
31	T1	All MCs	162	0.6	162	0.6	0.165	0.0	LOS A	0.0	0.0	0.00	0.28	0.00	57.4
Approach			313	0.7	313	0.7	0.165	2.7	LOS A	0.0	0.0	0.00	0.28	0.00	56.3
All Vehicles			1104	0.8	1104	0.8	0.360	5.7	LOS A	1.7	11.9	0.31	0.51	0.31	56.6

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Canterbury Road E (PM Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Canterbury Road E
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Rennie Street															
25	T1	All MCs	111	5.7	111	5.7	0.319	1.3	LOS A	1.8	12.6	0.46	0.57	0.46	54.7
26	R2	All MCs	349	0.0	349	0.0	0.319	6.8	LOS A	1.8	12.6	0.46	0.57	0.46	57.6
Approach			460	1.4	460	1.4	0.319	5.5	LOS A	1.8	12.6	0.46	0.57	0.46	56.8
NorthWest: Canterbury Road E															
27	L2	All MCs	207	0.0	207	0.0	0.326	7.5	LOS A	1.5	10.3	0.42	0.63	0.42	56.4
29	R2	All MCs	117	0.0	117	0.0	0.326	11.5	LOS A	1.5	10.3	0.42	0.63	0.42	56.1
Approach			324	0.0	324	0.0	0.326	9.0	LOS A	1.5	10.3	0.42	0.63	0.42	56.3
SouthWest: Rennie Street															
30	L2	All MCs	157	0.0	157	0.0	0.161	5.6	LOS A	0.0	0.0	0.00	0.31	0.00	54.9
31	T1	All MCs	146	2.9	146	2.9	0.161	0.0	LOS A	0.0	0.0	0.00	0.31	0.00	57.2
Approach			303	1.4	303	1.4	0.161	2.9	LOS A	0.0	0.0	0.00	0.31	0.00	56.0
All Vehicles			1087	1.0	1087	1.0	0.326	5.8	LOS A	1.8	12.6	0.32	0.51	0.32	56.4

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Canterbury Road E (Weekend Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Canterbury Road E
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Rennie Street															
25	T1	All MCs	112	2.8	112	2.8	0.219	0.7	LOS A	1.2	8.2	0.33	0.46	0.33	55.4
26	R2	All MCs	240	0.4	240	0.4	0.219	6.2	LOS A	1.2	8.2	0.33	0.46	0.33	58.3
Approach			352	1.2	352	1.2	0.219	4.4	LOS A	1.2	8.2	0.33	0.46	0.33	57.4
NorthWest: Canterbury Road E															
27	L2	All MCs	211	0.0	211	0.0	0.243	7.3	LOS A	1.1	7.5	0.28	0.60	0.28	57.2
29	R2	All MCs	82	0.0	82	0.0	0.243	9.5	LOS A	1.1	7.5	0.28	0.60	0.28	57.0
Approach			293	0.0	293	0.0	0.243	7.9	LOS A	1.1	7.5	0.28	0.60	0.28	57.2
SouthWest: Rennie Street															
30	L2	All MCs	85	0.0	85	0.0	0.099	5.6	LOS A	0.0	0.0	0.00	0.27	0.00	55.2
31	T1	All MCs	102	2.1	102	2.1	0.099	0.0	LOS A	0.0	0.0	0.00	0.27	0.00	57.5
Approach			187	1.1	187	1.1	0.099	2.5	LOS A	0.0	0.0	0.00	0.27	0.00	56.5
All Vehicles			832	0.8	832	0.8	0.243	5.2	LOS A	1.2	8.2	0.24	0.47	0.24	57.1

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Forest Road S/Canterbury Road W (AM Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Forest Road S/Canterbury Road W
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Road S															
1	L2	All MCs	43	2.4	43	2.4	0.439	6.4	LOS A	3.0	22.0	0.58	0.60	0.58	51.1
2	T1	All MCs	297	6.0	297	6.0	0.439	6.6	LOS A	3.0	22.0	0.58	0.60	0.58	51.4
3	R2	All MCs	105	1.0	105	1.0	0.439	9.7	LOS A	3.0	22.0	0.58	0.60	0.58	50.9
Approach			445	4.5	445	4.5	0.439	7.3	LOS A	3.0	22.0	0.58	0.60	0.58	51.3
East: Canterbury Road E															
4	L2	All MCs	198	1.6	198	1.6	0.619	14.5	LOS B	5.9	42.0	0.92	0.93	1.23	46.1
5	T1	All MCs	48	2.2	48	2.2	0.619	14.7	LOS B	5.9	42.0	0.92	0.93	1.23	46.5
6	R2	All MCs	161	2.0	161	2.0	0.619	17.9	LOS B	5.9	42.0	0.92	0.93	1.23	45.9
Approach			407	1.8	407	1.8	0.619	15.9	LOS B	5.9	42.0	0.92	0.93	1.23	46.1
North: Forest Road S															
7	L2	All MCs	109	1.9	109	1.9	0.084	5.3	LOS A	0.4	2.8	0.33	0.55	0.33	52.7
8	T1	All MCs	489	4.5	489	4.5	0.494	6.9	LOS A	3.5	25.5	0.66	0.64	0.66	51.3
9	R2	All MCs	49	0.0	49	0.0	0.494	10.0	LOS A	3.5	25.5	0.66	0.64	0.66	50.7
9u	U	All MCs	6	16.7	6	16.7	0.494	12.2	LOS A	3.5	25.5	0.66	0.64	0.66	50.1
Approach			655	3.9	655	3.9	0.494	6.9	LOS A	3.5	25.5	0.61	0.62	0.61	51.5
West: Canterbury Road W															
10	L2	All MCs	94	1.1	94	1.1	0.513	10.5	LOS A	4.1	29.2	0.81	0.80	0.93	48.4
11	T1	All MCs	102	1.0	102	1.0	0.513	10.6	LOS A	4.1	29.2	0.81	0.80	0.93	48.8
12	R2	All MCs	197	0.5	197	0.5	0.513	13.9	LOS A	4.1	29.2	0.81	0.80	0.93	48.2
12u	U	All MCs	1	0.0	1	0.0	0.513	15.5	LOS A	4.1	29.2	0.81	0.80	0.93	48.2
Approach			394	0.8	394	0.8	0.513	12.2	LOS A	4.1	29.2	0.81	0.80	0.93	48.4
All Vehicles			1901	2.9	1901	2.9	0.619	10.0	LOS B	5.9	42.0	0.71	0.72	0.80	49.5

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Forest Road S/Canterbury Road W (School Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Forest Road S/Canterbury Road W
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Road S															
1	L2	All MCs	187	2.2	187	2.2	0.815	12.5	LOS C	12.4	88.4	0.93	0.88	1.25	47.7
2	T1	All MCs	463	3.0	463	3.0	0.815	12.6	LOS C	12.4	88.4	0.93	0.88	1.25	48.1
3	R2	All MCs	156	1.4	156	1.4	0.815	15.8	LOS C	12.4	88.4	0.93	0.88	1.25	47.5
Approach			806	2.5	806	2.5	0.815	13.2	LOS C	12.4	88.4	0.93	0.88	1.25	47.9
East: Canterbury Road E															
4	L2	All MCs	123	0.9	123	0.9	0.449	8.9	LOS A	3.1	21.9	0.75	0.75	0.79	49.6
5	T1	All MCs	82	2.6	82	2.6	0.449	9.1	LOS A	3.1	21.9	0.75	0.75	0.79	49.9
6	R2	All MCs	154	2.1	154	2.1	0.449	12.4	LOS A	3.1	21.9	0.75	0.75	0.79	49.3
Approach			359	1.8	359	1.8	0.449	10.4	LOS A	3.1	21.9	0.75	0.75	0.79	49.5
North: Forest Road S															
7	L2	All MCs	159	0.7	159	0.7	0.124	5.3	LOS A	0.6	4.5	0.37	0.55	0.37	52.7
8	T1	All MCs	344	2.1	344	2.1	0.380	6.1	LOS A	2.4	16.9	0.52	0.60	0.52	51.7
9	R2	All MCs	111	1.0	111	1.0	0.380	9.4	LOS A	2.4	16.9	0.52	0.60	0.52	51.0
9u	U	All MCs	6	16.7	6	16.7	0.380	11.5	LOS A	2.4	16.9	0.52	0.60	0.52	50.4
Approach			620	1.7	620	1.7	0.380	6.6	LOS A	2.4	16.9	0.48	0.58	0.48	51.8
West: Canterbury Road W															
10	L2	All MCs	54	3.9	54	3.9	0.383	11.2	LOS A	2.7	19.5	0.89	0.80	0.91	48.0
11	T1	All MCs	58	1.8	58	1.8	0.383	11.2	LOS A	2.7	19.5	0.89	0.80	0.91	48.4
12	R2	All MCs	100	2.1	100	2.1	0.383	14.5	LOS A	2.7	19.5	0.89	0.80	0.91	47.8
12u	U	All MCs	1	0.0	1	0.0	0.383	16.0	LOS A	2.7	19.5	0.89	0.80	0.91	47.8
Approach			213	2.5	213	2.5	0.383	12.8	LOS A	2.7	19.5	0.89	0.80	0.91	48.0
All Vehicles			1998	2.1	1998	2.1	0.815	10.6	LOS C	12.4	88.4	0.76	0.76	0.89	49.3

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Forest Road S/Canterbury Road W (PM Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Forest Road S/Canterbury Road W
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Road S															
1	L2	All MCs	183	0.6	183	0.6	0.804	10.8	LOS C	11.8	84.0	0.89	0.80	1.12	48.7
2	T1	All MCs	466	2.0	466	2.0	0.804	11.0	LOS C	11.8	84.0	0.89	0.80	1.12	49.1
3	R2	All MCs	199	1.1	199	1.1	0.804	14.2	LOS C	11.8	84.0	0.89	0.80	1.12	48.4
Approach			848	1.5	848	1.5	0.804	11.7	LOS C	11.8	84.0	0.89	0.80	1.12	48.9
East: Canterbury Road E															
4	L2	All MCs	154	0.7	154	0.7	0.436	8.6	LOS A	2.9	20.7	0.74	0.73	0.77	50.0
5	T1	All MCs	83	0.0	83	0.0	0.436	8.7	LOS A	2.9	20.7	0.74	0.73	0.77	50.4
6	R2	All MCs	114	2.8	114	2.8	0.436	12.1	LOS A	2.9	20.7	0.74	0.73	0.77	49.6
Approach			351	1.2	351	1.2	0.436	9.8	LOS A	2.9	20.7	0.74	0.73	0.77	50.0
North: Forest Road S															
7	L2	All MCs	158	2.0	158	2.0	0.128	5.4	LOS A	0.7	4.8	0.40	0.56	0.40	52.5
8	T1	All MCs	355	2.4	355	2.4	0.388	6.3	LOS A	2.5	17.6	0.55	0.60	0.55	51.6
9	R2	All MCs	98	2.2	98	2.2	0.388	9.6	LOS A	2.5	17.6	0.55	0.60	0.55	50.9
9u	U	All MCs	4	0.0	4	0.0	0.388	11.2	LOS A	2.5	17.6	0.55	0.60	0.55	51.0
Approach			615	2.2	615	2.2	0.388	6.6	LOS A	2.5	17.6	0.51	0.59	0.51	51.7
West: Canterbury Road W															
10	L2	All MCs	60	3.5	60	3.5	0.373	11.0	LOS A	2.6	18.7	0.89	0.79	0.90	48.1
11	T1	All MCs	49	2.1	49	2.1	0.373	11.1	LOS A	2.6	18.7	0.89	0.79	0.90	48.5
12	R2	All MCs	95	1.1	95	1.1	0.373	14.3	LOS A	2.6	18.7	0.89	0.79	0.90	47.9
12u	U	All MCs	1	0.0	1	0.0	0.373	15.9	LOS A	2.6	18.7	0.89	0.79	0.90	48.0
Approach			205	2.1	205	2.1	0.373	12.6	LOS A	2.6	18.7	0.89	0.79	0.90	48.1
All Vehicles			2019	1.7	2019	1.7	0.804	9.9	LOS C	11.8	84.0	0.75	0.73	0.85	49.8

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Forest Road S/Canterbury Road W (Weekend Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Forest Road S/Canterbury Road W
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Road S															
1	L2	All MCs	118	0.0	118	0.0	0.531	5.9	LOS A	4.1	28.5	0.53	0.56	0.53	51.5
2	T1	All MCs	392	0.3	392	0.3	0.531	6.0	LOS A	4.1	28.5	0.53	0.56	0.53	51.9
3	R2	All MCs	117	0.9	117	0.9	0.531	9.3	LOS A	4.1	28.5	0.53	0.56	0.53	51.2
Approach			626	0.3	626	0.3	0.531	6.6	LOS A	4.1	28.5	0.53	0.56	0.53	51.7
East: Canterbury Road E															
4	L2	All MCs	135	1.6	135	1.6	0.339	8.7	LOS A	2.1	14.8	0.72	0.73	0.72	49.9
5	T1	All MCs	37	0.0	37	0.0	0.339	8.7	LOS A	2.1	14.8	0.72	0.73	0.72	50.4
6	R2	All MCs	89	2.4	89	2.4	0.339	12.1	LOS A	2.1	14.8	0.72	0.73	0.72	49.6
Approach			261	1.6	261	1.6	0.339	9.8	LOS A	2.1	14.8	0.72	0.73	0.72	49.9
North: Forest Road S															
7	L2	All MCs	114	2.8	114	2.8	0.085	5.1	LOS A	0.4	2.8	0.29	0.54	0.29	52.8
8	T1	All MCs	427	0.5	427	0.5	0.390	6.0	LOS A	2.4	17.2	0.50	0.57	0.50	52.0
9	R2	All MCs	60	0.0	60	0.0	0.390	9.3	LOS A	2.4	17.2	0.50	0.57	0.50	51.3
9u	U	All MCs	1	0.0	1	0.0	0.390	10.9	LOS A	2.4	17.2	0.50	0.57	0.50	51.3
Approach			602	0.9	602	0.9	0.390	6.2	LOS A	2.4	17.2	0.46	0.56	0.46	52.1
West: Canterbury Road W															
10	L2	All MCs	48	0.0	48	0.0	0.299	8.7	LOS A	1.9	13.3	0.73	0.73	0.73	49.4
11	T1	All MCs	46	0.0	46	0.0	0.299	8.9	LOS A	1.9	13.3	0.73	0.73	0.73	49.8
12	R2	All MCs	129	0.8	129	0.8	0.299	12.2	LOS A	1.9	13.3	0.73	0.73	0.73	49.1
12u	U	All MCs	1	0.0	1	0.0	0.299	13.8	LOS A	1.9	13.3	0.73	0.73	0.73	49.1
Approach			225	0.5	225	0.5	0.299	10.8	LOS A	1.9	13.3	0.73	0.73	0.73	49.3
All Vehicles			1715	0.7	1715	0.7	0.531	7.5	LOS A	4.1	28.5	0.56	0.61	0.56	51.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/McClelland Avenue (AM Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/McClelland Avenue
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
1a	L1	All MCs	195	2.7	195	2.7	0.449	6.4	LOS A	2.9	20.6	0.66	0.68	0.66	51.3
3a	R1	All MCs	121	0.9	121	0.9	0.449	10.3	LOS A	2.9	20.6	0.66	0.68	0.66	50.5
3	R2	All MCs	125	1.7	125	1.7	0.449	11.4	LOS A	2.9	20.6	0.66	0.68	0.66	52.7
3u	U	All MCs	1	0.0	1	0.0	0.449	13.4	LOS A	2.9	20.6	0.66	0.68	0.66	50.6
Approach			442	1.9	442	1.9	0.449	8.9	LOS A	2.9	20.6	0.66	0.68	0.66	51.5
East: McClelland Avenue															
4	L2	All MCs	17	0.0	17	0.0	0.012	5.4	LOS A	0.1	0.5	0.38	0.50	0.38	56.8
6a	R1	All MCs	314	5.4	314	5.4	0.297	10.5	LOS A	2.0	14.8	0.54	0.64	0.54	52.1
6b	R3	All MCs	45	2.3	45	2.3	0.297	12.6	LOS A	2.0	14.8	0.54	0.64	0.54	52.2
6u	U	All MCs	12	0.0	12	0.0	0.297	13.7	LOS A	2.0	14.8	0.54	0.64	0.54	52.3
Approach			387	4.6	387	4.6	0.297	10.6	LOS A	2.0	14.8	0.54	0.63	0.54	52.3
NorthEast: Hicks Street															
24b	L3	All MCs	26	0.0	26	0.0	0.192	6.8	LOS A	1.1	7.7	0.63	0.69	0.63	53.4
24a	L1	All MCs	57	1.9	57	1.9	0.192	6.4	LOS A	1.1	7.7	0.63	0.69	0.63	51.4
26	R2	All MCs	84	7.5	84	7.5	0.192	11.6	LOS A	1.1	7.7	0.63	0.69	0.63	50.3
26u	U	All MCs	1	0.0	1	0.0	0.192	13.4	LOS A	1.1	7.7	0.63	0.69	0.63	50.6
Approach			168	4.4	168	4.4	0.192	9.1	LOS A	1.1	7.7	0.63	0.69	0.63	51.1
NorthWest: McClelland Avenue															
27	L2	All MCs	96	8.8	96	8.8	0.127	7.0	LOS A	0.8	5.8	0.59	0.60	0.59	52.2
27a	L1	All MCs	309	4.4	309	4.4	0.380	5.7	LOS A	3.1	22.0	0.64	0.58	0.64	52.1
29a	R1	All MCs	148	0.0	148	0.0	0.380	9.6	LOS A	3.1	22.0	0.64	0.58	0.64	54.0
29u	U	All MCs	6	0.0	6	0.0	0.380	12.7	LOS A	3.1	22.0	0.64	0.58	0.64	51.4
Approach			560	3.9	560	3.9	0.380	7.0	LOS A	3.1	22.0	0.63	0.58	0.63	52.6
All Vehicles			1558	3.6	1558	3.6	0.449	8.7	LOS A	3.1	22.0	0.62	0.63	0.62	52.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/McClelland Avenue (School Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/McClelland Avenue
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
1a	L1	All MCs	160	0.0	160	0.0	0.381	6.5	LOS A	2.4	17.1	0.68	0.69	0.68	51.3
3a	R1	All MCs	89	2.4	89	2.4	0.381	10.6	LOS A	2.4	17.1	0.68	0.69	0.68	50.4
3	R2	All MCs	102	1.0	102	1.0	0.381	11.6	LOS A	2.4	17.1	0.68	0.69	0.68	52.8
3u	U	All MCs	2	0.0	2	0.0	0.381	13.6	LOS A	2.4	17.1	0.68	0.69	0.68	50.5
Approach			354	0.9	354	0.9	0.381	9.0	LOS A	2.4	17.1	0.68	0.69	0.68	51.5
East: McClelland Avenue															
4	L2	All MCs	63	0.0	63	0.0	0.050	6.0	LOS A	0.3	2.1	0.49	0.56	0.49	56.4
6a	R1	All MCs	394	2.1	394	2.1	0.366	11.4	LOS A	2.7	19.2	0.68	0.68	0.68	51.9
6b	R3	All MCs	19	5.6	19	5.6	0.366	13.8	LOS A	2.7	19.2	0.68	0.68	0.68	51.8
6u	U	All MCs	2	50.0	2	50.0	0.366	16.7	LOS A	2.7	19.2	0.68	0.68	0.68	50.2
Approach			478	2.2	478	2.2	0.366	10.8	LOS A	2.7	19.2	0.66	0.66	0.66	52.4
NorthEast: Hicks Street															
24b	L3	All MCs	37	5.7	37	5.7	0.298	7.6	LOS A	1.8	13.0	0.70	0.71	0.70	51.8
24a	L1	All MCs	94	2.2	94	2.2	0.298	7.0	LOS A	1.8	13.0	0.70	0.71	0.70	51.0
26	R2	All MCs	118	5.4	118	5.4	0.298	12.2	LOS A	1.8	13.0	0.70	0.71	0.70	50.1
26u	U	All MCs	1	0.0	1	0.0	0.298	14.1	LOS A	1.8	13.0	0.70	0.71	0.70	50.3
Approach			249	4.2	249	4.2	0.298	9.6	LOS A	1.8	13.0	0.70	0.71	0.70	50.7
NorthWest: McClelland Avenue															
27	L2	All MCs	85	6.2	85	6.2	0.102	6.1	LOS A	0.6	4.6	0.51	0.55	0.51	52.9
27a	L1	All MCs	318	3.3	318	3.3	0.414	5.2	LOS A	3.6	25.7	0.58	0.55	0.58	52.1
29a	R1	All MCs	233	2.7	233	2.7	0.414	9.1	LOS A	3.6	25.7	0.58	0.55	0.58	53.4
29u	U	All MCs	1	0.0	1	0.0	0.414	12.2	LOS A	3.6	25.7	0.58	0.55	0.58	51.4
Approach			637	3.5	637	3.5	0.414	6.7	LOS A	3.6	25.7	0.57	0.55	0.57	52.7
All Vehicles			1718	2.7	1718	2.7	0.414	8.8	LOS A	3.6	25.7	0.64	0.63	0.64	52.1

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/McClelland Avenue (PM Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/McClelland Avenue
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
1a	L1	All MCs	161	0.7	161	0.7	0.341	6.6	LOS A	2.1	15.0	0.68	0.69	0.68	51.4
3a	R1	All MCs	75	2.8	75	2.8	0.341	10.7	LOS A	2.1	15.0	0.68	0.69	0.68	50.5
3	R2	All MCs	72	1.5	72	1.5	0.341	11.7	LOS A	2.1	15.0	0.68	0.69	0.68	52.8
3u	U	All MCs	1	0.0	1	0.0	0.341	13.7	LOS A	2.1	15.0	0.68	0.69	0.68	50.6
Approach			308	1.4	308	1.4	0.341	8.8	LOS A	2.1	15.0	0.68	0.69	0.68	51.5
East: McClelland Avenue															
4	L2	All MCs	62	0.0	62	0.0	0.048	5.9	LOS A	0.3	2.0	0.46	0.55	0.46	56.5
6a	R1	All MCs	426	0.7	426	0.7	0.383	11.2	LOS A	2.9	20.2	0.67	0.67	0.67	52.0
6b	R3	All MCs	21	0.0	21	0.0	0.383	13.5	LOS A	2.9	20.2	0.67	0.67	0.67	52.0
6u	U	All MCs	1	0.0	1	0.0	0.383	14.6	LOS A	2.9	20.2	0.67	0.67	0.67	52.0
Approach			511	0.6	511	0.6	0.383	10.7	LOS A	2.9	20.2	0.65	0.66	0.65	52.5
NorthEast: Hicks Street															
24b	L3	All MCs	46	0.0	46	0.0	0.298	6.8	LOS A	1.7	12.3	0.64	0.68	0.64	53.6
24a	L1	All MCs	113	0.9	113	0.9	0.298	6.5	LOS A	1.7	12.3	0.64	0.68	0.64	51.6
26	R2	All MCs	113	6.5	113	6.5	0.298	11.7	LOS A	1.7	12.3	0.64	0.68	0.64	50.6
26u	U	All MCs	1	0.0	1	0.0	0.298	13.5	LOS A	1.7	12.3	0.64	0.68	0.64	50.8
Approach			273	3.1	273	3.1	0.298	8.7	LOS A	1.7	12.3	0.64	0.68	0.64	51.5
NorthWest: McClelland Avenue															
27	L2	All MCs	76	8.3	76	8.3	0.087	5.7	LOS A	0.5	4.0	0.46	0.53	0.46	53.0
27a	L1	All MCs	308	3.4	308	3.4	0.360	4.8	LOS A	3.0	21.5	0.50	0.52	0.50	52.5
29a	R1	All MCs	193	1.6	193	1.6	0.360	8.7	LOS A	3.0	21.5	0.50	0.52	0.50	54.0
29u	U	All MCs	2	0.0	2	0.0	0.360	11.8	LOS A	3.0	21.5	0.50	0.52	0.50	51.7
Approach			579	3.5	579	3.5	0.360	6.2	LOS A	3.0	21.5	0.49	0.52	0.49	53.0
All Vehicles			1671	2.1	1671	2.1	0.383	8.5	LOS A	3.0	21.5	0.60	0.62	0.60	52.3

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/McClelland Avenue (Weekend Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/McClelland Avenue
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
1a	L1	All MCs	141	0.7	141	0.7	0.244	5.4	LOS A	1.3	9.3	0.51	0.61	0.51	52.2
3a	R1	All MCs	45	4.7	45	4.7	0.244	9.5	LOS A	1.3	9.3	0.51	0.61	0.51	51.2
3	R2	All MCs	69	1.5	69	1.5	0.244	10.4	LOS A	1.3	9.3	0.51	0.61	0.51	53.6
3u	U	All MCs	1	100.0	1	100.0	0.244	15.2	LOS A	1.3	9.3	0.51	0.61	0.51	48.0
Approach			257	2.0	257	2.0	0.244	7.5	LOS A	1.3	9.3	0.51	0.61	0.51	52.4
East: McClelland Avenue															
4	L2	All MCs	49	0.0	49	0.0	0.036	5.6	LOS A	0.2	1.4	0.40	0.52	0.40	56.7
6a	R1	All MCs	296	2.1	296	2.1	0.242	10.3	LOS A	1.6	11.2	0.52	0.63	0.52	52.4
6b	R3	All MCs	13	0.0	13	0.0	0.242	12.5	LOS A	1.6	11.2	0.52	0.63	0.52	52.5
6u	U	All MCs	1	0.0	1	0.0	0.242	13.7	LOS A	1.6	11.2	0.52	0.63	0.52	52.5
Approach			359	1.8	359	1.8	0.242	9.8	LOS A	1.6	11.2	0.50	0.62	0.50	53.0
NorthEast: Hicks Street															
24b	L3	All MCs	5	0.0	5	0.0	0.138	6.6	LOS A	0.7	5.1	0.58	0.67	0.58	53.5
24a	L1	All MCs	58	0.0	58	0.0	0.138	6.2	LOS A	0.7	5.1	0.58	0.67	0.58	51.6
26	R2	All MCs	63	5.0	63	5.0	0.138	11.3	LOS A	0.7	5.1	0.58	0.67	0.58	50.6
26u	U	All MCs	1	0.0	1	0.0	0.138	13.3	LOS A	0.7	5.1	0.58	0.67	0.58	50.8
Approach			127	2.5	127	2.5	0.138	8.8	LOS A	0.7	5.1	0.58	0.67	0.58	51.1
NorthWest: McClelland Avenue															
27	L2	All MCs	77	2.7	77	2.7	0.081	5.2	LOS A	0.5	3.5	0.39	0.50	0.39	53.4
27a	L1	All MCs	341	1.2	341	1.2	0.351	4.5	LOS A	2.9	20.2	0.42	0.50	0.42	52.9
29a	R1	All MCs	175	0.0	175	0.0	0.351	8.5	LOS A	2.9	20.2	0.42	0.50	0.42	54.8
29u	U	All MCs	6	0.0	6	0.0	0.351	11.6	LOS A	2.9	20.2	0.42	0.50	0.42	52.1
Approach			599	1.1	599	1.1	0.351	5.8	LOS A	2.9	20.2	0.42	0.50	0.42	53.5
All Vehicles			1342	1.6	1342	1.6	0.351	7.5	LOS A	2.9	20.2	0.47	0.57	0.47	52.9

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/MacGregor Court (AM Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/MacGregor Court/Shell Parade
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Shell Parade															
1	L2	All MCs	358	7.6	358	7.6	0.242	3.7	LOS A	1.5	11.3	0.18	0.41	0.18	54.8
3	R2	All MCs	4	0.0	4	0.0	0.242	9.3	LOS A	1.5	11.3	0.18	0.41	0.18	54.4
Approach			362	7.6	362	7.6	0.242	3.7	LOS A	1.5	11.3	0.18	0.41	0.18	54.8
East: MacGregor Court															
4	L2	All MCs	3	0.0	3	0.0	0.012	5.7	LOS A	0.1	0.4	0.56	0.50	0.56	53.2
5	T1	All MCs	8	0.0	8	0.0	0.012	5.7	LOS A	0.1	0.4	0.56	0.50	0.56	53.6
Approach			12	0.0	12	0.0	0.012	5.7	LOS A	0.1	0.4	0.56	0.50	0.56	53.5
North: Princes Freeway															
7	L2	All MCs	1	0.0	1	0.0	0.197	5.0	LOS A	1.0	8.2	0.48	0.52	0.48	52.9
8	T1	All MCs	175	16.9	175	16.9	0.197	5.3	LOS A	1.0	8.2	0.48	0.52	0.48	53.0
9	R2	All MCs	32	0.0	32	0.0	0.197	10.7	LOS A	1.0	8.2	0.48	0.52	0.48	52.3
Approach			207	14.2	207	14.2	0.197	6.1	LOS A	1.0	8.2	0.48	0.52	0.48	52.9
West: Rennie Street															
11	T1	All MCs	1	0.0	1	0.0	0.181	3.4	LOS A	1.0	7.2	0.04	0.63	0.04	51.8
12	R2	All MCs	312	1.4	312	1.4	0.181	9.1	LOS A	1.0	7.2	0.04	0.63	0.04	50.9
Approach			313	1.3	313	1.3	0.181	9.1	LOS A	1.0	7.2	0.04	0.63	0.04	50.9
All Vehicles			894	6.8	894	6.8	0.242	6.2	LOS A	1.5	11.3	0.20	0.52	0.20	52.9

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/MacGregor Court (School Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/MacGregor Court/Shell Parade
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Shell Parade															
1	L2	All MCs	499	4.2	499	4.2	0.313	3.5	LOS A	2.2	15.9	0.14	0.41	0.14	55.0
3	R2	All MCs	4	0.0	4	0.0	0.313	9.2	LOS A	2.2	15.9	0.14	0.41	0.14	54.5
Approach			503	4.2	503	4.2	0.313	3.6	LOS A	2.2	15.9	0.14	0.41	0.14	55.0
East: MacGregor Court															
4	L2	All MCs	3	0.0	3	0.0	0.005	5.3	LOS A	0.0	0.2	0.51	0.47	0.51	53.6
5	T1	All MCs	2	0.0	2	0.0	0.005	5.2	LOS A	0.0	0.2	0.51	0.47	0.51	54.0
Approach			5	0.0	5	0.0	0.005	5.3	LOS A	0.0	0.2	0.51	0.47	0.51	53.8
North: Princes Freeway															
7	L2	All MCs	2	0.0	2	0.0	0.127	4.9	LOS A	0.6	5.1	0.46	0.52	0.46	52.9
8	T1	All MCs	108	18.4	108	18.4	0.127	5.3	LOS A	0.6	5.1	0.46	0.52	0.46	53.0
9	R2	All MCs	21	0.0	21	0.0	0.127	10.6	LOS A	0.6	5.1	0.46	0.52	0.46	52.3
Approach			132	15.2	132	15.2	0.127	6.1	LOS A	0.6	5.1	0.46	0.52	0.46	52.9
West: Rennie Street															
11	T1	All MCs	3	0.0	3	0.0	0.190	3.4	LOS A	1.0	7.4	0.04	0.63	0.04	51.9
12	R2	All MCs	324	1.9	324	1.9	0.190	9.1	LOS A	1.0	7.4	0.04	0.63	0.04	50.9
Approach			327	1.9	327	1.9	0.190	9.1	LOS A	1.0	7.4	0.04	0.63	0.04	50.9
All Vehicles			967	4.9	967	4.9	0.313	5.8	LOS A	2.2	15.9	0.15	0.50	0.15	53.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/MacGregor Court (PM Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/MacGregor Court/Shell Parade
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Shell Parade															
1	L2	All MCs	468	5.4	468	5.4	0.300	3.6	LOS A	2.1	15.0	0.14	0.41	0.14	55.0
3	R2	All MCs	7	0.0	7	0.0	0.300	9.2	LOS A	2.1	15.0	0.14	0.41	0.14	54.5
Approach			476	5.3	476	5.3	0.300	3.6	LOS A	2.1	15.0	0.14	0.41	0.14	55.0
East: MacGregor Court															
4	L2	All MCs	2	0.0	2	0.0	0.004	5.1	LOS A	0.0	0.1	0.48	0.45	0.48	53.7
5	T1	All MCs	2	0.0	2	0.0	0.004	5.0	LOS A	0.0	0.1	0.48	0.45	0.48	54.0
Approach			4	0.0	4	0.0	0.004	5.1	LOS A	0.0	0.1	0.48	0.45	0.48	53.9
North: Princes Freeway															
7	L2	All MCs	1	0.0	1	0.0	0.108	4.8	LOS A	0.5	4.3	0.45	0.52	0.45	52.8
8	T1	All MCs	87	24.1	87	24.1	0.108	5.3	LOS A	0.5	4.3	0.45	0.52	0.45	52.8
9	R2	All MCs	22	0.0	22	0.0	0.108	10.5	LOS A	0.5	4.3	0.45	0.52	0.45	52.2
Approach			111	19.0	111	19.0	0.108	6.3	LOS A	0.5	4.3	0.45	0.52	0.45	52.6
West: Rennie Street															
11	T1	All MCs	1	0.0	1	0.0	0.180	3.4	LOS A	1.0	7.0	0.05	0.62	0.05	51.8
12	R2	All MCs	302	2.1	302	2.1	0.180	9.1	LOS A	1.0	7.0	0.05	0.62	0.05	50.9
Approach			303	2.1	303	2.1	0.180	9.1	LOS A	1.0	7.0	0.05	0.62	0.05	50.9
All Vehicles			894	5.9	894	5.9	0.300	5.8	LOS A	2.1	15.0	0.15	0.50	0.15	53.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/MacGregor Court (Weekend Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/MacGregor Court/Shell Parade
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Shell Parade															
1	L2	All MCs	199	5.8	199	5.8	0.123	3.5	LOS A	0.7	4.8	0.04	0.43	0.04	55.3
3	R2	All MCs	4	0.0	4	0.0	0.123	9.1	LOS A	0.7	4.8	0.04	0.43	0.04	54.8
Approach			203	5.7	203	5.7	0.123	3.6	LOS A	0.7	4.8	0.04	0.43	0.04	55.3
East: MacGregor Court															
4	L2	All MCs	5	0.0	5	0.0	0.005	4.3	LOS A	0.0	0.2	0.37	0.43	0.37	54.3
5	T1	All MCs	1	0.0	1	0.0	0.005	4.3	LOS A	0.0	0.2	0.37	0.43	0.37	54.7
Approach			6	0.0	6	0.0	0.005	4.3	LOS A	0.0	0.2	0.37	0.43	0.37	54.4
North: Princes Freeway															
7	L2	All MCs	1	0.0	1	0.0	0.093	4.0	LOS A	0.4	3.4	0.28	0.39	0.28	54.2
8	T1	All MCs	109	10.6	109	10.6	0.093	4.1	LOS A	0.4	3.4	0.28	0.39	0.28	54.5
9	R2	All MCs	4	0.0	4	0.0	0.093	9.7	LOS A	0.4	3.4	0.28	0.39	0.28	53.6
Approach			115	10.1	115	10.1	0.093	4.3	LOS A	0.4	3.4	0.28	0.39	0.28	54.4
West: Rennie Street															
11	T1	All MCs	2	0.0	2	0.0	0.077	3.4	LOS A	0.4	2.6	0.03	0.63	0.03	51.9
12	R2	All MCs	127	1.7	127	1.7	0.077	9.1	LOS A	0.4	2.6	0.03	0.63	0.03	51.0
Approach			129	1.6	129	1.6	0.077	9.0	LOS A	0.4	2.6	0.03	0.63	0.03	51.0
All Vehicles			454	5.6	454	5.6	0.123	5.3	LOS A	0.7	4.8	0.11	0.48	0.11	53.7

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/McClelland Avenue (AM Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/McClelland Avenue
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	312	5.4	312	5.4	0.409	8.7	LOS A	2.2	16.5	0.31	0.85	0.31	51.6
3	R2	All MCs	95	20.0	95	20.0	0.409	15.1	LOS A	2.2	16.5	0.31	0.85	0.31	48.4
Approach			406	8.8	406	8.8	0.409	10.2	LOS A	2.2	16.5	0.31	0.85	0.31	50.8
East: McClelland Avenue															
4	L2	All MCs	81	23.4	81	23.4	0.086	6.7	LOS A	0.0	0.0	0.00	0.43	0.00	54.7
5	T1	All MCs	62	15.3	62	15.3	0.086	1.1	LOS A	0.0	0.0	0.00	0.43	0.00	64.8
Approach			143	19.9	143	19.9	0.086	4.3	LOS A	0.0	0.0	0.00	0.43	0.00	58.7
West: McClelland Avenue															
11	T1	All MCs	52	10.2	52	10.2	0.251	0.6	LOS A	1.4	10.0	0.32	0.53	0.32	62.0
12	R2	All MCs	340	4.3	340	4.3	0.251	7.0	LOS A	1.4	10.0	0.32	0.53	0.32	55.2
Approach			392	5.1	392	5.1	0.251	6.1	LOS A	1.4	10.0	0.32	0.53	0.32	56.0
All Vehicles			941	8.9	941	8.9	0.409	7.6	LOS A	2.2	16.5	0.26	0.65	0.26	54.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/McClelland Avenue (School Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/McClelland Avenue
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	372	4.0	372	4.0	0.442	8.9	LOS A	2.5	18.0	0.37	0.84	0.37	52.1
3	R2	All MCs	93	13.6	93	13.6	0.442	13.9	LOS A	2.5	18.0	0.37	0.84	0.37	49.9
Approach			464	5.9	464	5.9	0.442	9.9	LOS A	2.5	18.0	0.37	0.84	0.37	51.6
East: McClelland Avenue															
4	L2	All MCs	88	8.3	88	8.3	0.104	6.5	LOS A	0.0	0.0	0.00	0.39	0.00	59.2
5	T1	All MCs	102	3.1	102	3.1	0.104	1.1	LOS A	0.0	0.0	0.00	0.39	0.00	65.4
Approach			191	5.5	191	5.5	0.104	3.6	LOS A	0.0	0.0	0.00	0.39	0.00	62.4
West: McClelland Avenue															
11	T1	All MCs	69	7.6	69	7.6	0.212	0.7	LOS A	1.1	8.0	0.34	0.51	0.34	62.4
12	R2	All MCs	259	2.0	259	2.0	0.212	7.1	LOS A	1.1	8.0	0.34	0.51	0.34	55.6
Approach			328	3.2	328	3.2	0.212	5.7	LOS A	1.1	8.0	0.34	0.51	0.34	56.9
All Vehicles			983	4.9	983	4.9	0.442	7.3	LOS A	2.5	18.0	0.29	0.64	0.29	55.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Avalon Road/McClelland Avenue (PM Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/McClelland Avenue
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	396	1.9	396	1.9	0.478	9.1	LOS A	3.1	22.9	0.42	0.84	0.44	52.2
3	R2	All MCs	82	28.2	82	28.2	0.478	17.6	LOS A	3.1	22.9	0.42	0.84	0.44	46.6
Approach			478	6.4	478	6.4	0.478	10.6	LOS A	3.1	22.9	0.42	0.84	0.44	51.1
East: McClelland Avenue															
4	L2	All MCs	114	6.5	114	6.5	0.126	6.5	LOS A	0.0	0.0	0.00	0.40	0.00	59.7
5	T1	All MCs	119	1.8	119	1.8	0.126	1.1	LOS A	0.0	0.0	0.00	0.40	0.00	65.2
Approach			233	4.1	233	4.1	0.126	3.7	LOS A	0.0	0.0	0.00	0.40	0.00	62.4
West: McClelland Avenue															
11	T1	All MCs	77	6.8	77	6.8	0.242	0.9	LOS A	1.3	9.3	0.39	0.53	0.39	62.2
12	R2	All MCs	287	1.8	287	1.8	0.242	7.3	LOS A	1.3	9.3	0.39	0.53	0.39	55.4
Approach			364	2.9	364	2.9	0.242	5.9	LOS A	1.3	9.3	0.39	0.53	0.39	56.7
All Vehicles			1075	4.7	1075	4.7	0.478	7.5	LOS A	3.1	22.9	0.32	0.64	0.33	55.1

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/McClelland Avenue (Weekend Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/McClelland Avenue
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	232	2.3	232	2.3	0.287	8.5	LOS A	1.3	9.5	0.28	0.86	0.28	52.7
3	R2	All MCs	77	4.1	77	4.1	0.287	11.6	LOS A	1.3	9.5	0.28	0.86	0.28	52.2
Approach			308	2.7	308	2.7	0.287	9.3	LOS A	1.3	9.5	0.28	0.86	0.28	52.6
East: McClelland Avenue															
4	L2	All MCs	67	3.1	67	3.1	0.081	6.4	LOS A	0.0	0.0	0.00	0.38	0.00	60.9
5	T1	All MCs	85	0.0	85	0.0	0.081	1.1	LOS A	0.0	0.0	0.00	0.38	0.00	65.5
Approach			153	1.4	153	1.4	0.081	3.4	LOS A	0.0	0.0	0.00	0.38	0.00	63.4
West: McClelland Avenue															
11	T1	All MCs	53	0.0	53	0.0	0.206	0.6	LOS A	1.1	7.6	0.30	0.52	0.30	62.3
12	R2	All MCs	278	0.8	278	0.8	0.206	6.9	LOS A	1.1	7.6	0.30	0.52	0.30	55.6
Approach			331	0.6	331	0.6	0.206	5.9	LOS A	1.1	7.6	0.30	0.52	0.30	56.5
All Vehicles			792	1.6	792	1.6	0.287	6.7	LOS A	1.3	9.5	0.23	0.62	0.23	56.1

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway North (AM Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway North
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
2	T1	All MCs	203	6.7	203	6.7	0.130	0.6	LOS A	0.2	1.7	0.12	0.15	0.12	68.4
3	R2	All MCs	14	23.1	14	23.1	0.130	11.2	LOS A	0.2	1.7	0.12	0.15	0.12	63.7
Approach			217	7.8	217	7.8	0.130	1.3	LOS A	0.2	1.7	0.12	0.15	0.12	68.1
North: Avalon Road															
7	L2	All MCs	353	3.3	353	3.3	0.350	6.5	LOS A	0.0	0.0	0.00	0.34	0.00	60.5
8	T1	All MCs	288	7.7	288	7.7	0.350	0.1	LOS A	0.0	0.0	0.00	0.34	0.00	65.3
Approach			641	5.3	641	5.3	0.350	3.6	LOS A	0.0	0.0	0.00	0.34	0.00	62.6
West: Princes Freeway Off-Ramp															
10	L2	All MCs	285	8.1	285	8.1	0.238	8.9	LOS A	1.1	8.1	0.36	0.65	0.36	61.5
11	T1	All MCs	1	0.0	1	0.0	0.238	14.6	LOS A	1.1	8.1	0.36	0.65	0.36	71.6
12	R2	All MCs	8	12.5	8	12.5	0.238	12.9	LOS A	1.1	8.1	0.36	0.65	0.36	59.6
Approach			295	8.2	295	8.2	0.238	9.1	LOS A	1.1	8.1	0.36	0.65	0.36	61.4
All Vehicles			1153	6.5	1153	6.5	0.350	4.6	LOS A	1.1	8.1	0.11	0.38	0.11	63.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway North (School Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway North
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
2	T1	All MCs	396	3.2	396	3.2	0.220	0.2	LOS A	0.2	1.1	0.04	0.04	0.04	69.6
3	R2	All MCs	7	71.4	7	71.4	0.220	12.0	LOS A	0.2	1.1	0.04	0.04	0.04	52.3
Approach			403	4.4	403	4.4	0.220	0.4	LOS A	0.2	1.1	0.04	0.04	0.04	69.2
North: Avalon Road															
7	L2	All MCs	207	3.6	207	3.6	0.252	6.5	LOS A	0.0	0.0	0.00	0.28	0.00	61.2
8	T1	All MCs	261	3.6	261	3.6	0.252	0.1	LOS A	0.0	0.0	0.00	0.28	0.00	66.3
Approach			468	3.6	468	3.6	0.252	2.9	LOS A	0.0	0.0	0.00	0.28	0.00	63.9
West: Princes Freeway Off-Ramp															
10	L2	All MCs	285	5.9	285	5.9	0.320	10.2	LOS A	1.5	11.3	0.53	0.76	0.58	60.9
11	T1	All MCs	2	50.0	2	50.0	0.320	23.4	LOS A	1.5	11.3	0.53	0.76	0.58	57.6
12	R2	All MCs	20	10.5	20	10.5	0.320	15.5	LOS A	1.5	11.3	0.53	0.76	0.58	59.1
Approach			307	6.5	307	6.5	0.320	10.6	LOS A	1.5	11.3	0.53	0.76	0.58	60.8
All Vehicles			1179	4.6	1179	4.6	0.320	4.1	LOS A	1.5	11.3	0.15	0.32	0.16	64.7

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway North (PM Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway North
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
2	T1	All MCs	469	3.1	469	3.1	0.258	0.1	LOS A	0.1	1.0	0.03	0.04	0.03	69.6
3	R2	All MCs	8	37.5	8	37.5	0.258	10.8	LOS A	0.1	1.0	0.03	0.04	0.03	60.5
Approach			478	3.7	478	3.7	0.258	0.3	LOS A	0.1	1.0	0.03	0.04	0.03	69.4
North: Avalon Road															
7	L2	All MCs	207	2.0	207	2.0	0.271	6.4	LOS A	0.0	0.0	0.00	0.26	0.00	61.9
8	T1	All MCs	301	3.5	301	3.5	0.271	0.1	LOS A	0.0	0.0	0.00	0.26	0.00	66.5
Approach			508	2.9	508	2.9	0.271	2.7	LOS A	0.0	0.0	0.00	0.26	0.00	64.6
West: Princes Freeway Off-Ramp															
10	L2	All MCs	261	7.3	261	7.3	0.333	10.9	LOS A	1.6	12.0	0.58	0.82	0.67	59.6
11	T1	All MCs	1	0.0	1	0.0	0.333	16.3	LOS A	1.6	12.0	0.58	0.82	0.67	68.8
12	R2	All MCs	20	15.8	20	15.8	0.333	19.1	LOS A	1.6	12.0	0.58	0.82	0.67	56.7
Approach			282	7.8	282	7.8	0.333	11.5	LOS A	1.6	12.0	0.58	0.82	0.67	59.5
All Vehicles			1268	4.3	1268	4.3	0.333	3.8	LOS A	1.6	12.0	0.14	0.30	0.16	65.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway North (Weekend Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway North
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
2	T1	All MCs	280	2.3	280	2.3	0.158	0.2	LOS A	0.1	1.0	0.06	0.08	0.06	69.2
3	R2	All MCs	13	0.0	13	0.0	0.158	8.5	LOS A	0.1	1.0	0.06	0.08	0.06	72.6
Approach			293	2.2	293	2.2	0.158	0.5	LOS A	0.1	1.0	0.06	0.08	0.06	69.4
North: Avalon Road															
7	L2	All MCs	261	0.4	261	0.4	0.270	6.4	LOS A	0.0	0.0	0.00	0.32	0.00	61.8
8	T1	All MCs	247	2.1	247	2.1	0.270	0.1	LOS A	0.0	0.0	0.00	0.32	0.00	65.7
Approach			508	1.2	508	1.2	0.270	3.3	LOS A	0.0	0.0	0.00	0.32	0.00	63.6
West: Princes Freeway Off-Ramp															
10	L2	All MCs	205	1.0	205	1.0	0.192	9.0	LOS A	0.8	5.7	0.40	0.68	0.40	63.6
11	T1	All MCs	1	0.0	1	0.0	0.192	12.6	LOS A	0.8	5.7	0.40	0.68	0.40	71.4
12	R2	All MCs	17	0.0	17	0.0	0.192	11.6	LOS A	0.8	5.7	0.40	0.68	0.40	63.6
Approach			223	0.9	223	0.9	0.192	9.2	LOS A	0.8	5.7	0.40	0.68	0.40	63.7
All Vehicles			1024	1.4	1024	1.4	0.270	3.8	LOS A	0.8	5.7	0.11	0.33	0.11	65.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway South (AM Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway South
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	18	5.9	18	5.9	0.044	6.3	LOS A	0.2	1.8	0.53	0.55	0.53	63.3
2	T1	All MCs	25	20.8	25	20.8	0.044	6.7	LOS A	0.2	1.8	0.53	0.55	0.53	59.6
Approach			43	14.6	43	14.6	0.044	6.5	LOS A	0.2	1.8	0.53	0.55	0.53	61.1
East: Princes Freeway Off-Ramp															
4	L2	All MCs	6	0.0	6	0.0	0.156	8.0	LOS A	0.8	5.9	0.44	0.68	0.44	60.8
5	T1	All MCs	1	100.0	1	100.0	0.156	11.8	LOS A	0.8	5.9	0.44	0.68	0.44	44.8
6	R2	All MCs	175	4.8	175	4.8	0.156	15.2	LOS A	0.8	5.9	0.44	0.68	0.44	58.7
Approach			182	5.2	182	5.2	0.156	14.9	LOS A	0.8	5.9	0.44	0.68	0.44	58.7
North: Avalon Road															
8	T1	All MCs	25	12.5	25	12.5	0.171	4.3	LOS A	0.0	0.0	0.00	0.67	0.00	57.6
9	R2	All MCs	268	7.5	268	7.5	0.171	10.9	LOS A	0.0	0.0	0.00	0.67	0.00	59.9
9u	U	All MCs	3	0.0	3	0.0	0.171	13.5	LOS A	0.0	0.0	0.00	0.67	0.00	56.8
Approach			297	7.8	297	7.8	0.171	10.3	LOS A	0.0	0.0	0.00	0.67	0.00	59.6
All Vehicles			522	7.5	522	7.5	0.171	11.6	LOS A	0.8	5.9	0.20	0.66	0.20	59.4

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway South (School Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway South
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	14	0.0	14	0.0	0.040	7.0	LOS A	0.2	1.7	0.63	0.60	0.63	63.7
2	T1	All MCs	21	20.0	21	20.0	0.040	7.8	LOS A	0.2	1.7	0.63	0.60	0.63	59.0
Approach			35	12.1	35	12.1	0.040	7.5	LOS A	0.2	1.7	0.63	0.60	0.63	60.8
East: Princes Freeway Off-Ramp															
4	L2	All MCs	7	0.0	7	0.0	0.314	8.1	LOS A	1.9	13.2	0.48	0.67	0.48	60.5
5	T1	All MCs	1	0.0	1	0.0	0.314	8.8	LOS A	1.9	13.2	0.48	0.67	0.48	65.7
6	R2	All MCs	374	2.0	374	2.0	0.314	15.2	LOS A	1.9	13.2	0.48	0.67	0.48	59.2
Approach			382	1.9	382	1.9	0.314	15.1	LOS A	1.9	13.2	0.48	0.67	0.48	59.2
North: Avalon Road															
8	T1	All MCs	37	8.6	37	8.6	0.159	4.3	LOS A	0.0	0.0	0.00	0.66	0.00	58.0
9	R2	All MCs	243	3.0	243	3.0	0.159	10.8	LOS A	0.0	0.0	0.00	0.66	0.00	61.1
9u	U	All MCs	1	100.0	1	100.0	0.159	14.8	LOS A	0.0	0.0	0.00	0.66	0.00	47.3
Approach			281	4.1	281	4.1	0.159	10.0	LOS A	0.0	0.0	0.00	0.66	0.00	60.6
All Vehicles			698	3.3	698	3.3	0.314	12.6	LOS A	1.9	13.2	0.29	0.67	0.29	59.8

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway South (PM Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway South
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	14	7.7	14	7.7	0.048	8.2	LOS A	0.3	2.1	0.70	0.65	0.70	61.5
2	T1	All MCs	23	13.6	23	13.6	0.048	8.5	LOS A	0.3	2.1	0.70	0.65	0.70	58.6
Approach			37	11.4	37	11.4	0.048	8.4	LOS A	0.3	2.1	0.70	0.65	0.70	59.7
East: Princes Freeway Off-Ramp															
4	L2	All MCs	6	0.0	6	0.0	0.382	8.5	LOS A	2.4	17.2	0.54	0.68	0.54	60.2
5	T1	All MCs	1	0.0	1	0.0	0.382	9.2	LOS A	2.4	17.2	0.54	0.68	0.54	65.3
6	R2	All MCs	445	2.4	445	2.4	0.382	15.6	LOS A	2.4	17.2	0.54	0.68	0.54	58.8
Approach			453	2.3	453	2.3	0.382	15.5	LOS A	2.4	17.2	0.54	0.68	0.54	58.8
North: Avalon Road															
8	T1	All MCs	39	10.8	39	10.8	0.182	4.3	LOS A	0.0	0.0	0.00	0.66	0.00	57.8
9	R2	All MCs	281	3.0	281	3.0	0.182	10.8	LOS A	0.0	0.0	0.00	0.66	0.00	61.0
9u	U	All MCs	1	100.0	1	100.0	0.182	14.8	LOS A	0.0	0.0	0.00	0.66	0.00	47.3
Approach			321	4.3	321	4.3	0.182	10.0	LOS A	0.0	0.0	0.00	0.66	0.00	60.5
All Vehicles			811	3.5	811	3.5	0.382	13.0	LOS A	2.4	17.2	0.33	0.67	0.33	59.5

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway South (Sat Peak) (Site Folder: Post Development (Sensitivity Testing) - Appendix H)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway South
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	21	25.0	21	25.0	0.051	7.0	LOS A	0.3	2.0	0.55	0.57	0.55	59.7
2	T1	All MCs	28	0.0	28	0.0	0.051	6.3	LOS A	0.3	2.0	0.55	0.57	0.55	60.2
Approach			49	10.6	49	10.6	0.051	6.6	LOS A	0.3	2.0	0.55	0.57	0.55	60.0
East: Princes Freeway Off-Ramp															
4	L2	All MCs	4	0.0	4	0.0	0.208	7.9	LOS A	1.1	8.0	0.42	0.67	0.42	60.8
5	T1	All MCs	2	0.0	2	0.0	0.208	8.6	LOS A	1.1	8.0	0.42	0.67	0.42	66.0
6	R2	All MCs	249	1.7	249	1.7	0.208	14.9	LOS A	1.1	8.0	0.42	0.67	0.42	59.5
Approach			256	1.6	256	1.6	0.208	14.8	LOS A	1.1	8.0	0.42	0.67	0.42	59.6
North: Avalon Road															
8	T1	All MCs	31	10.3	31	10.3	0.149	4.3	LOS A	0.0	0.0	0.00	0.67	0.00	57.8
9	R2	All MCs	233	1.8	233	1.8	0.149	10.8	LOS A	0.0	0.0	0.00	0.67	0.00	61.2
9u	U	All MCs	1	0.0	1	0.0	0.149	13.5	LOS A	0.0	0.0	0.00	0.67	0.00	56.9
Approach			264	2.8	264	2.8	0.149	10.1	LOS A	0.0	0.0	0.00	0.67	0.00	60.8
All Vehicles			569	3.0	569	3.0	0.208	11.9	LOS A	1.1	8.0	0.24	0.66	0.24	60.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Appendix I

SIDRA Results – Post-Development Conditions (with Potential Regional Sports Reserve)

MOVEMENT SUMMARY

Site: 101 [Watt Street/Avalon Road (AM Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Watt Street/Avalon Road
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	84	1.3	84	1.3	0.236	6.4	LOS A	0.0	0.2	0.01	0.12	0.01	60.4
2	T1	All MCs	384	9.3	384	9.3	0.236	0.0	LOS A	0.0	0.2	0.01	0.12	0.01	68.3
3u	U	All MCs	1	0.0	1	0.0	0.236	8.3	LOS A	0.0	0.2	0.01	0.12	0.01	63.8
Approach			469	7.8	469	7.8	0.236	1.2	LOS A	0.0	0.2	0.01	0.12	0.01	66.7
North: Avalon Road															
8	T1	All MCs	402	7.9	402	7.9	0.227	0.2	LOS A	0.2	1.5	0.06	0.08	0.06	69.3
9	R2	All MCs	17	12.5	17	12.5	0.227	9.1	LOS A	0.2	1.5	0.06	0.08	0.06	60.3
Approach			419	8.0	419	8.0	0.227	0.6	LOS A	0.2	1.5	0.06	0.08	0.06	68.9
West: Watt Street															
10	L2	All MCs	17	0.0	17	0.0	0.394	8.3	LOS A	1.7	12.0	0.69	0.94	0.93	50.4
12	R2	All MCs	193	1.1	193	1.1	0.394	12.8	LOS A	1.7	12.0	0.69	0.94	0.93	50.0
Approach			209	1.0	209	1.0	0.394	12.5	LOS A	1.7	12.0	0.69	0.94	0.93	50.1
All Vehicles			1098	6.6	1098	6.6	0.394	3.1	LOS A	1.7	12.0	0.16	0.26	0.20	63.5

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Watt Street/Avalon Road (School Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Watt Street/Avalon Road
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	202	1.0	202	1.0	0.319	6.4	LOS A	0.0	0.0	0.00	0.20	0.00	62.8
2	T1	All MCs	445	6.1	445	6.1	0.319	0.1	LOS A	0.0	0.0	0.00	0.20	0.00	67.2
Approach			647	4.6	647	4.6	0.319	2.1	LOS A	0.0	0.0	0.00	0.20	0.00	65.7
North: Avalon Road															
8	T1	All MCs	328	3.8	328	3.8	0.184	0.3	LOS A	0.2	1.5	0.08	0.10	0.08	69.1
9	R2	All MCs	15	0.0	15	0.0	0.184	9.6	LOS A	0.2	1.5	0.08	0.10	0.08	60.9
Approach			343	3.7	343	3.7	0.184	0.7	LOS A	0.2	1.5	0.08	0.10	0.08	68.7
West: Watt Street															
10	L2	All MCs	17	0.0	17	0.0	0.281	8.0	LOS A	1.0	7.4	0.68	0.90	0.79	50.6
12	R2	All MCs	121	3.5	121	3.5	0.281	12.8	LOS A	1.0	7.4	0.68	0.90	0.79	49.7
Approach			138	3.1	138	3.1	0.281	12.2	LOS A	1.0	7.4	0.68	0.90	0.79	49.8
All Vehicles			1128	4.1	1128	4.1	0.319	2.9	LOS A	1.0	7.4	0.11	0.25	0.12	64.1

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Watt Street/Avalon Road (PM Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Watt Street/Avalon Road
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	222	1.4	222	1.4	0.338	6.5	LOS A	0.0	0.0	0.00	0.20	0.00	62.6
2	T1	All MCs	461	6.6	461	6.6	0.338	0.1	LOS A	0.0	0.0	0.00	0.20	0.00	67.0
Approach			683	4.9	683	4.9	0.338	2.2	LOS A	0.0	0.0	0.00	0.20	0.00	65.5
North: Avalon Road															
8	T1	All MCs	377	3.4	377	3.4	0.215	0.4	LOS A	0.3	2.1	0.09	0.12	0.09	68.8
9	R2	All MCs	20	0.0	20	0.0	0.215	10.0	LOS A	0.3	2.1	0.09	0.12	0.09	60.7
Approach			397	3.2	397	3.2	0.215	0.9	LOS A	0.3	2.1	0.09	0.12	0.09	68.4
West: Watt Street															
10	L2	All MCs	16	0.0	16	0.0	0.285	8.2	LOS A	1.0	7.3	0.71	0.92	0.83	50.0
12	R2	All MCs	113	1.9	113	1.9	0.285	13.8	LOS A	1.0	7.3	0.71	0.92	0.83	49.5
Approach			128	1.6	128	1.6	0.285	13.1	LOS A	1.0	7.3	0.71	0.92	0.83	49.5
All Vehicles			1208	4.0	1208	4.0	0.338	2.9	LOS A	1.0	7.3	0.11	0.25	0.12	64.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Watt Street/Avalon Road (Weekend Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Watt Street/Avalon Road
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	159	0.0	159	0.0	0.216	6.4	LOS A	0.0	0.0	0.00	0.22	0.00	63.0
2	T1	All MCs	286	2.9	286	2.9	0.216	0.0	LOS A	0.0	0.0	0.00	0.22	0.00	66.9
Approach			445	1.9	445	1.9	0.216	2.3	LOS A	0.0	0.0	0.00	0.22	0.00	65.4
North: Avalon Road															
8	T1	All MCs	323	1.6	323	1.6	0.179	0.2	LOS A	0.2	1.4	0.07	0.09	0.07	69.1
9	R2	All MCs	18	5.9	18	5.9	0.179	8.4	LOS A	0.2	1.4	0.07	0.09	0.07	60.6
Approach			341	1.9	341	1.9	0.179	0.6	LOS A	0.2	1.4	0.07	0.09	0.07	68.6
West: Watt Street															
10	L2	All MCs	19	5.6	19	5.6	0.273	7.0	LOS A	1.1	7.5	0.57	0.83	0.63	51.1
12	R2	All MCs	162	0.6	162	0.6	0.273	10.0	LOS A	1.1	7.5	0.57	0.83	0.63	52.1
Approach			181	1.2	181	1.2	0.273	9.7	LOS A	1.1	7.5	0.57	0.83	0.63	52.0
All Vehicles			967	1.7	967	1.7	0.273	3.1	LOS A	1.1	7.5	0.13	0.29	0.14	63.4

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Nasmyth Street (AM Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Nasmyth Street
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Nasmyth Street															
25	T1	All MCs	20	10.5	20	10.5	0.029	6.3	LOS A	0.1	0.9	0.42	0.58	0.42	52.1
26	R2	All MCs	3	0.0	3	0.0	0.029	9.6	LOS A	0.1	0.9	0.42	0.58	0.42	51.9
Approach			23	9.1	23	9.1	0.029	6.8	LOS A	0.1	0.9	0.42	0.58	0.42	52.1
NorthWest: Rennie Street															
27	L2	All MCs	1	0.0	1	0.0	0.146	5.7	LOS A	0.7	5.2	0.12	0.54	0.12	52.5
29	R2	All MCs	252	1.7	252	1.7	0.146	5.7	LOS A	0.7	5.2	0.12	0.54	0.12	52.5
Approach			253	1.7	253	1.7	0.146	5.7	LOS A	0.7	5.2	0.12	0.54	0.12	52.5
SouthWest: Rennie Street															
30	L2	All MCs	294	0.7	294	0.7	0.153	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	52.8
31	T1	All MCs	33	3.2	33	3.2	0.018	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			326	1.0	326	1.0	0.153	5.0	LOS A	0.0	0.0	0.00	0.52	0.00	53.5
All Vehicles			602	1.6	602	1.6	0.153	5.4	LOS A	0.7	5.2	0.07	0.53	0.07	53.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Nasmyth Street (School Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Nasmyth Street
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Nasmyth Street															
25	T1	All MCs	51	0.0	51	0.0	0.064	6.4	LOS A	0.3	1.8	0.45	0.61	0.45	52.5
26	R2	All MCs	2	0.0	2	0.0	0.064	10.6	LOS A	0.3	1.8	0.45	0.61	0.45	52.0
Approach			53	0.0	53	0.0	0.064	6.6	LOS A	0.3	1.8	0.45	0.61	0.45	52.5
NorthWest: Rennie Street															
27	L2	All MCs	3	33.3	3	33.3	0.174	6.0	LOS A	0.9	6.5	0.08	0.54	0.08	51.3
29	R2	All MCs	298	2.1	298	2.1	0.174	5.6	LOS A	0.9	6.5	0.08	0.54	0.08	52.6
29u	U	All MCs	1	0.0	1	0.0	0.174	8.8	LOS A	0.9	6.5	0.08	0.54	0.08	52.3
Approach			302	2.4	302	2.4	0.174	5.6	LOS A	0.9	6.5	0.08	0.54	0.08	52.6
SouthWest: Rennie Street															
30	L2	All MCs	333	0.3	333	0.3	0.173	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	52.8
31	T1	All MCs	17	0.0	17	0.0	0.009	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			349	0.3	349	0.3	0.173	5.3	LOS A	0.0	0.0	0.00	0.55	0.00	53.1
All Vehicles			704	1.2	704	1.2	0.174	5.5	LOS A	0.9	6.5	0.07	0.55	0.07	52.8

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Nasmyth Street (PM Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Nasmyth Street
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Nasmyth Street															
25	T1	All MCs	51	0.0	51	0.0	0.069	6.7	LOS A	0.3	1.9	0.47	0.63	0.47	52.2
26	R2	All MCs	3	0.0	3	0.0	0.069	10.4	LOS A	0.3	1.9	0.47	0.63	0.47	51.7
Approach			54	0.0	54	0.0	0.069	6.9	LOS A	0.3	1.9	0.47	0.63	0.47	52.2
NorthWest: Rennie Street															
27	L2	All MCs	3	33.3	3	33.3	0.190	6.0	LOS A	1.0	7.2	0.06	0.55	0.06	51.3
29	R2	All MCs	331	1.9	331	1.9	0.190	5.6	LOS A	1.0	7.2	0.06	0.55	0.06	52.6
Approach			334	2.2	334	2.2	0.190	5.6	LOS A	1.0	7.2	0.06	0.55	0.06	52.6
SouthWest: Rennie Street															
30	L2	All MCs	287	1.5	287	1.5	0.151	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	52.8
31	T1	All MCs	12	0.0	12	0.0	0.006	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			299	1.4	299	1.4	0.151	5.4	LOS A	0.0	0.0	0.00	0.55	0.00	53.0
All Vehicles			686	1.7	686	1.7	0.190	5.6	LOS A	1.0	7.2	0.07	0.56	0.07	52.8

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Nasmyth Street (Weekend Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Nasmyth Street
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Nasmyth Street															
25	T1	All MCs	36	0.0	36	0.0	0.048	6.2	LOS A	0.2	1.4	0.43	0.59	0.43	52.5
26	R2	All MCs	4	0.0	4	0.0	0.048	9.4	LOS A	0.2	1.4	0.43	0.59	0.43	52.0
Approach			40	0.0	40	0.0	0.048	6.6	LOS A	0.2	1.4	0.43	0.59	0.43	52.5
NorthWest: Rennie Street															
27	L2	All MCs	8	0.0	8	0.0	0.165	5.7	LOS A	0.8	6.0	0.11	0.54	0.11	52.5
29	R2	All MCs	277	1.5	277	1.5	0.165	5.7	LOS A	0.8	6.0	0.11	0.54	0.11	52.5
Approach			285	1.5	285	1.5	0.165	5.7	LOS A	0.8	6.0	0.11	0.54	0.11	52.5
SouthWest: Rennie Street															
30	L2	All MCs	238	0.9	238	0.9	0.124	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	52.8
31	T1	All MCs	29	0.0	29	0.0	0.016	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			267	0.8	267	0.8	0.124	5.0	LOS A	0.0	0.0	0.00	0.51	0.00	53.5
All Vehicles			593	1.1	593	1.1	0.165	5.4	LOS A	0.8	6.0	0.08	0.53	0.08	53.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Princes Freeway (AM Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Princes Freeway
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
2	T1	All MCs	292	0.4	292	0.4	0.151	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	All MCs	99	26.6	99	26.6	0.088	7.3	LOS A	0.4	3.3	0.43	0.64	0.43	50.4
Approach			391	7.0	391	7.0	0.151	1.9	LOS A	0.4	3.3	0.11	0.16	0.11	57.2
North: Rennie Street															
7	L2	All MCs	20	0.0	20	0.0	0.161	5.6	LOS A	0.0	0.0	0.00	0.04	0.00	57.1
8	T1	All MCs	289	1.5	289	1.5	0.161	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	59.6
Approach			309	1.4	309	1.4	0.161	0.4	LOS A	0.0	0.0	0.00	0.04	0.00	59.4
All Vehicles			700	4.5	700	4.5	0.161	1.2	NA	0.4	3.3	0.06	0.11	0.06	58.1

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/Princes Freeway (School Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Princes Freeway
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
2	T1	All MCs	361	0.6	361	0.6	0.187	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	All MCs	188	10.1	188	10.1	0.165	7.3	LOS A	0.7	5.7	0.48	0.68	0.48	50.9
Approach			549	3.8	549	3.8	0.187	2.5	LOS A	0.7	5.7	0.16	0.23	0.16	56.5
North: Rennie Street															
7	L2	All MCs	51	0.0	51	0.0	0.200	5.6	LOS A	0.0	0.0	0.00	0.08	0.00	56.7
8	T1	All MCs	333	1.9	333	1.9	0.200	0.1	LOS A	0.0	0.0	0.00	0.08	0.00	59.2
Approach			383	1.6	383	1.6	0.200	0.8	LOS A	0.0	0.0	0.00	0.08	0.00	58.8
All Vehicles			933	2.9	933	2.9	0.200	1.8	NA	0.7	5.7	0.10	0.17	0.10	57.4

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/Princes Freeway (PM Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Princes Freeway
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
2	T1	All MCs	365	1.2	365	1.2	0.190	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	All MCs	148	14.2	148	14.2	0.131	7.3	LOS A	0.6	4.5	0.46	0.67	0.46	50.8
Approach			514	4.9	514	4.9	0.190	2.1	LOS A	0.6	4.5	0.13	0.19	0.13	57.0
North: Rennie Street															
7	L2	All MCs	52	0.0	52	0.0	0.189	5.6	LOS A	0.0	0.0	0.00	0.08	0.00	56.7
8	T1	All MCs	311	2.0	311	2.0	0.189	0.0	LOS A	0.0	0.0	0.00	0.08	0.00	59.1
Approach			362	1.7	362	1.7	0.189	0.8	LOS A	0.0	0.0	0.00	0.08	0.00	58.8
All Vehicles			876	3.6	876	3.6	0.190	1.6	NA	0.6	4.5	0.08	0.15	0.08	57.7

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/Princes Freeway (Weekend Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Princes Freeway
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
2	T1	All MCs	233	0.5	233	0.5	0.120	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	All MCs	80	11.8	80	11.8	0.060	6.5	LOS A	0.3	2.0	0.35	0.59	0.35	51.2
Approach			313	3.4	313	3.4	0.120	1.7	LOS A	0.3	2.0	0.09	0.15	0.09	57.4
North: Rennie Street															
7	L2	All MCs	65	0.0	65	0.0	0.125	5.6	LOS A	0.0	0.0	0.00	0.16	0.00	56.1
8	T1	All MCs	175	1.2	175	1.2	0.125	0.0	LOS A	0.0	0.0	0.00	0.16	0.00	58.5
Approach			240	0.9	240	0.9	0.125	1.5	LOS A	0.0	0.0	0.00	0.16	0.00	57.8
All Vehicles			553	2.3	553	2.3	0.125	1.6	NA	0.3	2.0	0.05	0.16	0.05	57.6

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Canterbury Road E (AM Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Canterbury Road E
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Rennie Street															
25	T1	All MCs	128	3.3	128	3.3	0.165	0.5	LOS A	0.8	5.6	0.29	0.38	0.29	56.3
26	R2	All MCs	143	1.5	143	1.5	0.165	6.1	LOS A	0.8	5.6	0.29	0.38	0.29	58.9
Approach			272	2.3	272	2.3	0.165	3.5	LOS A	0.8	5.6	0.29	0.38	0.29	57.6
NorthWest: Canterbury Road E															
27	L2	All MCs	289	0.7	289	0.7	0.324	7.3	LOS A	1.6	11.0	0.28	0.60	0.28	57.2
29	R2	All MCs	117	0.0	117	0.0	0.324	9.1	LOS A	1.6	11.0	0.28	0.60	0.28	57.0
Approach			406	0.5	406	0.5	0.324	7.8	LOS A	1.6	11.0	0.28	0.60	0.28	57.2
SouthWest: Rennie Street															
30	L2	All MCs	96	0.0	96	0.0	0.098	5.6	LOS A	0.0	0.0	0.00	0.31	0.00	55.0
31	T1	All MCs	89	1.2	89	1.2	0.098	0.0	LOS A	0.0	0.0	0.00	0.31	0.00	57.2
Approach			185	0.6	185	0.6	0.098	2.9	LOS A	0.0	0.0	0.00	0.31	0.00	56.0
All Vehicles			863	1.1	863	1.1	0.324	5.4	LOS A	1.6	11.0	0.22	0.47	0.22	57.1

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Canterbury Road E (School Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Canterbury Road E
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Rennie Street															
25	T1	All MCs	107	5.9	107	5.9	0.234	1.1	LOS A	1.2	8.8	0.41	0.52	0.41	55.1
26	R2	All MCs	242	0.0	242	0.0	0.234	6.6	LOS A	1.2	8.8	0.41	0.52	0.41	58.0
Approach			349	1.8	349	1.8	0.234	4.9	LOS A	1.2	8.8	0.41	0.52	0.41	57.1
NorthWest: Canterbury Road E															
27	L2	All MCs	237	0.0	237	0.0	0.298	7.6	LOS A	1.3	9.4	0.37	0.63	0.37	56.9
29	R2	All MCs	99	0.0	99	0.0	0.298	10.2	LOS A	1.3	9.4	0.37	0.63	0.37	56.6
Approach			336	0.0	336	0.0	0.298	8.3	LOS A	1.3	9.4	0.37	0.63	0.37	56.8
SouthWest: Rennie Street															
30	L2	All MCs	131	0.8	131	0.8	0.149	5.6	LOS A	0.0	0.0	0.00	0.27	0.00	55.2
31	T1	All MCs	153	0.7	153	0.7	0.149	0.0	LOS A	0.0	0.0	0.00	0.27	0.00	57.5
Approach			283	0.7	283	0.7	0.149	2.6	LOS A	0.0	0.0	0.00	0.27	0.00	56.4
All Vehicles			968	0.9	968	0.9	0.298	5.4	LOS A	1.3	9.4	0.28	0.48	0.28	56.8

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Canterbury Road E (PM Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Canterbury Road E
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Rennie Street															
25	T1	All MCs	99	6.4	99	6.4	0.256	1.1	LOS A	1.4	9.7	0.41	0.53	0.41	54.9
26	R2	All MCs	282	0.0	282	0.0	0.256	6.6	LOS A	1.4	9.7	0.41	0.53	0.41	57.8
Approach			381	1.7	381	1.7	0.256	5.1	LOS A	1.4	9.7	0.41	0.53	0.41	57.0
NorthWest: Canterbury Road E															
27	L2	All MCs	192	0.0	192	0.0	0.267	7.5	LOS A	1.2	8.1	0.36	0.62	0.36	56.9
29	R2	All MCs	98	0.0	98	0.0	0.267	10.2	LOS A	1.2	8.1	0.36	0.62	0.36	56.6
Approach			289	0.0	289	0.0	0.267	8.4	LOS A	1.2	8.1	0.36	0.62	0.36	56.8
SouthWest: Rennie Street															
30	L2	All MCs	132	0.0	132	0.0	0.144	5.6	LOS A	0.0	0.0	0.00	0.29	0.00	55.1
31	T1	All MCs	139	3.0	139	3.0	0.144	0.0	LOS A	0.0	0.0	0.00	0.29	0.00	57.4
Approach			271	1.6	271	1.6	0.144	2.7	LOS A	0.0	0.0	0.00	0.29	0.00	56.2
All Vehicles			941	1.1	941	1.1	0.267	5.5	LOS A	1.4	9.7	0.28	0.49	0.28	56.7

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/Canterbury Road E (Weekend Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Canterbury Road E
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Rennie Street															
25	T1	All MCs	102	3.1	102	3.1	0.191	0.5	LOS A	1.0	6.9	0.29	0.43	0.29	55.6
26	R2	All MCs	211	0.5	211	0.5	0.191	6.0	LOS A	1.0	6.9	0.29	0.43	0.29	58.5
Approach			313	1.3	313	1.3	0.191	4.2	LOS A	1.0	6.9	0.29	0.43	0.29	57.5
NorthWest: Canterbury Road E															
27	L2	All MCs	214	0.0	214	0.0	0.213	7.3	LOS A	0.9	6.5	0.25	0.60	0.25	57.4
29	R2	All MCs	61	0.0	61	0.0	0.213	8.9	LOS A	0.9	6.5	0.25	0.60	0.25	57.1
Approach			275	0.0	275	0.0	0.213	7.6	LOS A	0.9	6.5	0.25	0.60	0.25	57.3
SouthWest: Rennie Street															
30	L2	All MCs	63	0.0	63	0.0	0.082	5.6	LOS A	0.0	0.0	0.00	0.24	0.00	55.5
31	T1	All MCs	93	2.3	93	2.3	0.082	0.0	LOS A	0.0	0.0	0.00	0.24	0.00	57.8
Approach			156	1.4	156	1.4	0.082	2.3	LOS A	0.0	0.0	0.00	0.24	0.00	56.8
All Vehicles			743	0.8	743	0.8	0.213	5.1	LOS A	1.0	6.9	0.21	0.45	0.21	57.3

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Forest Road S/Canterbury Road W (AM Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Forest Road S/Canterbury Road W
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Road S															
1	L2	All MCs	43	2.4	43	2.4	0.410	6.1	LOS A	2.7	19.9	0.53	0.58	0.53	51.3
2	T1	All MCs	297	6.0	297	6.0	0.410	6.3	LOS A	2.7	19.9	0.53	0.58	0.53	51.6
3	R2	All MCs	92	1.1	92	1.1	0.410	9.5	LOS A	2.7	19.9	0.53	0.58	0.53	51.1
Approach			432	4.6	432	4.6	0.410	7.0	LOS A	2.7	19.9	0.53	0.58	0.53	51.5
East: Canterbury Road E															
4	L2	All MCs	164	1.9	164	1.9	0.520	12.4	LOS A	4.2	30.1	0.87	0.86	1.05	47.4
5	T1	All MCs	43	2.4	43	2.4	0.520	12.5	LOS A	4.2	30.1	0.87	0.86	1.05	47.7
6	R2	All MCs	135	2.3	135	2.3	0.520	15.8	LOS A	4.2	30.1	0.87	0.86	1.05	47.1
Approach			342	2.2	342	2.2	0.520	13.8	LOS A	4.2	30.1	0.87	0.86	1.05	47.3
North: Forest Road S															
7	L2	All MCs	99	2.1	99	2.1	0.076	5.2	LOS A	0.3	2.5	0.31	0.55	0.31	52.8
8	T1	All MCs	489	4.5	489	4.5	0.487	6.8	LOS A	3.4	25.0	0.65	0.63	0.65	51.4
9	R2	All MCs	49	0.0	49	0.0	0.487	9.9	LOS A	3.4	25.0	0.65	0.63	0.65	50.8
9u	U	All MCs	6	16.7	6	16.7	0.487	12.1	LOS A	3.4	25.0	0.65	0.63	0.65	50.1
Approach			644	3.9	644	3.9	0.487	6.8	LOS A	3.4	25.0	0.60	0.61	0.60	51.5
West: Canterbury Road W															
10	L2	All MCs	94	1.1	94	1.1	0.491	9.6	LOS A	3.8	26.5	0.78	0.77	0.86	49.0
11	T1	All MCs	100	1.1	100	1.1	0.491	9.8	LOS A	3.8	26.5	0.78	0.77	0.86	49.3
12	R2	All MCs	197	0.5	197	0.5	0.491	13.0	LOS A	3.8	26.5	0.78	0.77	0.86	48.7
12u	U	All MCs	1	0.0	1	0.0	0.491	14.7	LOS A	3.8	26.5	0.78	0.77	0.86	48.7
Approach			392	0.8	392	0.8	0.491	11.4	LOS A	3.8	26.5	0.78	0.77	0.86	48.9
All Vehicles			1809	3.1	1809	3.1	0.520	9.2	LOS A	4.2	30.1	0.67	0.69	0.72	50.1

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Forest Road S/Canterbury Road W (School Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Forest Road S/Canterbury Road W
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Road S															
1	L2	All MCs	187	2.2	187	2.2	0.798	11.7	LOS C	11.5	82.2	0.91	0.85	1.19	48.2
2	T1	All MCs	463	3.0	463	3.0	0.798	11.9	LOS C	11.5	82.2	0.91	0.85	1.19	48.6
3	R2	All MCs	145	1.4	145	1.4	0.798	15.1	LOS C	11.5	82.2	0.91	0.85	1.19	48.0
Approach			796	2.5	796	2.5	0.798	12.4	LOS C	11.5	82.2	0.91	0.85	1.19	48.4
East: Canterbury Road E															
4	L2	All MCs	112	0.9	112	0.9	0.425	8.6	LOS A	2.8	19.9	0.74	0.74	0.75	49.8
5	T1	All MCs	89	2.4	89	2.4	0.425	8.8	LOS A	2.8	19.9	0.74	0.74	0.75	50.2
6	R2	All MCs	139	2.3	139	2.3	0.425	12.1	LOS A	2.8	19.9	0.74	0.74	0.75	49.5
Approach			340	1.9	340	1.9	0.425	10.1	LOS A	2.8	19.9	0.74	0.74	0.75	49.8
North: Forest Road S															
7	L2	All MCs	144	0.7	144	0.7	0.112	5.3	LOS A	0.6	4.0	0.36	0.55	0.36	52.7
8	T1	All MCs	344	2.1	344	2.1	0.380	6.1	LOS A	2.4	16.8	0.52	0.59	0.52	51.7
9	R2	All MCs	111	1.0	111	1.0	0.380	9.4	LOS A	2.4	16.8	0.52	0.59	0.52	51.0
9u	U	All MCs	6	16.7	6	16.7	0.380	11.5	LOS A	2.4	16.8	0.52	0.59	0.52	50.4
Approach			605	1.7	605	1.7	0.380	6.6	LOS A	2.4	16.8	0.48	0.58	0.48	51.8
West: Canterbury Road W															
10	L2	All MCs	54	3.9	54	3.9	0.382	10.8	LOS A	2.7	19.3	0.88	0.79	0.89	48.2
11	T1	All MCs	65	1.6	65	1.6	0.382	10.8	LOS A	2.7	19.3	0.88	0.79	0.89	48.7
12	R2	All MCs	100	2.1	100	2.1	0.382	14.2	LOS A	2.7	19.3	0.88	0.79	0.89	48.0
12u	U	All MCs	1	0.0	1	0.0	0.382	15.7	LOS A	2.7	19.3	0.88	0.79	0.89	48.1
Approach			220	2.4	220	2.4	0.382	12.4	LOS A	2.7	19.3	0.88	0.79	0.89	48.3
All Vehicles			1961	2.1	1961	2.1	0.798	10.2	LOS C	11.5	82.2	0.74	0.74	0.86	49.6

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Forest Road S/Canterbury Road W (PM Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Forest Road S/Canterbury Road W
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Road S															
1	L2	All MCs	183	0.6	183	0.6	0.788	10.5	LOS C	11.0	78.2	0.88	0.79	1.08	49.0
2	T1	All MCs	466	2.0	466	2.0	0.788	10.7	LOS C	11.0	78.2	0.88	0.79	1.08	49.3
3	R2	All MCs	176	1.2	176	1.2	0.788	13.9	LOS C	11.0	78.2	0.88	0.79	1.08	48.7
Approach			825	1.5	825	1.5	0.788	11.3	LOS C	11.0	78.2	0.88	0.79	1.08	49.1
East: Canterbury Road E															
4	L2	All MCs	139	0.8	139	0.8	0.424	8.5	LOS A	2.8	19.7	0.73	0.73	0.75	50.1
5	T1	All MCs	92	0.0	92	0.0	0.424	8.6	LOS A	2.8	19.7	0.73	0.73	0.75	50.5
6	R2	All MCs	112	2.8	112	2.8	0.424	12.0	LOS A	2.8	19.7	0.73	0.73	0.75	49.7
Approach			342	1.2	342	1.2	0.424	9.6	LOS A	2.8	19.7	0.73	0.73	0.75	50.1
North: Forest Road S															
7	L2	All MCs	149	2.1	149	2.1	0.119	5.4	LOS A	0.6	4.4	0.38	0.56	0.38	52.6
8	T1	All MCs	355	2.4	355	2.4	0.382	6.2	LOS A	2.4	17.0	0.53	0.60	0.53	51.7
9	R2	All MCs	98	2.2	98	2.2	0.382	9.5	LOS A	2.4	17.0	0.53	0.60	0.53	51.0
9u	U	All MCs	4	0.0	4	0.0	0.382	11.1	LOS A	2.4	17.0	0.53	0.60	0.53	51.1
Approach			606	2.3	606	2.3	0.382	6.6	LOS A	2.4	17.0	0.49	0.59	0.49	51.8
West: Canterbury Road W															
10	L2	All MCs	60	3.5	60	3.5	0.370	10.7	LOS A	2.6	18.4	0.88	0.78	0.88	48.4
11	T1	All MCs	57	1.9	57	1.9	0.370	10.7	LOS A	2.6	18.4	0.88	0.78	0.88	48.8
12	R2	All MCs	95	1.1	95	1.1	0.370	13.9	LOS A	2.6	18.4	0.88	0.78	0.88	48.2
12u	U	All MCs	1	0.0	1	0.0	0.370	15.5	LOS A	2.6	18.4	0.88	0.78	0.88	48.2
Approach			213	2.0	213	2.0	0.370	12.2	LOS A	2.6	18.4	0.88	0.78	0.88	48.4
All Vehicles			1986	1.7	1986	1.7	0.788	9.7	LOS C	11.0	78.2	0.73	0.72	0.82	50.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Forest Road S/Canterbury Road W (Weekend Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Forest Road S/Canterbury Road W
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Road S															
1	L2	All MCs	118	0.0	118	0.0	0.550	6.3	LOS A	4.3	29.9	0.60	0.59	0.60	51.3
2	T1	All MCs	392	0.3	392	0.3	0.550	6.4	LOS A	4.3	29.9	0.60	0.59	0.60	51.7
3	R2	All MCs	103	1.0	103	1.0	0.550	9.7	LOS A	4.3	29.9	0.60	0.59	0.60	51.0
Approach			613	0.3	613	0.3	0.550	6.9	LOS A	4.3	29.9	0.60	0.59	0.60	51.5
East: Canterbury Road E															
4	L2	All MCs	121	1.7	121	1.7	0.384	8.8	LOS A	2.4	17.2	0.74	0.73	0.74	49.8
5	T1	All MCs	67	0.0	67	0.0	0.384	8.8	LOS A	2.4	17.2	0.74	0.73	0.74	50.2
6	R2	All MCs	106	2.0	106	2.0	0.384	12.2	LOS A	2.4	17.2	0.74	0.73	0.74	49.5
Approach			295	1.4	295	1.4	0.384	10.0	LOS A	2.4	17.2	0.74	0.73	0.74	49.8
North: Forest Road S															
7	L2	All MCs	131	2.4	131	2.4	0.099	5.2	LOS A	0.5	3.3	0.30	0.54	0.30	52.8
8	T1	All MCs	427	0.5	427	0.5	0.397	6.1	LOS A	2.5	17.9	0.53	0.58	0.53	51.9
9	R2	All MCs	60	0.0	60	0.0	0.397	9.4	LOS A	2.5	17.9	0.53	0.58	0.53	51.2
9u	U	All MCs	1	0.0	1	0.0	0.397	11.0	LOS A	2.5	17.9	0.53	0.58	0.53	51.2
Approach			619	0.9	619	0.9	0.397	6.2	LOS A	2.5	17.9	0.48	0.57	0.48	52.0
West: Canterbury Road W															
10	L2	All MCs	48	0.0	48	0.0	0.344	8.9	LOS A	2.2	15.8	0.76	0.73	0.76	49.5
11	T1	All MCs	77	0.0	77	0.0	0.344	9.0	LOS A	2.2	15.8	0.76	0.73	0.76	49.8
12	R2	All MCs	129	0.8	129	0.8	0.344	12.4	LOS A	2.2	15.8	0.76	0.73	0.76	49.1
12u	U	All MCs	1	0.0	1	0.0	0.344	14.0	LOS A	2.2	15.8	0.76	0.73	0.76	49.2
Approach			256	0.4	256	0.4	0.344	10.7	LOS A	2.2	15.8	0.76	0.73	0.76	49.4
All Vehicles			1782	0.7	1782	0.7	0.550	7.8	LOS A	4.3	29.9	0.60	0.63	0.60	51.1

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/McClelland Avenue (AM Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/McClelland Avenue
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
1a	L1	All MCs	189	2.8	189	2.8	0.394	6.2	LOS A	2.4	17.2	0.63	0.67	0.63	51.5
3a	R1	All MCs	97	1.1	97	1.1	0.394	10.2	LOS A	2.4	17.2	0.63	0.67	0.63	50.7
3	R2	All MCs	100	2.1	100	2.1	0.394	11.2	LOS A	2.4	17.2	0.63	0.67	0.63	52.8
3u	U	All MCs	1	0.0	1	0.0	0.394	13.2	LOS A	2.4	17.2	0.63	0.67	0.63	50.8
Approach			387	2.2	387	2.2	0.394	8.5	LOS A	2.4	17.2	0.63	0.67	0.63	51.7
East: McClelland Avenue															
4	L2	All MCs	15	0.0	15	0.0	0.011	5.3	LOS A	0.1	0.4	0.36	0.49	0.36	56.9
6a	R1	All MCs	314	5.4	314	5.4	0.291	10.4	LOS A	2.0	14.4	0.52	0.63	0.52	52.1
6b	R3	All MCs	45	2.3	45	2.3	0.291	12.5	LOS A	2.0	14.4	0.52	0.63	0.52	52.2
6u	U	All MCs	12	0.0	12	0.0	0.291	13.6	LOS A	2.0	14.4	0.52	0.63	0.52	52.3
Approach			385	4.6	385	4.6	0.291	10.5	LOS A	2.0	14.4	0.51	0.63	0.51	52.3
NorthEast: Hicks Street															
24b	L3	All MCs	26	0.0	26	0.0	0.174	6.5	LOS A	0.9	6.8	0.59	0.68	0.59	53.4
24a	L1	All MCs	46	2.3	46	2.3	0.174	6.2	LOS A	0.9	6.8	0.59	0.68	0.59	51.4
26	R2	All MCs	84	7.5	84	7.5	0.174	11.3	LOS A	0.9	6.8	0.59	0.68	0.59	50.4
26u	U	All MCs	1	0.0	1	0.0	0.174	13.2	LOS A	0.9	6.8	0.59	0.68	0.59	50.7
Approach			158	4.7	158	4.7	0.174	9.0	LOS A	0.9	6.8	0.59	0.68	0.59	51.2
NorthWest: McClelland Avenue															
27	L2	All MCs	96	8.8	96	8.8	0.120	6.5	LOS A	0.7	5.5	0.54	0.57	0.54	52.6
27a	L1	All MCs	309	4.4	309	4.4	0.354	5.4	LOS A	2.8	20.1	0.58	0.55	0.58	52.3
29a	R1	All MCs	138	0.0	138	0.0	0.354	9.2	LOS A	2.8	20.1	0.58	0.55	0.58	54.2
29u	U	All MCs	6	0.0	6	0.0	0.354	12.3	LOS A	2.8	20.1	0.58	0.55	0.58	51.6
Approach			549	4.0	549	4.0	0.354	6.6	LOS A	2.8	20.1	0.57	0.56	0.57	52.8
All Vehicles			1480	3.8	1480	3.8	0.394	8.4	LOS A	2.8	20.1	0.57	0.62	0.57	52.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/McClelland Avenue (School Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/McClelland Avenue
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
1a	L1	All MCs	159	0.0	159	0.0	0.369	6.5	LOS A	2.3	16.3	0.67	0.69	0.67	51.3
3a	R1	All MCs	88	2.4	88	2.4	0.369	10.5	LOS A	2.3	16.3	0.67	0.69	0.67	50.5
3	R2	All MCs	94	1.1	94	1.1	0.369	11.5	LOS A	2.3	16.3	0.67	0.69	0.67	52.8
3u	U	All MCs	2	0.0	2	0.0	0.369	13.6	LOS A	2.3	16.3	0.67	0.69	0.67	50.5
Approach			343	0.9	343	0.9	0.369	9.0	LOS A	2.3	16.3	0.67	0.69	0.67	51.5
East: McClelland Avenue															
4	L2	All MCs	63	0.0	63	0.0	0.049	5.9	LOS A	0.3	2.0	0.47	0.55	0.47	56.4
6a	R1	All MCs	394	2.1	394	2.1	0.360	11.2	LOS A	2.6	18.7	0.66	0.67	0.66	52.0
6b	R3	All MCs	19	5.6	19	5.6	0.360	13.6	LOS A	2.6	18.7	0.66	0.67	0.66	51.8
6u	U	All MCs	2	50.0	2	50.0	0.360	16.5	LOS A	2.6	18.7	0.66	0.67	0.66	50.3
Approach			478	2.2	478	2.2	0.360	10.7	LOS A	2.6	18.7	0.64	0.65	0.64	52.5
NorthEast: Hicks Street															
24b	L3	All MCs	37	5.7	37	5.7	0.283	7.4	LOS A	1.7	12.0	0.67	0.71	0.67	51.9
24a	L1	All MCs	87	2.4	87	2.4	0.283	6.8	LOS A	1.7	12.0	0.67	0.71	0.67	51.1
26	R2	All MCs	118	5.4	118	5.4	0.283	11.9	LOS A	1.7	12.0	0.67	0.71	0.67	50.2
26u	U	All MCs	1	0.0	1	0.0	0.283	13.8	LOS A	1.7	12.0	0.67	0.71	0.67	50.4
Approach			243	4.3	243	4.3	0.283	9.4	LOS A	1.7	12.0	0.67	0.71	0.67	50.8
NorthWest: McClelland Avenue															
27	L2	All MCs	85	6.2	85	6.2	0.101	6.0	LOS A	0.6	4.5	0.50	0.55	0.50	52.9
27a	L1	All MCs	318	3.3	318	3.3	0.397	5.1	LOS A	3.4	24.3	0.56	0.54	0.56	52.3
29a	R1	All MCs	214	3.0	214	3.0	0.397	9.0	LOS A	3.4	24.3	0.56	0.54	0.56	53.4
29u	U	All MCs	1	0.0	1	0.0	0.397	12.1	LOS A	3.4	24.3	0.56	0.54	0.56	51.5
Approach			618	3.6	618	3.6	0.397	6.6	LOS A	3.4	24.3	0.55	0.54	0.55	52.7
All Vehicles			1682	2.8	1682	2.8	0.397	8.6	LOS A	3.4	24.3	0.62	0.63	0.62	52.1

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/McClelland Avenue (PM Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/McClelland Avenue
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
1a	L1	All MCs	161	0.7	161	0.7	0.338	6.6	LOS A	2.1	14.8	0.68	0.69	0.68	51.4
3a	R1	All MCs	74	2.9	74	2.9	0.338	10.7	LOS A	2.1	14.8	0.68	0.69	0.68	50.6
3	R2	All MCs	71	1.5	71	1.5	0.338	11.7	LOS A	2.1	14.8	0.68	0.69	0.68	52.9
3u	U	All MCs	1	0.0	1	0.0	0.338	13.7	LOS A	2.1	14.8	0.68	0.69	0.68	50.7
Approach			306	1.4	306	1.4	0.338	8.8	LOS A	2.1	14.8	0.68	0.69	0.68	51.5
East: McClelland Avenue															
4	L2	All MCs	62	0.0	62	0.0	0.047	5.8	LOS A	0.3	1.9	0.44	0.54	0.44	56.5
6a	R1	All MCs	426	0.7	426	0.7	0.376	11.1	LOS A	2.8	19.6	0.65	0.66	0.65	52.1
6b	R3	All MCs	21	0.0	21	0.0	0.376	13.3	LOS A	2.8	19.6	0.65	0.66	0.65	52.1
6u	U	All MCs	1	0.0	1	0.0	0.376	14.4	LOS A	2.8	19.6	0.65	0.66	0.65	52.1
Approach			511	0.6	511	0.6	0.376	10.5	LOS A	2.8	19.6	0.63	0.65	0.63	52.6
NorthEast: Hicks Street															
24b	L3	All MCs	46	0.0	46	0.0	0.281	6.7	LOS A	1.6	11.5	0.63	0.68	0.63	53.6
24a	L1	All MCs	100	1.1	100	1.1	0.281	6.3	LOS A	1.6	11.5	0.63	0.68	0.63	51.6
26	R2	All MCs	113	6.5	113	6.5	0.281	11.5	LOS A	1.6	11.5	0.63	0.68	0.63	50.6
26u	U	All MCs	1	0.0	1	0.0	0.281	13.4	LOS A	1.6	11.5	0.63	0.68	0.63	50.8
Approach			260	3.2	260	3.2	0.281	8.7	LOS A	1.6	11.5	0.63	0.68	0.63	51.5
NorthWest: McClelland Avenue															
27	L2	All MCs	76	8.3	76	8.3	0.087	5.6	LOS A	0.5	4.0	0.45	0.52	0.45	53.0
27a	L1	All MCs	308	3.4	308	3.4	0.350	4.8	LOS A	2.9	20.7	0.49	0.51	0.49	52.6
29a	R1	All MCs	180	1.8	180	1.8	0.350	8.7	LOS A	2.9	20.7	0.49	0.51	0.49	54.0
29u	U	All MCs	2	0.0	2	0.0	0.350	11.8	LOS A	2.9	20.7	0.49	0.51	0.49	51.8
Approach			566	3.5	566	3.5	0.350	6.2	LOS A	2.9	20.7	0.48	0.52	0.48	53.1
All Vehicles			1643	2.2	1643	2.2	0.376	8.4	LOS A	2.9	20.7	0.59	0.61	0.59	52.4

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/McClelland Avenue (Weekend Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/McClelland Avenue
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rennie Street															
1a	L1	All MCs	143	0.7	143	0.7	0.262	5.4	LOS A	1.4	10.2	0.52	0.62	0.52	52.1
3a	R1	All MCs	54	3.9	54	3.9	0.262	9.5	LOS A	1.4	10.2	0.52	0.62	0.52	51.1
3	R2	All MCs	78	1.4	78	1.4	0.262	10.4	LOS A	1.4	10.2	0.52	0.62	0.52	53.6
3u	U	All MCs	1	100.0	1	100.0	0.262	15.3	LOS A	1.4	10.2	0.52	0.62	0.52	47.9
Approach			276	1.9	276	1.9	0.262	7.7	LOS A	1.4	10.2	0.52	0.62	0.52	52.3
East: McClelland Avenue															
4	L2	All MCs	49	0.0	49	0.0	0.037	5.6	LOS A	0.2	1.5	0.40	0.52	0.40	56.7
6a	R1	All MCs	296	2.1	296	2.1	0.244	10.3	LOS A	1.6	11.3	0.52	0.63	0.52	52.4
6b	R3	All MCs	13	0.0	13	0.0	0.244	12.5	LOS A	1.6	11.3	0.52	0.63	0.52	52.5
6u	U	All MCs	1	0.0	1	0.0	0.244	13.7	LOS A	1.6	11.3	0.52	0.63	0.52	52.5
Approach			359	1.8	359	1.8	0.244	9.8	LOS A	1.6	11.3	0.50	0.62	0.50	53.0
NorthEast: Hicks Street															
24b	L3	All MCs	5	0.0	5	0.0	0.143	6.6	LOS A	0.7	5.3	0.59	0.67	0.59	53.5
24a	L1	All MCs	60	0.0	60	0.0	0.143	6.2	LOS A	0.7	5.3	0.59	0.67	0.59	51.5
26	R2	All MCs	63	5.0	63	5.0	0.143	11.4	LOS A	0.7	5.3	0.59	0.67	0.59	50.6
26u	U	All MCs	1	0.0	1	0.0	0.143	13.3	LOS A	0.7	5.3	0.59	0.67	0.59	50.7
Approach			129	2.4	129	2.4	0.143	8.8	LOS A	0.7	5.3	0.59	0.67	0.59	51.1
NorthWest: McClelland Avenue															
27	L2	All MCs	77	2.7	77	2.7	0.083	5.4	LOS A	0.5	3.6	0.41	0.51	0.41	53.3
27a	L1	All MCs	341	1.2	341	1.2	0.360	4.6	LOS A	3.0	20.8	0.45	0.50	0.45	52.8
29a	R1	All MCs	177	0.0	177	0.0	0.360	8.6	LOS A	3.0	20.8	0.45	0.50	0.45	54.6
29u	U	All MCs	6	0.0	6	0.0	0.360	11.7	LOS A	3.0	20.8	0.45	0.50	0.45	52.0
Approach			601	1.1	601	1.1	0.360	5.9	LOS A	3.0	20.8	0.45	0.50	0.45	53.4
All Vehicles			1365	1.5	1365	1.5	0.360	7.6	LOS A	3.0	20.8	0.49	0.57	0.49	52.8

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/MacGregor Court (AM Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/MacGregor Court/Shell Parade
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Shell Parade															
1	L2	All MCs	349	7.8	349	7.8	0.238	3.7	LOS A	1.5	11.0	0.18	0.41	0.18	54.8
3	R2	All MCs	4	0.0	4	0.0	0.238	9.3	LOS A	1.5	11.0	0.18	0.41	0.18	54.3
Approach			354	7.7	354	7.7	0.238	3.7	LOS A	1.5	11.0	0.18	0.41	0.18	54.8
East: MacGregor Court															
4	L2	All MCs	3	0.0	3	0.0	0.012	5.6	LOS A	0.1	0.4	0.54	0.49	0.54	53.3
5	T1	All MCs	8	0.0	8	0.0	0.012	5.5	LOS A	0.1	0.4	0.54	0.49	0.54	53.6
Approach			12	0.0	12	0.0	0.012	5.6	LOS A	0.1	0.4	0.54	0.49	0.54	53.5
North: Princes Freeway															
7	L2	All MCs	1	0.0	1	0.0	0.195	4.8	LOS A	1.0	8.1	0.46	0.51	0.46	52.9
8	T1	All MCs	175	16.9	175	16.9	0.195	5.2	LOS A	1.0	8.1	0.46	0.51	0.46	53.0
9	R2	All MCs	33	0.0	33	0.0	0.195	10.5	LOS A	1.0	8.1	0.46	0.51	0.46	52.3
Approach			208	14.1	208	14.1	0.195	6.0	LOS A	1.0	8.1	0.46	0.51	0.46	52.9
West: Rennie Street															
11	T1	All MCs	1	0.0	1	0.0	0.169	3.4	LOS A	0.9	6.6	0.04	0.63	0.04	51.8
12	R2	All MCs	289	1.5	289	1.5	0.169	9.1	LOS A	0.9	6.6	0.04	0.63	0.04	50.9
Approach			291	1.4	291	1.4	0.169	9.1	LOS A	0.9	6.6	0.04	0.63	0.04	50.9
All Vehicles			864	7.1	864	7.1	0.238	6.1	LOS A	1.5	11.0	0.20	0.51	0.20	52.9

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/MacGregor Court (School Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/MacGregor Court/Shell Parade
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Shell Parade															
1	L2	All MCs	504	4.2	504	4.2	0.333	3.7	LOS A	2.4	17.2	0.21	0.41	0.21	54.8
3	R2	All MCs	4	0.0	4	0.0	0.333	9.3	LOS A	2.4	17.2	0.21	0.41	0.21	54.2
Approach			508	4.1	508	4.1	0.333	3.7	LOS A	2.4	17.2	0.21	0.41	0.21	54.8
East: MacGregor Court															
4	L2	All MCs	3	0.0	3	0.0	0.005	5.4	LOS A	0.0	0.2	0.53	0.47	0.53	53.5
5	T1	All MCs	2	0.0	2	0.0	0.005	5.4	LOS A	0.0	0.2	0.53	0.47	0.53	53.9
Approach			5	0.0	5	0.0	0.005	5.4	LOS A	0.0	0.2	0.53	0.47	0.53	53.7
North: Princes Freeway															
7	L2	All MCs	2	0.0	2	0.0	0.147	5.0	LOS A	0.8	5.9	0.47	0.55	0.47	52.4
8	T1	All MCs	108	18.4	108	18.4	0.147	5.4	LOS A	0.8	5.9	0.47	0.55	0.47	52.5
9	R2	All MCs	43	0.0	43	0.0	0.147	10.7	LOS A	0.8	5.9	0.47	0.55	0.47	51.8
Approach			154	13.0	154	13.0	0.147	6.9	LOS A	0.8	5.9	0.47	0.55	0.47	52.3
West: Rennie Street															
11	T1	All MCs	3	0.0	3	0.0	0.193	3.4	LOS A	1.1	7.9	0.04	0.63	0.04	51.9
12	R2	All MCs	329	1.9	329	1.9	0.193	9.1	LOS A	1.1	7.9	0.04	0.63	0.04	50.9
Approach			333	1.9	333	1.9	0.193	9.1	LOS A	1.1	7.9	0.04	0.63	0.04	50.9
All Vehicles			1000	4.7	1000	4.7	0.333	6.0	LOS A	2.4	17.2	0.20	0.51	0.20	53.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/MacGregor Court (PM Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/MacGregor Court/Shell Parade
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Shell Parade															
1	L2	All MCs	467	5.4	467	5.4	0.314	3.7	LOS A	2.2	15.9	0.21	0.41	0.21	54.7
3	R2	All MCs	7	0.0	7	0.0	0.314	9.3	LOS A	2.2	15.9	0.21	0.41	0.21	54.2
Approach			475	5.3	475	5.3	0.314	3.8	LOS A	2.2	15.9	0.21	0.41	0.21	54.7
East: MacGregor Court															
4	L2	All MCs	2	0.0	2	0.0	0.004	5.2	LOS A	0.0	0.1	0.50	0.45	0.50	53.6
5	T1	All MCs	2	0.0	2	0.0	0.004	5.2	LOS A	0.0	0.1	0.50	0.45	0.50	54.0
Approach			4	0.0	4	0.0	0.004	5.2	LOS A	0.0	0.1	0.50	0.45	0.50	53.8
North: Princes Freeway															
7	L2	All MCs	1	0.0	1	0.0	0.128	4.9	LOS A	0.6	5.1	0.46	0.55	0.46	52.3
8	T1	All MCs	87	24.1	87	24.1	0.128	5.3	LOS A	0.6	5.1	0.46	0.55	0.46	52.2
9	R2	All MCs	44	0.0	44	0.0	0.128	10.6	LOS A	0.6	5.1	0.46	0.55	0.46	51.7
Approach			133	15.9	133	15.9	0.128	7.1	LOS A	0.6	5.1	0.46	0.55	0.46	52.1
West: Rennie Street															
11	T1	All MCs	1	0.0	1	0.0	0.184	3.4	LOS A	1.0	7.3	0.06	0.62	0.06	51.8
12	R2	All MCs	309	2.0	309	2.0	0.184	9.1	LOS A	1.0	7.3	0.06	0.62	0.06	50.9
Approach			311	2.0	311	2.0	0.184	9.1	LOS A	1.0	7.3	0.06	0.62	0.06	50.9
All Vehicles			922	5.7	922	5.7	0.314	6.1	LOS A	2.2	15.9	0.19	0.51	0.19	52.9

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Rennie Street/MacGregor Court (Weekend Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/MacGregor Court/Shell Parade
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Shell Parade															
1	L2	All MCs	243	4.8	243	4.8	0.175	3.8	LOS A	1.0	7.3	0.22	0.42	0.22	54.7
3	R2	All MCs	4	0.0	4	0.0	0.175	9.4	LOS A	1.0	7.3	0.22	0.42	0.22	54.2
Approach			247	4.7	247	4.7	0.175	3.9	LOS A	1.0	7.3	0.22	0.42	0.22	54.7
East: MacGregor Court															
4	L2	All MCs	5	0.0	5	0.0	0.006	4.8	LOS A	0.0	0.2	0.45	0.46	0.45	54.0
5	T1	All MCs	1	0.0	1	0.0	0.006	4.7	LOS A	0.0	0.2	0.45	0.46	0.45	54.4
Approach			6	0.0	6	0.0	0.006	4.8	LOS A	0.0	0.2	0.45	0.46	0.45	54.0
North: Princes Freeway															
7	L2	All MCs	1	0.0	1	0.0	0.146	4.2	LOS A	0.7	5.5	0.34	0.51	0.34	52.7
8	T1	All MCs	109	10.6	109	10.6	0.146	4.3	LOS A	0.7	5.5	0.34	0.51	0.34	52.9
9	R2	All MCs	68	0.0	68	0.0	0.146	9.9	LOS A	0.7	5.5	0.34	0.51	0.34	52.2
Approach			179	6.5	179	6.5	0.146	6.5	LOS A	0.7	5.5	0.34	0.51	0.34	52.6
West: Rennie Street															
11	T1	All MCs	2	0.0	2	0.0	0.103	3.4	LOS A	0.5	3.8	0.04	0.63	0.04	51.9
12	R2	All MCs	173	1.2	173	1.2	0.103	9.1	LOS A	0.5	3.8	0.04	0.63	0.04	51.0
Approach			175	1.2	175	1.2	0.103	9.1	LOS A	0.5	3.8	0.04	0.63	0.04	51.0
All Vehicles			607	4.2	607	4.2	0.175	6.1	LOS A	1.0	7.3	0.21	0.51	0.21	52.9

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/McClelland Avenue (AM Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/McClelland Avenue
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	312	5.4	312	5.4	0.399	8.6	LOS A	2.1	16.0	0.29	0.85	0.29	51.6
3	R2	All MCs	89	21.2	89	21.2	0.399	15.1	LOS A	2.1	16.0	0.29	0.85	0.29	48.2
Approach			401	8.9	401	8.9	0.399	10.1	LOS A	2.1	16.0	0.29	0.85	0.29	50.8
East: McClelland Avenue															
4	L2	All MCs	79	24.0	79	24.0	0.083	6.7	LOS A	0.0	0.0	0.00	0.43	0.00	54.5
5	T1	All MCs	59	16.1	59	16.1	0.083	1.1	LOS A	0.0	0.0	0.00	0.43	0.00	64.7
Approach			138	20.6	138	20.6	0.083	4.3	LOS A	0.0	0.0	0.00	0.43	0.00	58.5
West: McClelland Avenue															
11	T1	All MCs	52	10.2	52	10.2	0.250	0.6	LOS A	1.4	10.0	0.31	0.53	0.31	62.0
12	R2	All MCs	340	4.3	340	4.3	0.250	7.0	LOS A	1.4	10.0	0.31	0.53	0.31	55.2
Approach			392	5.1	392	5.1	0.250	6.1	LOS A	1.4	10.0	0.31	0.53	0.31	56.0
All Vehicles			931	9.0	931	9.0	0.399	7.6	LOS A	2.1	16.0	0.26	0.65	0.26	53.9

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/McClelland Avenue (School Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/McClelland Avenue
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	372	4.0	372	4.0	0.437	8.8	LOS A	2.4	17.8	0.36	0.84	0.36	52.1
3	R2	All MCs	91	14.0	91	14.0	0.437	13.8	LOS A	2.4	17.8	0.36	0.84	0.36	49.8
Approach			462	5.9	462	5.9	0.437	9.8	LOS A	2.4	17.8	0.36	0.84	0.36	51.7
East: McClelland Avenue															
4	L2	All MCs	84	8.8	84	8.8	0.099	6.5	LOS A	0.0	0.0	0.00	0.39	0.00	59.1
5	T1	All MCs	98	3.2	98	3.2	0.099	1.1	LOS A	0.0	0.0	0.00	0.39	0.00	65.4
Approach			182	5.8	182	5.8	0.099	3.6	LOS A	0.0	0.0	0.00	0.39	0.00	62.3
West: McClelland Avenue															
11	T1	All MCs	69	7.6	69	7.6	0.210	0.7	LOS A	1.1	7.9	0.33	0.51	0.33	62.4
12	R2	All MCs	259	2.0	259	2.0	0.210	7.0	LOS A	1.1	7.9	0.33	0.51	0.33	55.6
Approach			328	3.2	328	3.2	0.210	5.7	LOS A	1.1	7.9	0.33	0.51	0.33	56.9
All Vehicles			973	5.0	973	5.0	0.437	7.2	LOS A	2.4	17.8	0.28	0.64	0.28	55.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/McClelland Avenue (PM Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/McClelland Avenue
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	396	1.9	396	1.9	0.472	8.9	LOS A	2.8	20.9	0.41	0.83	0.41	52.3
3	R2	All MCs	80	28.9	80	28.9	0.472	17.3	LOS A	2.8	20.9	0.41	0.83	0.41	46.6
Approach			476	6.4	476	6.4	0.472	10.4	LOS A	2.8	20.9	0.41	0.83	0.41	51.2
East: McClelland Avenue															
4	L2	All MCs	108	6.8	108	6.8	0.121	6.5	LOS A	0.0	0.0	0.00	0.40	0.00	59.6
5	T1	All MCs	115	1.8	115	1.8	0.121	1.1	LOS A	0.0	0.0	0.00	0.40	0.00	65.3
Approach			223	4.2	223	4.2	0.121	3.7	LOS A	0.0	0.0	0.00	0.40	0.00	62.4
West: McClelland Avenue															
11	T1	All MCs	77	6.8	77	6.8	0.241	0.9	LOS A	1.3	9.2	0.38	0.53	0.38	62.2
12	R2	All MCs	287	1.8	287	1.8	0.241	7.2	LOS A	1.3	9.2	0.38	0.53	0.38	55.5
Approach			364	2.9	364	2.9	0.241	5.9	LOS A	1.3	9.2	0.38	0.53	0.38	56.8
All Vehicles			1063	4.8	1063	4.8	0.472	7.4	LOS A	2.8	20.9	0.31	0.64	0.31	55.1

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/McClelland Avenue (Weekend Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/McClelland Avenue
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	232	2.3	232	2.3	0.281	8.5	LOS A	1.3	9.3	0.27	0.86	0.27	52.7
3	R2	All MCs	74	4.3	74	4.3	0.281	11.5	LOS A	1.3	9.3	0.27	0.86	0.27	52.2
Approach			305	2.8	305	2.8	0.281	9.2	LOS A	1.3	9.3	0.27	0.86	0.27	52.6
East: McClelland Avenue															
4	L2	All MCs	63	3.3	63	3.3	0.076	6.4	LOS A	0.0	0.0	0.00	0.38	0.00	60.9
5	T1	All MCs	81	0.0	81	0.0	0.076	1.1	LOS A	0.0	0.0	0.00	0.38	0.00	65.6
Approach			144	1.5	144	1.5	0.076	3.4	LOS A	0.0	0.0	0.00	0.38	0.00	63.4
West: McClelland Avenue															
11	T1	All MCs	53	0.0	53	0.0	0.204	0.5	LOS A	1.1	7.6	0.29	0.51	0.29	62.3
12	R2	All MCs	278	0.8	278	0.8	0.204	6.8	LOS A	1.1	7.6	0.29	0.51	0.29	55.6
Approach			331	0.6	331	0.6	0.204	5.8	LOS A	1.1	7.6	0.29	0.51	0.29	56.6
All Vehicles			780	1.6	780	1.6	0.281	6.7	LOS A	1.3	9.3	0.23	0.63	0.23	56.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway North (AM Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway North
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
2	T1	All MCs	183	7.5	183	7.5	0.118	0.6	LOS A	0.2	1.6	0.13	0.15	0.13	68.5
3	R2	All MCs	14	23.1	14	23.1	0.118	10.6	LOS A	0.2	1.6	0.13	0.15	0.13	63.8
Approach			197	8.6	197	8.6	0.118	1.3	LOS A	0.2	1.6	0.13	0.15	0.13	68.1
North: Avalon Road															
7	L2	All MCs	306	3.8	306	3.8	0.325	6.5	LOS A	0.0	0.0	0.00	0.32	0.00	60.6
8	T1	All MCs	288	7.7	288	7.7	0.325	0.1	LOS A	0.0	0.0	0.00	0.32	0.00	65.6
Approach			595	5.7	595	5.7	0.325	3.4	LOS A	0.0	0.0	0.00	0.32	0.00	62.9
West: Princes Freeway Off-Ramp															
10	L2	All MCs	285	8.1	285	8.1	0.233	8.9	LOS A	1.1	7.9	0.34	0.64	0.34	61.5
11	T1	All MCs	1	0.0	1	0.0	0.233	13.4	LOS A	1.1	7.9	0.34	0.64	0.34	71.7
12	R2	All MCs	8	12.5	8	12.5	0.233	12.6	LOS A	1.1	7.9	0.34	0.64	0.34	59.7
Approach			295	8.2	295	8.2	0.233	9.0	LOS A	1.1	7.9	0.34	0.64	0.34	61.5
All Vehicles			1086	6.9	1086	6.9	0.325	4.5	LOS A	1.1	7.9	0.11	0.38	0.11	63.4

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway North (School Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway North
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
2	T1	All MCs	362	3.5	362	3.5	0.203	0.2	LOS A	0.1	1.1	0.04	0.05	0.04	69.6
3	R2	All MCs	7	71.4	7	71.4	0.203	11.6	LOS A	0.1	1.1	0.04	0.05	0.04	52.3
Approach			369	4.8	369	4.8	0.203	0.4	LOS A	0.1	1.1	0.04	0.05	0.04	69.1
North: Avalon Road															
7	L2	All MCs	188	3.9	188	3.9	0.241	6.5	LOS A	0.0	0.0	0.00	0.26	0.00	61.3
8	T1	All MCs	261	3.6	261	3.6	0.241	0.1	LOS A	0.0	0.0	0.00	0.26	0.00	66.5
Approach			449	3.7	449	3.7	0.241	2.7	LOS A	0.0	0.0	0.00	0.26	0.00	64.2
West: Princes Freeway Off-Ramp															
10	L2	All MCs	285	5.9	285	5.9	0.307	9.8	LOS A	1.4	10.4	0.50	0.73	0.52	61.3
11	T1	All MCs	2	50.0	2	50.0	0.307	21.4	LOS A	1.4	10.4	0.50	0.73	0.52	57.9
12	R2	All MCs	20	10.5	20	10.5	0.307	14.8	LOS A	1.4	10.4	0.50	0.73	0.52	59.4
Approach			307	6.5	307	6.5	0.307	10.2	LOS A	1.4	10.4	0.50	0.73	0.52	61.2
All Vehicles			1126	4.9	1126	4.9	0.307	4.0	LOS A	1.4	10.4	0.15	0.32	0.16	64.8

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway North (PM Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway North
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
2	T1	All MCs	422	3.5	422	3.5	0.233	0.1	LOS A	0.1	0.9	0.03	0.04	0.03	69.6
3	R2	All MCs	8	37.5	8	37.5	0.233	10.1	LOS A	0.1	0.9	0.03	0.04	0.03	60.5
Approach			431	4.2	431	4.2	0.233	0.3	LOS A	0.1	0.9	0.03	0.04	0.03	69.4
North: Avalon Road															
7	L2	All MCs	188	2.2	188	2.2	0.240	6.4	LOS A	0.0	0.0	0.00	0.26	0.00	61.8
8	T1	All MCs	261	4.0	261	4.0	0.240	0.1	LOS A	0.0	0.0	0.00	0.26	0.00	66.4
Approach			449	3.3	449	3.3	0.240	2.7	LOS A	0.0	0.0	0.00	0.26	0.00	64.4
West: Princes Freeway Off-Ramp															
10	L2	All MCs	261	7.3	261	7.3	0.308	10.4	LOS A	1.4	10.7	0.54	0.78	0.59	60.3
11	T1	All MCs	1	0.0	1	0.0	0.308	14.3	LOS A	1.4	10.7	0.54	0.78	0.59	69.7
12	R2	All MCs	20	15.8	20	15.8	0.308	16.8	LOS A	1.4	10.7	0.54	0.78	0.59	57.3
Approach			282	7.8	282	7.8	0.308	10.9	LOS A	1.4	10.7	0.54	0.78	0.59	60.1
All Vehicles			1162	4.7	1162	4.7	0.308	3.8	LOS A	1.4	10.7	0.14	0.31	0.16	65.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway North (Weekend Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway North
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
2	T1	All MCs	240	2.6	240	2.6	0.137	0.2	LOS A	0.1	0.9	0.07	0.09	0.07	69.1
3	R2	All MCs	13	0.0	13	0.0	0.137	8.3	LOS A	0.1	0.9	0.07	0.09	0.07	72.5
Approach			253	2.5	253	2.5	0.137	0.6	LOS A	0.1	0.9	0.07	0.09	0.07	69.3
North: Avalon Road															
7	L2	All MCs	238	0.4	238	0.4	0.257	6.4	LOS A	0.0	0.0	0.00	0.31	0.00	61.9
8	T1	All MCs	247	2.1	247	2.1	0.257	0.1	LOS A	0.0	0.0	0.00	0.31	0.00	65.9
Approach			485	1.3	485	1.3	0.257	3.2	LOS A	0.0	0.0	0.00	0.31	0.00	63.9
West: Princes Freeway Off-Ramp															
10	L2	All MCs	205	1.0	205	1.0	0.184	8.8	LOS A	0.8	5.5	0.37	0.66	0.37	63.8
11	T1	All MCs	1	0.0	1	0.0	0.184	11.9	LOS A	0.8	5.5	0.37	0.66	0.37	71.6
12	R2	All MCs	17	0.0	17	0.0	0.184	11.1	LOS A	0.8	5.5	0.37	0.66	0.37	63.7
Approach			223	0.9	223	0.9	0.184	9.0	LOS A	0.8	5.5	0.37	0.66	0.37	63.8
All Vehicles			961	1.5	961	1.5	0.257	3.8	LOS A	0.8	5.5	0.10	0.33	0.10	65.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway South (AM Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway South
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	18	5.9	18	5.9	0.043	6.2	LOS A	0.2	1.7	0.51	0.55	0.51	63.4
2	T1	All MCs	25	20.8	25	20.8	0.043	6.6	LOS A	0.2	1.7	0.51	0.55	0.51	59.7
Approach			43	14.6	43	14.6	0.043	6.4	LOS A	0.2	1.7	0.51	0.55	0.51	61.2
East: Princes Freeway Off-Ramp															
4	L2	All MCs	6	0.0	6	0.0	0.139	8.0	LOS A	0.7	5.2	0.43	0.68	0.43	60.9
5	T1	All MCs	1	100.0	1	100.0	0.139	11.7	LOS A	0.7	5.2	0.43	0.68	0.43	44.8
6	R2	All MCs	155	5.4	155	5.4	0.139	15.2	LOS A	0.7	5.2	0.43	0.68	0.43	58.6
Approach			162	5.8	162	5.8	0.139	14.9	LOS A	0.7	5.2	0.43	0.68	0.43	58.6
North: Avalon Road															
8	T1	All MCs	25	12.5	25	12.5	0.171	4.3	LOS A	0.0	0.0	0.00	0.67	0.00	57.6
9	R2	All MCs	268	7.5	268	7.5	0.171	10.9	LOS A	0.0	0.0	0.00	0.67	0.00	59.9
9u	U	All MCs	3	0.0	3	0.0	0.171	13.5	LOS A	0.0	0.0	0.00	0.67	0.00	56.8
Approach			297	7.8	297	7.8	0.171	10.3	LOS A	0.0	0.0	0.00	0.67	0.00	59.6
All Vehicles			502	7.8	502	7.8	0.171	11.5	LOS A	0.7	5.2	0.18	0.66	0.18	59.4

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway South (School Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway South
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	14	0.0	14	0.0	0.039	6.8	LOS A	0.2	1.7	0.61	0.59	0.61	63.9
2	T1	All MCs	21	20.0	21	20.0	0.039	7.5	LOS A	0.2	1.7	0.61	0.59	0.61	59.2
Approach			35	12.1	35	12.1	0.039	7.2	LOS A	0.2	1.7	0.61	0.59	0.61	60.9
East: Princes Freeway Off-Ramp															
4	L2	All MCs	7	0.0	7	0.0	0.287	8.1	LOS A	1.7	11.8	0.47	0.67	0.47	60.6
5	T1	All MCs	1	0.0	1	0.0	0.287	8.8	LOS A	1.7	11.8	0.47	0.67	0.47	65.8
6	R2	All MCs	340	2.2	340	2.2	0.287	15.2	LOS A	1.7	11.8	0.47	0.67	0.47	59.2
Approach			348	2.1	348	2.1	0.287	15.0	LOS A	1.7	11.8	0.47	0.67	0.47	59.2
North: Avalon Road															
8	T1	All MCs	37	8.6	37	8.6	0.159	4.3	LOS A	0.0	0.0	0.00	0.66	0.00	58.0
9	R2	All MCs	243	3.0	243	3.0	0.159	10.8	LOS A	0.0	0.0	0.00	0.66	0.00	61.1
9u	U	All MCs	1	100.0	1	100.0	0.159	14.8	LOS A	0.0	0.0	0.00	0.66	0.00	47.3
Approach			281	4.1	281	4.1	0.159	10.0	LOS A	0.0	0.0	0.00	0.66	0.00	60.6
All Vehicles			664	3.5	664	3.5	0.287	12.5	LOS A	1.7	11.8	0.28	0.67	0.28	59.9

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway South (PM Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway South
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	14	7.7	14	7.7	0.045	7.8	LOS A	0.3	2.0	0.67	0.63	0.67	61.8
2	T1	All MCs	23	13.6	23	13.6	0.045	8.1	LOS A	0.3	2.0	0.67	0.63	0.67	58.9
Approach			37	11.4	37	11.4	0.045	8.0	LOS A	0.3	2.0	0.67	0.63	0.67	59.9
East: Princes Freeway Off-Ramp															
4	L2	All MCs	6	0.0	6	0.0	0.344	8.4	LOS A	2.1	15.0	0.52	0.68	0.52	60.3
5	T1	All MCs	1	0.0	1	0.0	0.344	9.1	LOS A	2.1	15.0	0.52	0.68	0.52	65.4
6	R2	All MCs	398	2.6	398	2.6	0.344	15.5	LOS A	2.1	15.0	0.52	0.68	0.52	58.8
Approach			405	2.6	405	2.6	0.344	15.4	LOS A	2.1	15.0	0.52	0.68	0.52	58.8
North: Avalon Road															
8	T1	All MCs	39	10.8	39	10.8	0.182	4.3	LOS A	0.0	0.0	0.00	0.66	0.00	57.8
9	R2	All MCs	281	3.0	281	3.0	0.182	10.8	LOS A	0.0	0.0	0.00	0.66	0.00	61.0
9u	U	All MCs	1	100.0	1	100.0	0.182	14.8	LOS A	0.0	0.0	0.00	0.66	0.00	47.3
Approach			321	4.3	321	4.3	0.182	10.0	LOS A	0.0	0.0	0.00	0.66	0.00	60.5
All Vehicles			763	3.7	763	3.7	0.344	12.8	LOS A	2.1	15.0	0.31	0.67	0.31	59.6

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway South (Sat Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway South
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	21	25.0	21	25.0	0.049	6.8	LOS A	0.3	1.9	0.52	0.55	0.52	59.8
2	T1	All MCs	28	0.0	28	0.0	0.049	6.1	LOS A	0.3	1.9	0.52	0.55	0.52	60.4
Approach			49	10.6	49	10.6	0.049	6.4	LOS A	0.3	1.9	0.52	0.55	0.52	60.1
East: Princes Freeway Off-Ramp															
4	L2	All MCs	4	0.0	4	0.0	0.176	7.8	LOS A	0.9	6.6	0.41	0.67	0.41	60.9
5	T1	All MCs	2	0.0	2	0.0	0.176	8.5	LOS A	0.9	6.6	0.41	0.67	0.41	66.1
6	R2	All MCs	209	2.0	209	2.0	0.176	14.9	LOS A	0.9	6.6	0.41	0.67	0.41	59.5
Approach			216	2.0	216	2.0	0.176	14.7	LOS A	0.9	6.6	0.41	0.67	0.41	59.6
North: Avalon Road															
8	T1	All MCs	31	10.3	31	10.3	0.149	4.3	LOS A	0.0	0.0	0.00	0.67	0.00	57.8
9	R2	All MCs	233	1.8	233	1.8	0.149	10.8	LOS A	0.0	0.0	0.00	0.67	0.00	61.2
9u	U	All MCs	1	0.0	1	0.0	0.149	13.5	LOS A	0.0	0.0	0.00	0.67	0.00	56.9
Approach			264	2.8	264	2.8	0.149	10.1	LOS A	0.0	0.0	0.00	0.67	0.00	60.8
All Vehicles			529	3.2	529	3.2	0.176	11.6	LOS A	0.9	6.6	0.22	0.66	0.22	60.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Appendix J

SIDRA Results – Post-Development Conditions (Growth Scenario – 10-Year)

MOVEMENT SUMMARY

Site: 101 [Watt Street/Avalon Road (AM Peak) (Site Folder: Post Dev (Growth Scenario) - Appendix J)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Watt Street/Avalon Road
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	103	1.0	103	1.0	0.285	3.2	LOS A	0.0	0.3	0.01	0.11	0.01	55.0
2	T1	All MCs	468	7.6	468	7.6	0.285	0.0	LOS A	0.0	0.3	0.01	0.11	0.01	62.4
3u	U	All MCs	1	0.0	1	0.0	0.285	5.4	LOS A	0.0	0.3	0.01	0.11	0.01	37.5
Approach			573	6.4	573	6.4	0.285	0.6	LOS A	0.0	0.3	0.01	0.11	0.01	58.1
North: Avalon Road															
8	T1	All MCs	491	6.4	491	6.4	0.278	0.3	LOS A	0.3	2.2	0.07	0.09	0.07	62.8
9	R2	All MCs	21	10.0	21	10.0	0.278	7.6	LOS A	0.3	2.2	0.07	0.09	0.07	54.6
Approach			512	6.6	512	6.6	0.278	0.6	LOS A	0.3	2.2	0.07	0.09	0.07	61.0
West: Watt Street															
10	L2	All MCs	20	0.0	20	0.0	0.618	11.6	LOS B	3.1	22.1	0.84	1.11	1.47	37.4
12	R2	All MCs	235	0.9	235	0.9	0.618	18.8	LOS B	3.1	22.1	0.84	1.11	1.47	37.0
Approach			255	0.8	255	0.8	0.618	18.3	LOS B	3.1	22.1	0.84	1.11	1.47	37.0
All Vehicles			1339	5.4	1339	5.4	0.618	3.9	LOS B	3.1	22.1	0.19	0.29	0.31	46.4

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Rennie Street/Canterbury Road E (AM Peak) (Site Folder: Post Development (with Sports Reserve) - Appendix I)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Rennie Street/Canterbury Road E
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Rennie Street															
25	T1	All MCs	122	3.4	122	3.4	0.159	0.4	LOS A	0.8	5.4	0.27	0.37	0.27	56.3
26	R2	All MCs	143	1.5	143	1.5	0.159	6.0	LOS A	0.8	5.4	0.27	0.37	0.27	58.9
Approach			265	2.4	265	2.4	0.159	3.5	LOS A	0.8	5.4	0.27	0.37	0.27	57.7
NorthWest: Canterbury Road E															
27	L2	All MCs	289	0.7	289	0.7	0.290	7.3	LOS A	1.4	9.7	0.25	0.59	0.25	57.3
29	R2	All MCs	89	0.0	89	0.0	0.290	8.8	LOS A	1.4	9.7	0.25	0.59	0.25	57.1
Approach			379	0.6	379	0.6	0.290	7.7	LOS A	1.4	9.7	0.25	0.59	0.25	57.3
SouthWest: Rennie Street															
30	L2	All MCs	77	0.0	77	0.0	0.085	5.6	LOS A	0.0	0.0	0.00	0.28	0.00	55.2
31	T1	All MCs	84	1.3	84	1.3	0.085	0.0	LOS A	0.0	0.0	0.00	0.28	0.00	57.4
Approach			161	0.7	161	0.7	0.085	2.7	LOS A	0.0	0.0	0.00	0.28	0.00	56.3
All Vehicles			805	1.2	805	1.2	0.290	5.3	LOS A	1.4	9.7	0.21	0.46	0.21	57.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Watt Street/Avalon Road (School Peak) (Site Folder: Post Dev (Growth Scenario) - Appendix J)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Watt Street/Avalon Road
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	246	0.9	246	0.9	0.387	6.5	LOS A	0.0	0.0	0.00	0.20	0.00	62.9
2	T1	All MCs	543	5.0	543	5.0	0.387	0.1	LOS A	0.0	0.0	0.00	0.20	0.00	67.1
Approach			789	3.7	789	3.7	0.387	2.1	LOS A	0.0	0.0	0.00	0.20	0.00	65.7
North: Avalon Road															
8	T1	All MCs	400	3.2	400	3.2	0.228	0.5	LOS A	0.3	2.3	0.09	0.12	0.09	68.8
9	R2	All MCs	18	0.0	18	0.0	0.228	11.1	LOS A	0.3	2.3	0.09	0.12	0.09	60.6
Approach			418	3.0	418	3.0	0.228	0.9	LOS A	0.3	2.3	0.09	0.12	0.09	68.4
West: Watt Street															
10	L2	All MCs	21	0.0	21	0.0	0.459	10.3	LOS A	1.8	13.2	0.81	1.01	1.15	47.3
12	R2	All MCs	147	2.9	147	2.9	0.459	18.2	LOS A	1.8	13.2	0.81	1.01	1.15	46.7
Approach			168	2.5	168	2.5	0.459	17.2	LOS A	1.8	13.2	0.81	1.01	1.15	46.7
All Vehicles			1376	3.4	1376	3.4	0.459	3.6	LOS A	1.8	13.2	0.13	0.27	0.17	63.3

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Watt Street/Avalon Road (PM Peak) (Site Folder: Post Dev (Growth Scenario) - Appendix J)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Watt Street/Avalon Road
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	271	1.2	271	1.2	0.409	3.1	LOS A	0.0	0.0	0.00	0.19	0.00	59.5
2	T1	All MCs	562	5.4	562	5.4	0.409	0.0	LOS A	0.0	0.0	0.00	0.19	0.00	58.2
Approach			833	4.0	833	4.0	0.409	1.0	LOS A	0.0	0.0	0.00	0.19	0.00	59.1
North: Avalon Road															
8	T1	All MCs	459	2.8	459	2.8	0.269	0.7	LOS A	0.5	3.4	0.12	0.14	0.12	57.5
9	R2	All MCs	24	0.0	24	0.0	0.269	9.7	LOS A	0.5	3.4	0.12	0.14	0.12	54.7
Approach			483	2.6	483	2.6	0.269	1.1	LOS A	0.5	3.4	0.12	0.14	0.12	56.8
West: Watt Street															
10	L2	All MCs	19	0.0	19	0.0	0.485	11.1	LOS A	1.9	13.6	0.84	1.03	1.21	36.7
12	R2	All MCs	138	1.5	138	1.5	0.485	20.5	LOS A	1.9	13.6	0.84	1.03	1.21	36.2
Approach			157	1.3	157	1.3	0.485	19.4	LOS A	1.9	13.6	0.84	1.03	1.21	36.3
All Vehicles			1473	3.3	1473	3.3	0.485	3.0	LOS A	1.9	13.6	0.13	0.26	0.17	50.9

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Watt Street/Avalon Road (Weekend Peak) (Site Folder: Post Dev (Growth Scenario) - Appendix J)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Watt Street/Avalon Road
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	194	0.0	194	0.0	0.263	6.4	LOS A	0.0	0.0	0.00	0.22	0.00	62.9
2	T1	All MCs	349	2.4	349	2.4	0.263	0.1	LOS A	0.0	0.0	0.00	0.22	0.00	66.9
Approach			543	1.6	543	1.6	0.263	2.3	LOS A	0.0	0.0	0.00	0.22	0.00	65.4
North: Avalon Road															
8	T1	All MCs	394	1.3	394	1.3	0.220	0.3	LOS A	0.3	1.9	0.09	0.11	0.09	69.0
9	R2	All MCs	22	4.8	22	4.8	0.220	9.1	LOS A	0.3	1.9	0.09	0.11	0.09	60.6
Approach			416	1.5	416	1.5	0.220	0.7	LOS A	0.3	1.9	0.09	0.11	0.09	68.5
West: Watt Street															
10	L2	All MCs	23	4.5	23	4.5	0.402	8.2	LOS A	1.8	12.6	0.68	0.94	0.92	49.6
12	R2	All MCs	198	0.5	198	0.5	0.402	12.7	LOS A	1.8	12.6	0.68	0.94	0.92	50.3
Approach			221	1.0	221	1.0	0.402	12.3	LOS A	1.8	12.6	0.68	0.94	0.92	50.2
All Vehicles			1180	1.4	1180	1.4	0.402	3.6	LOS A	1.8	12.6	0.16	0.32	0.20	62.9

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/McClelland Avenue (AM Peak) (Site Folder: Post Dev (Growth Scenario) - Appendix J)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/McClelland Avenue
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	380	4.4	380	4.4	0.518	7.3	LOS A	3.2	23.6	0.39	0.81	0.39	47.6
3	R2	All MCs	108	17.5	108	17.5	0.518	16.9	LOS A	3.2	23.6	0.39	0.81	0.39	43.4
Approach			488	7.3	488	7.3	0.518	9.4	LOS A	3.2	23.6	0.39	0.81	0.39	46.6
East: McClelland Avenue															
4	L2	All MCs	97	19.6	97	19.6	0.100	6.7	LOS A	0.0	0.0	0.00	0.43	0.00	56.0
5	T1	All MCs	73	13.0	73	13.0	0.100	1.1	LOS A	0.0	0.0	0.00	0.43	0.00	64.7
Approach			169	16.8	169	16.8	0.100	4.3	LOS A	0.0	0.0	0.00	0.43	0.00	60.6
West: McClelland Avenue															
11	T1	All MCs	63	8.3	63	8.3	0.312	0.8	LOS A	1.8	12.9	0.36	0.55	0.36	61.8
12	R2	All MCs	415	3.6	415	3.6	0.312	7.1	LOS A	1.8	12.9	0.36	0.55	0.36	52.2
Approach			478	4.2	478	4.2	0.312	6.3	LOS A	1.8	12.9	0.36	0.55	0.36	53.9
All Vehicles			1136	7.4	1136	7.4	0.518	7.3	LOS A	3.2	23.6	0.32	0.64	0.32	51.8

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/McClelland Avenue (School Peak) (Site Folder: Post Dev (Growth Scenario) - Appendix J)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/McClelland Avenue
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	453	3.3	453	3.3	0.562	10.1	LOS A	5.6	40.7	0.47	0.85	0.59	51.1
3	R2	All MCs	111	11.4	111	11.4	0.562	17.8	LOS A	5.6	40.7	0.47	0.85	0.59	49.3
Approach			563	4.9	563	4.9	0.562	11.6	LOS A	5.6	40.7	0.47	0.85	0.59	50.7
East: McClelland Avenue															
4	L2	All MCs	103	7.1	103	7.1	0.120	6.5	LOS A	0.0	0.0	0.00	0.39	0.00	59.6
5	T1	All MCs	119	2.7	119	2.7	0.120	1.1	LOS A	0.0	0.0	0.00	0.39	0.00	65.4
Approach			222	4.7	222	4.7	0.120	3.6	LOS A	0.0	0.0	0.00	0.39	0.00	62.5
West: McClelland Avenue															
11	T1	All MCs	84	6.3	84	6.3	0.264	0.9	LOS A	1.4	10.3	0.38	0.53	0.38	62.2
12	R2	All MCs	316	1.7	316	1.7	0.264	7.2	LOS A	1.4	10.3	0.38	0.53	0.38	55.5
Approach			400	2.6	400	2.6	0.264	5.9	LOS A	1.4	10.3	0.38	0.53	0.38	56.8
All Vehicles			1185	4.1	1185	4.1	0.562	8.2	LOS A	5.6	40.7	0.35	0.66	0.41	54.6

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/McClelland Avenue (PM Peak) (Site Folder: Post Dev (Growth Scenario) - Appendix J)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/McClelland Avenue
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	482	1.5	482	1.5	0.614	9.9	LOS B	7.6	55.9	0.55	0.89	0.79	46.2
3	R2	All MCs	97	23.9	97	23.9	0.614	22.2	LOS B	7.6	55.9	0.55	0.89	0.79	39.9
Approach			579	5.3	579	5.3	0.614	12.0	LOS B	7.6	55.9	0.55	0.89	0.79	45.0
East: McClelland Avenue															
4	L2	All MCs	132	5.6	132	5.6	0.146	6.5	LOS A	0.0	0.0	0.00	0.40	0.00	57.1
5	T1	All MCs	139	1.5	139	1.5	0.146	1.1	LOS A	0.0	0.0	0.00	0.40	0.00	65.2
Approach			271	3.5	271	3.5	0.146	3.7	LOS A	0.0	0.0	0.00	0.40	0.00	62.1
West: McClelland Avenue															
11	T1	All MCs	94	5.6	94	5.6	0.305	1.2	LOS A	1.7	12.1	0.44	0.56	0.44	62.0
12	R2	All MCs	351	1.5	351	1.5	0.305	7.5	LOS A	1.7	12.1	0.44	0.56	0.44	52.4
Approach			444	2.4	444	2.4	0.305	6.2	LOS A	1.7	12.1	0.44	0.56	0.44	55.2
All Vehicles			1294	3.9	1294	3.9	0.614	8.2	LOS B	7.6	55.9	0.40	0.67	0.50	52.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/McClelland Avenue (Weekend Peak)
(Site Folder: Post Dev (Growth Scenario) - Appendix J)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/McClelland Avenue
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	282	1.9	282	1.9	0.364	8.6	LOS A	1.8	12.9	0.34	0.84	0.34	52.5
3	R2	All MCs	91	3.5	91	3.5	0.364	13.1	LOS A	1.8	12.9	0.34	0.84	0.34	52.1
Approach			373	2.3	373	2.3	0.364	9.7	LOS A	1.8	12.9	0.34	0.84	0.34	52.4
East: McClelland Avenue															
4	L2	All MCs	77	2.7	77	2.7	0.093	6.4	LOS A	0.0	0.0	0.00	0.38	0.00	61.1
5	T1	All MCs	99	0.0	99	0.0	0.093	1.1	LOS A	0.0	0.0	0.00	0.38	0.00	65.5
Approach			176	1.2	176	1.2	0.093	3.4	LOS A	0.0	0.0	0.00	0.38	0.00	63.5
West: McClelland Avenue															
11	T1	All MCs	64	0.0	64	0.0	0.256	0.7	LOS A	1.4	9.8	0.33	0.53	0.33	62.1
12	R2	All MCs	339	0.6	339	0.6	0.256	7.0	LOS A	1.4	9.8	0.33	0.53	0.33	55.5
Approach			403	0.5	403	0.5	0.256	6.0	LOS A	1.4	9.8	0.33	0.53	0.33	56.4
All Vehicles			952	1.3	952	1.3	0.364	7.0	LOS A	1.8	12.9	0.27	0.62	0.27	55.9

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway North (AM Peak) (Site Folder: Post Dev (Growth Scenario) - Appendix J)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway North
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
2	T1	All MCs	224	6.1	224	6.1	0.149	0.9	LOS A	0.3	2.4	0.14	0.18	0.14	66.2
3	R2	All MCs	17	18.8	17	18.8	0.149	12.1	LOS A	0.3	2.4	0.14	0.18	0.14	64.6
Approach			241	7.0	241	7.0	0.149	1.7	LOS A	0.3	2.4	0.14	0.18	0.14	66.0
North: Avalon Road															
7	L2	All MCs	374	3.1	374	3.1	0.393	3.1	LOS A	0.0	0.0	0.00	0.29	0.00	57.4
8	T1	All MCs	352	6.3	352	6.3	0.393	0.0	LOS A	0.0	0.0	0.00	0.29	0.00	65.8
Approach			725	4.6	725	4.6	0.393	1.6	LOS A	0.0	0.0	0.00	0.29	0.00	61.2
West: Princes Freeway Off-Ramp															
10	L2	All MCs	347	6.7	347	6.7	0.296	9.1	LOS A	1.4	10.3	0.39	0.66	0.39	50.2
11	T1	All MCs	1	0.0	1	0.0	0.296	17.4	LOS A	1.4	10.3	0.39	0.66	0.39	71.4
12	R2	All MCs	11	10.0	11	10.0	0.296	14.3	LOS A	1.4	10.3	0.39	0.66	0.39	60.2
Approach			359	6.7	359	6.7	0.296	9.2	LOS A	1.4	10.3	0.39	0.66	0.39	50.7
All Vehicles			1325	5.6	1325	5.6	0.393	3.7	LOS A	1.4	10.3	0.13	0.37	0.13	58.7

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway North (School Peak) (Site Folder: Post Dev (Growth Scenario) - Appendix J)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway North
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
2	T1	All MCs	441	2.9	441	2.9	0.247	0.3	LOS A	0.2	1.5	0.05	0.06	0.05	69.4
3	R2	All MCs	9	55.6	9	55.6	0.247	12.4	LOS A	0.2	1.5	0.05	0.06	0.05	55.8
Approach			451	4.0	451	4.0	0.247	0.5	LOS A	0.2	1.5	0.05	0.06	0.05	69.1
North: Avalon Road															
7	L2	All MCs	229	3.2	229	3.2	0.293	6.5	LOS A	0.0	0.0	0.00	0.26	0.00	61.5
8	T1	All MCs	318	3.0	318	3.0	0.293	0.1	LOS A	0.0	0.0	0.00	0.26	0.00	66.4
Approach			547	3.1	547	3.1	0.293	2.8	LOS A	0.0	0.0	0.00	0.26	0.00	64.3
West: Princes Freeway Off-Ramp															
10	L2	All MCs	347	4.8	347	4.8	0.414	11.1	LOS A	2.4	17.6	0.59	0.83	0.77	60.2
11	T1	All MCs	2	50.0	2	50.0	0.414	31.3	LOS A	2.4	17.6	0.59	0.83	0.77	56.6
12	R2	All MCs	24	8.7	24	8.7	0.414	18.5	LOS A	2.4	17.6	0.59	0.83	0.77	58.6
Approach			374	5.4	374	5.4	0.414	11.7	LOS A	2.4	17.6	0.59	0.83	0.77	60.1
All Vehicles			1372	4.0	1372	4.0	0.414	4.5	LOS A	2.4	17.6	0.18	0.35	0.22	64.5

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway North (PM Peak)
(Site Folder: Post Dev (Growth Scenario) - Appendix J)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway North
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
2	T1	All MCs	515	2.9	515	2.9	0.285	0.2	LOS A	0.2	1.4	0.04	0.05	0.04	69.1
3	R2	All MCs	11	30.0	11	30.0	0.285	7.7	LOS A	0.2	1.4	0.04	0.05	0.04	57.3
Approach			525	3.4	525	3.4	0.285	0.4	LOS A	0.2	1.4	0.04	0.05	0.04	68.9
North: Avalon Road															
7	L2	All MCs	231	1.8	231	1.8	0.318	6.5	LOS A	0.0	0.0	0.00	0.24	0.00	62.1
8	T1	All MCs	367	2.9	367	2.9	0.318	0.1	LOS A	0.0	0.0	0.00	0.24	0.00	64.1
Approach			598	2.5	598	2.5	0.318	2.5	LOS A	0.0	0.0	0.00	0.24	0.00	63.0
West: Princes Freeway Off-Ramp															
10	L2	All MCs	318	6.0	318	6.0	0.434	12.0	LOS A	2.5	18.1	0.64	0.89	0.88	58.8
11	T1	All MCs	1	0.0	1	0.0	0.434	20.8	LOS A	2.5	18.1	0.64	0.89	0.88	67.2
12	R2	All MCs	24	13.0	24	13.0	0.434	23.3	LOS A	2.5	18.1	0.64	0.89	0.88	55.3
Approach			343	6.4	343	6.4	0.434	12.8	LOS A	2.5	18.1	0.64	0.89	0.88	58.7
All Vehicles			1466	3.7	1466	3.7	0.434	4.2	LOS A	2.5	18.1	0.16	0.32	0.22	63.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway North (Weekend Peak) (Site Folder: Post Dev (Growth Scenario) - Appendix J)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway North
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
2	T1	All MCs	293	2.2	293	2.2	0.169	0.3	LOS A	0.2	1.4	0.08	0.10	0.08	69.0
3	R2	All MCs	16	0.0	16	0.0	0.169	9.1	LOS A	0.2	1.4	0.08	0.10	0.08	72.4
Approach			308	2.0	308	2.0	0.169	0.7	LOS A	0.2	1.4	0.08	0.10	0.08	69.2
North: Avalon Road															
7	L2	All MCs	291	0.4	291	0.4	0.313	6.4	LOS A	0.0	0.0	0.00	0.31	0.00	61.9
8	T1	All MCs	301	1.7	301	1.7	0.313	0.1	LOS A	0.0	0.0	0.00	0.31	0.00	65.8
Approach			592	1.1	592	1.1	0.313	3.2	LOS A	0.0	0.0	0.00	0.31	0.00	63.8
West: Princes Freeway Off-Ramp															
10	L2	All MCs	251	0.8	251	0.8	0.241	9.1	LOS A	1.0	7.4	0.43	0.69	0.43	63.6
11	T1	All MCs	1	0.0	1	0.0	0.241	14.5	LOS A	1.0	7.4	0.43	0.69	0.43	71.2
12	R2	All MCs	21	0.0	21	0.0	0.241	12.6	LOS A	1.0	7.4	0.43	0.69	0.43	63.4
Approach			273	0.8	273	0.8	0.241	9.4	LOS A	1.0	7.4	0.43	0.69	0.43	63.6
All Vehicles			1173	1.3	1173	1.3	0.313	4.0	LOS A	1.0	7.4	0.12	0.34	0.12	65.1

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on degree of saturation per movement.
Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway South (AM Peak)
(Site Folder: Post Dev (Growth Scenario) - Appendix J)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway South
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	22	4.8	22	4.8	0.056	6.7	LOS A	0.3	2.3	0.57	0.59	0.57	63.3
2	T1	All MCs	31	17.2	31	17.2	0.056	7.1	LOS A	0.3	2.3	0.57	0.59	0.57	59.5
Approach			53	12.0	53	12.0	0.056	6.9	LOS A	0.3	2.3	0.57	0.59	0.57	61.0
East: Princes Freeway Off-Ramp															
4	L2	All MCs	7	0.0	7	0.0	0.176	8.3	LOS A	0.9	6.8	0.49	0.69	0.49	60.6
5	T1	All MCs	1	100.0	1	100.0	0.176	12.4	LOS A	0.9	6.8	0.49	0.69	0.49	44.6
6	R2	All MCs	189	4.4	189	4.4	0.176	15.5	LOS A	0.9	6.8	0.49	0.69	0.49	58.6
Approach			198	4.8	198	4.8	0.176	15.3	LOS A	0.9	6.8	0.49	0.69	0.49	58.6
North: Avalon Road															
8	T1	All MCs	31	10.3	31	10.3	0.207	4.3	LOS A	0.0	0.0	0.00	0.67	0.00	57.7
9	R2	All MCs	327	6.1	327	6.1	0.207	10.9	LOS A	0.0	0.0	0.00	0.67	0.00	60.1
9u	U	All MCs	4	0.0	4	0.0	0.207	13.5	LOS A	0.0	0.0	0.00	0.67	0.00	56.7
Approach			362	6.4	362	6.4	0.207	10.3	LOS A	0.0	0.0	0.00	0.67	0.00	59.9
All Vehicles			613	6.4	613	6.4	0.207	11.6	LOS A	0.9	6.8	0.21	0.67	0.21	59.6

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway South (School Peak) (Site Folder: Post Dev (Growth Scenario) - Appendix J)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway South
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	17	0.0	17	0.0	0.053	7.8	LOS A	0.3	2.3	0.69	0.65	0.69	63.1
2	T1	All MCs	25	16.7	25	16.7	0.053	8.5	LOS A	0.3	2.3	0.69	0.65	0.69	58.6
Approach			42	10.0	42	10.0	0.053	8.2	LOS A	0.3	2.3	0.69	0.65	0.69	60.3
East: Princes Freeway Off-Ramp															
4	L2	All MCs	9	0.0	9	0.0	0.364	8.6	LOS A	2.3	16.0	0.54	0.69	0.54	60.2
5	T1	All MCs	1	0.0	1	0.0	0.364	9.3	LOS A	2.3	16.0	0.54	0.69	0.54	65.3
6	R2	All MCs	414	1.8	414	1.8	0.364	15.7	LOS A	2.3	16.0	0.54	0.69	0.54	59.0
Approach			424	1.7	424	1.7	0.364	15.5	LOS A	2.3	16.0	0.54	0.69	0.54	59.0
North: Avalon Road															
8	T1	All MCs	47	6.7	47	6.7	0.195	4.3	LOS A	0.0	0.0	0.00	0.66	0.00	58.1
9	R2	All MCs	297	2.5	297	2.5	0.195	10.8	LOS A	0.0	0.0	0.00	0.66	0.00	61.2
9u	U	All MCs	1	100.0	1	100.0	0.195	14.8	LOS A	0.0	0.0	0.00	0.66	0.00	47.3
Approach			345	3.4	345	3.4	0.195	9.9	LOS A	0.0	0.0	0.00	0.66	0.00	60.7
All Vehicles			812	2.9	812	2.9	0.364	12.7	LOS A	2.3	16.0	0.32	0.68	0.32	59.8

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway South (PM Peak)
(Site Folder: Post Dev (Growth Scenario) - Appendix J)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway South
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	17	6.3	17	6.3	0.064	9.2	LOS A	0.4	3.0	0.76	0.69	0.76	61.2
2	T1	All MCs	28	11.1	28	11.1	0.064	9.4	LOS A	0.4	3.0	0.76	0.69	0.76	58.1
Approach			45	9.3	45	9.3	0.064	9.3	LOS A	0.4	3.0	0.76	0.69	0.76	59.2
East: Princes Freeway Off-Ramp															
4	L2	All MCs	7	0.0	7	0.0	0.437	9.0	LOS A	2.9	20.6	0.61	0.70	0.61	59.9
5	T1	All MCs	1	0.0	1	0.0	0.437	9.7	LOS A	2.9	20.6	0.61	0.70	0.61	64.9
6	R2	All MCs	485	2.2	485	2.2	0.437	16.2	LOS A	2.9	20.6	0.61	0.70	0.61	58.5
Approach			494	2.1	494	2.1	0.437	16.0	LOS A	2.9	20.6	0.61	0.70	0.61	58.6
North: Avalon Road															
8	T1	All MCs	47	8.9	47	8.9	0.220	4.3	LOS A	0.0	0.0	0.00	0.66	0.00	57.9
9	R2	All MCs	342	2.5	342	2.5	0.220	10.8	LOS A	0.0	0.0	0.00	0.66	0.00	61.1
9u	U	All MCs	1	100.0	1	100.0	0.220	14.8	LOS A	0.0	0.0	0.00	0.66	0.00	47.3
Approach			391	3.5	391	3.5	0.220	10.0	LOS A	0.0	0.0	0.00	0.66	0.00	60.7
All Vehicles			929	3.1	929	3.1	0.437	13.2	LOS A	2.9	20.6	0.36	0.69	0.36	59.5

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Avalon Road/Princes Freeway South (Sat Peak) (Site Folder: Post Dev (Growth Scenario) - Appendix J)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Avalon Road/Princes Freeway South
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Avalon Road															
1	L2	All MCs	25	20.8	25	20.8	0.063	7.3	LOS A	0.3	2.6	0.58	0.59	0.58	60.2
2	T1	All MCs	35	0.0	35	0.0	0.063	6.7	LOS A	0.3	2.6	0.58	0.59	0.58	60.0
Approach			60	8.8	60	8.8	0.063	6.9	LOS A	0.3	2.6	0.58	0.59	0.58	60.1
East: Princes Freeway Off-Ramp															
4	L2	All MCs	5	0.0	5	0.0	0.222	8.2	LOS A	1.2	8.7	0.47	0.68	0.47	60.6
5	T1	All MCs	2	0.0	2	0.0	0.222	8.9	LOS A	1.2	8.7	0.47	0.68	0.47	65.8
6	R2	All MCs	256	1.6	256	1.6	0.222	15.2	LOS A	1.2	8.7	0.47	0.68	0.47	59.3
Approach			263	1.6	263	1.6	0.222	15.1	LOS A	1.2	8.7	0.47	0.68	0.47	59.4
North: Avalon Road															
8	T1	All MCs	37	8.6	37	8.6	0.180	4.3	LOS A	0.0	0.0	0.00	0.67	0.00	57.9
9	R2	All MCs	283	1.5	283	1.5	0.180	10.8	LOS A	0.0	0.0	0.00	0.67	0.00	61.3
9u	U	All MCs	1	0.0	1	0.0	0.180	13.5	LOS A	0.0	0.0	0.00	0.67	0.00	56.9
Approach			321	2.3	321	2.3	0.180	10.1	LOS A	0.0	0.0	0.00	0.67	0.00	60.9
All Vehicles			644	2.6	644	2.6	0.222	11.8	LOS A	1.2	8.7	0.25	0.67	0.25	60.2

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on degree of saturation per movement.
Intersection and Approach LOS values are based on worst degree of saturation for any vehicle movement.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.