New Primary School at Googong (Monaro Cluster 2) (SSDA - 10326042)

Transport Assessment

Googong
10 June 2021
P1566r01

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Project No	P1566
Project	New Primary School in Googong (Monaro Cluster 2)
Client	Hansen Yuncken
File Reference	P1566r01 Issue II TA SSDA Primary School in Googong

Revision History

Revision No.	Date	Details	Author	Approved by
	18/05/2021	Draft	M. Tran / M. Tangonan / T. Lehmann / W. Zheng	D. Choi
R01	21/05/2021	Issue I	T. Chen / W. Zheng	D. Choi
R01	10/06/2021	Issue II	T. Chen / W Zheng	D. Choi

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APPENDICES

1 Introduction

1.1 Overview

This Ason Group Transport Assessment Report (TA) accompanies an Environmental Impact Statement (EIS) pursuant to Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act) in support of an application for a State Significant Development (SSD-10326042).

The development is for a new primary school located on land bound by Gorman Drive, Aprasia Avenue, Wilkins Way and McPhail Way in Googong.

This report addresses the relevant Secretary's Environmental Assessment Requirements (SEARs) as detailed in Section 1.5 of this report. The TA provides a comprehensive assessment of the traffic and transport elements of the project on the existing and future road network within proximity of the project and wider Queanbeyan-Palerang area in line with Transport for NSW (TfNSW) guidelines.

In addition, SINSW have outlined assessments of multi-modal transport, travel patterns and demand. These are accordingly undertaken within this TA, in conjunction with the Preliminary School Transport Plan (PSTP) document, which forms a separate report accompanying the submission.

1.2 The School

The proposed development is for construction and operation of a new primary school in Googong that will accommodate up to 700 students.

The proposed development is a Core 35 school and includes:

- A collection of 1-2 storey buildings containing 30 home base units, 3 special education learning units, canteen, hall, library and administrative facilities.
- On-site carpark with 60 spaces and on-street kiss-and-ride facilities.
- OSHC with a capacity of 240 students.
- 46 staff members on-site at any given time.
- Outdoor sports court and play area.
- Integrated landscaping, fencing and signage.

Reference should be made to the reduced plans provided in the **Figure 1**: Site Plan.

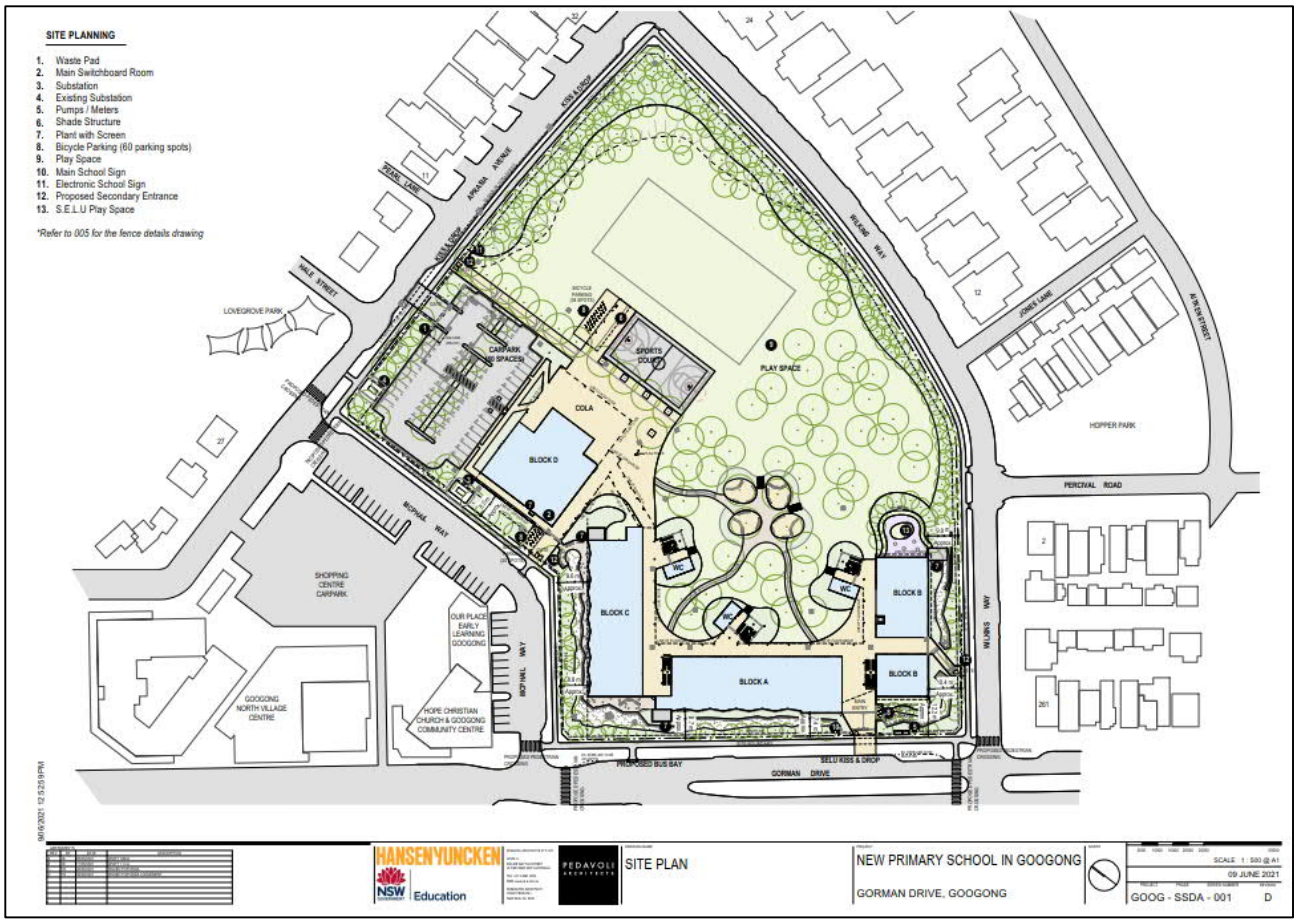


Figure 1: Site Plan (received 9 June 2021)

1.3 Key References

The TA makes reference to a series of key strategic, design and planning documents in assessment of the traffic and transport related elements of the project. These documents include:

- Queanbeyan Development Control Plan (2012)
- Queanbeyan Local Environmental Plan (2012)
- Queanbeyan-Palerang Regional Council (QPRC), Engineering Design and Construction Specifications
- Transport for NSW, NSW Movement and Place Framework
- NSW Government, Practitioner's Guide to Movement and Place, March 2020

This TA also references general access, traffic and parking guidelines, including:

- Roads and Maritime Services, Guide to Traffic Generating Developments, v2.02, 2002 (RMS Guide)
- Australian Standard 2890.1:2004 Parking Facilities – Off-Street Car Parking (AS 2890.1: 2004)
- Australian Standard 2890.2:2018 Parking Facilities – Off Street Commercial Vehicle Facilities (AS 2890.2:2018)
- Australian Standard 2890.3:2015 Parking Facilities – Bicycle Parking (AS 2890.3:2015)
- Australian Standard 2890.5:2020 Parking Facilities – On-Street Parking (AS 2890.5:2020)

- Australian Standard 2890.6:2009 Parking Facilities – Off-Street Parking for People with Disabilities (AS 2890.6:2009)
- Austroads, Cycling Aspects of Austroads Guides, April 2014
- Transport for NSW, Supplement to Australian Standard AS 1742.10-2009, Manual of Uniform Traffic Control Devices – Part 10: Pedestrian Control and Protection Version 3.1 March 2021
- Austroads Guide to Traffic Management Part 3 – Traffic Studies and Analysis, Edition 4.0 April 2020
- Austroads Guide to Traffic Management Part 11 – Parking Management Techniques, Edition 4.0 April 2020
- Austroads Guide to Traffic Management Part 12 – Integrated Transport Assessment for Developments, Edition 4.0 April 2020

1.4 Background Reports

Other documents referenced in the development of this TA include:

- GHD, Googong Public School Rapid Transport Assessment, July 2020
- Ason Group, Googong Demographic Report, March 2021

1.5 SEARs

As mentioned above, the project team have submitted formal request for the SEARs for the preparation of an environmental impact statement and development application for the SSDA.

This was formally lodged in October 2020, with the response documentation subsequently issued by the NSW Department of Planning, Industry & Environment (DPIE) on the 20 November 2020.

A summary of the requirements relating to Transport & Accessibility are highlighted in the below table.

Table 1: SEARS

No.	SEARS Requirement	Ason Group Response
1	Analysis of the existing transport network to at least the existing or proposed enrolment boundary, including: Road hierarchy. Pedestrian, cycle and public transport infrastructure. Details of current daily and peak hour vehicle movements based on traffic Surveys and / or existing traffic studies relevant to the locality. Existing performance levels of nearby intersections utilising appropriate Traffic modelling methods (such as SIDRA network modelling). Existing pedestrian and vehicular access to and from the site.	Analysis of the existing transport networks has been undertaken as part of this document – the TA – in Section 4 as well as the Preliminary School Transport Plan. Details relating to Road Hierarchy, multi-modal traffic surveys and existing intersection assessment are provided in Section 4.1. Details relating to public and active transport are provided in Section 5.
2	Details of the proposed development, including: A map of the proposed access which identifies public roads, bus routes, footpaths and cycleways. Pedestrian site access arrangements, including the number and design of access points to and from the site. Vehicular access arrangements, including for service and emergency vehicles and loading/unloading, including swept path analysis demonstrating the largest design vehicle entering and leaving the site and moving in each direction through intersections along the proposed transport routes. Car and motorcycle parking, bicycle parking and end-of-trip facilities. Drop-off / pick-zone(s) and arrival/departure bus bay(s) Pedestrian, public transport or road infrastructure improvements or safety measures.	Details of the proposed development is outlined in Section 1.2 and Section 7. The road hierarchy, public transport infrastructure and services, cycle network are been detailed in Section 4, 5.1 & 5.2 respectively. Vehicular access arrangements have been assessed with swept path analysis. The assessment is provided in Appendix B. Parking requirements have been assessed against the relevant requirements including DCP, Austroads and EFSG. Refer to Section 7.
3	Analysis of the impacts due to the operation of the proposed development, including: Proposed modal split for all users of the development including vehicle, pedestrian, bicycle riders, public transport, school buses and other sustainable travel modes. Estimated total daily and peak hour vehicular trip generation. A clear explanation and justification of the: - assumed growth rate applied.	The existing travel modal split has been determined based on Australian Bureau of Statistics (ABS) Census 2016 Data. Proposed travel mode targets have been set to achieve a lower reliance on the private vehicle. See Section 6.4.1. Growth rate of 2% has been applied to the surveyed traffic volumes to determine the future base case (based on School opening in Term 1, 2023) and horizon year (10 years post school opening) volumes. Traffic distribution has been determined based on the student

	- volume and distribution of proposed trips to be generated. - type and frequency of design vehicles accessing the site.	catchment and existing intersection operations. See Section 8.1.
4	Details of performance of nearby intersections with the additional traffic generated by the development both at the commencement of operation and in a 10-year time period (using SIDRA network modelling).	The intersections have been analysed using SIDRA Intersection 9 with the additional traffic generated by the development both at the commencement of operation and in a 10-year time period. Results show that there is minimal queuing and the road network performs with good operations.
5	Cumulative traffic impacts from any surrounding approved development(s).	The cumulative traffic impacts are considered as part of the background traffic growth. Results of the modelling are detailed in Section 8.3.2.
6	Adequacy of pedestrian, bicycle and public transport infrastructure and operations to accommodate the development	The adequacy of pedestrian, bicycle and public transport infrastructure and operations to accommodate the development is examined in detail in Section 5.
7	Adequacy of car and motorcycle parking and bicycle parking provisions when assessed against the relevant car / bicycle parking codes and standards	Reference has been made to the DCP to determine the parking provisions. The DCP recommends the *State Environmental Planning Policy 2017,* however, specific rates are not provided for schools. With respect to bicycle parking, it is considered that the Education Facilities Standards and Guidelines (EFSG) is more appropriate to be assessed against. Refer to Section 7
8	Adequacy of the drop-off / pick-up zone(s) and bus bay(s), including assessment of any related queuing during peak-hour access	The Drop-Off/ Pick-Up (DOPU) zone(s), bus bays have been assessed. Results indicate the DOPU Zone can accommodate the peak demand. See Section 8.4.
9	Adequacy of the existing / proposed pedestrian infrastructure to enable convenient and safe access to and from the site for all users.	The Site is well connected to pedestrian infrastructure such as footpaths. See Section 5.2.1 & 6.2.1

1.6 Detailed Stakeholder Engagement

Over the course of the development of this Plan, Ason Group has consulted with key stakeholders including Transport for NSW (TfNSW), Queanbeyan-Palerang Regional Council, and the SINSW. This report provides details of consultation undertaken by the Project Team in its preparation of the preliminary STP.

1.6.1 Council & TfNSW Joint Project Working Group

Table 2: Engagement 1

Scheduled Weekly Meeting 02	
Identified Party to Consult:	QPRC, TfNSW
Consultation type:	Microsoft Teams Meeting
When is consultation required?	Prior to submissions
Why?	To note contractor onboarding and introduction of the consultant team including Ason Group (transport consultant) and Pedavoli (architect).
When was consultation scheduled?	Meetings are scheduled to occur on a weekly basis from project inception.
When was consultation held?	15th March, 2021
Identify persons and positions who were involved	**QPRC –** Derek Tooth (Service Manager, Contracts and Projects), Tim Reich (Development Engineer), Charbel Sleiman (Team Leader), Joanne Wilson Ridley (Contracts and Projects) **TfNSW –** Andrew Lissenden (Development Assessment Officer), Kristy Campbell (Manager – Road Use Safety), Kelly Cherry (Network and Safety Officer), Damien Pfeiffer (Director Land Use) **SINSW –** Lachlan MacDonald (Project Director), Alfred Jury (Project Director), Rebecca Lehman (Project Director), Sarah Kelly (Project Director) **Ason Group –** Dora Choi (Transport Consultant), Wendy Zheng (Transport Consultant) **Hansen Yuncken –** Paul Todhunter (Project Manager) **Pedavoli –** Sam Rigoli (Architect), Katie- Lee Carter (Architect) **Mecone –** Adam Coburn (Town Planning Consultant) **Savills –** Emma Viljoen (Project Manager)
Provide the details of the consultation	Preliminary discussion to raise working concerns, share project progress.
What specific matters were discussed?	**Transport –** Ason Group present investigation findings relating to Site visit undertaken on 12/03/2021 relating to overall site appraisal- citing constraints, opportunities and consideration for critical locations of transport infrastructure including: • bus bays • Kiss and ride locations • Pedestrian routes, revised crossing locations, school access points • Staff car parking • General connectivity with subdivision and broader area. In addition, AG is undertaking traffic counts to obtain data to support current design considerations. **Council –** Noted several items for consideration as follows: • Requested a plan showing the key infrastructure proposals. • Consideration of the frontage along Gorman Drive to be used for buses only. • McPhail Way, adjacent to the childcare centre and neighbourhood shops was noted as not an appropriate location for the kiss and ride. • Wilkins Way was noted as too narrow for a kiss and ride. • Supported Ason obtaining traffic counts as data to support investigations.

Scheduled Weekly Meeting 02	
	• Council (DT) noted they had worked with Anglican school (noted in 4.1) on their bus and drop off and pick-up arrangements • Council (DT) noted that parents / carers drop children to school and drive to work (particularly Canberra). • SI noted that the proposed car park on Aprasia Ave (60 spaces) is only for school staff. • TfNSW (AL) noted they support Councils comments. **SINSW –** • Notes AG is preparing a School Travel Plan, inclusive of a Green Travel Plan), and will continue to work with SINSW on implementation once school is operational. • SINSW to provide benchmarks against other schools in new release areas and illustrate most relevant school catchment. • Out of School Hours Care (OSHC) numbers should be confirmed in order to establish student travel numbers during peak time. Post Meeting note: OSHC generally caters for 30% of students. • TfNSW offered to send bus planning data to Ason including the relevant TfNSW contacts.
What matters were resolved?	n/a – preliminary discussion

Table 3: Engagement 2

Scheduled Weekly Meeting 03	
Identified Party to Consult:	QPRC, TfNSW
Consultation type:	Microsoft Teams Meeting
When is consultation required?	Prior to submissions
Why?	Purpose of meeting to provide ongoing status updates in weekly format and raise key queries for discussion.
When was consultation scheduled?	Meetings are scheduled to occur on a weekly basis from project inception.
When was consultation held?	23rd March, 2021
Identify persons and positions who were involved	**QPRC –** Derek Tooth (Service Manager, Contracts and Projects), Tim Reich (Development Engineer), Charbel Sleiman (Team Leader), Joanne Wilson Ridley (Contracts and Projects) **TfNSW –** Andrew Lissenden (Development Assessment Officer), Kristy Campbell (Manager – Road Use Safety), Kelly Cherry (Network and Safety Officer), Damien Pfeiffer (Director Land Use) **SINSW -** Alfred Jury (Project Director), Rebecca Lehman (Project Director), Danny Cvetkovski (Project Director), Sarah Kelly (Project DIrector) **Ason Group –** Dora Choi (Transport Consultant), Wendy Zheng (Transport Consultant) **Hansen Yuncken –** Paul Todhunter (Project Manager), Nader Zreik (Project Manager), **Pedavoli –** Sam Rigoli (Architect), Katie- Lee Carter (Architect) **Mecone –** Adam Coburn (Town Planning Consultant) **Savills –** Emma Viljoen (Project Manager)
Provide the details of the consultation	Weekly discussion to raise working concerns, share project progress.
What specific matters were discussed?	***Transport –*** DC presented an overview of transport and traffic strategy and drivers, referring to key items below:

Scheduled Weekly Meeting 03	
	• Catchment areas with walking and cycling opportunity at 70%. Subject to further analysis of de-personalised catchment data. • Ason noted good pedestrian infrastructure in place for walking and cycling within Googong area, which was recently developed masterplan community. • Site has four frontages with opportunity for pedestrian access all around • Mode share assumptions – refer to presentation • Case Study at Estella PS, Wagga Wagga • OSHC accounts for 30% of students utilising alternative hours • Requires clarification from Council for suitable benchmark school within QRPC Local Government Area • Bus – pending consultation with TfNSW Bus Team due to current bus service loop (Gorman Dr, McPhail Way, Aprasia Ave) • Kiss & Ride – Predominantly at Aprasia Ave. Existing indent – 1.8m. ***TfNSW –*** CM noted a number of item for consideration: • CM noted TfNSW were supportive of active transport promotion and consideration of how design can encourage active transport solutions. • 50% of students walking sounded ambitious but considered in cold of winter 30% of students walking could be more realistic. • Consider design solutions that discourage driving by making walking more convenient. ***Council -*** Council noted a number of items for consideration: • CS noted this particular area of Googong was problematic which led to revised road design standards. Roads around school site too narrow for queuing, kiss and ride off street. • Aprasia Ave – if road is to be used as Kiss & Ride, road requires widening. Road widening required for use of Wilkins Way as Kiss & Ride. • CS noted high altitude climate meant cold and windy through winter and spring which is not good walking conditions. • CS noted Even during increased work from home situations, people still drove. • DT requested whether an on-site kiss and ride had been considered for the site.
What matters were resolved?	n/a – preliminary discussion

Table 4: Engagement 3

Scheduled Weekly Meeting 04	
Identified Party to Consult:	QPRC, TfNSW
Consultation type:	Microsoft Teams Meeting
When is consultation required?	Prior to submissions
Why?	Purpose of meeting to provide ongoing status updates in weekly format and raise key queries for discussion.

Scheduled Weekly Meeting 04	
When was consultation scheduled?	Meetings are scheduled to occur on a weekly basis from project inception.
When was consultation held?	30th March, 2021
Identify persons and positions who were involved	**QPRC –** Derek Tooth (Service Manager, Contracts and Projects), Tim Reich (Development Engineer), Joanne Wilson Ridley (Contracts and Projects) **TfNSW –** Chris Meller (Manager Southern Region). Andrew Lissenden (Development Assessment Officer) **SINSW -** Alfred Jury (Project Director), Rebecca Lehman (Project Director), Erin Algeo (Project Director) **Ason Group –** Dora Choi (Transport Consultant), Wendy Zheng (Transport Consultant) **Hansen Yuncken –** Paul Todhunter (Project Manager) **Pedavoli –** Sam Rigoli (Architect), Katie- Lee Carter (Architect) **Savills –** Emma Viljoen (Project Manager)
Provide the details of the consultation	Weekly discussion to raise working concerns, share project progress. EV noted that project team (HY and Architects) have undertaken a site visit and noted number of opportunities and limitations.
What specific matters were discussed?	**Transport –** DC (Ason) presented an overview of the masterplan in line with the principals shared last meeting 23/03. • Pedestrian crossing locations had been updated, revised warrant requirements published 16 March 2021. • Traffic counts were underway reviewing am and pm total movements • On site kiss and ride limits play space, noting the requirement for 8m2 per child. **Council -** Council noted a number of items for consideration: • Email dated 30/03 sent prior to the meeting, items within to be addressed. • Request a demonstration that an on site kiss and ride and other car park layouts have been considered. • - Safety concerns of pedestrian and traffic movements on all sides of the site • - Benchmark School nominated at Jerrabomberra Public School, noting similarities in suburbs, email dated 30/03/21 highlighted issues in more detail and supporting Councils view that students are driven to school. • DT noted heavy reliance on active transport isn't supported by actual practises of the community and local conditions. • RL noted it was disappointing for a Council in a new release area with walkable neighbourhoods not to be supporting active transport solutions. • JWR noted the Gorman Drive median was vegetated and a bioretention swale, if converted to crossing this should be addressed. Sightlines to be addressed too. • JWR noted safety concerns around the use of the gate at Wilkins Way, as not a formal kiss and ride area but close to the school buildings **TfNSW –** CM noted a number of items for consideration: • CM queried how the kiss and ride would operate, RL noted this would be outlined in the School Travel Plan which addresses operational management of items raised in the transport assessment report. • CM noted placement of school access points should minimise driveway crossings.
What matters were resolved?	n/a – preliminary discussion

Table 5: Engagement 4

Regional Bus Contractor Consultation	
Identified Party to Consult:	TfNSW, QCity Transit
Consultation type:	Phone Calls, e-mail exchange
When is consultation required?	Prior to submissions
Why?	Purpose of meeting to discuss the additional bus routes options and availabilities with bus service providers for the School.
When was consultation scheduled?	Consultation scheduled to be undertaken between 10-May 2021 and 17-May 2021.
When was consultation held?	-
Identify persons and positions who were involved	**TfNSW –** Tanya Jennison, Nicola Gentle **Ason Group –** Dora Choi (Transport Consultant), Wendy Zheng (Transport Consultant) **QCity Transit –** David Thompson (Infrastructure and Planning Officer)
Provide the details of the consultation	Options for bus transit information is currently being sought for Googong location. Discussion points include – - Potential for existing school bus routes in the region to additionally provide service for new school. - Potential for new routes to be introduced, feasibility discussion.
What specific matters were discussed?	-
What matters were resolved?	On-going.

2 Strategic Context

2.1 Southern Regional Transport Plan (2014)

The *Southern Regional Transport Plan*, prepared in March 2014, covering the extents of the Queanbeyan-Palerang Regional Council, captures the challenges and actions to support travel within the Southern Region, in support of the NSW Long Term Transport Master Plan released in December 2012.

Specifically, the Plan identified the following challenges and actions to support travel within the Southern Region. Key challenges identified are:

- Improving road safety
- Ensuring connection between smaller towns and village to regional centres
- The lack of single comprehensive source of public transport information
- High public transport fares in comparison to those in metropolitan areas
- A high demand for urban growth and rural lifestyle housing in those areas closest to the cities of Sydney and Canberra
- A decline in the rural communities and centres located away from the high growth areas.

Actions identified to support travel within the Southern Region that are relevant to the development include:

- Improve road safety
- Invest in road upgrades
- Improve regional bus services
- Improve public transport interchanges
- Improve public transport customer information
- Investigate flexible or demand responsive transport
- Ensure adequate community transport services are provided
- Improve the integration of community transport into the passenger transport system
- Develop a sustainable model for community transport service provision
- Support proposals to investigate walking and cycling trails including disused rail lines

For travel within major centres and towns, the actions identified focussed on:

- Improve transport services in towns
- Roll out the Walking Communities Program
- Connecting Centres Cycling Program
- Roll out the Cycling Towns Program
- Improve information about walking and cycling routes and facilities

The plan acknowledge significant travel movements of residents within the Queanbeyan-Pelarang area to Canberra. The development of the new primary school within Googong intends to service the education needs of the local catchment, with a focus on walking, cycling and opportunities to improve transport services between the school's catchment area and the school, which aligns with the actions identified in the *Southern Regional Transport Plan*.

2.2 Local Strategic Planning Statement (2020)

The *Local Strategic Planning Statement* (LSPS) prepared by QPR Council in July 2020 has been prepared to support NSW Development and refers to specific development for the Government area. The document outlines strategic Planning directives through 2040 for the locale and highlights development priorities for the region.

Of relevance, the document recognizes urban growth of new towns and neighbourhood centres in the region and prioritises actions for the provision and improvement of education facilities in these areas in line with Planning Priority 8. To this effect, the Googong locale was strategically planned to provide access and proximity of low and medium density residential developments to education facilities, specifically the new primary school in Googong.

2.3 Queanbeyan Residential and Economic Strategy 2031

The *Queanbeyan Residential and Economic Strategy 2031* (The Strategy) was endorsed by Queanbeyan City Council in 2008. The Strategy forms the basis for future urban release planning proposals within the former Queanbeyan Local Government Area and guides future development. In particular, it focused on providing sufficient housing and employment lands to accommodate growth over the next 15 years.

The Strategy recognises the rezoning of Googong from a rural zone to an urban release area accommodating approximately 6,190 dwellings, a town centre and four neighbourhood centres. Additionally, the Strategy notes that negotiations are also consistent with the State Government for a school site as part of a State Planning Agreement and will be subject to future consideration,

2.4 Googong Master Plan

The *Googong DCP, Part 3 - Master Plan* (Master Plan) was adopted by Queanbeyan-Palerang Regional Council (QPRC) in October 2010.

The Master Plan envisages Googong a new township nestled within a unique rural landscape where innovation, a sustainable way of living and true sense of belonging will be created.

An impression of the Googong Masterplan is extracted below at a reduced scale. See **Figure 2**.

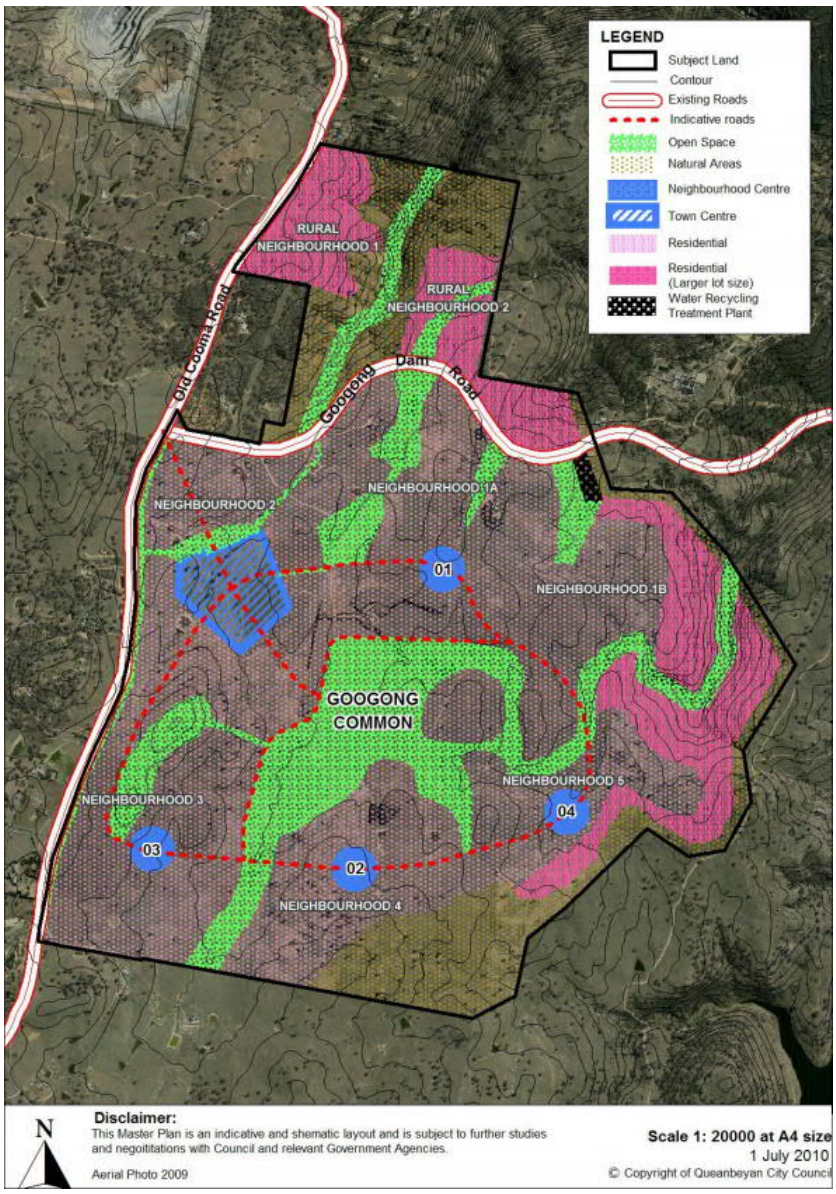


Figure 2: Googong Masterplan[1]

Source: Queanbeyan City Council

2.5 Queanbeyan-Palerang Regional Council Community Strategic Plan and Delivery Plan 2018–2028

The *Queanbeyan-Palerang Regional Council Community Strategic Plan and Delivery Plan 2018 – 2028* (Community Strategic Plan) is a high-level aspirational plan which identifies the community's main priorities and aspirations for the future and identifies the strategies for achieving these. In this regard, Council has a custodial role in initiating, preparing and maintaining the Community Strategic Plan on behalf of the residents.

One of the clear goals set by the Community Strategic Plan is to have Healthy and Connected Communities, of which a directive is to increase access to health and education services. The community engagement as

[1] https://www.qprc.nsw.gov.au/files/assets/public/building-and-development/planning-docs/dcps/googong/googong-dcp-part-3-december-2018.pdf

part of the Community Strategic Plan also showed that provision and maintenance of the public realm, including pedestrian and bike paths was important to the community.

2.6 South Jerrabomberra and Queanbeyan Traffic Analysis (2014)

In 2014, comprehensive traffic network modelling was undertaken using the QCC TRACKS model to support the proposed Jerrabomberra Development in the region. The model was supported by QPR Council and captures future year development staging of not only the Jerrabomberra development, but additionally the Googong masterplan as well as cross-border interactions with the ACT.

Specific to the Googong development, the construction is characterised by 5 stages, by period of development. Inherently, the future year modelling for the Jerrabomberra development captures the input of Primary and Secondary schools in Stage 2 and 4, reflective of the three schools (including the new primary school in Googong) included within the Googong masterplan. The below table references the future years inputs of the model relevant to the study.

Table 6: Future Years Input

Staging	Years of Development	Primary School Students	Primary School Employment	Secondary School Students	Secondary School Employment
Stage 2	2018 – 2023	800 pupils	59 jobs	400 pupils	30 jobs
Stage 4	2026 – 2030	350 pupils	33 jobs	1,200 pupils	90 jobs

2.7 Integrated Transport Strategy (2020)

The *Integrated Transport Strategy* (ITS) was prepared by Aecom on behalf of Queanbeyan-Pelerang Regional Council and adopted in June 2020. It provides direction for transport; including the public transport, cycling, and footpath networks and links, heavy vehicle management, future road planning and regional integration with the ACT and the broader NSW.

Environmental Sustainability is recognised as an agreed goal of the study, which seeks to minimise the impact of transport on the environment by supporting growth in public transport, walking and cycling trips within the region.

Specific to Googong, new bus routes and services have been identified to provide better connectivity between Queanbeyan and Canberra, including the investigation of a park and ride facility in Googong.

2.8 Movement and Place Framework

The Movement and Place is a cross-government framework for planning and managing roads and streets across NSW. The framework delivers on NSW policy and strategy directions to create successful streets and roads by balancing the movement of people and goods with the amenity and quality of places.

The below provides a brief summary of how Movement and Place is relevant for the school development.

2.8.1 Place Analysis

The place analysis makes reference to the importance of the location in its physical form, the activity and generates and how its meaning is characterized for the community. To this effect, the school development for Googong relates to the contribution of a wider 'Activity Centre', shared with the neighbouring Googong north village, and provides educational and childcare services for the immediate and surrounding communities. As part of the Googong Masterplan, the township is developed around a series of activity centres aimed to characterize and provide identity and amenity to the local community. In this regard, the school fulfils a key component of the areas' liveability.

With reference to the movement impacts on place, the framework recognises the need to provide safe, direct, and comfortable walking and cycling routes as the backbone of active travel, including to schools and linking local activities to local recreation, giving priority to car-free arrival points and providing minimal parking. Of relevance to the Proposal, built environment indicators for Primary Schools extracted from the Practitioner's Guide to Movement and Place is presented in **Figure 3.**

USER OUTCOME	INDICATOR	MEASURE	DESIRED OUTCOME	DATA SOURCE
Amenity and Uses				
Convenient facilities	Primary schools	Walkable access to primary schools	Positive indicates increase in catchment	GIS network analysis

Figure 3: Built Environment Indicators

2.8.2 Movement Analysis

The concept of movement as characterized by the Framework describes the demand to, from and through the activity centres, and describes the series of modal networks interlinking them. With reference to the Googong Masterplan and township, the school – forming part of a key activity centre – is interlinked by the road network, with adequate width to provide for bus services, as well as pedestrian footpaths and a dedicated cycling shoulder.

2.8.3 Issues & Opportunities

With reference to issues and opportunities relating to the Movement and Place Framework, it should be considered that both the TA and Preliminary STP documents aim to address and highlight key issues and opportunities specific to the development. Reference should be made to Section 6.5, which identifies and addresses key infrastructure improvements for the development and address elements of both movement and place.

2.9 Road Safety Education Program

The Road Safety Education Program is a long-term integrated education initiative funded by the Centre for Road Safety in government and non-government schools. The aim of the program is to increase road safety knowledge, understanding and skills.

Road safety education specialists in the government, Catholic and independent school sectors provide professional learning and advice to teachers and schools about teaching road safety and how to address road safety issues through the curriculum.

The teaching and learning focus is on pedestrian, passenger and wheels safety, as well as on future drivers. The Centre for Road Safety leads the development of quality teaching and learning resources for teachers to use in schools.

The education sectors provide professional learning to teachers to equip them with the knowledge and skills to teach quality road safety education. Teachers are also shown how to use the resources in the classroom to create effective teaching and learning programs.

2.10 Safety Around Schools Program

TfNSW continues to have a strong focus on improving the visibility of school zones to increase driver awareness and compliance. Schools aim to address road safety issues around their school to create a safer environment for the whole school community by:

- Teaching students about the local road safety conditions contributes significantly to improving their own safety.
- Reminding parents and carers about safe road user behaviours outside the school also contributes significantly to the safety of our students
- Working with agencies to improve local safety issues in the school zone through planning, enforcement, engineering or environmental changes.

2.11 Community Profile

2.11.1 Population

A review of Profile ID was undertaken to establish the context of the Googong community profile. Profile ID sources data from Australian Bureau of Statistics (ABS) Census Data. It is noted that this data includes Environa and Tralee, however, these areas are mostly undeveloped and as such, the figures can be considered to represent Googong's population.

The data indicates that the Estimated Resident Population (ERP) in 2020 was 5,677 which was an increase of approximately 16.95% from the previous year. **Figure 4** presents the data from 2013 to 2020 to highlight the growth trend over seven years.

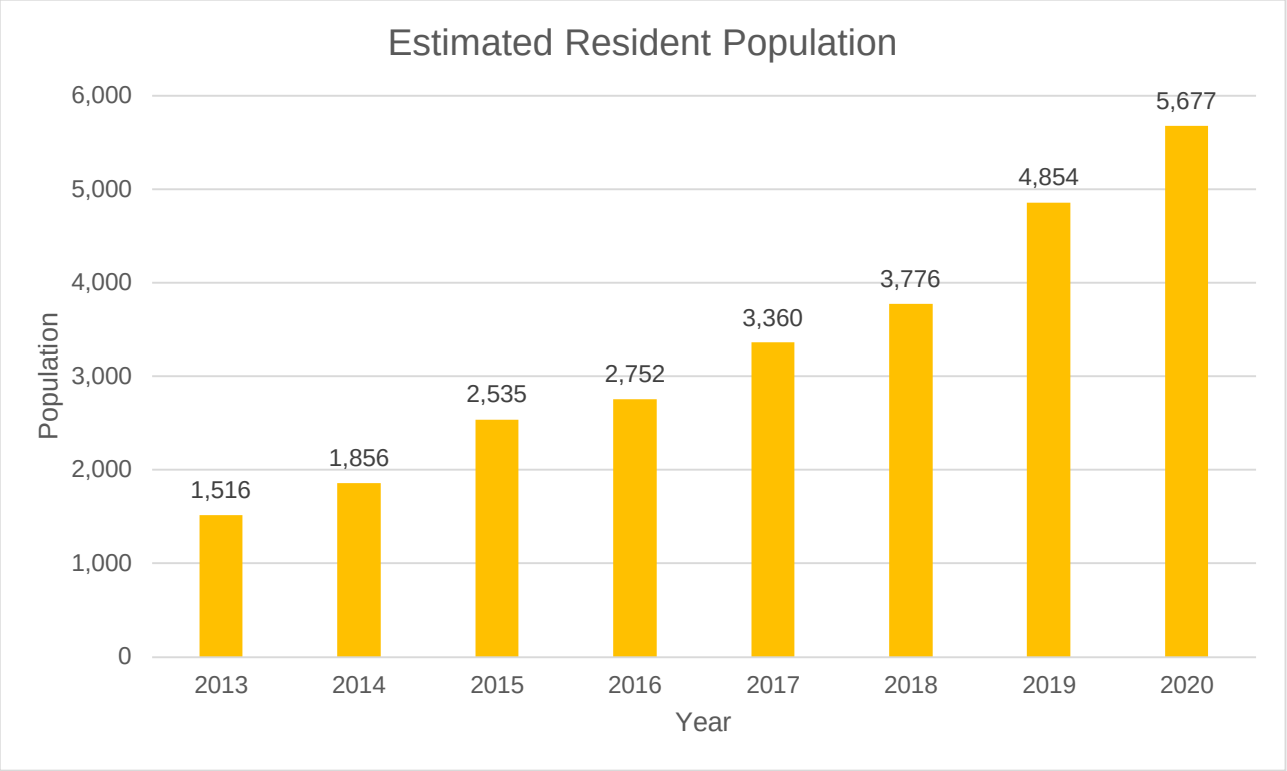


Figure 4: Estimated Resident Population

Source: Profile ID 2021

2.11.2 Travel Mode Share

An analysis of the ABS 2016 Census Data was undertaken to determine the travel mode share in Googong. The results are presented in **Table 7.**

Table 7: Existing Mode Share

Travel Mode[1]	%
Car (as driver)	90%
Car (as passenger)	6%
Bus	1%
Truck	1%
Motorbike / Scooter	1%

Note: 1. Excludes people who worked from home or do not work

With reference to the table above, it is evident that travel mode to work is reliant on car. The data showed that 96% of the population commuting to work from Googong did so by vehicle. This number was made up by 90% as driver and 6% as the passenger.

It is considered that this data is also representative of the general travel mode choice, such as shopping and recreational trips.

3 Overview

3.1 Site & Location

The site is about 10 kilometres south of the Queanbeyan Central Business District (CBD). The township of Googong is a recently developed town, with the planning beginning in the early 2000s and the first residents taking up residence in 2014.

The site is located about 100 metres west of Googong North Village Centre which is a neighbourhood shopping centre with supermarket, cafes and take-away food outlets. The site also adjoins a neighbourhood centre, including early learning centre and is opposite local parks. The local context of the site is shown in **Figure 5**.

The township of Googong lies within Queanbeyan Public School and Queanbeyan South Public School catchment area, both located to the north. The new primary school will have a relatively large catchment, including sections of the suburbs of Carwoola, Greenleigh, The Ridgeway, Royalla, Burra, Jerrabomberra, Tralee and Environa, as well as Googong.

Figure 5: Site Location

3.1.1 Surrounding Development

The Site is surrounded by newly developed residential dwellings on land zoned as *R1 – General Residential*. To the north and south of the Site there is a mix of low-medium density residential dwellings, to the east there is low density detached dwellings and to the west there is a collection of medium density apartments above retail developments.

Directly to the west of the Site is the Googong North Village Centre which can be accessed from Aprasia Avenue, McPhail Way and Gorman Drive. Other developments located within proximity to the Site include the Hope Christian Church and Our Place Early Learning childcare located about 50 metres west of the site on the corner of McPhail Way and Gorman Drive. Hopper Park is located about 20 metres south-east of the site, on Wilkins Way. To the northwest is Lovegrove Park, which is accessed from Aprasia Avenue.

The Anglican School, Googong which also has frontage to Gorman Drive, and located approximately 280 metres west of the site. Beyond The Anglican School to the west approximately 380 metres from the Site and accessed from Gorman Drive is the Rockley Oval. Other key locations include the Duncan Fields / Playground and Aprasia Park, both of which are located some 380 metres to the east of the Site. Barkley Dog Park is located approximately 480 metres to the north-east of the Site.

4 Road Network

4.1 Road Hierarchy

The key roads in proximity of the site are summarised in **Table 8** with reference to the site plan and road hierarchy in **Figure 6.**

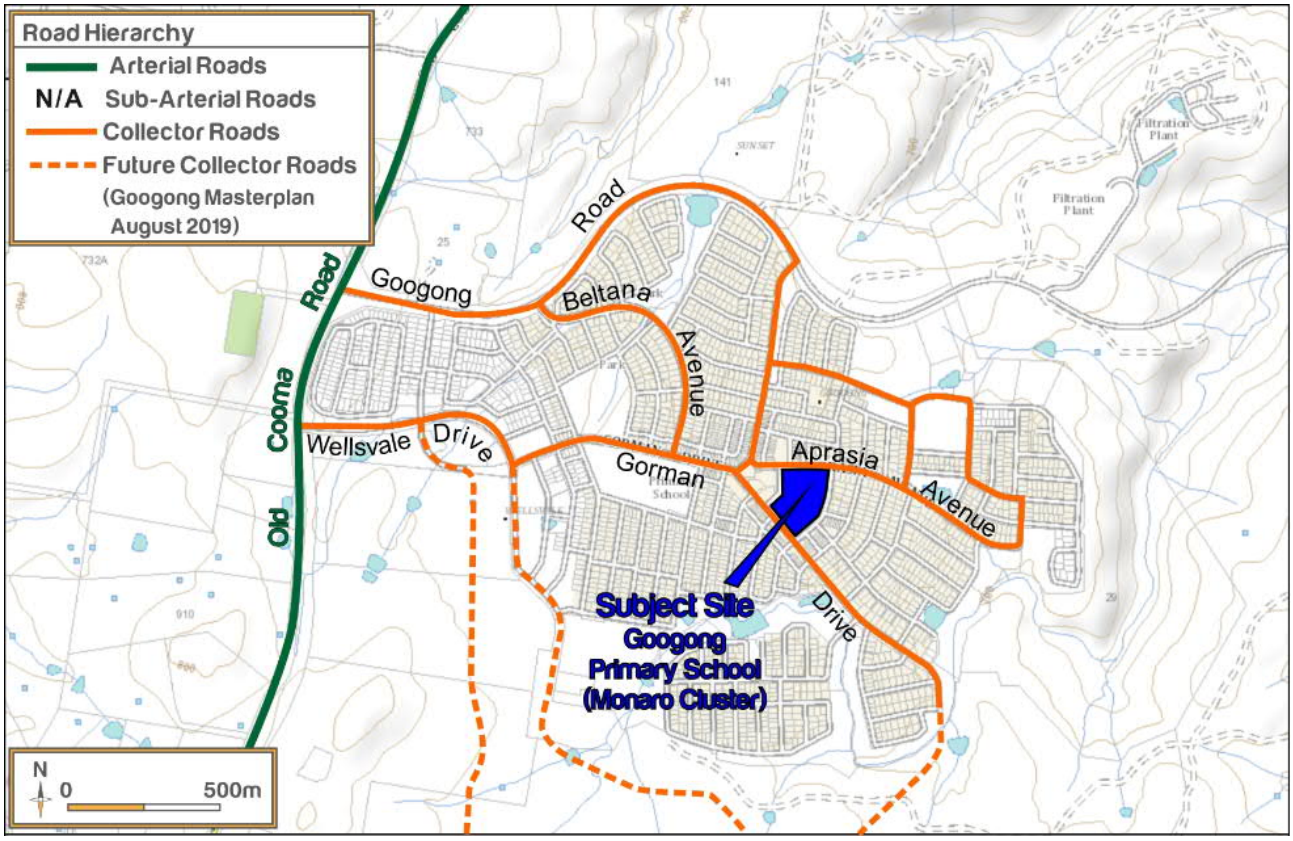


Figure 6: Road Hierarchy

Table 8: Key Roads

Road Name	Road Classification	AADT[1] (vpd)[2]	Speed Limit[3]
Old Cooma Road	Arterial	~1,000	80 km/h
Gorman Drive	Local Road	~500	50 km/h
Aprasia Avenue	Local Road	~500	50 km/h

Wilkins Way	Local Road	~500	50 km/h
McPhail Way	Local Road	~500	50 km/h

4.2 Key Intersections

The key intersections in the vicinity of the site are discussed below:

- Gorman Drive / McPhail Way is a priority T-junction located to the School's west. Gorman Drive is the major leg and forms a key east-west link serving the residential developments in Googong and travels along the southern boundary of the school. McPhail Way is a local road travelling in a generally north-south direction connecting Gorman Drive to the south and Aprasia Avenue in the north. It provides access to the Googong North Village Centre including the at-grade car park.
- Aprasia Avenue / McPhail Way is a priority T-junction located to the School's north-west. Aprasia Avenue is the major leg and is also a key east-west link serving the residential developments in Googong and travels along the northern boundary of the school.
- Aprasia Avenue / Wilkins Way is a priority T-junction located to the School's north-east. Wilkins Way runs in north-south direction to the east of the School and provides a connection between Aprasia Avenue and Wilkins Way. Aside from providing the through link between Aprasia Avenue and Wilkins Way, the purpose of Wilkins Way is to service the residential developments to the east of the School.
- Gorman Drive / Wilkins Way / Helen Circuit is a priority intersection located to the School's south. Gorman Drive is the major leg and contains a central landscaped median in this location. The break in median at the intersection with Wilkins Way and Helen Circuit serves as storage space for vehicles navigating the intersection. Helen Circuit is a local road which forms a circuit looping to the southern side of Gorman Drive.

4.2.1 Traffic Volumes

Ason Group commissioned traffic volume movement counts which were conducted at the above identified intersections on Tuesday 27 April 2021 between the hours of 6:00am to 10:00am and 2:00pm to 6:00pm.

Given the expected start and finish times of the school operations, and based on experiences of similar schools in regional areas, the following times were selected to analyse for the road network assessment:

- AM School Peak: 8:00am to 9:00am
- PM School Peak: 2:30pm to 3:30pm

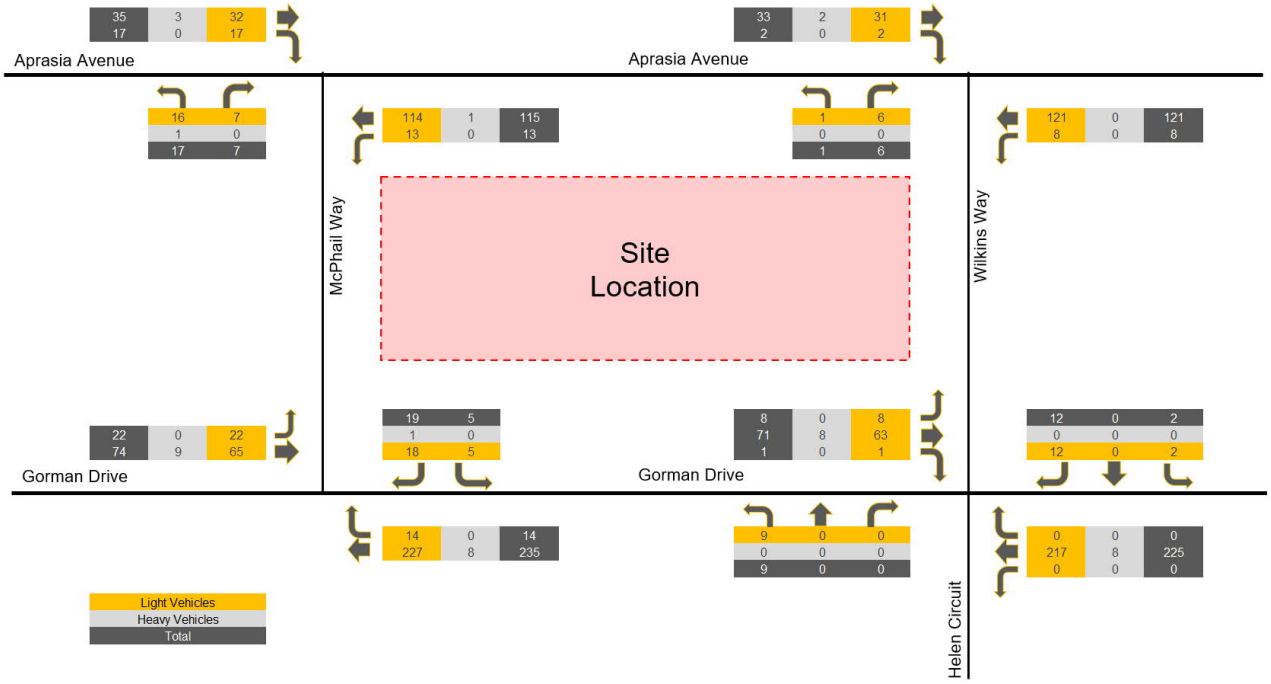


Figure 7: Existing AM Hour Traffic Volumes (School Peak)

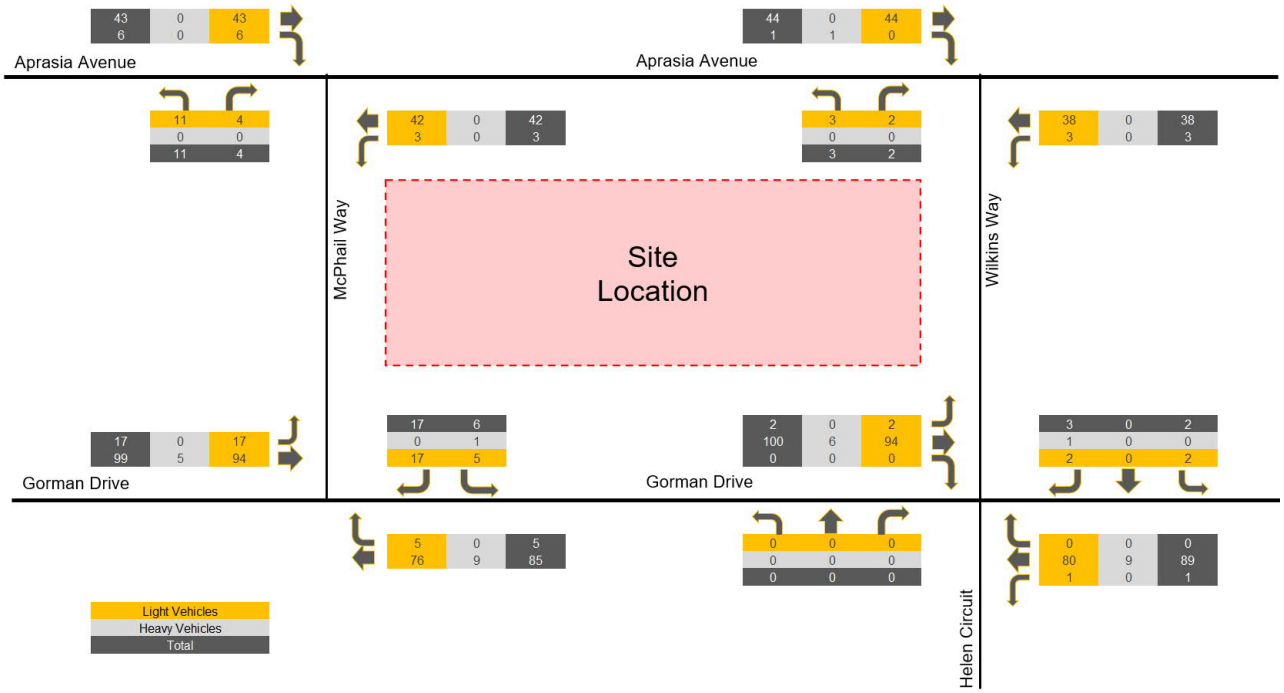


Figure 8: Existing PM Hour Traffic Volumes (School Peak)

4.2.2 Bicycle and Scooter Volumes

The surveyed Bicycle and Scoter volumes during the School AM and PM Peak Hours are provided in **Figure 9.**

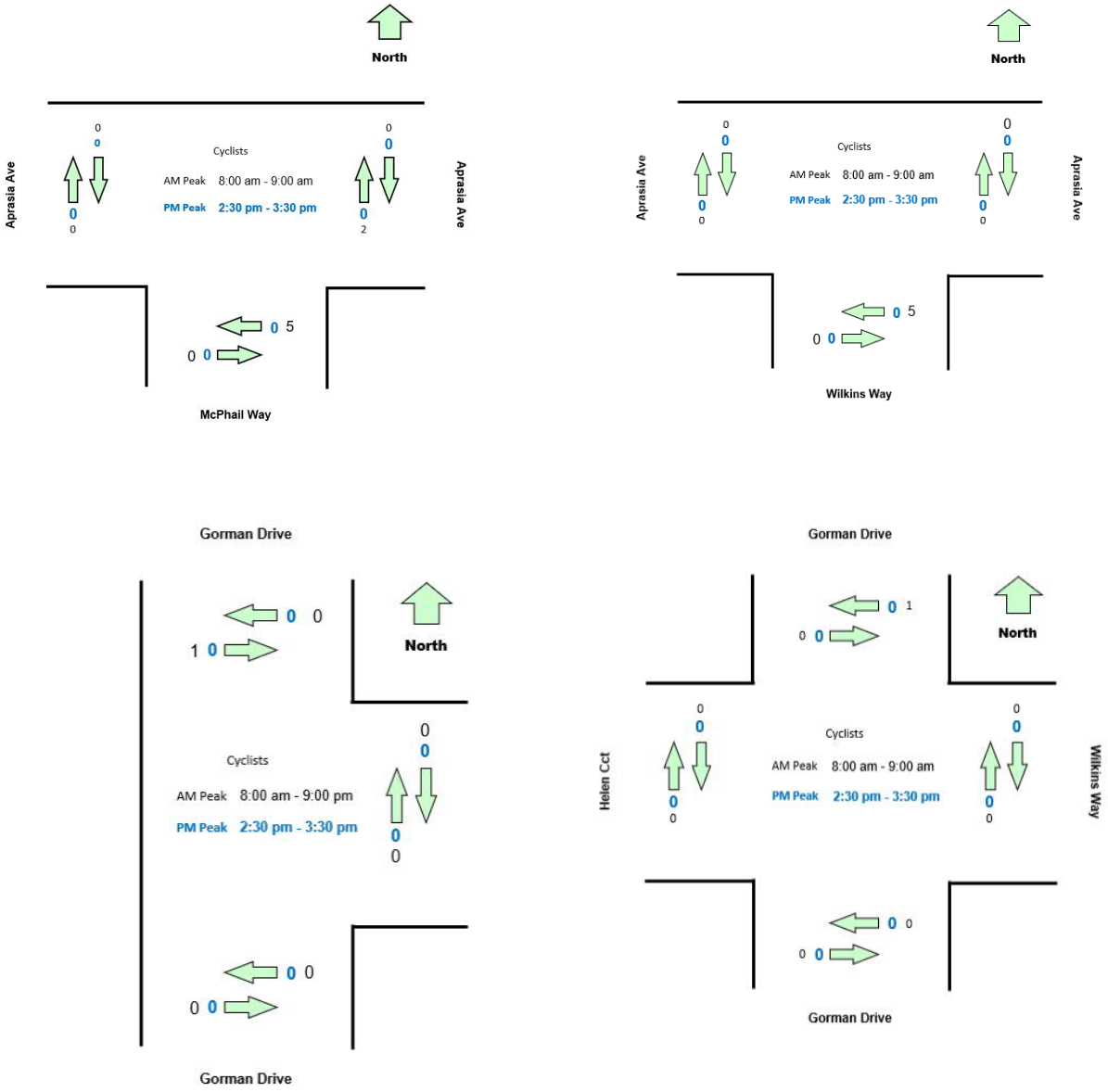


Figure 9: Existing AM and PM Hour Cyclist Volumes (School Peak)

4.2.3 Pedestrian Volumes

The surveyed pedestrian volumes during the School AM and PM Peak Hours are provided in **Figure 10.**

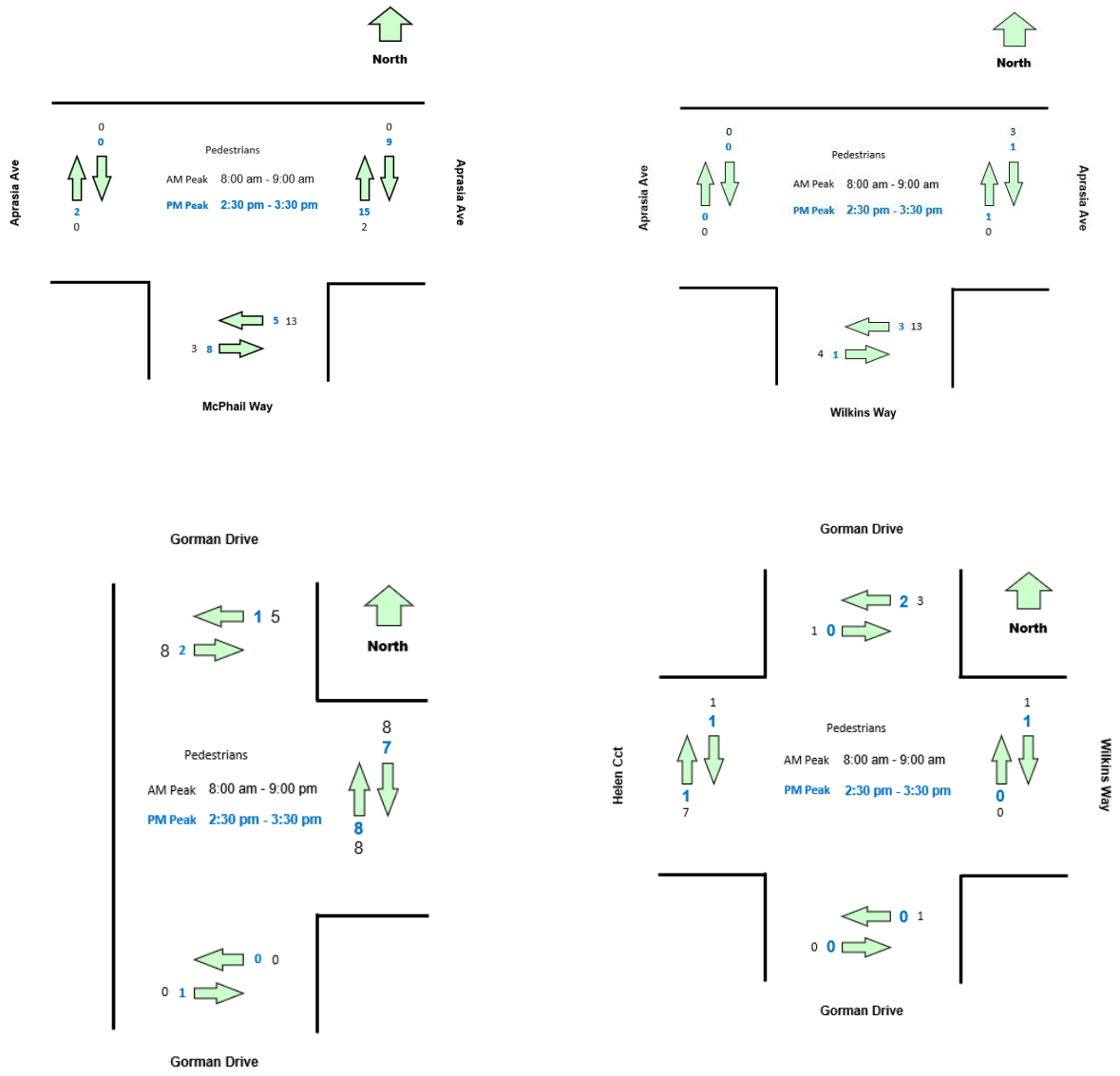


Figure 10: Existing AM and PM Hour Pedestrian Volumes (School Peak)

4.3 Baseline SIDRA Performance Testing

The performance of the existing road network is largely dependent on the operating performance of key intersections, which are critical capacity control points on the road network. SIDRA Intersection 9 modelling software was used to assess the proposed peak hour operating performance of intersections on the surrounding road network at key intersections within proximity of the site.

In accordance with RMS (now Transport for NSW) *Guide to Traffic Generating Developments V2.2* (2002) (RMS Guide), the Levels of Service (LOS) relevant to local roads is used to evaluate the operational performance of intersections.

According to the RMS guidelines, roads operating at LOS D or better are generally considered to have acceptable flow conditions because they are below capacity. Roads operating at LOS E or worse are generally considered to have unacceptable flow conditions because they are at or above capacity.

In this regard, the operating performance of the key intersections has been analysed using the SIDRA Intersection 9 software. SIDRA modelling outputs a range of performance measures, in particular:

- **Level of Service (LOS)** – The LOS is a qualitative measure used to relate the quality of motor vehicle traffic service. LOS is used to analyse roadways and intersections by categorizing traffic flow and assigning quality levels of traffic based on performance measure like vehicle speed, density, congestion.
- **Average Vehicle Delay (AVD)** – The AVD (or average delay per vehicle in seconds) for intersections also provides a measure of the operational performance of an intersection and is used to determine an intersection's Level of Service (see below). For signalised intersections, the AVD reported relates to the average of all vehicle movements through the intersection. For priority (Give Way, Stop & Roundabout controlled) intersections, the AVD reported is that for the movement with the highest AVD.
- **Degree of Saturation (DOS)** – The DOS of an intersection (typically under traffic signal control) or a link measures the demand relative to the total capacity. A DoS value of 100% means that demand and capacity are equal and no further traffic is able to progress through the junction.

The SIDRA recommended criteria for the assessment of intersections as references by the RMS Guide is outlined in **Table 9**.

Table 9: RMS Level of Service Guidelines

Level of Service	Average Delay per Vehicle (sec/veh)	Traffic Signals, Roundabout	Give Way and Stop Signs
A	less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays & spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays. Roundabouts require other control mode	At capacity, requires other control mode
F	More than 70	Unsatisfactory and requires additional capacity.	Unsatisfactory and requires other control mode or major treatment

4.3.1 SIDRA Layout

The modelled SIDRA Intersection network layout is provided in **Figure 11**.

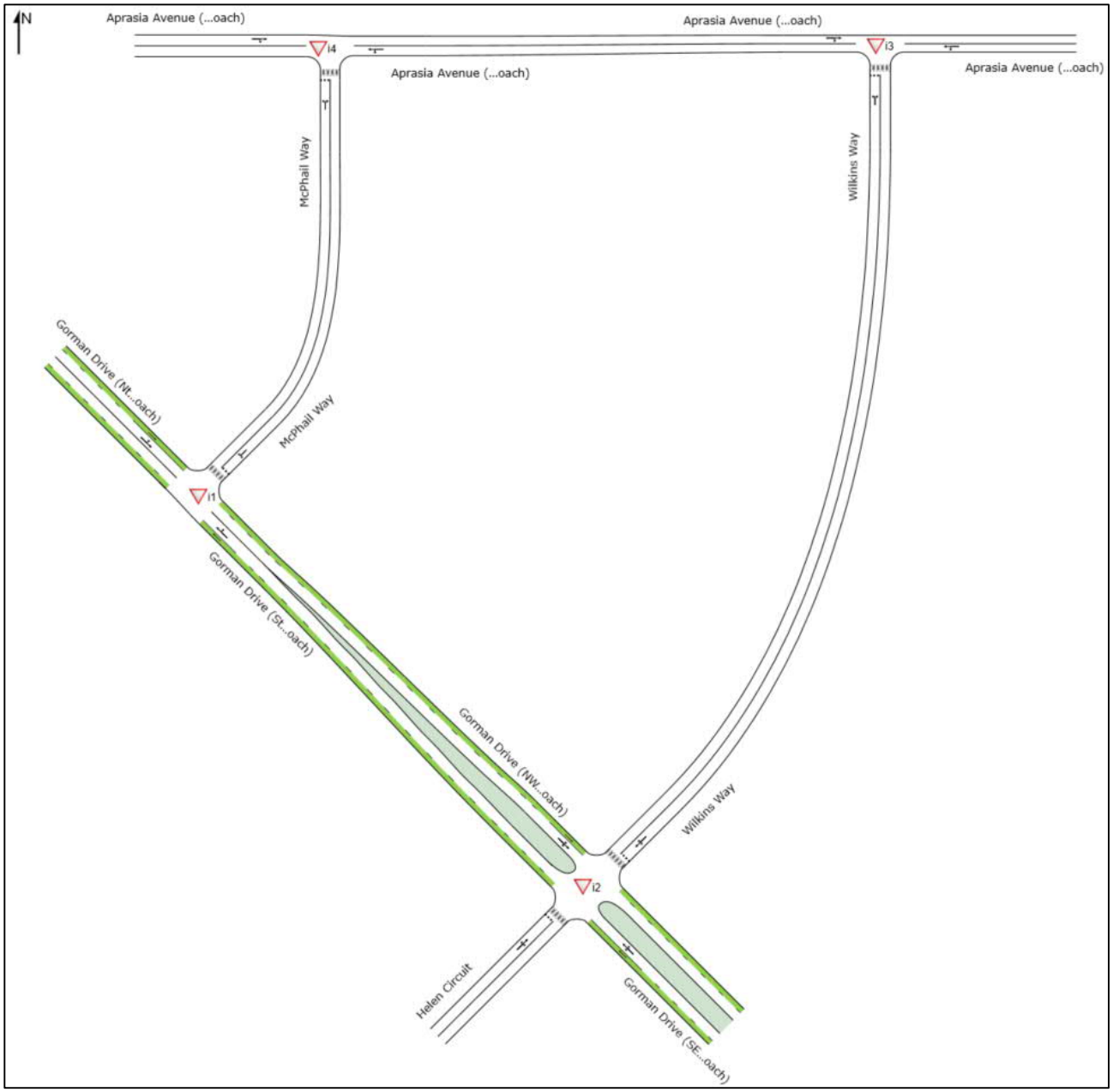


Figure 11: Existing intersection layout as modelled in SIDRA Intersection 9

4.3.2 Existing Intersection Performance

The results of the baseline SIDRA Intersection assessment are provided below in **Table 10.**

Table 10: Existing Baseline Performance for School Peak Periods

Intersection	Control Type	Period	Intersection Delay (s)	95th Queue (m)	Degree of Saturation	Level of Service
Gorman Drive / McPhail Way	Priority	AM	3.8	0.2	0.016	LOS A
		PM	3.6	0.1	0.01	LOS A
Gorman Drive / Wilkins Way	Priority	AM	4.4	0.2	0.022	LOS A
		PM	3.9	0.2	0.019	LOS A
Aprasia Avenue / Wilkins Way	Priority	AM	4.1	0.1	0.006	LOS A
		PM	3.7	0	0.004	LOS A
Aprasia Avenue / McPhail Way	Priority	AM	6	0.3	0.024	LOS A
		PM	4.8	0.1	0.008	LOS A

4.4 Road Safety

A review of the TfNSW *Centre for Road Safety* database has been undertaken to establish the crash history within the immediate vicinity of the Site. The results are based on crashes over a five-year period between 2014 and 2019. Locations of recorded crashes are shown in **Figure 12** and details summarised in **Table 11**.

Figure 12: Crash Locations

Table 11: Crash Typology

Reporting Year	Lighting	RUM Description	Location	Injury
2016	Daylight	81 – Off left/right bend into object	Googong Road	1 minor / other injury
2017	Dawn	21 – Right through	Old Cooma Road / Googong Road intersection	1 moderate injury
	Daylight	16 – Left near	Old Cooma Road / Googong Road intersection	Non-casualty
	Daylight	30 – Rear end	Old Cooma Road / Googong Road intersection	Non-casualty
2018	Daylight	16 – Left near	Beltana Avenue / Baker Crescent intersection	2 moderate injury
2019	Daylight	10 – Cross Traffic	Gorman Drive / Hearne Street intersection	Non-casualty

	Dusk	67 – Struck animal	Googong Road	1 moderate injury
	Dusk	67 – Struck animal	Old Cooma Road	Non-casualty

With reference to the map and table above, crashes which have occurred in the area in the recent time (last five years) have taken place away from the school site. No crashes have been recorded within proximity to the subject site.

The crashes which were recorded are part of the broader road network. The data also shows that of the crashes that were recorded over the past 5 years, there is no discernible pattern relating to a trend of incident type.

However, one location which was the highest represented in the crashes is the intersection of Old Cooma Road / Googong Road. Three (3) crashes were recorded in 2017. It is noted that the intersection has been upgraded in 2019 from a priority controlled intersection to a fully signalised intersection, improving safety to all road users.

In 2019, there were also three (3) crashes recorded. Again, all of the crashes recorded during this time did not result in any serious injuries or fatalities. The locations of these crashes were also different.

It can be concluded from the incidents discussed above, the local road network within the immediate vicinity of the site is operating in a relatively safe manner.

5 Public and Active Transport

5.1 Existing Public Transport

In terms of travel modes, the Googong locality can be described as having a high dependency on private vehicles. A review of the Australian Bureau of Statistics (ABS) 2016 census data reveals that approximately 78% of households had access to two (2) or more vehicles as compared to 48% in New South Wales.

The Googong area has experienced rapid population growth since the 2016 census. With a forecasted population of 16,000 by 2035 as identified in the Googong Masterplan, and considering the actions identified in the *Southern Region Transport Plan* and Council's *Integrated Transport Strategy*, it is expected that additional public transport services will be available in the future to support the continued growth of Googong.

The following sections provide details of existing, available public and active transport facilities.

5.1.1 Rail Services

Railway services that are suitable for the purposes of commuting to and from school are not available.

5.1.2 Bus Services

There is currently one public bus service (837 Queanbeyan to Googong Loop) operating in Googong. The bus service runs between Queanbeyan and Googong 14 times a day.

There are two bus stops located on Gorman drive in proximity to the site, the eastbound bus stop is directly adjacent Hope Christian Church and the westbound bus stop is located on the southern side of Gorman Drive south of the McPhail Way intersection. The bus service is summarised in **Table 12** below.

Additional detail relating to the bus services coverage is assessed as part of the preliminary STP.

Table 12: Public Bus Network

Route	Description	Stop Location	Service Frequency
837	Queanbeyan to Googong Loop	Gorman Street to the west of Rosa Street and outside of The Anglican School (Note: The Bus Stop directly outside to the south of the Site and Googong Drive is currently not in operation.)	14 services per day

5.2 Active Transport

5.2.1 Pedestrian Infrastructure

Established as part of the Googong Development, the pedestrian network provides comprehensive coverage of the township providing excellent walking connectivity from the Googong area to the school. As identified in Council's Integrated Transport Plan, Googong has an extensive network of pedestrian footpaths.

Site observations confirm that the area surrounding the Site has an extensive and connected pedestrian network throughout the Googong subdivision. Footpaths are generally 1.5 metres wide on local roads and 2.5 metres wide on Collector Roads.

Footpaths of good condition immediately border the four frontages of the Site along Gorman Drive, Aprasia Avenue, McPhail Way and Wilkins Way. At the majority of intersections, the footpaths transition to kerb ramps to facilitate access across the roadway. McPhail Way contains three crossing points with two at the ends of the intersections and one in the middle which provides access to the Googong North Village Centre.

These pedestrian infrastructure amenities complement the sense of neighbourhood, where footpaths provide walkways and connectivity to the recently constructed residential developments, Googong North Village Centre and recreational areas such as Rockley Oval, Duncan Fields and Barkley Dog Park.

The Googong DCP provides a figure which shows the extents of pedestrian path and key path provision for the Neighbourhood 1A and 1B areas. This is shown below in **Figure 13.**

Figure 13: Pedestrian and Key Path Locations

5.2.2 Bicycle Infrastructure

Existing cycling infrastructure includes the on-road dedicated bicycle lane on either side of Gorman Drive. These routes travel along the length of Gorman Drive from Wellsvale Drive in the west to Bobby Street to the east. No other formal cycling infrastructure is provided.

However, as noted in Section 5.2.1, the footpath networks serving the residential developments in the Googong neighbourhood are well connected and developed, providing safe and convenient access opportunities.

This infrastructure is considered to be of sufficient quality and standard to cater for the needs of children who ride a bicycle or scooter. It is noted that children under the age of 16 can ride on the footpath which has recently been changed from up to the age of 12[2].

It is acknowledged that the cycling catchment is limited to the Googong township given the geographical constraints, including elevation changes and gradients that limit the feasibility for the cycling catchment primarily within the Googong township. This is discussed in further detail in Section 6.2.

Figure 14 below is extracted from the Googong DCP documentation and captures the dedicated cycling loop (blue), with adjoining shared paths (yellow).

[2] https://education.nsw.gov.au/teaching-and-learning/curriculum/learning-across-the-curriculum/road-safety-education/news/children-under-16-can-now-ride-on-the-footpath#:~:text=Did%20you%20know%20the%20rules,a%20bike%20on%20the%20footpath%3F&text=An%20adult%20rider%20who%20is,are%20signs%20specifically%20prohibiting%20cycling.

Figure 14: Cycling Network

6 Travel Characteristics & Future Demand

6.1 Student Catchment

In consideration of the School being constructed as a new development, SINSW have provided a database of indicative student locations based on the existing catchments of other primary schools within the region. For the purposes of reporting, information relating to student location and identity have been anonymised for analysis.

Figure 15 below demonstrates the density of student locations around the Googong and Queanbeyan area with reference to broader catchment areas for other schools in the locale, specifically centred around the Queanbeyan area. Accordingly, with the implementation of a new school in Googong, students are gradually anticipated to shift towards options in closer proximity to their place of residency.

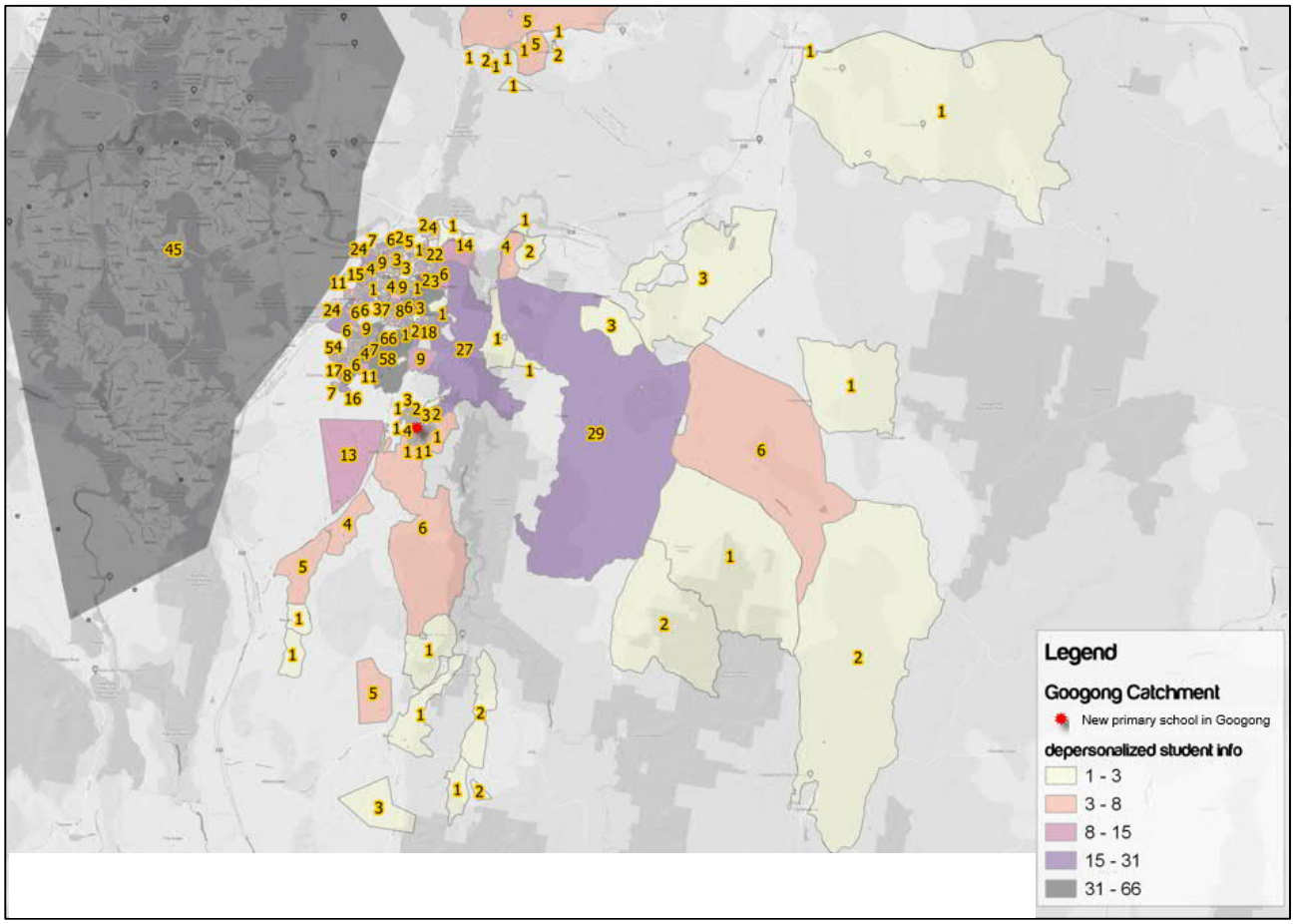


Figure 15: Queanbeyan Student Catchment (K-6)

The catchment figure demonstrates moderate student density within the Googong township, with future land releases in Googong South expecting to increase the catchment for the Primary School. Further to the south of Googong – in the suburbs of Royalla and Burra – currently there are students indicated to be commuting to Queanbeyan. It should be considered that these areas also form ideal catchment areas for the new primary school in Googong, as the school provides closer, more convenient access than Queanbeyan.

Alternatively, a large area of the student catchment exists to the east of Googong in the Carwoola - Hoskinstown regions. While the area demonstrates a significant density of students, geographical

constraints and a lack of direct access limit potential student attendance to the new primary school in Googong from these areas, with schools situated in Queanbeyan providing better alternatives.

In addition to the above, future strategic Council strategies refers to several land release areas in the locale. As these areas come online, it is anticipated that the new primary school in Googong catchment area will include suburban residential developments in closer proximity to Googong from the north, west, as well as the south.

6.2 Active Travel Catchment

6.2.1 Pedestrian Catchment

SINSW have characterised the walking catchment of a school within 5, 10 and 15-minute walking distance increments of the school, representing desirability for the catchment area. **Figure 16** below demonstrates the walking distance isochrones relative to the Site.

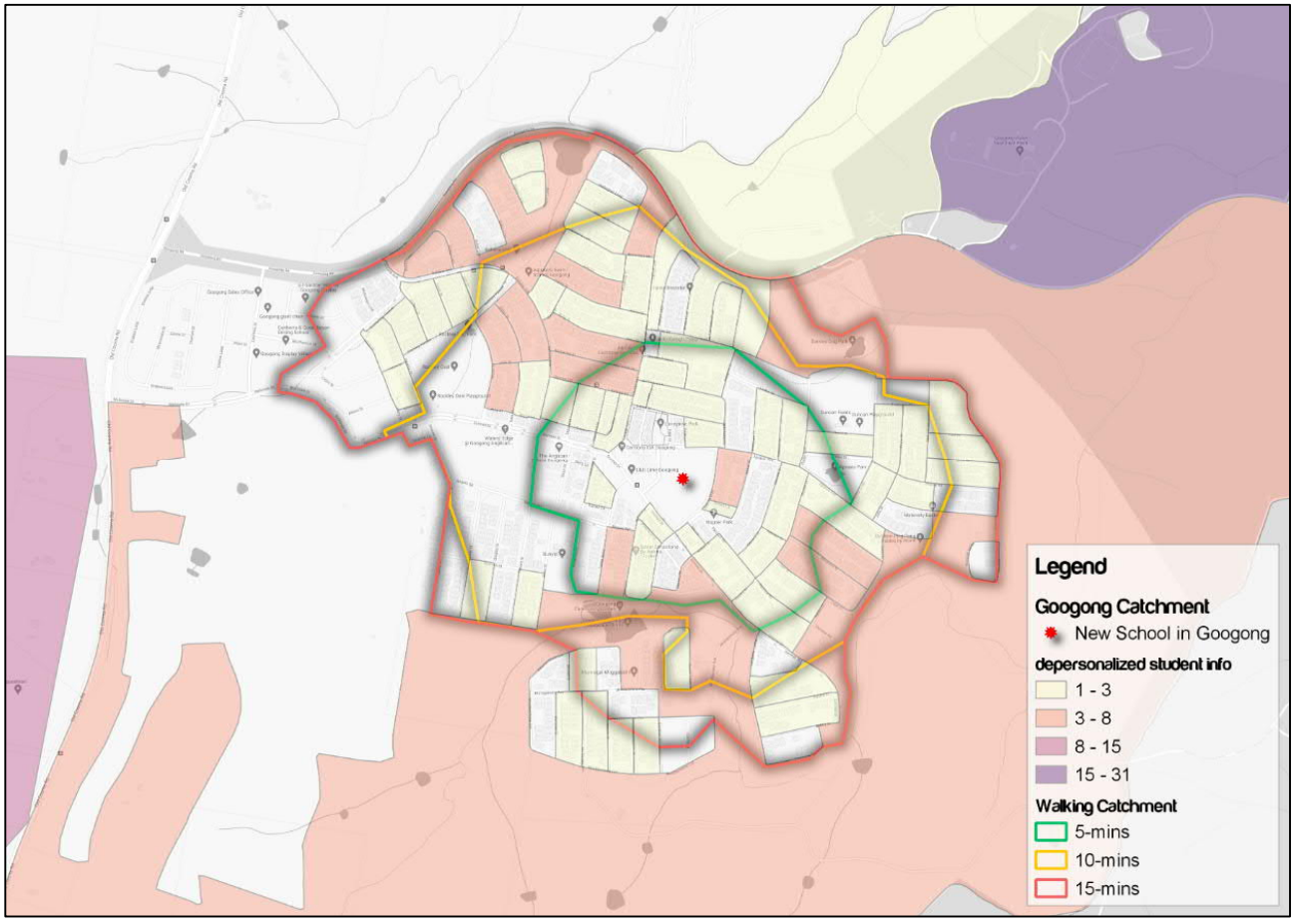


Figure 16: Pedestrian Catchment Zones

The walking catchment for Googong generally demonstrates adequate coverage of a large proportion of the township, indicating beneficial proximity to the surrounding residential areas.

6.2.2 Cycling Catchment

In addition to the pedestrian catchment guidelines described by SINSW, the catchment areas for cycling are defined in a similar format of 5-minute increments.

However, in the contexts of the Googong area, it has been considered that a variety of geographical constraints demonstrate notable impacts to the cycling catchment area, including elevation changes and gradients that limit feasibility for the cycling catchment to build up areas to the south of Googong Road, and east of Old Cooma Road. Whilst the intersection of Old Cooma Road / Googong Road has been signalised, the crossing of Old Cooma Road is considered a natural barrier due to safety considerations. Accordingly, the cycling catchment has been limited to a 5-minute travel time area in cognizance of the abovementioned constraints.

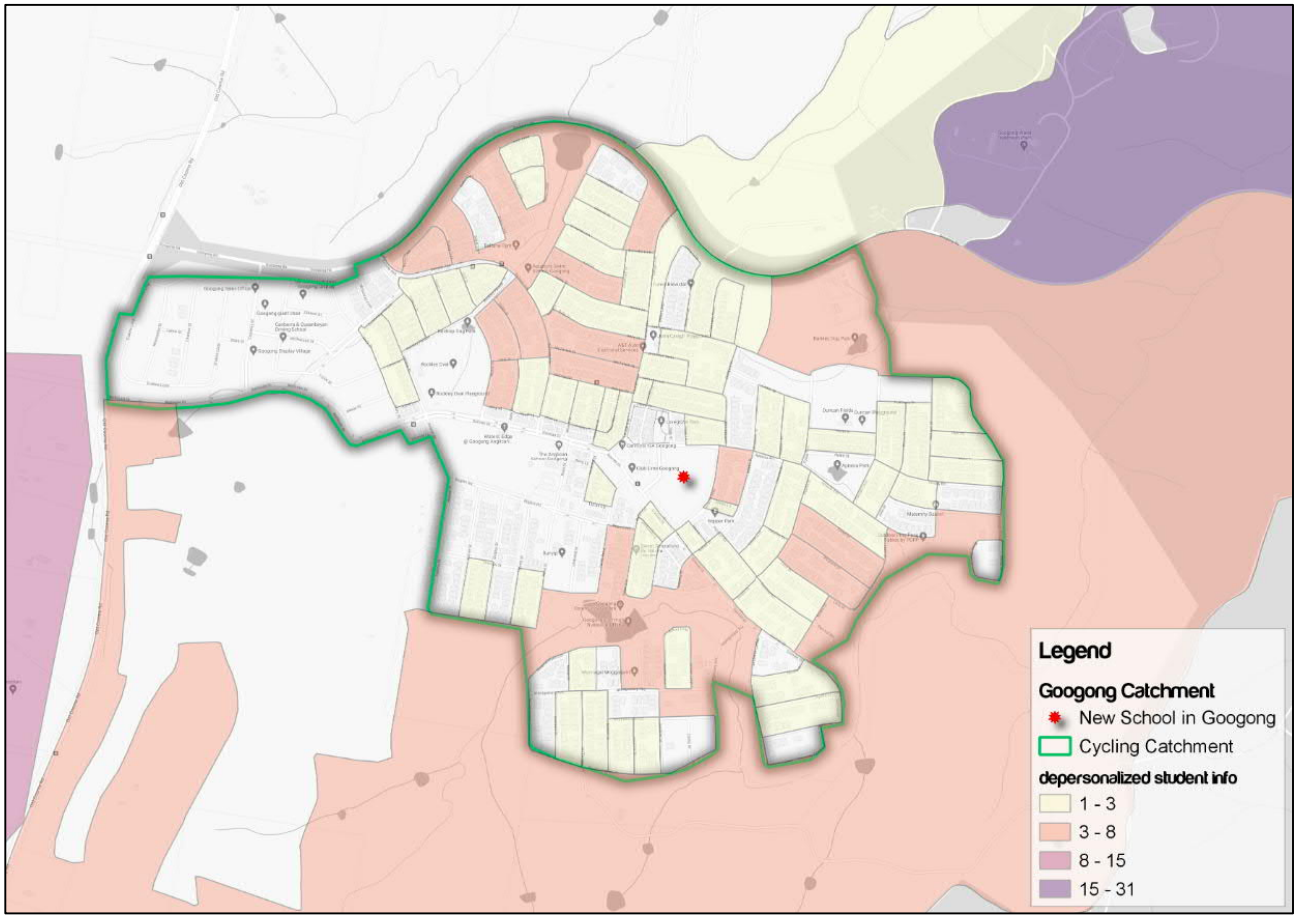


Figure 17: Cycling Catchment Zones

The cycling catchment for Googong demonstrated above captures almost the entirety of the Googong north township area, demonstrating complete catchment for the locale.

6.3 Public Transport Catchment

In line with guidelines outlines by the NSW Government and Transport for NSW, the School Student Transport Scheme (SSTS) provides catchment guidelines to provide eligibility for school public transport.

For grades 3 – 6, the following eligibility criteria applies –

- They are a resident of NSW, or an overseas student eligible for free government education.
- The straight line distance from their home address to school is more than 1.6 km.
- The walking distance from home to school is 2.3 km or further.

As defined above, **Figure 18** below demonstrates the catchment areas with reference to the new primary school in Googong development.

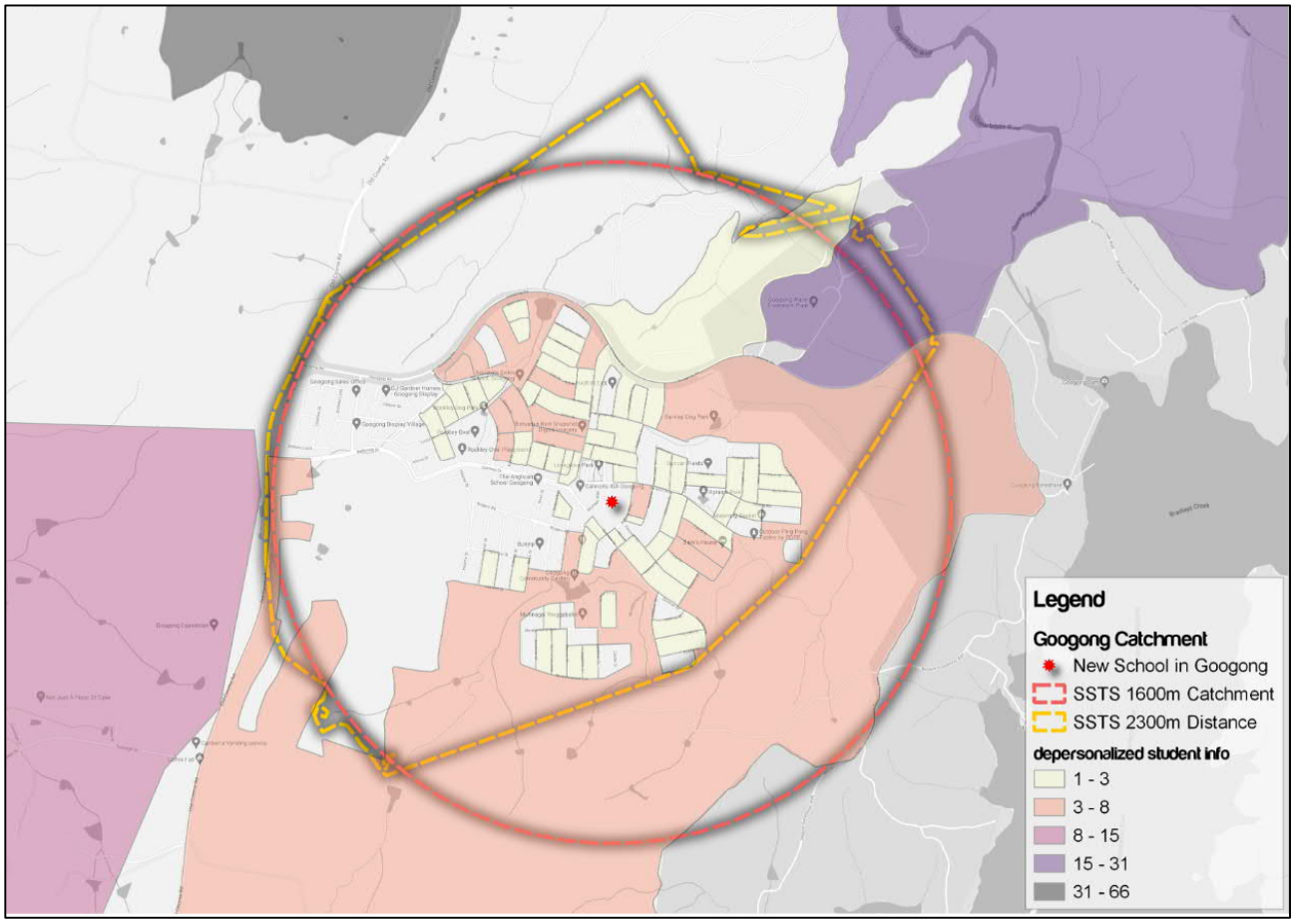


Figure 18: SSTS Exclusion Zones

The boundaries above demonstrate that both the 1.6km radius and 2.3km distance capture the entirety of Googong North within the exclusion zone, indicating ineligibility for free bus travel for children between Years 3 to 6.

6.4 Travel Mode Scenarios

In considering the prospective methods of travel to school, Ason Group workshopped three scenarios with the project team. Each of the scenarios considered were based on the existing known profiles and patterns of the New Estella Primary School, Wagga Wagg, and Barramurra Public School, Oran Park to establish the likely student demand for each of the travel modes. Traffic counts were undertaken at the New Estella Primary School most recently on 19 March 2021.

The scenarios are outlined as follows:

- **Scenario 1** - Walking / Cycling maximised - based on likely catchment being within Googong Village area
- **Scenario 2** - 60% car mode share – based on percentage of residents working in ACT and assume car use as part of a linked trip
- **Scenario 3** - Worst Case – Adapted mode share developed with reference to the existing Journey to Work data, captured in Census 2016

Table 13: School Travel Planning Considerations – Scenario Analysis

Scenarios (excluding OSHC)	Walk	Cycle	Bus	Vehicle
Scenario 1	50% - 350 students	20% - 140 students	5% - 35 students	25% - 175 students
Scenario 2	25% - 175 students	5% - 35 students	10% - 70 students	60% - 420 students
Scenario 3	10% - 70 students	5% - 35 students	5% - 35 students	80% - 560 students

6.4.1 Student Travel Mode

With consideration for the Action Plan and the communication strategy outlined in the Preliminary School Travel Plan, the following target mode shares for student travel have been identified in **Table 14**.

It is expected that further travel mode surveys would be undertaken once the School is operational to establish baseline figures from which progress can be measured.

Table 14: Student Mode Share Targets

Travel Mode	Student
Car (as driver)	-
Car (as passenger)	60%

Bus	10%
Walking	25%
Cycling	5%

6.4.2 Staff Travel Modes

Further to the above, the following target mode shares for staff travel have been identified in **Table 15**.

Table 15: Staff Mode Share Targets

Travel Mode	Staff
Car (as driver)	65%
Car (as passenger)	20%
Bus	5%
Walking	5%
Cycling	5%

6.5 Infrastructure and Operation Improvements

To meet the travel mode targets nominated above, the Preliminary School Travel Plan (STP) is intended to propose a series of operational arrangements with the intention to drive modal share towards active and public modal measures and achieve mode share targets. A summary of the operational improvements are suggested below:

- Education initiatives such as road awareness / safety, independent travel
- Advocate TfNSW to improve public transport services in response to increased development
- Promote use of public transport for students with a rewards scheme
- Liaise and discuss with TfNSW the feasibility of providing bus services for students outside of the 2.3km driving distance from the School

– Potentially introduce and enforce of parking restrictions around the school. This is to be discussed and implemented in collaboration with Council's Road Safety Officer

In addition to the above, the Preliminary STP makes reference to a variety of key infrastructure changes in the locale relating to the provision of bus services, as well as the inclusion of key pedestrian crossings to improve Site connectivity and amenity.

Reference should be made to the outcomes of the assessments within the Preliminary STP document and are summarised below.

6.5.1 Bus Service Future Opportunities

A key opportunity to maximise student catchment effectiveness relates to the provision of bus services for the school. The Preliminary STP document has identifies and details the following strategies:

– Walking / Cycling maximised - based on likely catchment being within Googong Village area To develop a shared school bus arrangement with the neighbouring Anglican School, Googong. Currently, the existing school bus network for the school captures key strategic catchment locations and provides opportunity for shared service with Googong Primary School.
– The strategy benefits from providing additional primary education options to same catchment area and is unique through the opportunities shared between public and private education.
– In addition to the above, supplementary service routes have been suggested in the Preliminary STP as part of ongoing consultation with the provision of a north-eastern loop connection providing connectivity through the Queanbeyan – Carwoola – Hoskinstown areas and linking them with both the new primary school in Googong and The Anglican School.
– While these areas can be considered more remote to Googong, the routes anticipate provide full catchment coverage for the school.

6.5.2 Key Pedestrian Crossing Locations

With reference to the architectural plans, a total of 6 pedestrian crossing locations have been identified to service the school. The STP has undertaken a warrant assessment to establish the feasibility of the suggested locations with respect to existing and future conditions.

Of the assessed locations, key locations benefiting from the implementation of zebra crossings exist on Gorman Drive to the Schools' south, and Aprasia Avenue to North.

These two connections demonstrate the highest potential for the implementation of crossing infrastructure and in response would form key connection locations between the School and the wider footpath network.

7 The Proposal

7.1 The School

7.1.1 Features

The proposed development will support high-quality educational outcomes to meet the needs of students within the local community and deliver innovative learning and teaching spaces as follows:

- Capacity to provide for 700 students
- 60 car parking spaces
- Out of School Hours Care (OSHC) Program (240 Capacity)
- 46 staff members on-site at any given time.
- Special Education Learning Unit (SELU)
- Special Programs Learning Unit (SPLU)
- Hall including OSHC
- Library Learning Unit

7.1.2 School Operations

The School is anticipated to be accessible from 6:30 am – 6:30 pm on weekdays with restricted access outside of these hours. The bell times are expected to be as follows:

- Morning bell time: 9:00 am
- Afternoon bell time: 3:00 pm

7.1.3 OSHC Operations

The School also provides Out of School Hours Care (OSHC) which are expected to be as follows:

- Before School: 7:00 am - 9:00 am
- After School: 3:00 pm – 6:00 pm

7.2 Parking Assessment

The Googong DCP Part 10 details that parking is to be provided in accordance with Part 2 of the Queanbeyan City Council DCP 2012. This subsequently details that Educational Establishments (including primary schools) are to provide parking in accordance with *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* (SEPP 2017). However, no parking rates are provided within this document.

Furthermore, a review of recently completed primary schools developed using the Modern Methods of Construction and correlating parking provisions are detailed in **Table 16.**

Table 16: Recently completed primary school car parking provisions and rates

School	Staff Number	Car Park Number	Rate per staff member
Galungara Public School	70	80	1.14
Barramurra Public School	44	68	1.55
Estella Public School	24	22	0.92
Denham Court Public School	44	100	2.27

A total of 60 on-site car parking spaces are proposed for the 46 staff members, which equates to a rate of 1.25 spaces per staff member. This level of on-site car parking is within the range identified within **Table 16** and is expected to fully meet the staff requirements, in line with SINSW Guidelines. As such, the on-site car parking provision is considered acceptable.

7.3 Vehicle Access

7.3.1 Staff Car Park

Staff car parking will be provided in the general car park which is accessed from Aprasia Avenue to the north via a two-way driveway. Parking within this car park will be restricted to staff and students with accessible set down requirements only (to the south-east corner of the car park). Service vehicles will access the servicing area via the staff carpark access.

The location of the Car Park and access is shown in **Figure 19.**

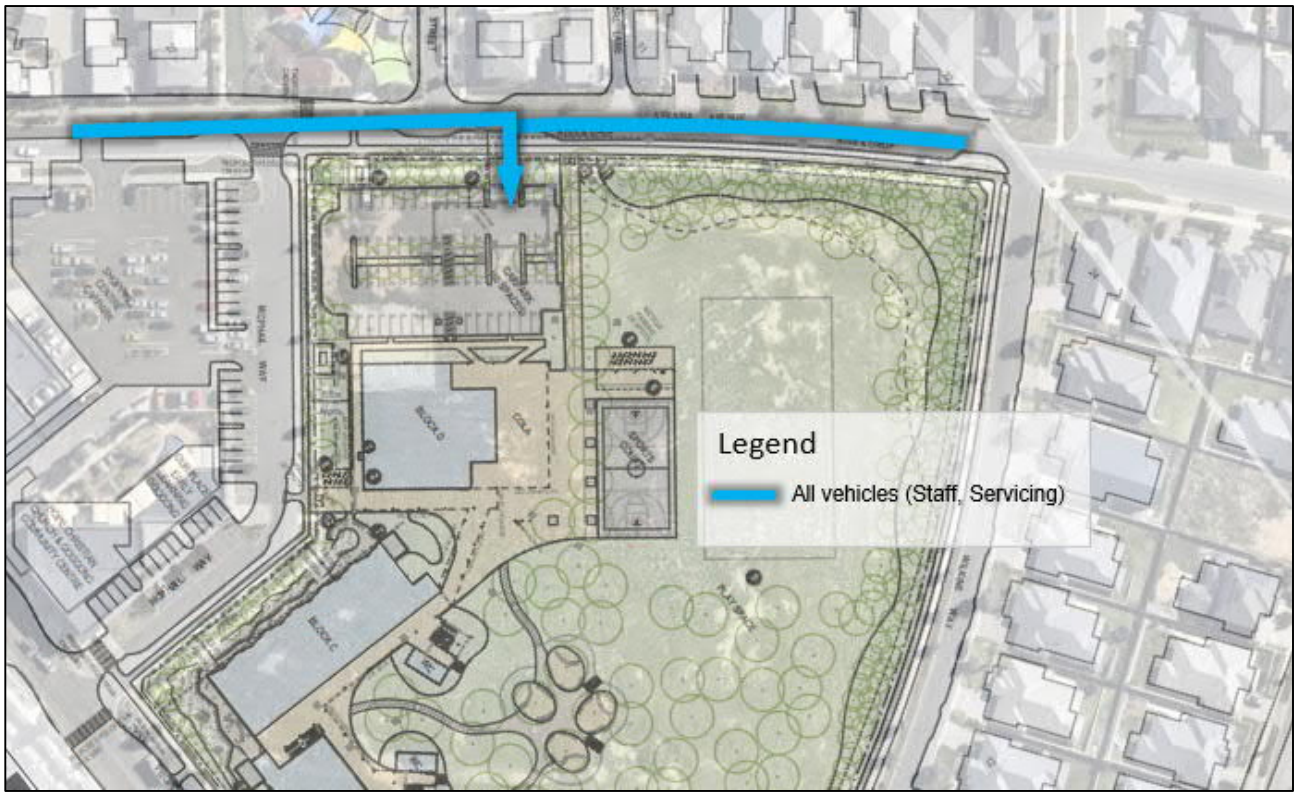


Figure 19: Staff Car Park Location

7.3.2 Kiss & Ride

Two Drop-Off / Pick-Up (DOPU) otherwise known as Kiss & Ride facility separate to the car park will be provided along Aprasia Avenue westbound and Gorman Drive eastbound. See **Figure 20**.

The Kiss & Ride facility along Aprasia Avenue is the principal facility.

The Kiss & Ride facility along Gorman Drive is the secondary facility for use in association with the Special Education Learning Unit.

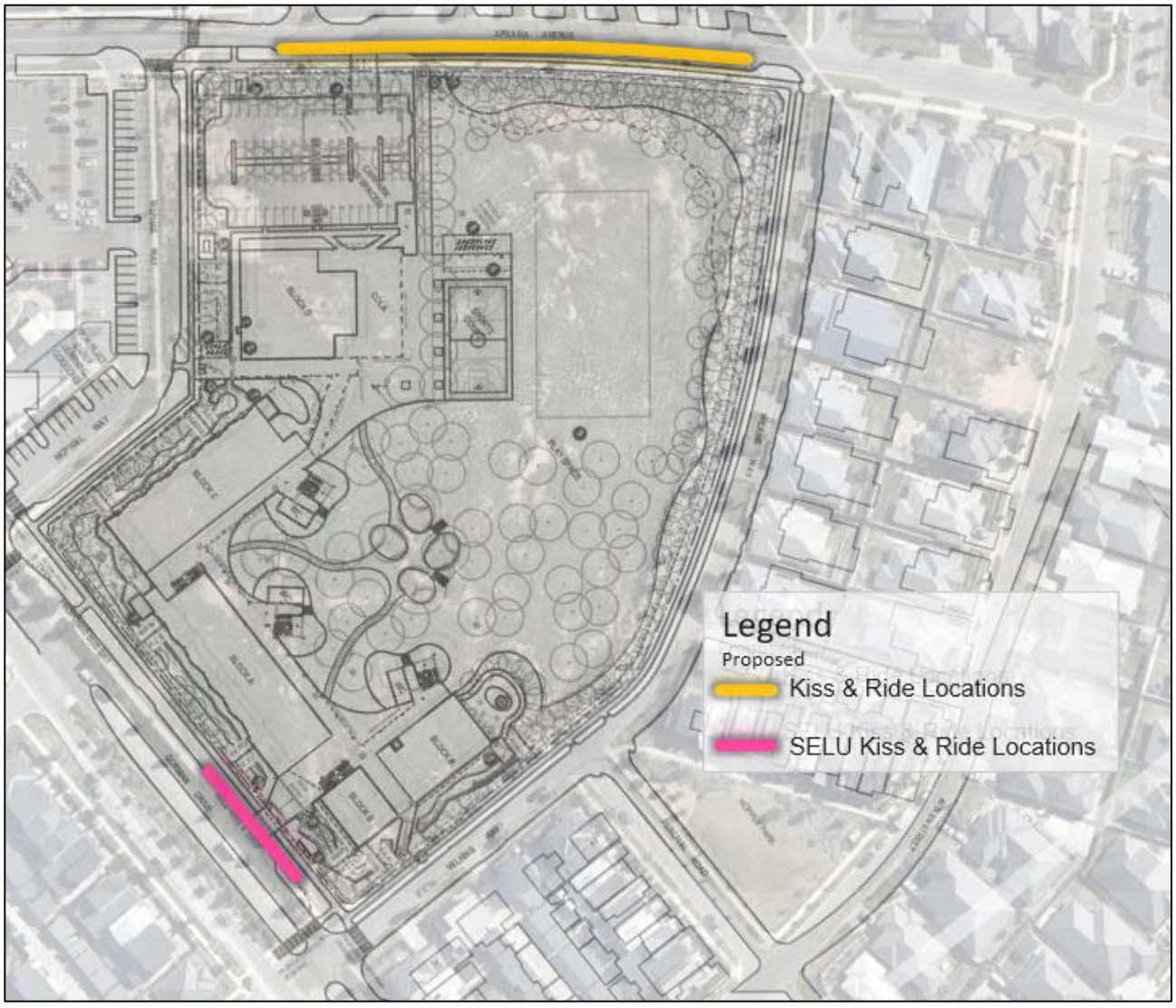


Figure 20: Kiss & Ride Location

7.3.3 Bus Stops

The bus stops / bays servicing the School are located to the Sites' southern frontage along Gorman Drive. The south-eastern end of the Gorman Street frontage to be configured as accessible parking for SELU drop off. The bus bay can accommodate up to 2 buses at any given time.

For special events such as excursions, these bus stops will also be utilised. Students would be escorted to and from the bus stops and traffic will be managed by a school crossing supervisor when students are using the crossings.

7.3.4 Service Vehicles

Waste and other service vehicle access will be provided via (and through) the staff car park, which has been specifically designed for larger vehicles. The travel path and swept path of service vehicles to, through and from the staff car park and service area is provided in **Appendix B**.

7.4 Bicycle Parking

7.4.1 Council

For bicycle parking, reference to the Queanbeyan DCP recommends the *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* (SEPP 2017). However, as with Parking requirements, the SEPP does not specify rates for bicycle parking.

7.4.2 Austroads

Reference is made to the Austroads *Guide to Traffic Management Part 11: Parking Management Techniques* (2020) to establish bicycle parking requirements. In this regard, Clause 2.3, Table 2 6 provides the following rate for School Land Uses:

- 1 per 5 pupils over Year 4

According to the depersonalised data for the schools provided by Department of Education, student numbers over year 4 in 2023 is 7. Application of the above rate would result in a requirement of 7 bicycle spaces.

7.4.3 EFSG Guide

The EFSG provides bicycle parking requirements based on school core size. The new primary school in Googong in categorised as a CORE 35 school, which has a requirement for at least 60 bicycle parking spaces.

7.4.4 Bicycle Parking Summary

Based on the bicycle parking requirements above and to actively encourage cycling as a primary mode of transport for students and staff travelling to and from the school, it is considered that the EFSG would

provide the most appropriate bicycle parking requirements. In this regard, in accordance with the EFSG, the development is required to provide a minimum of 60 bicycle parking spaces.

7.5 Servicing

As discussed, servicing areas (deliveries, waste collection) are located within the staff car park. All major deliveries and waste collection will occur at the servicing area within the staff carpark. Delivery times would be strictly managed, whereby regular services are subject to strict timelines that to ensure the minimum movements possible and these occur outside of the school peak periods.

8 Transport Assessment

8.1 Trip Generation

Ason Group has undertaken a detailed review of the *Roads and Maritime Services (now TfNSW) Trip Generation Surveys, Schools* (Schools Trip Generation Report) prepared by GTA Consultants on behalf of TfNSW in 2014.

The Schools Trip Generation Report determined contemporary trip generation rates for the land use "School" within Metropolitan Sydney and Regional NSW. Rates were determined on the back of surveys conducted in March 2014.

The review was undertaken to identify schools with similar characteristics to the proposed School to establish. an appropriate trip generation profile. In this regard, we have considered the following key characteristics:

- Bus services;
- Immediately adjacent residential area of such as to utilise all of the school's capacity;
- Number of pedestrian access points;
- Number of vehicle access points;
- School type / status (i.e./ primary or secondary); and
- On-site car parking provision

On this basis, **Table 17,** provides a summary of the surveyed schools which provide the comparative data for the assessment – noting that the trip rates also include staff and visitor trip generation.

Table 17: RMS School Survey Comparative Sites

Criterion	Grays Point Public School	Kurnell Public School	Woronora River Public School
Region	Sydney	Sydney	Sydney
Suburb	Grays Point	Kurnell	Woronora
No. of students	383	215	115
Staff	20	15	10
Staff / Student	0.05	0.07	0.09
On-site Parking Spaces	21	14	10
OSHC	Yes	Yes	Yes
Bus Stop / Zone	Yes	Yes	Yes
AM Vehicle Trips / Student	0.43	0.60	0.74
PM Vehicle Trips / Student	0.14	0.32	0.86

With reference to Table 17, the average rates for the AM and PM Peak hours of the three schools are:

- AM Peak: 0.53 Trips / Student
- PM Peak: 0.31 Trips / Student

8.1.1 OSHC

It is understood the school has provision of an Out of School Hours Care (OSHC) Facility. The maximum capacity of this OSHC Facility is 240 students.

Adopting a conservative approach it has been assumed that the OSHC facility operates at 80% capacity, this implies 192 students participate in the OSHC Program. Noting the start and finish hours of the OSHC Program, these 192 students would be arriving outside of the school peak hour periods.

Following on from this, the maximum number of students arriving and departing during the school peak hours would be 508 students.

Application of the rates above to the maximum number of students travelling to / from school during the peak (508) results in the following trip estimation:

- AM Peak: 269 Trips
- PM Peak: 157 Trips

The survey data also revealed the following inbound and outbound traffic distribution splits:

AM Peak

- Inbound: 52%
- Outbound: 48%

PM Peak

- Inbound: 46%
- Outbound: 54%

8.2 Trip Assignment

8.2.1 Student Trip Distribution

The traffic directional distribution and assignment of traffic generated by the proposed development would be influenced by the following factors:

- Configuration of access points to the site
- Geographical location of households near the site and the proposed school catchment areas in the locality (see **Figure 21**)

- Existing operation of intersections providing access between the local road network and the school site
- Probable distribution of staff and student residences with respect to the Site

Figure 21 depicts the predicted trip distributions for the school catchment for the proposed new school in Googong. It is noted that students within a 5km radius of Queanbeyan Public School and Queanbeyan East Public School have been excluded from the catchment, as it is envisaged that they would not travel to Googong to attend the new school.

As such, majority of the students attending the new primary school in Googong are expected to come from either the south, east or northeast as shown, with the percentages representative of the expected number of students arriving from each direction.

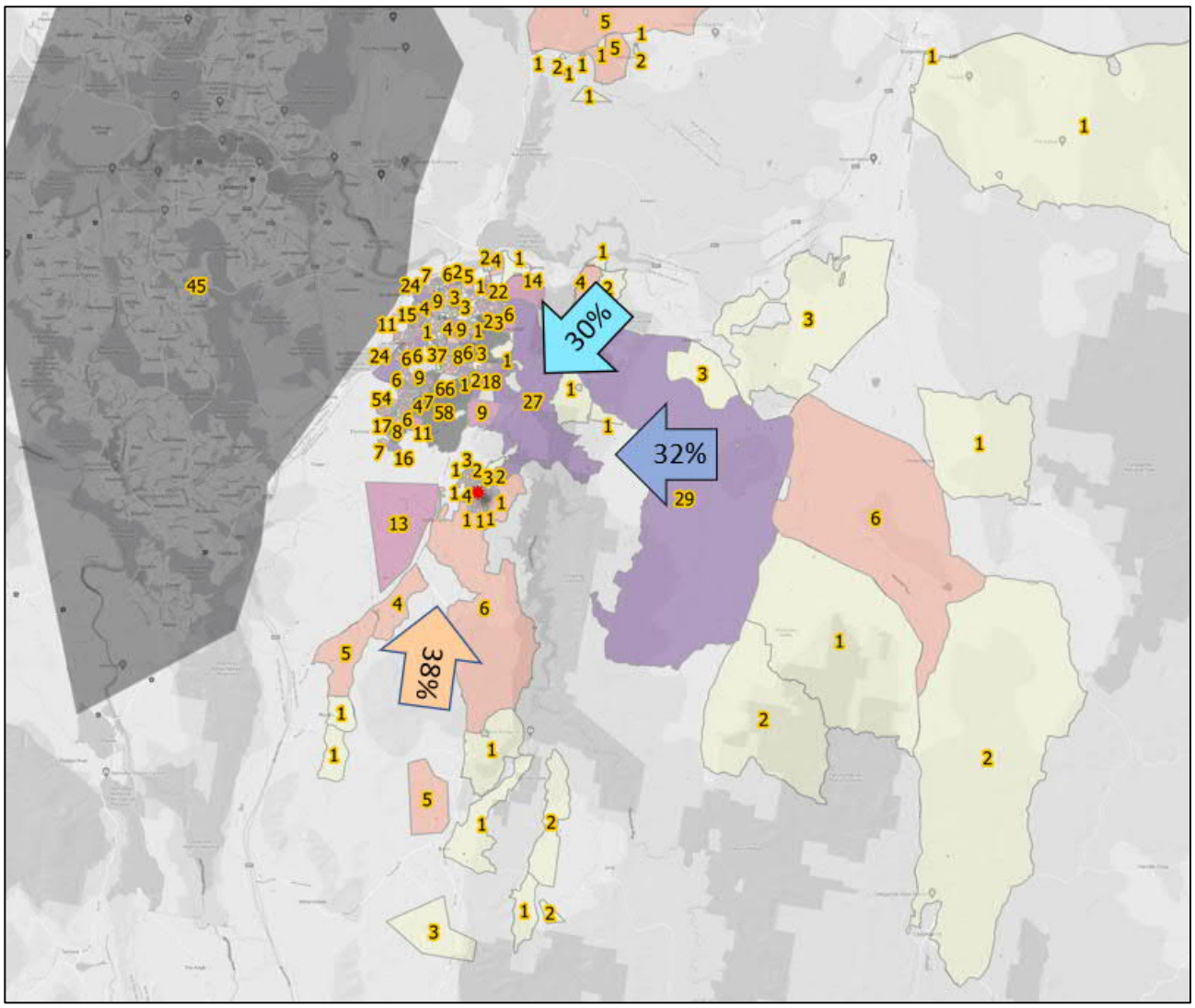


Figure 21: Student Catchment Distribution

8.2.2 Staff Trip Distribution

Staff to the school are anticipated to travel to / from the broader sub-region, with only a minority of trips generated within Googong.

In this regard, staff trips would take place during the morning peak hour with the majority being arrival trips and, in the evening, staff trips would take place after 3:30 pm once school is over and would predominately be departure trips.

It is noted that the staff vehicle trips are captured as part of the surveys conducted for the Schools Traffic Generation Report.

8.2.3 Trip Distribution

The generated traffic distribution to / from the Site is illustrated in **Figure 22** and **Figure 23.**

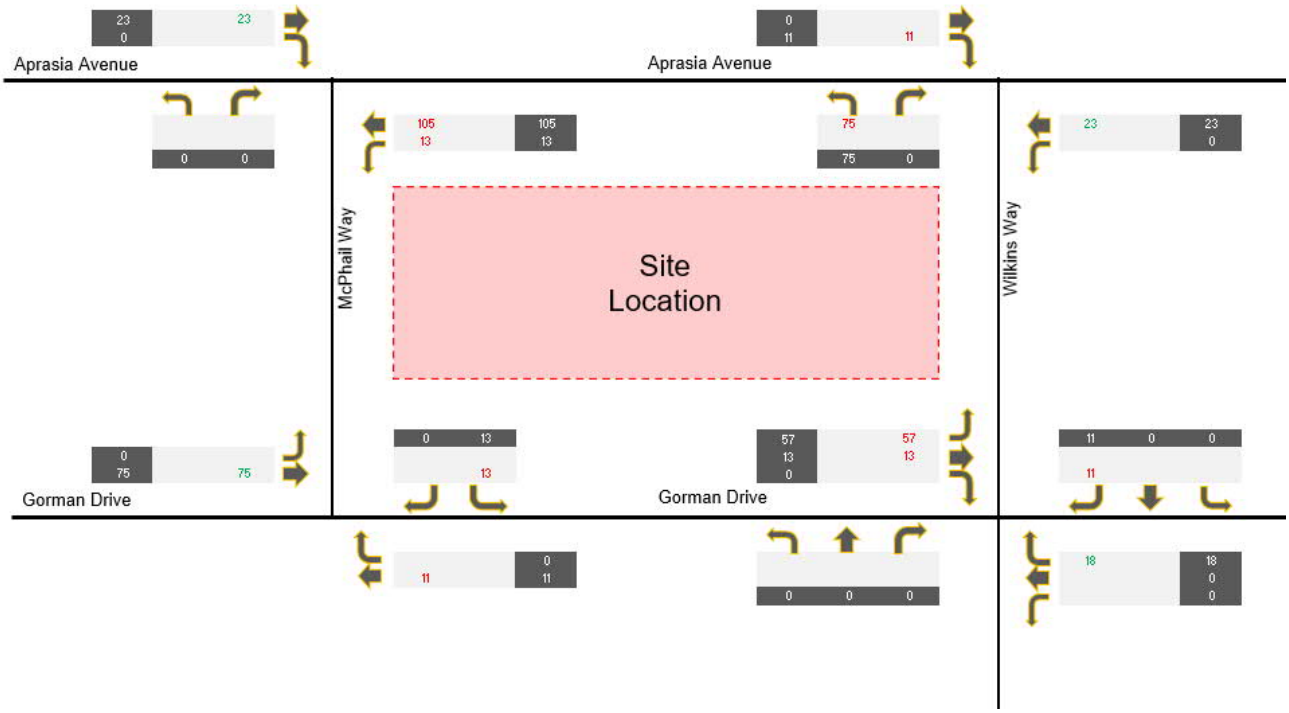


Figure 22: AM Peak Development Traffic Trip Assignment

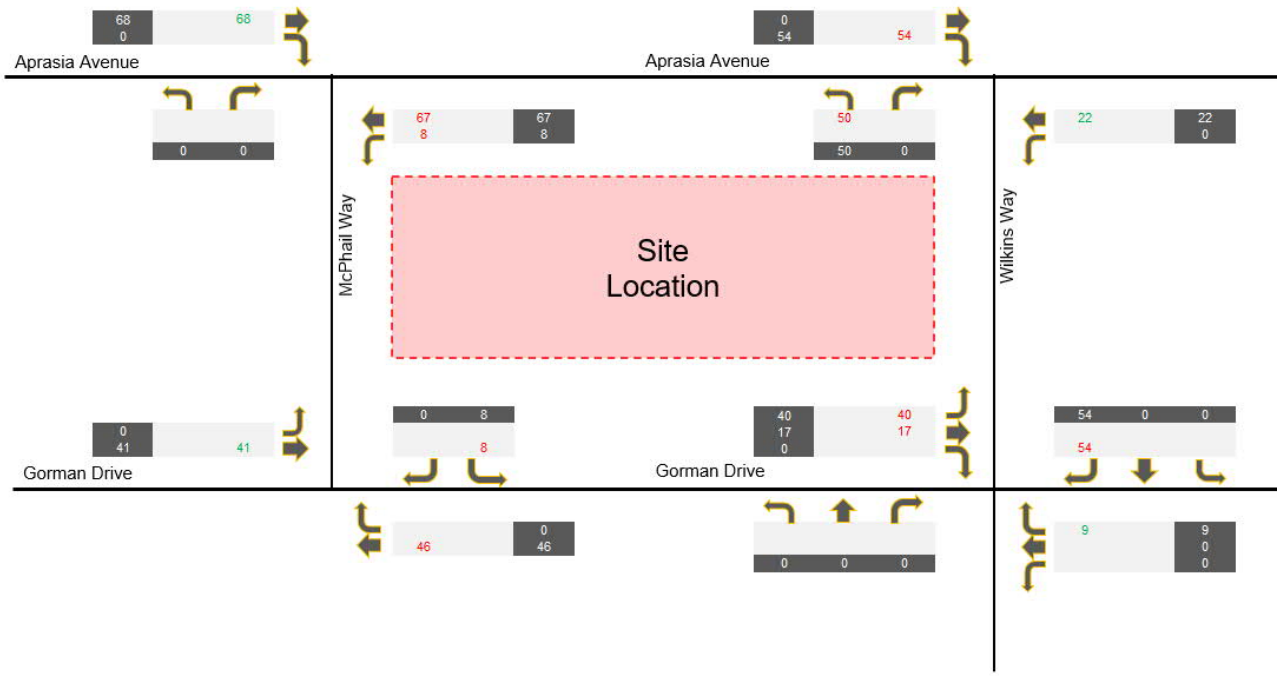


Figure 23: PM Peak Development Traffic Trip Assignment

8.3 Intersection Performance

8.3.1 Scenarios

A comparison between Future Base and Future with Development Traffic scenarios will provide the potential impacts of the proposed development. Future models have been developed for Opening Year (2023) and Future Horizon year (2033).

In summary, the following scenarios were analysed in addition to the 2021 Base Year outlined in Section 4.4.2:

Without Development Traffic

- 2023 (Open Year) with 2% compound growth
- 2033 (Future Horizon) with 2% compound growth

With Development Traffic

- 2023 (Open Year) with 2% compound growth PLUS Development Traffic
- 2033 (Future Horizon) with 2% compound growth PLUS Development Traffic

8.3.2 Intersection Impact

Without Development Traffic

The SIDRA Intersection modelling results for the 2023 Open Year with 2% growth compounded are presented in **Table 18**. The full suite of SIDRA output data is provided in **Appendix A.**

Table 18: Intersection Performance 2023 Open Year (2% growth)

Intersection	Control Type	Period	Intersection Delay (s)	95th Queue (m)	Degree of Saturation	Level of Service
Gorman Drive / McPhail Way	Priority	AM	3.8	0.2	0.017	LOS A
		PM	3.6	0.1	0.01	LOS A
Gorman Drive / Wilkins Way	Priority	AM	4.4	0.2	0.023	LOS A
		PM	3.9	0.2	0.02	LOS A
Aprasia Avenue / Wilkins Way	Priority	AM	4.1	0.1	0.006	LOS A
		PM	3.7	0	0.004	LOS A
Aprasia Avenue / McPhail Way	Priority	AM	6.2	0.3	0.025	LOS A
		PM	4.8	0.1	0.008	LOS A

The SIDRA Intersection modelling results for the 2033 Open Year with 2% growth compounded are presented in **Table 19**.

Table 19: Intersection Performance 2033 Future Horizon Year (2% growth)

Intersection	Control Type	Period	Intersection Delay (s)	95th Queue (m)	Degree of Saturation	Level of Service
Gorman Drive / McPhail Way	Priority	AM	3.9	0.2	0.021	LOS A
		PM	3.6	0.1	0.012	LOS A
Gorman Drive / Wilkins Way	Priority	AM	4.7	0.3	0.028	LOS A
		PM	4.1	0.2	0.024	LOS A
Aprasia Avenue / Wilkins Way	Priority	AM	4.3	0.1	0.009	LOS A
		PM	3.7	0.1	0.005	LOS A
Aprasia Avenue / McPhail Way	Priority	AM	7	0.4	0.034	LOS A
		PM	5.1	0.1	0.011	LOS A

With reference to the tables above, the key intersections analysed are anticipated to perform to good levels of operation during the school morning and afternoon peak periods if there was no School Development.

The analysis indicated that for the 2023 year and 2033 year with a 2% compounded growth, that the key intersections would operate with ample spare capacity and a 95th percentile queue of 7 metre (during the morning school peak of the 2033 horizon year at the Aprasia Avenue / McPhail Way intersection).

All of the degree of saturation levels are well below 1, which suggests that the network is operating under capacity.

With Development Traffic

The SIDRA Intersection modelling results for the 2023 Open Year with 2% growth compounded and the addition of Development Traffic (detailed in Section 8.2) are presented in **Table 20**.

Table 20: Intersection Performance 2023 Open Year (2% growth) PLUS Development Traffic

Intersection	Control Type	Period	Intersection Delay (s)	95th Queue (m)	Degree of Saturation	Level of Service
Gorman Drive / McPhail Way	Priority	AM	4.1	0.2	0.019	LOS A
		PM	3.7	0.1	0.01	LOS A
Gorman Drive / Wilkins Way	Priority	AM	4.3	0.3	0.035	LOS A
		PM	3.9	0.3	0.026	LOS A
Aprasia Avenue / Wilkins Way	Priority	AM	4	0.7	0.062	LOS A
		PM	3.6	0.4	0.038	LOS A
Aprasia Avenue / McPhail Way	Priority	AM	7	0.3	0.027	LOS A
		PM	5.2	0.1	0.009	LOS A

The SIDRA Intersection modelling results for the 2033 Open Year with 2% growth compounded and the addition of Development Traffic (detailed in Section 8.2) are presented in **Table 21**.

Table 21: Intersection Performance 2033 Future Year (2% growth) PLUS Development Traffic

Intersection	Control Type	Period	Intersection Delay (s)	95th Queue (m)	Degree of Saturation	Level of Service
Gorman Drive / McPhail Way	Priority	AM	4.2	0.2	0.023	LOS A
		PM	3.8	0.1	0.013	LOS A
Gorman Drive / Wilkins Way	Priority	AM	4.5	0.4	0.041	LOS A
		PM	4	0.3	0.032	LOS A
Aprasia Avenue / Wilkins Way	Priority	AM	4.1	0.7	0.067	LOS A
		PM	3.6	0.4	0.04	LOS A
Aprasia Avenue / McPhail Way	Priority	AM	7.9	0.4	0.039	LOS A
		PM	5.5	0.1	0.012	LOS A

With reference to the tables above, the key intersections analysed are anticipated to perform to good levels of operation during the school morning and afternoon peak periods if there was no School Development.

The analysis indicated that for the 2023 year and 2033 year with a 2% compounded growth, that the key intersections would continue to operate with a Level of Service Level A, with ample spare capacity and a 95th percentile queue of 7.9 metre (during the morning school peak of the 2033 horizon year at the Aprasia Avenue / McPhail Way intersection).

Importantly, all of the degree of saturation levels are well below 1, which suggests that the network is operating under capacity.

Refer to Appendix A for the SIDRA Analysis Results.

8.4 Drop-Off and Pick-Up

Student DOPU trips are expected to be concentrated over 30 – 45 minutes rather than a full hour in the school morning and afternoon peak.

With reference to previous assessments of primary schools, it is understood that schools are required to use DOPU areas under the same conditions as No Parking zones. That is, no stopping for more than 2 minutes provided that occupants stay within 3 metres of the vehicle such that they are dropping off or pick up passengers and loading or unloading items. On this basis, an individual DOPU space could effectively serve approximately 10 - 15 vehicles across a 30 – 45-minute period.

It is also important to consider the different characteristics of the drop-off trip against the pick-up trip. In the AM school peak, the drop-off trip generally takes less time, as the students are in the car and simply need to be dropped-off.

Conversely, in the PM school peak parents / carers typically arrives early and wait for the students, which can increase the average stopping time; in addition, many parents / carers will arrive prior to the end of school, and as such queues can form behind the vehicles waiting in the pick-up area. To ensure queuing is kept to a minimum, management measures will be required to ensure parents / carers do not arrive at the school early, with potential time-slots based on a numbering system in place to allow for families to be assigned an appropriate time for pick-up. This system has been adopted at the recently opened Barramurra Public School, and will be adopted by the Denham Court Public School, which will be operational in Day 1, Term 3, 2021.

The arrival and departure times of students (through the broader AM and PM school peaks) utilising the DOPU facilities has been surveyed and observed by Ason Group over a number of years, with almost all primary schools having a similar build-up of trips prior to school finishing.

These observed profiles have been assigned to the School demand for the afternoon (PM) peak pick-up period and are presented in **Figure 24.**

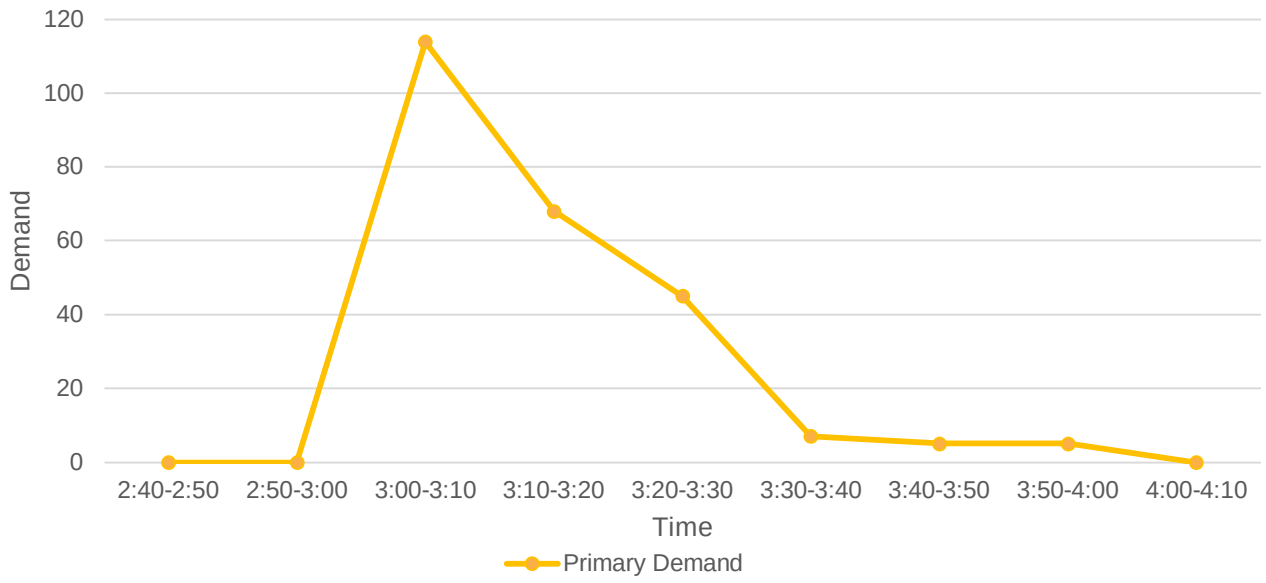


Figure 24: Afternoon PM School Peak Profile

It is assumed that the managed, time restricted (maximum 2 minutes) Drop-Off / Pick-Up (DOPU) zone could potentially cater for parent drop-off/pick-up movements over a 45 minute period during the school's morning and afternoon peak periods. In this regard, the maximum number of movements the DOPU zone could accommodate would be as follows:

- 21 spaces (15 on Aprasia Avenue and 6 on Gorman Drive)
- 45-minute period
- 2 minute Drop-Off & Pick-Up
- 21 spaces x 45 minutes / 2 minutes DOPU = 473 vehicle movements (Trips)

As noted in Section 8.1.1, the estimated traffic generation potential of the Site is:

- AM Peak: 269 Trips
- PM Peak: 157 Trips

On the basis of the above, it is considered that there is sufficient capacity within the DOPU Zones to accommodate the generated traffic without any adverse impacts on the adjoining road network.

9 Design

9.1 Design Standard

The site access, car park and loading arrangements for the preliminary site plan will be designed to comply with the following relevant Australian Standards:

- Australian Standard 2890.1:2004 Parking Facilities – Off Street Car Parking (AS 2890.1: 2004)
- Australian Standard 2890.2:2018 Parking Facilities – Off Street Commercial Vehicle Facilities (AS 2890.2:2018)
- Australian Standard 2890.3:2015 Parking Facilities – Bicycle Parking (AS 2890.3:2015)
- Australian Standard 2890.5:2020 Parking Facilities – On-Street Parking (AS 2890.5:2020)
- Australian Standard 2890.6:2009 Parking Facilities – Off-Street Parking for People with Disabilities (AS 2890.6:2009)
- Queanbeyan-Palerang Regional Council (QPRC), Engineering Design and Construction Specifications

Reference should be made to design review and associated swept path assessments included in **Appendix B**.

9.2 Design Commentary

To facilitate the proposal, design changes to the external road infrastructure are proposed. For details of the design changes proposed, see the design review and associated swept path assessment in **Appendix B.**

9.2.1 Access Design

The Proposal includes one vehicle access on Aprasia Avenue and four pedestrian accesses with one on each of the frontage roads shown in **Figure 25.**

The vehicle access is on the southern side of Aprasia Avenue offset to the east of Hale Street and is designed for B99 car and Medium Rigid Vehicle access.

The pedestrian access on Aprasia Avenue is located 7 metres to the east of the vehicle access, allowing for appropriate separation.

The McPhail Way pedestrian access is located to the north of the pram ramp connection to Our Place Early Childhood Learning Googong.

To the south of the site there are two pedestrian accesses proposed, the main entry on Gorman Drive and the SELU entry on Wilkins Way.

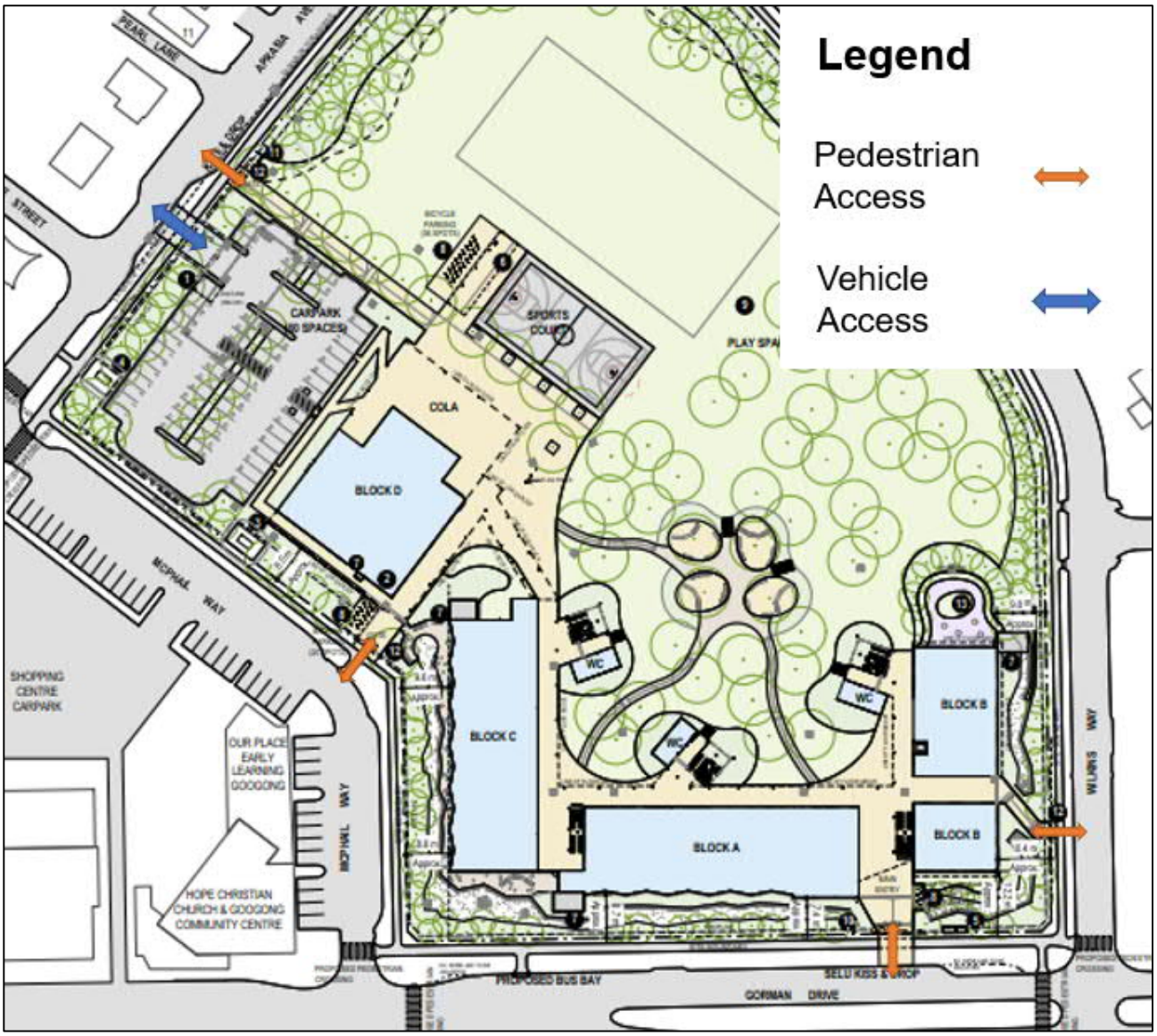


Figure 25: School Access Locations

9.2.2 Public Realm Design

The Proposal has proposed the following public realm re-design for Aprasia Avenue and Gorman Drive:

- Further indentation of existing parking lane along Aprasia Aevenue to provide 2.5-metre wide Kiss and Ride bays to achieve safe separation between through traffic and vehicles using the Kiss and Ride
- Provision of a kerb extension along Aprasia Avenue extending 10 metres either side of the proposed vehicle access to provide safe separation between staff carpark driveway and Kiss and Ride bay users therefore allowing for 14 Kiss and Ride spaces to the east of the driveway and 1 Kiss and Ride space to the west.
- Kerb changes to the existing indented parking lane on Gorman Drive to allow for no stopping distances to pedestrian crossings on the Gorman Drive / McPhail Way and Gorman Drive / Wilkins Way intersections.

In addition to the design changes above, note that with the implementation of the proposed pedestrian crossings on McPhail Way, the existing indented parking lane on the eastern side of McPhail Way will have parking lengths reduced to accommodate the no stopping distances required.

9.2.3 Internal Car Park

The plan issued by Pedavoli Architects on 09 June 2021 were reviewed and was found to be generally compliant with AS2890.1:2004. A summary of the access and internal car parking arrangements provided below:

- Access to the car park is provided by a 7.0m wide double width crossover and accessway
- All car parking spaces have been designed in accordance with Figure 2.2 of AS 2890.1:2004, with the following minimum dimensions:
  - Width of 2.5m and a length of 5.4m accessed via a minimum 5.8m wide aisle.
  - Width of 2.5m and a length of 4.8m, allowing for 600mm overhang over a low kerb (below 150mm) accessed via a minimum 5.8m wide aisle.
- Accessible car spaces have been designed in accordance with AS 2890.6:2009, with a width of 2.4m and a length of 5.4m accessed via a minimum 5.8m wide aisle. Shared zones have been provided with a width of 2.4m and a length of 5.4m.
- The access gate for the internal carpark has been setback at least 6.0m from the property boundary along Aprasia Avenue, which allows for one queuing space between the footpath and access gate. This departure from the queuing requirements against AS 2890.1:2004 is considered acceptable based on the following:
  - The traffic is tidal in nature, such that the school could keep the gate open between the first staff member arriving and 8am. The majority of staff are expected to arrive during these times.
  - Queuing of one car length will be provided between the gate and footpath.
  - Service vehicles are expected to arrive outside of school hours when the impact on pedestrians accessing the footpath is minimal.
- No gradients are currently shown along the accessway and within the internal car park.

In addition, consideration should be given to the following design recommendation for the internal Car Park:

- Entry swept path for waste collection vehicle requires entire width of driveway, access control will have to be mounted to the south clear of the driveway, to be detailed in schematic design.

Refer to **Appendix B** for details of the car park review.

9.2.4 Bicycle Parking

A total of 64 bicycle parking spaces are proposed within the school grounds, as shown graphically in **Figure 26.**

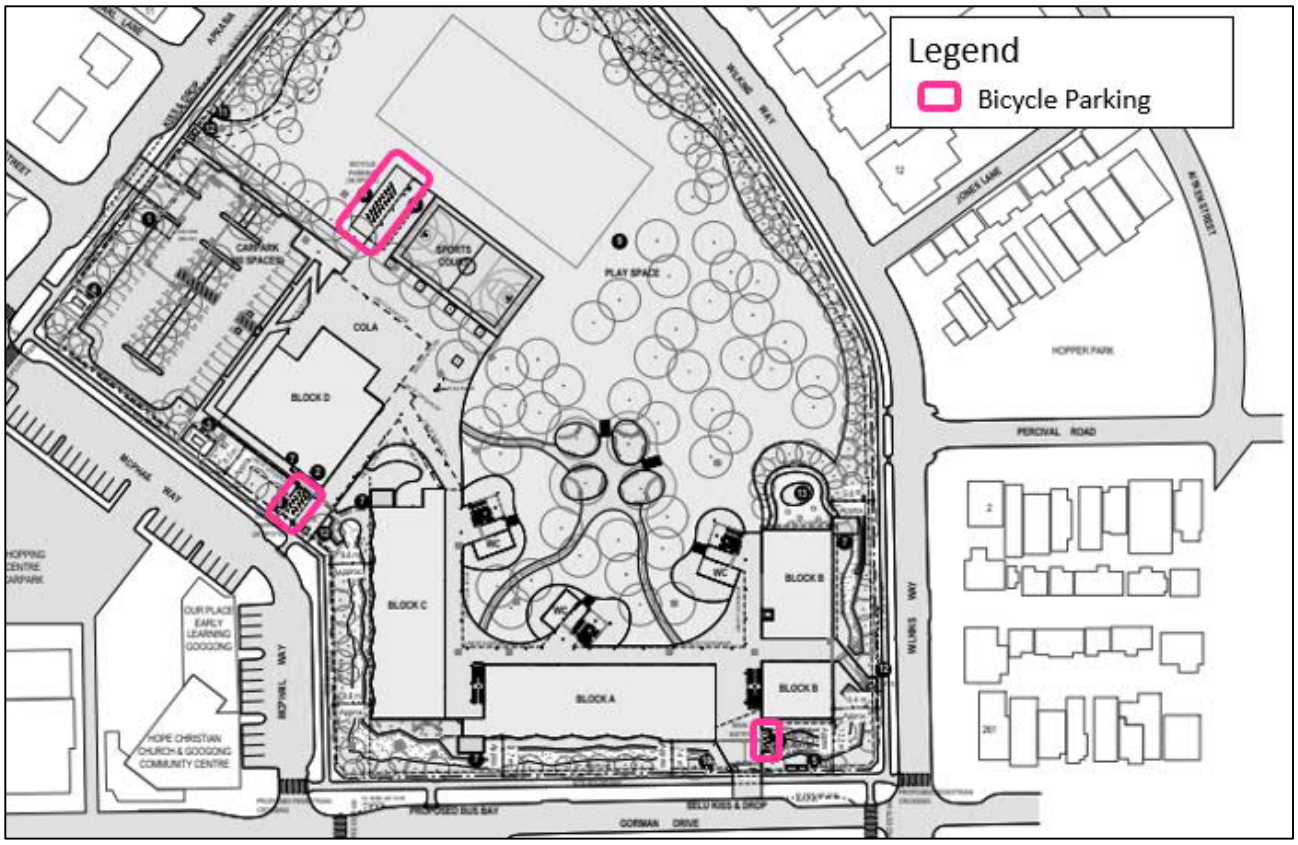


Figure 26: Bicycle Parking Locations

9.2.5 Kiss and Ride Alternative

Following receipt of feedback from Council in relation to the Kiss and Ride arrangement for the new school, investigation to the feasibility of the provision of an on-site Kiss and Ride was undertaken and presented in Figure 27.

The option is considered not viable due to the following:

- The on-site kiss and ride can yield approximately 12 on-site spaces;
- To ensure pedestrian safety, only one vehicle crossing is used in the development of the Kiss & Ride investigation;
- To ensure safe pedestrian and bicycle access and to minimise the need for pedestrians and bicycle riders approaching from the north-east of the site crossing vehicular traffic at the on-site kiss and ride, the pedestrian and bicycle access will need to be provided at the north-eastern corner of the site;
- Due to the gradient of the site, in order to achieve compliance with AS1428, the pedestrian and bicycle pathway is approximately 250 metres in length;
- The provision of on-site kiss and ride will result in the loss of 2700 square metres of play space.

Considering the above factors, the on-site kiss and ride option is considered not viable for the project.

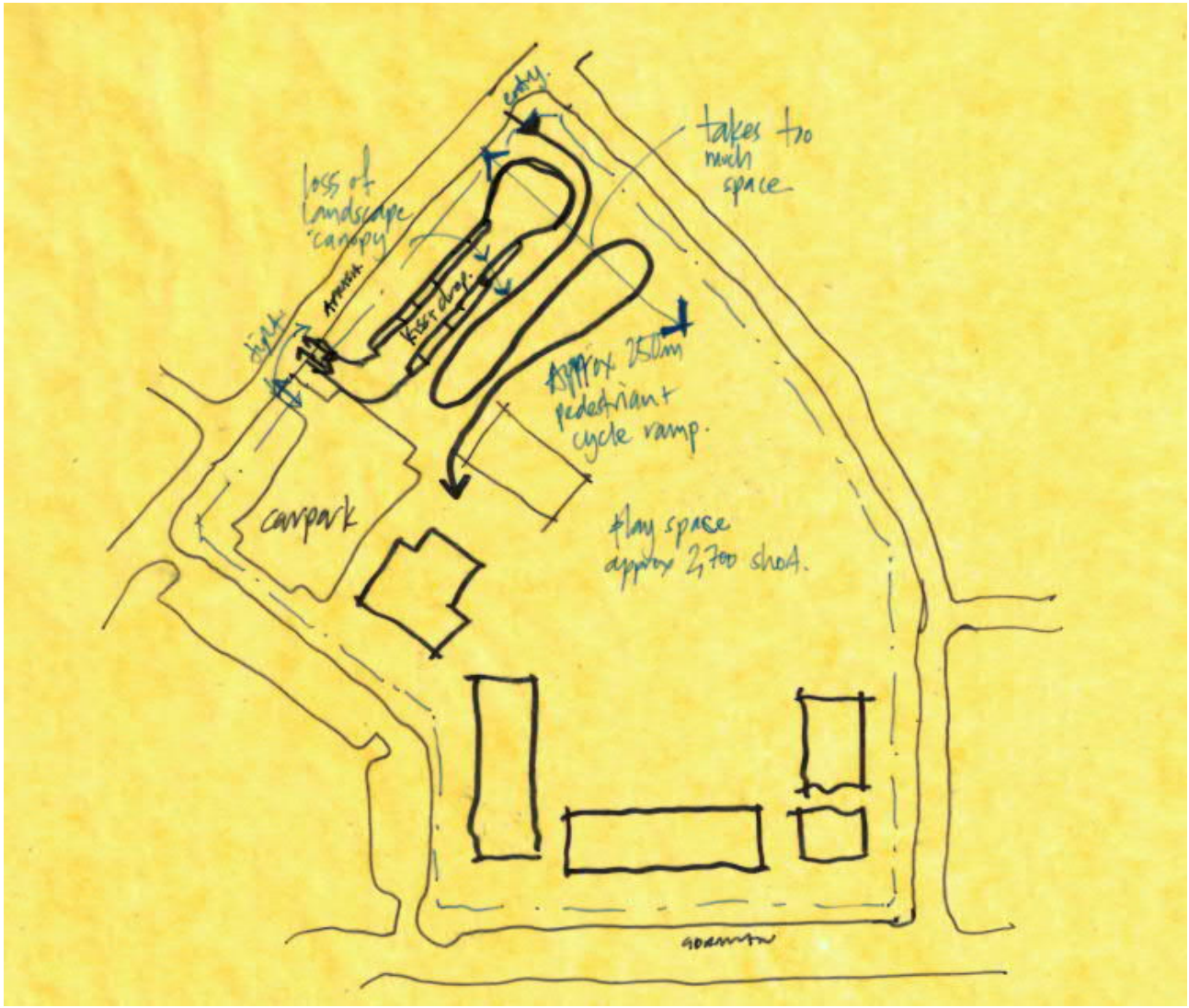


Figure 27: Alternative Kiss and Ride Sketch

10 Preliminary Construction Traffic Management Plan

10.1 Overview

The proposed works forming part of this SSDA include the following:

- Demolition works to accommodate new works;
- Construction of new buildings;
- Construction of pedestrian and car park infrastructure
- New covered outdoor learning area (COLA) and covered walkways;
- Associated earthworks, landscaping, stormwater works, service upgrades; and
- Tree removal/ tree safety works.

This Preliminary Construction Traffic Management Plan (Preliminary CTMP) outlines principles that shall be adopted by the appointed contractors for the project and is subject to a detailed Construction Traffic Management Plan (CTMP) that forms part of a Construction Management Plan (CMP) to be prepared and commissioned by the incumbent contractor.

10.2 Overall Principles of Construction Traffic Management

The overall principals of traffic management during construction activities include:

- Minimising the impact on pedestrian and cyclist safety and movements
- Maintaining appropriate public transport and school bus access
- Minimising the impact to existing traffic on adjacent roads and intersections
- Minimising the loss of on-street parking
- Maintaining access to / from adjacent properties
- Restricting construction vehicle movements to designated routes to / from the site
- Managing and controlling construction vehicle activity near the site
- Ensuring construction activity is carried out in accordance with Council's approved hours of work.

10.3 Contractor Parking

On-site parking will be available to construction contractors on the land available where appropriate and safe.

The incumbent contractor will be required to ensure contractors working on the project are aware of the available on-site parking and minimise any reliance on on-street parking.

10.4 Proposed Work Hours

The construction work will vary depending on the phase of construction and associated activities. Construction works however will be undertaken during standard construction-working hours, with no deliveries allowed prior to the AM and PM school bell time as follows:

- Monday to Friday: 7.00AM to 6:00PM.
- No construction deliveries between 7:30am to 9:00am, and between 1:30pm to 3:00pm on school days.
- Saturday: 8.00AM to 5.00PM
- Sunday and Public holidays: No planned work.

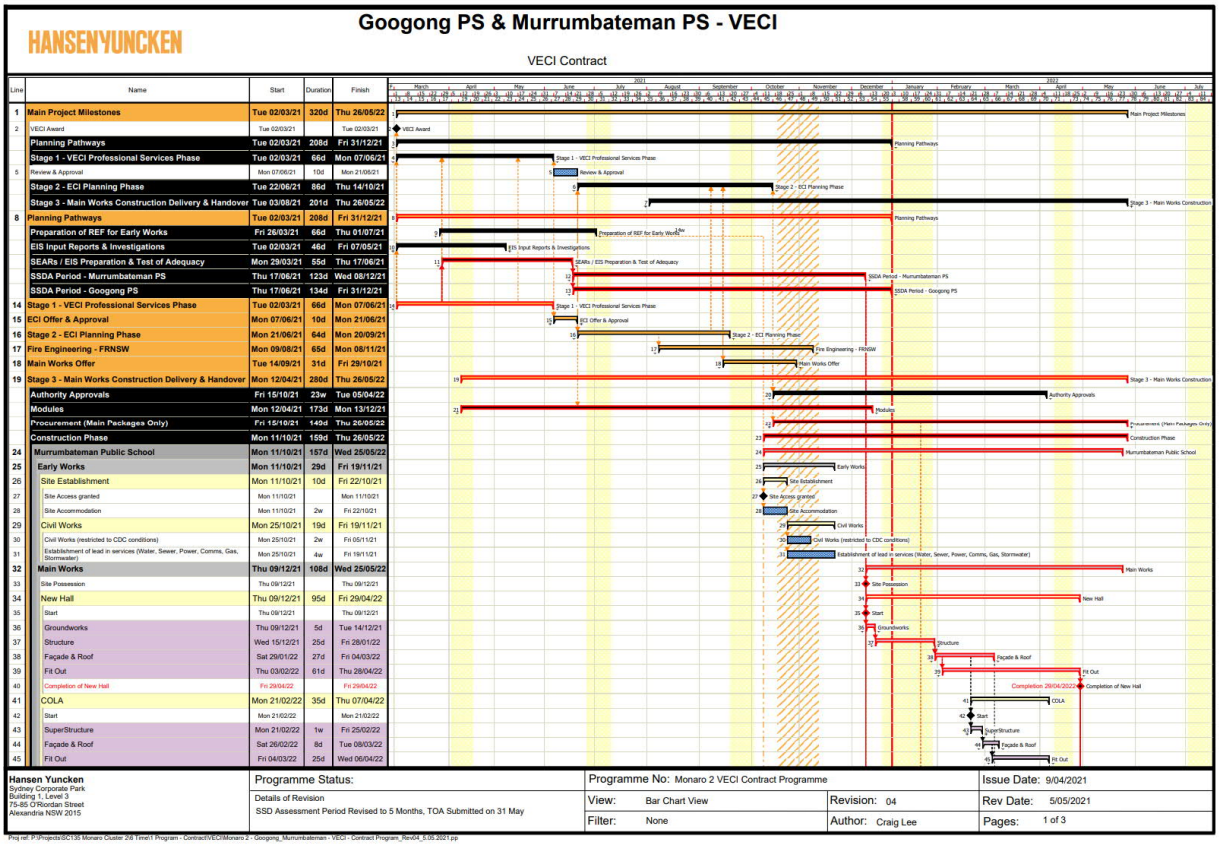
It may (on occasions) be necessary to undertake night works to minimise disruption to traffic however any works undertaken outside of these times will only occur with prior approval from Council.

10.5 Staging and Duration

The construction program would consist of the following construction stages and duration:

- Stage 1: Site Establishment and Civil Works, Duration: 1 month
- Stage 2: Main Works, Duration: 6 months

See Construction Program as extracted in **Figure 28.**



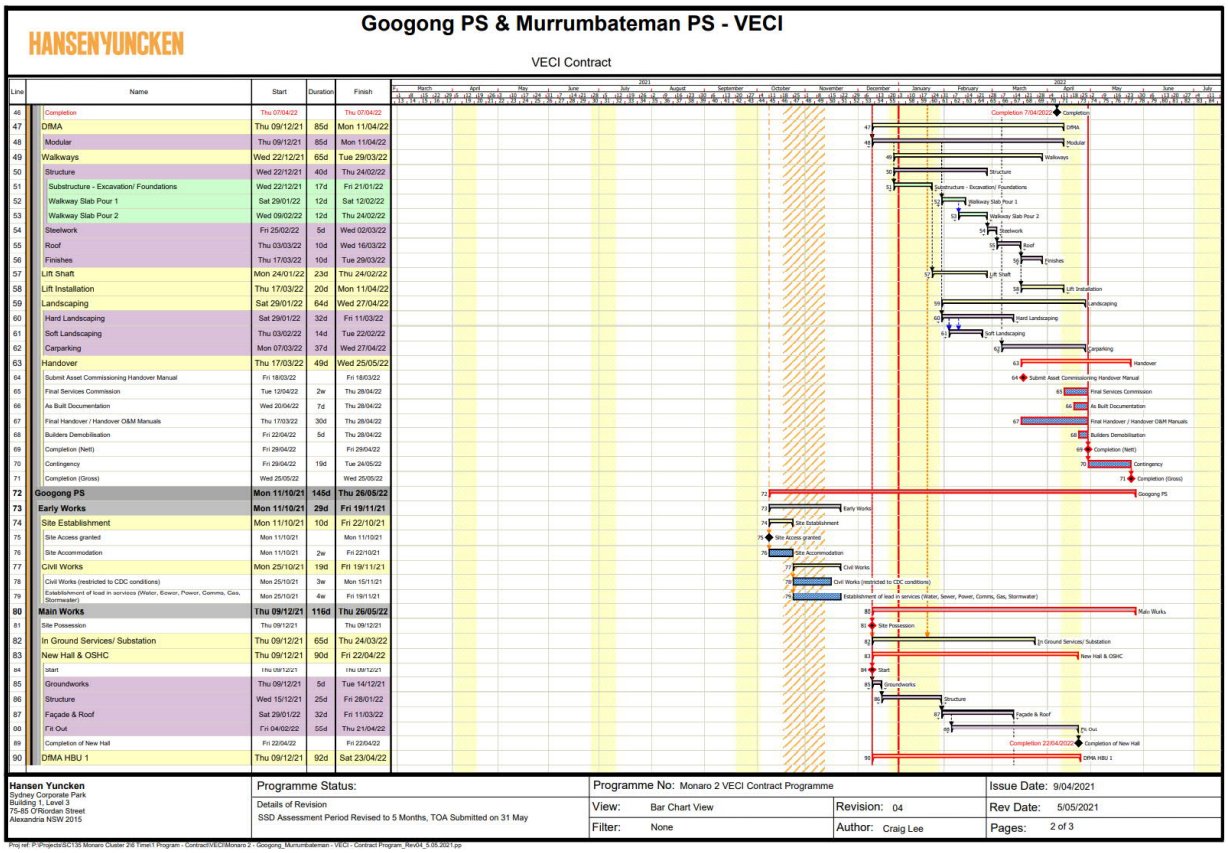


Figure 28: Very Early Contractor Involvement (VECI) Program

It is noted during both Stages, all vehicle entry and exit movements are to be in a forward direction only, with spoil to be loaded within the site and under the careful supervision of an authorised traffic controller. Accordingly, supervision by an authorised traffic controller would also be required for the movements of vehicles that would cross the footpath during deliveries.

10.6 Worker Induction

All workers and subcontractors engaged on-site would be required to complete a site induction. The induction should include permitted access routes to and from the construction site for all vehicles, as well as standard environmental, work, health and safety (WHS), driver protocols and emergency procedures.

Any workers required to undertake works or traffic control within the public domain would be suitably trained and covered by adequate and appropriate insurances.

10.7 Authorised Traffic Controller

If there is a requirement for an authorised traffic controllers to be present throughout the demolition, and construction stages of the project, there responsibilities include:

- Pedestrian and cyclist management, to ensure that adverse conflicts between vehicle movements and pedestrians do not occur.
- Supervision of all vehicle movements across pedestrian footpaths at all times, and
- Supervision of all loading and unloading of construction materials during the deliveries in the construction phase of the project.

10.8 Construction Traffic Volumes

Construction traffic will generally incorporate:

- Prime movers and low loaders up to 26.0m;
- Up to 20.0 m Semi-trailer and Truck & Dog for removal of spoil and transportation of material.

Any oversize vehicles using local roads to access the site for would require additional Council and/or Transport for NSW approval.

The maximum number of trucks accessing the site is estimated to be between 6 to 12 trucks per hour, depending on the works undertaken and type of material required on-site.

It is anticipated that there will be an average of 20 – 40 workers on-site during peak construction activities. Workers will be advised that there is no on-site parking and encouraged to carpool, of travel to / from the site using public transport where practicable.

10.9 Site Access

Construction vehicles accessing the site are expected to travel in a forward-in and forward-out direction to/from Aprasia Avenue.

10.10 Construction Mitigation Measures

Construction of the above development would generate a moderate increase in traffic on the surrounding road network. In this regard, the following measures should be undertaken to minimise the impacts of the construction activities of the development:

- A construction fence will be provided along the Aprasia Avenue, McPhail Way, Gorman Drive Street site boundaries to the south of the Site and Wilkins Way to provide safe pedestrian access. The fence will consist of chain wire fencing along the remaining site boundaries, that will be maintained for the duration of the construction program.
- Traffic control may be required to manage and regulate traffic movements into and out of the site during construction, with pedestrian priority provided during peak hour periods to maintain accessibility to public transport facilities.
- Disruption to road users would be kept to a minimum by scheduling intensive delivery activities outside of peak network hours.

– Supervised traffic control will be required where two-way flow is restricted over any length of the roadway, depending on the number of truck movements required and would be managed outside of peak hour vehicle and pedestrian activity.

10.11 Pedestrian and Cyclist Management

During construction, pedestrian movements will be maintained along all frontages of the site when possible. This includes maintaining access needs and requirements for pedestrians to / from the Googong North Village Centre particularly from Gorman Drive.

It is expected that the construction fencing is to be located as close as possible to the property boundary, maintaining maximum footpath width to minimise impact on pedestrian amenity.

Construction fencing will be provided around the perimeter of the site and shall be documented in the Project's Construction Management Plan.

Traffic controller(s) will be present at the site accesses to manage pedestrian and vehicular traffic to ensure public safety while construction vehicles enter and exit the site. Pedestrians will not be directed to use the other footpath by use of signage alone. Also, traffic controls would need to be in accordance with AS1742.3 and RMS 'Traffic Control at Worksites' manual at all times.

Should any unforeseen activities require the temporary closure of any existing pedestrian access, a TGS should be developed and implemented by the contractor to ensure a safe alternative for pedestrians traversing these routes in the vicinity of the site.

10.12 Truck Routes

It is proposed that construction vehicles enter and exit the Site via the routes shown in **Figure 29**. A copy of the truck route maps shall be provided to all drivers prior to attending the Site.

The access and egress routes are to be utilised by all construction vehicles associated with the Site and represents the shortest route between the local and regional road network – hence minimising the impacts of the construction process. No trucks are to be queued on local roads. Mobile phones and two-way radios will be used to coordinate truck arrivals.

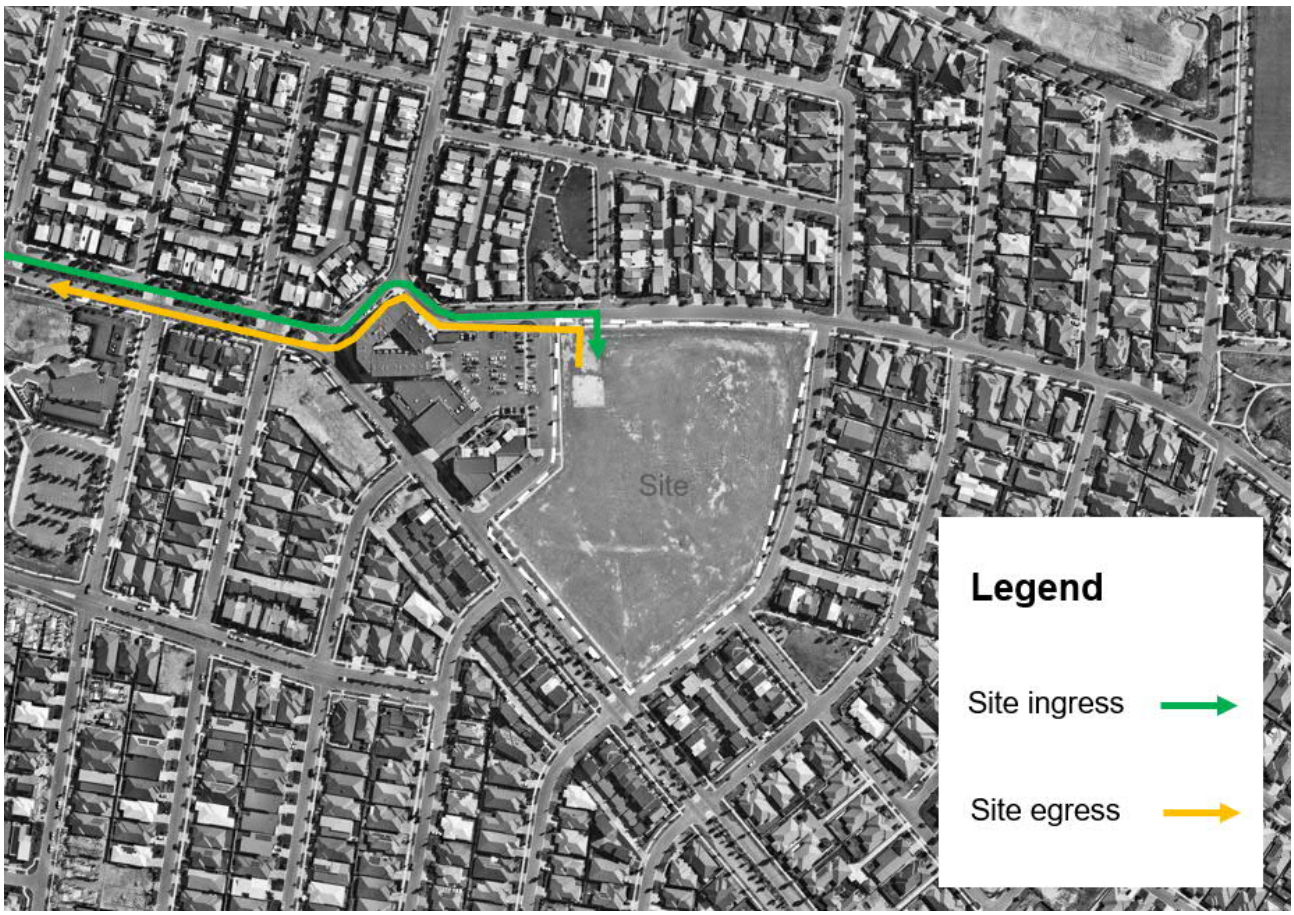


Figure 29: Construction Vehicle Haulage Routes

11 Summary and Conclusions

11.1 Summary

Ason Group has been commissioned by Hansen Yuncken on behalf of School Infrastructure NSW (SINSW) to prepare a Transport Assessment Report (TA) to accompany the state significant development application (SSDA) to the NSW Department of Planning, Industry and Environment (DPIE) for a proposed new primary school development, in Googong, to meet the educational needs of the area.

11.2 Key Findings

Further to a detailed assessment of the proposed development of the new primary school in Googong we provide the following conclusions:

- The new primary school in Googong will be located in Googong and the Googong catchment, and as such it is predicted that the majority of students would reside.
- The Googong subdivision has strong active transport infrastructure accessibility, connectivity and would therefore generate less trips from private vehicles.
- Adopted rates have been determined based on the averages of surveyed rates of similar schools in Sydney by Roads and Maritime (now TfNSW).
- These rates estimate that the School would generate the following trips during the school peak hours:
  - AM Peak Hour: 269 trips
  - PM Peak Hour: 167 trips
- The majority of these trips would occur at the Kiss & Ride (DOPU Zone). Analysis of the capacity of DOPU Zone with consideration of the typical Primary School arrival and departure profile shows that it is capable of accommodating the trips generated without adversely impacting the adjoining road network.
- SIDRA Intersection analysis indicates that the local intersections have ample spare capacity to accommodate the trips without adversely impact the surrounding road network.
- Application of the 2% growth factor indicates the intersections will continue to perform with spare capacity and good operations.
- All access, parking and servicing areas have been designed in general accordance with the relevant Australian Standards.

It is Ason Group's opinion that the proposed development is supportable on Traffic and Transport grounds.

Appendix A. SIDRA Results

MOVEMENT SUMMARY

Site: i4 [2021 AM Base - Aprasia Avenue x McPhail Way (Site Folder: 2021 AM Base)]

Network: N101 [2021 AM Base (Network Folder: General)]

Aprasia Avenue x McPhail Way
Site Category: Base Year
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: McPhail Way														
1	L2	18	5.9	18	5.9	0.016	3.8	LOS A	0.0	0.2	0.20	0.45	0.20	34.2
3	R2	7	0.0	7	0.0	0.016	3.7	LOS A	0.0	0.2	0.20	0.45	0.20	30.9
Approach		25	4.2	25	4.2	0.016	3.8	LOS A	0.0	0.2	0.20	0.45	0.20	33.5
East: Aprasia Avenue (Est Approach)														
4	L2	14	0.0	14	0.0	0.070	3.4	LOS A	0.0	0.0	0.00	0.05	0.00	39.1
5	T1	121	0.9	121	0.9	0.070	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	39.4
Approach		135	0.8	135	0.8	0.070	0.4	NA	0.0	0.0	0.00	0.05	0.00	39.4
West: Aprasia Avenue (Wst Approach)														
11	T1	37	8.6	37	8.6	0.028	0.1	LOS A	0.0	0.3	0.16	0.16	0.16	33.6
12	R2	18	0.0	18	0.0	0.028	3.8	LOS A	0.0	0.3	0.16	0.16	0.16	33.6
Approach		55	5.8	55	5.8	0.028	1.3	NA	0.0	0.3	0.16	0.16	0.16	33.6
All Vehicles		215	2.5	215	2.5	0.070	1.0	NA	0.0	0.3	0.06	0.12	0.06	37.8

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

MOVEMENT SUMMARY

Site: i1 [2021 AM Base - Gorman Drive x McPhail Way (Site Folder: 2021 AM Base)]

Network: N101 [2021 AM Base (Network Folder: General)]

Gorman Drive x McPhail Way
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Gorman Drive (SthEst Approach)														
5	T1	248	3.4	248	3.4	0.136	0.0	LOS A	0.0	0.3	0.03	0.03	0.03	39.8
6	R2	15	0.0	15	0.0	0.136	3.9	LOS A	0.0	0.3	0.03	0.03	0.03	39.1
Approach		263	3.2	263	3.2	0.136	0.2	NA	0.0	0.3	0.03	0.03	0.03	39.8
NorthEast: McPhail Way														
7	L2	5	0.0	5	0.0	0.022	3.4	LOS A	0.0	0.2	0.00	0.48	0.00	30.6
9	R2	20	5.3	20	5.3	0.022	4.6	LOS A	0.0	0.2	0.00	0.48	0.00	37.1
Approach		25	4.2	25	4.2	0.022	4.4	LOS A	0.0	0.2	0.00	0.48	0.00	36.6
NorthWest: Gorman Drive (NthWst Approach)														
10	L2	23	0.0	23	0.0	0.056	3.4	LOS A	0.0	0.0	0.00	0.11	0.00	39.3
11	T1	79	12.0	79	12.0	0.056	0.0	LOS A	0.0	0.0	0.00	0.11	0.00	39.3
Approach		102	9.3	102	9.3	0.056	0.8	NA	0.0	0.0	0.00	0.11	0.00	39.3
All Vehicles		391	4.9	391	4.9	0.136	0.7	NA	0.0	0.3	0.02	0.08	0.02	39.4

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

MOVEMENT SUMMARY

Site: i3 [2021 AM Base - Aprasia Avenue x Wilkins Way (Site Folder: 2021 AM Base)]

Network: N101 [2021 AM Base (Network Folder: General)]

Aprasia Avenue x Wilkins Way
Site Category: Base Year
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Wilkins Way														
1	L2	1	0.0	1	0.0	0.006	3.7	LOS A	0.0	0.1	0.23	0.48	0.23	34.2
3	R2	6	0.0	6	0.0	0.006	4.2	LOS A	0.0	0.1	0.23	0.48	0.23	37.4
Approach		7	0.0	7	0.0	0.006	4.1	LOS A	0.0	0.1	0.23	0.48	0.23	37.2
East: Aprasia Avenue (Est Approach)														
4	L2	8	0.0	8	0.0	0.072	3.4	LOS A	0.0	0.0	0.00	0.03	0.00	39.8
5	T1	127	0.0	127	0.0	0.072	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	39.8
Approach		136	0.0	136	0.0	0.072	0.2	NA	0.0	0.0	0.00	0.03	0.00	39.8
West: Aprasia Avenue (Wst Approach)														
11	T1	35	6.1	35	6.1	0.020	0.0	LOS A	0.0	0.0	0.03	0.03	0.03	39.8
12	R2	2	0.0	2	0.0	0.020	4.0	LOS A	0.0	0.0	0.03	0.03	0.03	39.2
Approach		37	5.7	37	5.7	0.020	0.3	NA	0.0	0.0	0.03	0.03	0.03	39.8
All Vehicles		180	1.2	180	1.2	0.072	0.4	NA	0.0	0.1	0.02	0.05	0.02	39.6

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

MOVEMENT SUMMARY

Site: i2 [2021 AM Base - Gorman Drive x Wilkins Way (Site Folder: 2021 AM Base)]

Network: N101 [2021 AM Base (Network Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Gorman Drive (SE Approach)														
4	L2	1	0.0	1	0.0	0.126	3.6	LOS A	0.0	0.0	0.00	0.00	0.00	40.1
5	T1	238	3.5	238	3.5	0.126	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	40.0
6	R2	1	0.0	1	0.0	0.126	3.9	LOS A	0.0	0.0	0.00	0.00	0.00	40.0
Approach		240	3.5	240	3.5	0.126	0.0	NA	0.0	0.0	0.00	0.00	0.00	40.0
NorthEast: Wilkins Way														
7	L2	2	0.0	2	0.0	0.024	3.4	LOS A	0.0	0.3	0.01	0.47	0.01	37.0
8	T1	1	0.0	1	0.0	0.024	4.8	LOS A	0.0	0.3	0.01	0.47	0.01	37.2
9	R2	13	0.0	13	0.0	0.024	6.6	LOS A	0.0	0.3	0.01	0.47	0.01	32.5
Approach		16	0.0	16	0.0	0.024	6.0	LOS A	0.0	0.3	0.01	0.47	0.01	34.2
NorthWest: Gorman Drive (NW Approach)														
10	L2	8	0.0	8	0.0	0.047	3.5	LOS A	0.0	0.0	0.01	0.05	0.01	38.6
11	T1	76	11.1	76	11.1	0.047	0.0	LOS A	0.0	0.0	0.01	0.05	0.01	39.7
12	R2	1	0.0	1	0.0	0.047	4.5	LOS A	0.0	0.0	0.01	0.05	0.01	39.5
Approach		85	9.9	85	9.9	0.047	0.4	NA	0.0	0.0	0.01	0.05	0.01	39.6
SouthWest: Helen Circuit														
1	L2	9	0.0	9	0.0	0.010	3.4	LOS A	0.0	0.1	0.00	0.45	0.00	37.0
2	T1	1	0.0	1	0.0	0.010	4.8	LOS A	0.0	0.1	0.00	0.45	0.00	37.0
3	R2	1	0.0	1	0.0	0.010	6.4	LOS A	0.0	0.1	0.00	0.45	0.00	38.3
Approach		12	0.0	12	0.0	0.010	3.8	LOS A	0.0	0.1	0.00	0.45	0.00	37.2
All Vehicles		353	4.8	353	4.8	0.126	0.5	NA	0.0	0.3	0.01	0.05	0.01	39.6

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

MOVEMENT SUMMARY

Site: i4 [2021 PM Base - Aprasia Avenue x McPhail Way (Site Folder: 2021 PM Base)]

Network: N101 [2021 PM Base (Network Folder: General)]

Aprasia Avenue x McPhail Way
Site Category: Base Year
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: McPhail Way														
1	L2	12	0.0	12	0.0	0.010	3.5	LOS A	0.0	0.1	0.11	0.45	0.11	34.7
3	R2	4	0.0	4	0.0	0.010	3.7	LOS A	0.0	0.1	0.11	0.45	0.11	31.5
Approach		16	0.0	16	0.0	0.010	3.6	LOS A	0.0	0.1	0.11	0.45	0.11	34.1
East: Aprasia Avenue (Est Approach)														
4	L2	3	0.0	3	0.0	0.024	3.4	LOS A	0.0	0.0	0.00	0.03	0.00	39.4
5	T1	44	0.0	44	0.0	0.024	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	39.6
Approach		47	0.0	47	0.0	0.024	0.2	NA	0.0	0.0	0.00	0.03	0.00	39.6
West: Aprasia Avenue (Wst Approach)														
11	T1	45	0.0	45	0.0	0.026	0.0	LOS A	0.0	0.1	0.04	0.06	0.04	37.7
12	R2	6	0.0	6	0.0	0.026	3.6	LOS A	0.0	0.1	0.04	0.06	0.04	37.7
Approach		52	0.0	52	0.0	0.026	0.5	NA	0.0	0.1	0.04	0.06	0.04	37.7
All Vehicles		115	0.0	115	0.0	0.026	0.8	NA	0.0	0.1	0.03	0.10	0.03	38.1

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

MOVEMENT SUMMARY

Site: i1 [2021 PM Base - Gorman Drive x McPhail Way (Site Folder: 2021 PM Base)]

Network: N101 [2021 PM Base (Network Folder: General)]

Gorman Drive x McPhail Way
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Gorman Drive (SthEst Approach)														
5	T1	91	10.5	91	10.5	0.051	0.0	LOS A	0.0	0.1	0.03	0.03	0.03	39.8
6	R2	5	0.0	5	0.0	0.051	3.9	LOS A	0.0	0.1	0.03	0.03	0.03	39.0
Approach		96	9.9	96	9.9	0.051	0.2	NA	0.0	0.1	0.03	0.03	0.03	39.8
NorthEast: McPhail Way														
7	L2	6	16.7	6	16.7	0.019	3.5	LOS A	0.0	0.2	0.00	0.48	0.00	31.4
9	R2	18	0.0	18	0.0	0.019	4.1	LOS A	0.0	0.2	0.00	0.48	0.00	37.4
Approach		24	4.3	24	4.3	0.019	3.9	LOS A	0.0	0.2	0.00	0.48	0.00	36.8
NorthWest: Gorman Drive (NthWst Approach)														
10	L2	18	0.0	18	0.0	0.065	3.4	LOS A	0.0	0.0	0.00	0.07	0.00	39.5
11	T1	105	5.0	105	5.0	0.065	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	39.5
Approach		123	4.3	123	4.3	0.065	0.5	NA	0.0	0.0	0.00	0.07	0.00	39.5
All Vehicles		243	6.5	243	6.5	0.065	0.7	NA	0.0	0.2	0.01	0.09	0.01	39.4

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

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

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

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

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

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

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

MOVEMENT SUMMARY

Site: i3 [2021 PM Base - Aprasia Avenue x Wilkins Way (Site Folder: 2021 PM Base)]

Network: N101 [2021 PM Base (Network Folder: General)]

Aprasia Avenue x Wilkins Way
Site Category: Base Year
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Wilkins Way														
1	L2	3	0.0	3	0.0	0.004	3.5	LOS A	0.0	0.0	0.11	0.45	0.11	34.8
3	R2	2	0.0	2	0.0	0.004	3.9	LOS A	0.0	0.0	0.11	0.45	0.11	37.6
Approach		5	0.0	5	0.0	0.004	3.7	LOS A	0.0	0.0	0.11	0.45	0.11	36.6
East: Aprasia Avenue (Est Approach)														
4	L2	3	0.0	3	0.0	0.023	3.4	LOS A	0.0	0.0	0.00	0.03	0.00	39.8
5	T1	40	0.0	40	0.0	0.023	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	39.8
Approach		43	0.0	43	0.0	0.023	0.3	NA	0.0	0.0	0.00	0.03	0.00	39.8
West: Aprasia Avenue (Wst Approach)														
11	T1	46	0.0	46	0.0	0.026	0.0	LOS A	0.0	0.0	0.01	0.02	0.01	39.9
12	R2	2	50.0	2	50.0	0.026	4.1	LOS A	0.0	0.0	0.01	0.02	0.01	39.6
Approach		48	2.2	48	2.2	0.026	0.2	NA	0.0	0.0	0.01	0.02	0.01	39.9
All Vehicles		97	1.1	97	1.1	0.026	0.4	NA	0.0	0.0	0.01	0.05	0.01	39.7

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

MOVEMENT SUMMARY

Site: i2 [2021 PM Base - Gorman Drive x Wilkins Way (Site Folder: 2021 PM Base)]

Network: N101 [2021 PM Base (Network Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Gorman Drive (SE Approach)														
4	L2	1	0.0	1	0.0	0.053	3.6	LOS A	0.0	0.0	0.01	0.01	0.01	40.1
5	T1	95	10.0	95	10.0	0.053	0.0	LOS A	0.0	0.0	0.01	0.01	0.01	39.9
6	R2	1	0.0	1	0.0	0.053	3.9	LOS A	0.0	0.0	0.01	0.01	0.01	39.9
Approach		97	9.8	97	9.8	0.053	0.1	NA	0.0	0.0	0.01	0.01	0.01	39.9
NorthEast: Wilkins Way														
7	L2	2	0.0	2	0.0	0.008	3.4	LOS A	0.0	0.1	0.00	0.45	0.00	37.7
8	T1	1	0.0	1	0.0	0.008	3.7	LOS A	0.0	0.1	0.00	0.45	0.00	37.9
9	R2	3	33.3	3	33.3	0.008	6.0	LOS A	0.0	0.1	0.00	0.45	0.00	34.1
Approach		6	16.7	6	16.7	0.008	4.8	LOS A	0.0	0.1	0.00	0.45	0.00	36.7
NorthWest: Gorman Drive (NW Approach)														
10	L2	2	0.0	2	0.0	0.058	3.5	LOS A	0.0	0.0	0.01	0.01	0.01	39.6
11	T1	106	5.9	106	5.9	0.058	0.0	LOS A	0.0	0.0	0.01	0.01	0.01	39.9
12	R2	1	0.0	1	0.0	0.058	3.9	LOS A	0.0	0.0	0.01	0.01	0.01	39.8
Approach		109	5.8	109	5.8	0.058	0.1	NA	0.0	0.0	0.01	0.01	0.01	39.9
SouthWest: Helen Circuit														
1	L2	1	0.0	1	0.0	0.003	3.4	LOS A	0.0	0.0	0.00	0.43	0.00	36.8
2	T1	1	0.0	1	0.0	0.003	3.7	LOS A	0.0	0.0	0.00	0.43	0.00	36.8
3	R2	1	0.0	1	0.0	0.003	5.1	LOS A	0.0	0.0	0.00	0.43	0.00	38.2
Approach		3	0.0	3	0.0	0.003	4.1	LOS A	0.0	0.0	0.00	0.43	0.00	37.5
All Vehicles		216	7.8	216	7.8	0.058	0.3	NA	0.0	0.1	0.01	0.03	0.01	39.8

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

MOVEMENT SUMMARY

Site: i4 [2023 AM Base - Aprasia Avenue x McPhail Way (Site Folder: 2023 AM Base)]

Network: N101 [2023 AM Base (Network Folder: General)]

Aprasia Avenue x McPhail Way
Site Category: Base Year
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: McPhail Way														
1	L2	19	5.6	19	5.6	0.017	3.8	LOS A	0.0	0.2	0.20	0.46	0.20	34.1
3	R2	7	0.0	7	0.0	0.017	3.7	LOS A	0.0	0.2	0.20	0.46	0.20	30.9
Approach		26	4.0	26	4.0	0.017	3.8	LOS A	0.0	0.2	0.20	0.46	0.20	33.5
East: Aprasia Avenue (Est Approach)														
4	L2	15	0.0	15	0.0	0.073	3.4	LOS A	0.0	0.0	0.00	0.05	0.00	39.1
5	T1	126	0.8	126	0.8	0.073	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	39.4
Approach		141	0.7	141	0.7	0.073	0.4	NA	0.0	0.0	0.00	0.05	0.00	39.4
West: Aprasia Avenue (Wst Approach)														
11	T1	38	8.3	38	8.3	0.029	0.1	LOS A	0.0	0.3	0.16	0.16	0.16	33.5
12	R2	19	0.0	19	0.0	0.029	3.8	LOS A	0.0	0.3	0.16	0.16	0.16	33.5
Approach		57	5.6	57	5.6	0.029	1.4	NA	0.0	0.3	0.16	0.16	0.16	33.5
All Vehicles		224	2.3	224	2.3	0.073	1.0	NA	0.0	0.3	0.07	0.13	0.07	37.7

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

MOVEMENT SUMMARY

Site: i1 [2023 AM Base - Gorman Drive x McPhail Way (Site Folder: 2023 AM Base)]

Network: N101 [2023 AM Base (Network Folder: General)]

Gorman Drive x McPhail Way
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Gorman Drive (SthEst Approach)														
5	T1	258	3.3	258	3.3	0.141	0.0	LOS A	0.0	0.3	0.03	0.03	0.03	39.8
6	R2	16	0.0	16	0.0	0.141	3.9	LOS A	0.0	0.3	0.03	0.03	0.03	39.0
Approach		274	3.1	274	3.1	0.141	0.3	NA	0.0	0.3	0.03	0.03	0.03	39.8
NorthEast: McPhail Way														
7	L2	5	0.0	5	0.0	0.023	3.4	LOS A	0.0	0.2	0.00	0.48	0.00	30.6
9	R2	21	5.0	21	5.0	0.023	4.7	LOS A	0.0	0.2	0.00	0.48	0.00	37.0
Approach		26	4.0	26	4.0	0.023	4.4	LOS A	0.0	0.2	0.00	0.48	0.00	36.6
NorthWest: Gorman Drive (NthWst Approach)														
10	L2	24	0.0	24	0.0	0.058	3.4	LOS A	0.0	0.0	0.00	0.11	0.00	39.3
11	T1	82	11.5	82	11.5	0.058	0.0	LOS A	0.0	0.0	0.00	0.11	0.00	39.3
Approach		106	8.9	106	8.9	0.058	0.8	NA	0.0	0.0	0.00	0.11	0.00	39.3
All Vehicles		406	4.7	406	4.7	0.141	0.7	NA	0.0	0.3	0.02	0.08	0.02	39.4

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

MOVEMENT SUMMARY

Site: i3 [2023 AM Base - Aprasia Avenue x Wilkins Way (Site Folder: 2023 AM Base)]

Network: N101 [2023 AM Base (Network Folder: General)]

Aprasia Avenue x Wilkins Way
Site Category: Base Year
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Wilkins Way														
1	L2	1	0.0	1	0.0	0.006	3.8	LOS A	0.0	0.1	0.23	0.49	0.23	34.2
3	R2	6	0.0	6	0.0	0.006	4.2	LOS A	0.0	0.1	0.23	0.49	0.23	37.4
Approach		7	0.0	7	0.0	0.006	4.1	LOS A	0.0	0.1	0.23	0.49	0.23	37.2
East: Aprasia Avenue (Est Approach)														
4	L2	8	0.0	8	0.0	0.075	3.4	LOS A	0.0	0.0	0.00	0.03	0.00	39.8
5	T1	133	0.0	133	0.0	0.075	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	39.8
Approach		141	0.0	141	0.0	0.075	0.2	NA	0.0	0.0	0.00	0.03	0.00	39.8
West: Aprasia Avenue (Wst Approach)														
11	T1	36	5.9	36	5.9	0.021	0.0	LOS A	0.0	0.0	0.03	0.03	0.03	39.8
12	R2	2	0.0	2	0.0	0.021	4.0	LOS A	0.0	0.0	0.03	0.03	0.03	39.2
Approach		38	5.6	38	5.6	0.021	0.3	NA	0.0	0.0	0.03	0.03	0.03	39.8
All Vehicles		186	1.1	186	1.1	0.075	0.4	NA	0.0	0.1	0.02	0.05	0.02	39.7

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

MOVEMENT SUMMARY

Site: i2 [2023 AM Base - Gorman Drive x Wilkins Way (Site Folder: 2023 AM Base)]

Network: N101 [2023 AM Base (Network Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Gorman Drive (SE Approach)														
4	L2	1	0.0	1	0.0	0.131	3.6	LOS A	0.0	0.0	0.00	0.00	0.00	40.1
5	T1	247	3.4	247	3.4	0.131	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	40.0
6	R2	1	0.0	1	0.0	0.131	3.9	LOS A	0.0	0.0	0.00	0.00	0.00	40.0
Approach		249	3.4	249	3.4	0.131	0.0	NA	0.0	0.0	0.00	0.00	0.00	40.0
NorthEast: Wilkins Way														
7	L2	2	0.0	2	0.0	0.025	3.4	LOS A	0.0	0.3	0.01	0.47	0.01	37.0
8	T1	1	0.0	1	0.0	0.025	4.9	LOS A	0.0	0.3	0.01	0.47	0.01	37.1
9	R2	13	0.0	13	0.0	0.025	6.7	LOS A	0.0	0.3	0.01	0.47	0.01	32.4
Approach		16	0.0	16	0.0	0.025	6.2	LOS A	0.0	0.3	0.01	0.47	0.01	34.1
NorthWest: Gorman Drive (NW Approach)														
10	L2	8	0.0	8	0.0	0.048	3.5	LOS A	0.0	0.0	0.01	0.05	0.01	38.7
11	T1	79	10.7	79	10.7	0.048	0.0	LOS A	0.0	0.0	0.01	0.05	0.01	39.7
12	R2	1	0.0	1	0.0	0.048	4.6	LOS A	0.0	0.0	0.01	0.05	0.01	39.5
Approach		88	9.5	88	9.5	0.048	0.4	NA	0.0	0.0	0.01	0.05	0.01	39.7
SouthWest: Helen Circuit														
1	L2	9	0.0	9	0.0	0.010	3.4	LOS A	0.0	0.1	0.00	0.45	0.00	36.9
2	T1	1	0.0	1	0.0	0.010	4.9	LOS A	0.0	0.1	0.00	0.45	0.00	36.9
3	R2	1	0.0	1	0.0	0.010	6.6	LOS A	0.0	0.1	0.00	0.45	0.00	38.3
Approach		12	0.0	12	0.0	0.010	3.8	LOS A	0.0	0.1	0.00	0.45	0.00	37.2
All Vehicles		365	4.6	365	4.6	0.131	0.5	NA	0.0	0.3	0.01	0.05	0.01	39.6

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

MOVEMENT SUMMARY

Site: i4 [2023 PM Base - Aprasia Avenue x McPhail Way (Site Folder: 2023 PM Base)]

Network: N101 [2023 PM Base (Network Folder: General)]

Aprasia Avenue x McPhail Way
Site Category: Base Year
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: McPhail Way														
1	L2	12	0.0	12	0.0	0.010	3.5	LOS A	0.0	0.1	0.11	0.45	0.11	34.7
3	R2	4	0.0	4	0.0	0.010	3.7	LOS A	0.0	0.1	0.11	0.45	0.11	31.5
Approach		16	0.0	16	0.0	0.010	3.6	LOS A	0.0	0.1	0.11	0.45	0.11	34.0
East: Aprasia Avenue (Est Approach)														
4	L2	3	0.0	3	0.0	0.026	3.4	LOS A	0.0	0.0	0.00	0.03	0.00	39.5
5	T1	46	0.0	46	0.0	0.026	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	39.6
Approach		49	0.0	49	0.0	0.026	0.2	NA	0.0	0.0	0.00	0.03	0.00	39.6
West: Aprasia Avenue (Wst Approach)														
11	T1	47	0.0	47	0.0	0.027	0.0	LOS A	0.0	0.1	0.03	0.06	0.03	37.8
12	R2	6	0.0	6	0.0	0.027	3.6	LOS A	0.0	0.1	0.03	0.06	0.03	37.8
Approach		54	0.0	54	0.0	0.027	0.4	NA	0.0	0.1	0.03	0.06	0.03	37.8
All Vehicles		119	0.0	119	0.0	0.027	0.8	NA	0.0	0.1	0.03	0.10	0.03	38.2

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

MOVEMENT SUMMARY

Site: i1 [2023 PM Base - Gorman Drive x McPhail Way (Site Folder: 2023 PM Base)]

Network: N101 [2023 PM Base (Network Folder: General)]

Gorman Drive x McPhail Way
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Gorman Drive (SthEst Approach)														
5	T1	94	10.1	94	10.1	0.053	0.0	LOS A	0.0	0.1	0.03	0.03	0.03	39.8
6	R2	5	0.0	5	0.0	0.053	3.9	LOS A	0.0	0.1	0.03	0.03	0.03	39.1
Approach		99	9.6	99	9.6	0.053	0.2	NA	0.0	0.1	0.03	0.03	0.03	39.8
NorthEast: McPhail Way														
7	L2	6	16.7	6	16.7	0.020	3.5	LOS A	0.0	0.2	0.00	0.48	0.00	31.4
9	R2	19	0.0	19	0.0	0.020	4.1	LOS A	0.0	0.2	0.00	0.48	0.00	37.4
Approach		25	4.2	25	4.2	0.020	3.9	LOS A	0.0	0.2	0.00	0.48	0.00	36.8
NorthWest: Gorman Drive (NthWst Approach)														
10	L2	19	0.0	19	0.0	0.068	3.4	LOS A	0.0	0.0	0.00	0.07	0.00	39.5
11	T1	109	4.8	109	4.8	0.068	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	39.5
Approach		128	4.1	128	4.1	0.068	0.5	NA	0.0	0.0	0.00	0.07	0.00	39.5
All Vehicles		253	6.3	253	6.3	0.068	0.8	NA	0.0	0.2	0.01	0.09	0.01	39.4

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

MOVEMENT SUMMARY

Site: i3 [2023 PM Base - Aprasia Avenue x Wilkins Way (Site Folder: 2023 PM Base)]

Network: N101 [2023 PM Base (Network Folder: General)]

Aprasia Avenue x Wilkins Way
Site Category: Base Year
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Wilkins Way														
1	L2	3	0.0	3	0.0	0.004	3.5	LOS A	0.0	0.0	0.11	0.45	0.11	34.8
3	R2	2	0.0	2	0.0	0.004	3.9	LOS A	0.0	0.0	0.11	0.45	0.11	37.6
Approach		5	0.0	5	0.0	0.004	3.7	LOS A	0.0	0.0	0.11	0.45	0.11	36.6
East: Aprasia Avenue (Est Approach)														
4	L2	3	0.0	3	0.0	0.024	3.4	LOS A	0.0	0.0	0.00	0.03	0.00	39.8
5	T1	42	0.0	42	0.0	0.024	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	39.8
Approach		45	0.0	45	0.0	0.024	0.2	NA	0.0	0.0	0.00	0.03	0.00	39.8
West: Aprasia Avenue (Wst Approach)														
11	T1	48	0.0	48	0.0	0.028	0.0	LOS A	0.0	0.0	0.01	0.02	0.01	39.9
12	R2	2	50.0	2	50.0	0.028	4.2	LOS A	0.0	0.0	0.01	0.02	0.01	39.7
Approach		51	2.1	51	2.1	0.028	0.2	NA	0.0	0.0	0.01	0.02	0.01	39.9
All Vehicles		101	1.0	101	1.0	0.028	0.4	NA	0.0	0.0	0.01	0.05	0.01	39.7

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

MOVEMENT SUMMARY

Site: i2 [2023 PM Base - Gorman Drive x Wilkins Way (Site Folder: 2023 PM Base)]

Network: N101 [2023 PM Base (Network Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Gorman Drive (SE Approach)														
4	L2	1	0.0	1	0.0	0.054	3.6	LOS A	0.0	0.0	0.01	0.01	0.01	40.1
5	T1	98	9.7	98	9.7	0.054	0.0	LOS A	0.0	0.0	0.01	0.01	0.01	39.9
6	R2	1	0.0	1	0.0	0.054	3.9	LOS A	0.0	0.0	0.01	0.01	0.01	39.9
Approach		100	9.5	100	9.5	0.054	0.1	NA	0.0	0.0	0.01	0.01	0.01	39.9
NorthEast: Wilkins Way														
7	L2	2	0.0	2	0.0	0.008	3.4	LOS A	0.0	0.1	0.00	0.45	0.00	37.7
8	T1	1	0.0	1	0.0	0.008	3.8	LOS A	0.0	0.1	0.00	0.45	0.00	37.9
9	R2	3	33.3	3	33.3	0.008	6.1	LOS A	0.0	0.1	0.00	0.45	0.00	34.0
Approach		6	16.7	6	16.7	0.008	4.8	LOS A	0.0	0.1	0.00	0.45	0.00	36.7
NorthWest: Gorman Drive (NW Approach)														
10	L2	2	0.0	2	0.0	0.060	3.5	LOS A	0.0	0.0	0.01	0.01	0.01	39.6
11	T1	111	5.7	111	5.7	0.060	0.0	LOS A	0.0	0.0	0.01	0.01	0.01	39.9
12	R2	1	0.0	1	0.0	0.060	3.9	LOS A	0.0	0.0	0.01	0.01	0.01	39.8
Approach		114	5.6	114	5.6	0.060	0.1	NA	0.0	0.0	0.01	0.01	0.01	39.9
SouthWest: Helen Circuit														
1	L2	1	0.0	1	0.0	0.003	3.4	LOS A	0.0	0.0	0.00	0.43	0.00	36.7
2	T1	1	0.0	1	0.0	0.003	3.8	LOS A	0.0	0.0	0.00	0.43	0.00	36.7
3	R2	1	0.0	1	0.0	0.003	5.2	LOS A	0.0	0.0	0.00	0.43	0.00	38.2
Approach		3	0.0	3	0.0	0.003	4.1	LOS A	0.0	0.0	0.00	0.43	0.00	37.4
All Vehicles		223	7.5	223	7.5	0.060	0.3	NA	0.0	0.1	0.01	0.03	0.01	39.8

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

MOVEMENT SUMMARY

Site: i4 [2033 AM Base - Aprasia Avenue x McPhail Way (Site Folder: 2033 AM Base)]

Network: N101 [2033 AM Base (Network Folder: General)]

Aprasia Avenue x McPhail Way
Site Category: Base Year
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: McPhail Way														
1	L2	22	4.8	22	4.8	0.021	3.9	LOS A	0.0	0.2	0.22	0.46	0.22	34.0
3	R2	9	0.0	9	0.0	0.021	3.8	LOS A	0.0	0.2	0.22	0.46	0.22	30.7
Approach		32	3.3	32	3.3	0.021	3.9	LOS A	0.0	0.2	0.22	0.46	0.22	33.3
East: Aprasia Avenue (Est Approach)														
4	L2	17	0.0	17	0.0	0.089	3.4	LOS A	0.0	0.0	0.00	0.05	0.00	39.1
5	T1	154	0.7	154	0.7	0.089	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	39.4
Approach		171	0.6	171	0.6	0.089	0.3	NA	0.0	0.0	0.00	0.05	0.00	39.4
West: Aprasia Avenue (Wst Approach)														
11	T1	47	8.9	47	8.9	0.036	0.2	LOS A	0.0	0.3	0.18	0.16	0.18	33.3
12	R2	23	0.0	23	0.0	0.036	3.9	LOS A	0.0	0.3	0.18	0.16	0.18	33.3
Approach		71	6.0	71	6.0	0.036	1.4	NA	0.0	0.3	0.18	0.16	0.18	33.3
All Vehicles		273	2.3	273	2.3	0.089	1.0	NA	0.0	0.3	0.07	0.12	0.07	37.7

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

MOVEMENT SUMMARY

Site: i1 [2033 AM Base - Gorman Drive x McPhail Way (Site Folder: 2033 AM Base)]

Network: N101 [2033 AM Base (Network Folder: General)]

Gorman Drive x McPhail Way
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Gorman Drive (SthEst Approach)														
5	T1	315	3.3	315	3.3	0.172	0.0	LOS A	0.1	0.4	0.04	0.03	0.04	39.8
6	R2	19	0.0	19	0.0	0.172	4.0	LOS A	0.1	0.4	0.04	0.03	0.04	39.0
Approach		334	3.2	334	3.2	0.172	0.3	NA	0.1	0.4	0.04	0.03	0.04	39.8
NorthEast: McPhail Way														
7	L2	5	0.0	5	0.0	0.028	3.4	LOS A	0.0	0.3	0.00	0.48	0.00	30.1
9	R2	25	4.2	25	4.2	0.028	5.0	LOS A	0.0	0.3	0.00	0.48	0.00	36.9
Approach		31	3.4	31	3.4	0.028	4.7	LOS A	0.0	0.3	0.00	0.48	0.00	36.5
NorthWest: Gorman Drive (NthWst Approach)														
10	L2	24	0.0	24	0.0	0.067	3.4	LOS A	0.0	0.0	0.00	0.09	0.00	39.3
11	T1	99	11.7	99	11.7	0.067	0.0	LOS A	0.0	0.0	0.00	0.09	0.00	39.4
Approach		123	9.4	123	9.4	0.067	0.7	NA	0.0	0.0	0.00	0.09	0.00	39.3
All Vehicles		487	4.8	487	4.8	0.172	0.6	NA	0.1	0.4	0.02	0.07	0.02	39.5

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

MOVEMENT SUMMARY

Site: i3 [2033 AM Base - Aprasia Avenue x Wilkins Way (Site Folder: 2033 AM Base)]

Network: N101 [2033 AM Base (Network Folder: General)]

Aprasia Avenue x Wilkins Way
Site Category: Base Year
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Wilkins Way														
1	L2	1	0.0	1	0.0	0.009	3.9	LOS A	0.0	0.1	0.26	0.50	0.26	34.1
3	R2	8	0.0	8	0.0	0.009	4.3	LOS A	0.0	0.1	0.26	0.50	0.26	37.3
Approach		9	0.0	9	0.0	0.009	4.3	LOS A	0.0	0.1	0.26	0.50	0.26	37.2
East: Aprasia Avenue (Est Approach)														
4	L2	11	0.0	11	0.0	0.091	3.4	LOS A	0.0	0.0	0.00	0.03	0.00	39.8
5	T1	161	0.0	161	0.0	0.091	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	39.8
Approach		172	0.0	172	0.0	0.091	0.2	NA	0.0	0.0	0.00	0.03	0.00	39.8
West: Aprasia Avenue (Wst Approach)														
11	T1	44	7.1	44	7.1	0.027	0.0	LOS A	0.0	0.1	0.04	0.03	0.04	39.7
12	R2	3	0.0	3	0.0	0.027	4.1	LOS A	0.0	0.1	0.04	0.03	0.04	39.0
Approach		47	6.7	47	6.7	0.027	0.3	NA	0.0	0.1	0.04	0.03	0.04	39.7
All Vehicles		228	1.4	228	1.4	0.091	0.4	NA	0.0	0.1	0.02	0.05	0.02	39.6

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

MOVEMENT SUMMARY

Site: i2 [2033 AM Base - Gorman Drive x Wilkins Way (Site Folder: 2033 AM Base)]

Network: N101 [2033 AM Base (Network Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Gorman Drive (SE Approach)														
4	L2	1	0.0	1	0.0	0.159	3.7	LOS A	0.0	0.0	0.00	0.00	0.00	40.1
5	T1	301	3.5	301	3.5	0.159	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	40.0
6	R2	1	0.0	1	0.0	0.159	4.0	LOS A	0.0	0.0	0.00	0.00	0.00	40.0
Approach		303	3.5	303	3.5	0.159	0.0	NA	0.0	0.0	0.00	0.00	0.00	40.0
NorthEast: Wilkins Way														
7	L2	3	0.0	3	0.0	0.034	3.4	LOS A	0.1	0.4	0.01	0.47	0.01	36.6
8	T1	1	0.0	1	0.0	0.034	5.8	LOS A	0.1	0.4	0.01	0.47	0.01	36.8
9	R2	16	0.0	16	0.0	0.034	7.8	LOS A	0.1	0.4	0.01	0.47	0.01	31.6
Approach		20	0.0	20	0.0	0.034	7.0	LOS A	0.1	0.4	0.01	0.47	0.01	33.5
NorthWest: Gorman Drive (NW Approach)														
10	L2	11	0.0	11	0.0	0.059	3.6	LOS A	0.0	0.0	0.01	0.05	0.01	38.7
11	T1	96	11.0	96	11.0	0.059	0.0	LOS A	0.0	0.0	0.01	0.05	0.01	39.7
12	R2	1	0.0	1	0.0	0.059	4.9	LOS A	0.0	0.0	0.01	0.05	0.01	39.5
Approach		107	9.8	107	9.8	0.059	0.4	NA	0.0	0.0	0.01	0.05	0.01	39.7
SouthWest: Helen Circuit														
1	L2	12	0.0	12	0.0	0.012	3.4	LOS A	0.0	0.1	0.00	0.45	0.00	36.9
2	T1	1	0.0	1	0.0	0.012	5.7	LOS A	0.0	0.1	0.00	0.45	0.00	36.9
3	R2	1	0.0	1	0.0	0.012	7.5	LOS A	0.0	0.1	0.00	0.45	0.00	38.3
Approach		14	0.0	14	0.0	0.012	3.9	LOS A	0.0	0.1	0.00	0.45	0.00	37.1
All Vehicles		444	4.7	444	4.7	0.159	0.6	NA	0.1	0.4	0.01	0.05	0.01	39.5

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

MOVEMENT SUMMARY

Site: i4 [2033 PM Base - Aprasia Avenue x McPhail Way (Site Folder: 2033 PM Base)]

Network: N101 [2033 PM Base (Network Folder: General)]

Aprasia Avenue x McPhail Way
Site Category: Base Year
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: McPhail Way														
1	L2	15	0.0	15	0.0	0.012	3.6	LOS A	0.0	0.1	0.12	0.45	0.12	34.6
3	R2	5	0.0	5	0.0	0.012	3.7	LOS A	0.0	0.1	0.12	0.45	0.12	31.4
Approach		20	0.0	20	0.0	0.012	3.6	LOS A	0.0	0.1	0.12	0.45	0.12	34.0
East: Aprasia Avenue (Est Approach)														
4	L2	4	0.0	4	0.0	0.031	3.4	LOS A	0.0	0.0	0.00	0.03	0.00	39.4
5	T1	56	0.0	56	0.0	0.031	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	39.6
Approach		60	0.0	60	0.0	0.031	0.2	NA	0.0	0.0	0.00	0.03	0.00	39.6
West: Aprasia Avenue (Wst Approach)														
11	T1	58	0.0	58	0.0	0.033	0.0	LOS A	0.0	0.1	0.04	0.06	0.04	37.6
12	R2	8	0.0	8	0.0	0.033	3.7	LOS A	0.0	0.1	0.04	0.06	0.04	37.6
Approach		66	0.0	66	0.0	0.033	0.5	NA	0.0	0.1	0.04	0.06	0.04	37.6
All Vehicles		146	0.0	146	0.0	0.033	0.8	NA	0.0	0.1	0.04	0.10	0.04	38.0

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

MOVEMENT SUMMARY

Site: i1 [2033 PM Base - Gorman Drive x McPhail Way (Site Folder: 2033 PM Base)]

Network: N101 [2033 PM Base (Network Folder: General)]

Gorman Drive x McPhail Way
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Gorman Drive (SthEst Approach)														
5	T1	114	10.2	114	10.2	0.064	0.0	LOS A	0.0	0.1	0.03	0.03	0.03	39.8
6	R2	6	0.0	6	0.0	0.064	4.0	LOS A	0.0	0.1	0.03	0.03	0.03	39.0
Approach		120	9.6	120	9.6	0.064	0.2	NA	0.0	0.1	0.03	0.03	0.03	39.8
NorthEast: McPhail Way														
7	L2	7	14.3	7	14.3	0.024	3.5	LOS A	0.0	0.2	0.00	0.48	0.00	31.2
9	R2	23	0.0	23	0.0	0.024	4.2	LOS A	0.0	0.2	0.00	0.48	0.00	37.3
Approach		31	3.4	31	3.4	0.024	4.1	LOS A	0.0	0.2	0.00	0.48	0.00	36.8
NorthWest: Gorman Drive (NthWst Approach)														
10	L2	23	0.0	23	0.0	0.082	3.4	LOS A	0.0	0.0	0.00	0.07	0.00	39.5
11	T1	133	4.8	133	4.8	0.082	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	39.5
Approach		156	4.1	156	4.1	0.082	0.5	NA	0.0	0.0	0.00	0.07	0.00	39.5
All Vehicles		306	6.2	306	6.2	0.082	0.8	NA	0.0	0.2	0.01	0.09	0.01	39.3

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

MOVEMENT SUMMARY

Site: i3 [2033 PM Base - Aprasia Avenue x Wilkins Way (Site Folder: 2033 PM Base)]

Network: N101 [2033 PM Base (Network Folder: General)]

Aprasia Avenue x Wilkins Way
Site Category: Base Year
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Wilkins Way														
1	L2	4	0.0	4	0.0	0.005	3.5	LOS A	0.0	0.1	0.13	0.45	0.13	34.7
3	R2	3	0.0	3	0.0	0.005	4.0	LOS A	0.0	0.1	0.13	0.45	0.13	37.6
Approach		7	0.0	7	0.0	0.005	3.7	LOS A	0.0	0.1	0.13	0.45	0.13	36.6
East: Aprasia Avenue (Est Approach)														
4	L2	4	0.0	4	0.0	0.029	3.4	LOS A	0.0	0.0	0.00	0.04	0.00	39.8
5	T1	51	0.0	51	0.0	0.029	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	39.8
Approach		55	0.0	55	0.0	0.029	0.3	NA	0.0	0.0	0.00	0.04	0.00	39.8
West: Aprasia Avenue (Wst Approach)														
11	T1	59	0.0	59	0.0	0.033	0.0	LOS A	0.0	0.1	0.01	0.02	0.01	39.9
12	R2	2	50.0	2	50.0	0.033	4.2	LOS A	0.0	0.1	0.01	0.02	0.01	39.7
Approach		61	1.7	61	1.7	0.033	0.2	NA	0.0	0.1	0.01	0.02	0.01	39.9
All Vehicles		123	0.9	123	0.9	0.033	0.4	NA	0.0	0.1	0.01	0.05	0.01	39.7

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

MOVEMENT SUMMARY

Site: i2 [2033 PM Base - Gorman Drive x Wilkins Way (Site Folder: 2033 PM Base)]

Network: N101 [2033 PM Base (Network Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Gorman Drive (SE Approach)														
4	L2	1	0.0	1	0.0	0.066	3.7	LOS A	0.0	0.0	0.01	0.01	0.01	40.1
5	T1	119	9.7	119	9.7	0.066	0.0	LOS A	0.0	0.0	0.01	0.01	0.01	39.9
6	R2	1	0.0	1	0.0	0.066	4.0	LOS A	0.0	0.0	0.01	0.01	0.01	39.9
Approach		121	9.6	121	9.6	0.066	0.1	NA	0.0	0.0	0.01	0.01	0.01	39.9
NorthEast: Wilkins Way														
7	L2	3	0.0	3	0.0	0.011	3.4	LOS A	0.0	0.1	0.00	0.45	0.00	37.6
8	T1	1	0.0	1	0.0	0.011	4.2	LOS A	0.0	0.1	0.00	0.45	0.00	37.7
9	R2	4	25.0	4	25.0	0.011	6.5	LOS A	0.0	0.1	0.00	0.45	0.00	33.7
Approach		8	12.5	8	12.5	0.011	5.1	LOS A	0.0	0.1	0.00	0.45	0.00	36.5
NorthWest: Gorman Drive (NW Approach)														
10	L2	3	0.0	3	0.0	0.074	3.5	LOS A	0.0	0.0	0.01	0.01	0.01	39.6
11	T1	135	6.3	135	6.3	0.074	0.0	LOS A	0.0	0.0	0.01	0.01	0.01	39.9
12	R2	1	0.0	1	0.0	0.074	4.0	LOS A	0.0	0.0	0.01	0.01	0.01	39.7
Approach		139	6.1	139	6.1	0.074	0.1	NA	0.0	0.0	0.01	0.01	0.01	39.9
SouthWest: Helen Circuit														
1	L2	1	0.0	1	0.0	0.004	3.4	LOS A	0.0	0.0	0.00	0.43	0.00	36.5
2	T1	1	0.0	1	0.0	0.004	4.1	LOS A	0.0	0.0	0.00	0.43	0.00	36.5
3	R2	1	0.0	1	0.0	0.004	5.7	LOS A	0.0	0.0	0.00	0.43	0.00	38.1
Approach		3	0.0	3	0.0	0.004	4.4	LOS A	0.0	0.0	0.00	0.43	0.00	37.3
All Vehicles		272	7.8	272	7.8	0.074	0.3	NA	0.0	0.1	0.01	0.03	0.01	39.8

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

MOVEMENT SUMMARY

Site: i4 [2023 AM Base - Aprasia Avenue x McPhail Way + DT (Site Folder: 2023 AM Base + Development Traffic)]

Network: N101 [2023 AM Base + Development Traffic (Network Folder: General)]

Aprasia Avenue x McPhail Way
Site Category: Base Year
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: McPhail Way														
1	L2	19	5.6	19	5.6	0.019	4.2	LOS A	0.0	0.2	0.29	0.48	0.29	33.7
3	R2	7	0.0	7	0.0	0.019	3.9	LOS A	0.0	0.2	0.29	0.48	0.29	30.3
Approach		26	4.0	26	4.0	0.019	4.1	LOS A	0.0	0.2	0.29	0.48	0.29	33.0
East: Aprasia Avenue (Est Approach)														
4	L2	27	0.0	27	0.0	0.137	3.4	LOS A	0.0	0.0	0.00	0.05	0.00	39.1
5	T1	237	0.4	237	0.4	0.137	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	39.4
Approach		264	0.4	264	0.4	0.137	0.4	NA	0.0	0.0	0.00	0.05	0.00	39.4
West: Aprasia Avenue (Wst Approach)														
11	T1	38	8.3	38	8.3	0.030	0.3	LOS A	0.0	0.3	0.24	0.17	0.24	32.6
12	R2	19	0.0	19	0.0	0.030	4.2	LOS A	0.0	0.3	0.24	0.17	0.24	32.6
Approach		57	5.6	57	5.6	0.030	1.6	NA	0.0	0.3	0.24	0.17	0.24	32.6
All Vehicles		347	1.5	347	1.5	0.137	0.9	NA	0.0	0.3	0.06	0.10	0.06	38.2

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

MOVEMENT SUMMARY

Site: i1 [2023 AM Base - Gorman Drive x McPhail Way + DT (Site Folder: 2023 AM Base + Development Traffic)]

Network: N101 [2023 AM Base + Development Traffic (Network Folder: General)]

Gorman Drive x McPhail Way
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Gorman Drive (SthEst Approach)														
5	T1	258	3.3	258	3.3	0.142	0.1	LOS A	0.0	0.3	0.04	0.03	0.04	39.7
6	R2	16	0.0	16	0.0	0.142	4.2	LOS A	0.0	0.3	0.04	0.03	0.04	38.9
Approach		274	3.1	274	3.1	0.142	0.3	NA	0.0	0.3	0.04	0.03	0.04	39.7
NorthEast: McPhail Way														
7	L2	19	0.0	19	0.0	0.035	3.4	LOS A	0.0	0.3	0.00	0.47	0.00	30.9
9	R2	21	5.0	21	5.0	0.035	5.0	LOS A	0.0	0.3	0.00	0.47	0.00	37.1
Approach		40	2.6	40	2.6	0.035	4.3	LOS A	0.0	0.3	0.00	0.47	0.00	35.8
NorthWest: Gorman Drive (NthWst Approach)														
10	L2	24	0.0	24	0.0	0.099	3.4	LOS A	0.0	0.0	0.00	0.06	0.00	39.6
11	T1	161	5.9	161	5.9	0.099	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	39.6
Approach		185	5.1	185	5.1	0.099	0.5	NA	0.0	0.0	0.00	0.06	0.00	39.6
All Vehicles		499	3.8	499	3.8	0.142	0.7	NA	0.0	0.3	0.02	0.08	0.02	39.4

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

MOVEMENT SUMMARY

Site: i3 [2023 AM Base - Aprasia Avenue x Wilkins Way + DT (Site Folder: 2023 AM Base + Development Traffic)]

Network: N101 [2023 AM Base + Development Traffic (Network Folder: General)]

Aprasia Avenue x Wilkins Way
Site Category: Base Year
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Wilkins Way														
1	L2	79	0.0	79	0.0	0.062	4.0	LOS A	0.1	0.7	0.27	0.48	0.27	34.2
3	R2	6	0.0	6	0.0	0.062	4.4	LOS A	0.1	0.7	0.27	0.48	0.27	37.4
Approach		85	0.0	85	0.0	0.062	4.0	LOS A	0.1	0.7	0.27	0.48	0.27	34.7
East: Aprasia Avenue (Est Approach)														
4	L2	8	0.0	8	0.0	0.101	3.4	LOS A	0.0	0.0	0.00	0.02	0.00	39.8
5	T1	182	0.0	182	0.0	0.101	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	39.8
Approach		191	0.0	191	0.0	0.101	0.2	NA	0.0	0.0	0.00	0.02	0.00	39.8
West: Aprasia Avenue (Wst Approach)														
11	T1	36	5.9	36	5.9	0.021	0.0	LOS A	0.0	0.0	0.04	0.03	0.04	39.8
12	R2	2	0.0	2	0.0	0.021	4.2	LOS A	0.0	0.0	0.04	0.03	0.04	39.1
Approach		38	5.6	38	5.6	0.021	0.3	NA	0.0	0.0	0.04	0.03	0.04	39.8
All Vehicles		314	0.7	314	0.7	0.101	1.2	NA	0.1	0.7	0.08	0.15	0.08	38.7

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

MOVEMENT SUMMARY

Site: i2 [2023 AM Base - Gorman Drive x Wilkins Way + DT (Site Folder: 2023 AM Base + Development Traffic)]

Network: N101 [2023 AM Base + Development Traffic (Network Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Gorman Drive (SE Approach)														
4	L2	1	0.0	1	0.0	0.146	4.2	LOS A	0.1	0.5	0.05	0.04	0.05	39.9
5	T1	247	3.4	247	3.4	0.146	0.1	LOS A	0.1	0.5	0.05	0.04	0.05	39.6
6	R2	19	0.0	19	0.0	0.146	4.3	LOS A	0.1	0.5	0.05	0.04	0.05	39.6
Approach		267	3.1	267	3.1	0.146	0.4	NA	0.1	0.5	0.05	0.04	0.05	39.6
NorthEast: Wilkins Way														
7	L2	2	0.0	2	0.0	0.027	3.4	LOS A	0.0	0.3	0.01	0.47	0.01	36.6
8	T1	1	0.0	1	0.0	0.027	5.7	LOS A	0.0	0.3	0.01	0.47	0.01	36.8
9	R2	13	0.0	13	0.0	0.027	7.7	LOS A	0.0	0.3	0.01	0.47	0.01	31.6
Approach		16	0.0	16	0.0	0.027	7.0	LOS A	0.0	0.3	0.01	0.47	0.01	33.5
NorthWest: Gorman Drive (NW Approach)														
10	L2	68	0.0	68	0.0	0.094	3.4	LOS A	0.0	0.0	0.01	0.18	0.01	36.2
11	T1	105	8.0	105	8.0	0.094	0.0	LOS A	0.0	0.0	0.01	0.18	0.01	39.0
12	R2	1	0.0	1	0.0	0.094	4.6	LOS A	0.0	0.0	0.01	0.18	0.01	38.9
Approach		175	4.8	175	4.8	0.094	1.4	NA	0.0	0.0	0.01	0.18	0.01	38.6
SouthWest: Helen Circuit														
1	L2	9	0.0	9	0.0	0.011	3.4	LOS A	0.0	0.1	0.00	0.45	0.00	36.8
2	T1	1	0.0	1	0.0	0.011	6.0	LOS A	0.0	0.1	0.00	0.45	0.00	36.8
3	R2	1	0.0	1	0.0	0.011	7.1	LOS A	0.0	0.1	0.00	0.45	0.00	38.2
Approach		12	0.0	12	0.0	0.011	4.0	LOS A	0.0	0.1	0.00	0.45	0.00	37.1
All Vehicles		469	3.6	469	3.6	0.146	1.1	NA	0.1	0.5	0.03	0.12	0.03	39.0

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

MOVEMENT SUMMARY

Site: i4 [2023 PM Base - Aprasia Avenue x McPhail Way + DT (Site Folder: 2023 PM Base + Development Traffic)]

Network: N101 [2023 PM Base + Development Traffic (Network Folder: General)]

Aprasia Avenue x McPhail Way
Site Category: Base Year
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: McPhail Way														
1	L2	12	0.0	12	0.0	0.010	3.7	LOS A	0.0	0.1	0.19	0.45	0.19	34.3
3	R2	4	0.0	4	0.0	0.010	3.7	LOS A	0.0	0.1	0.19	0.45	0.19	31.0
Approach		16	0.0	16	0.0	0.010	3.7	LOS A	0.0	0.1	0.19	0.45	0.19	33.6
East: Aprasia Avenue (Est Approach)														
4	L2	12	0.0	12	0.0	0.066	3.4	LOS A	0.0	0.0	0.00	0.04	0.00	39.2
5	T1	117	0.0	117	0.0	0.066	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	39.5
Approach		128	0.0	128	0.0	0.066	0.3	NA	0.0	0.0	0.00	0.04	0.00	39.5
West: Aprasia Avenue (Wst Approach)														
11	T1	47	0.0	47	0.0	0.027	0.0	LOS A	0.0	0.1	0.06	0.06	0.06	37.4
12	R2	6	0.0	6	0.0	0.027	3.8	LOS A	0.0	0.1	0.06	0.06	0.06	37.4
Approach		54	0.0	54	0.0	0.027	0.5	NA	0.0	0.1	0.06	0.06	0.06	37.4
All Vehicles		198	0.0	198	0.0	0.066	0.6	NA	0.0	0.1	0.03	0.08	0.03	38.6

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

MOVEMENT SUMMARY

Site: i1 [2023 PM Base - Gorman Drive x McPhail Way + DT (Site Folder: 2023 PM Base + Development Traffic)]

Network: N101 [2023 PM Base + Development Traffic (Network Folder: General)]

Gorman Drive x McPhail Way
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Gorman Drive (SthEst Approach)														
5	T1	94	10.1	94	10.1	0.053	0.0	LOS A	0.0	0.1	0.04	0.03	0.04	39.8
6	R2	5	0.0	5	0.0	0.053	4.0	LOS A	0.0	0.1	0.04	0.03	0.04	39.0
Approach		99	9.6	99	9.6	0.053	0.3	NA	0.0	0.1	0.04	0.03	0.04	39.8
NorthEast: McPhail Way														
7	L2	15	7.1	15	7.1	0.026	3.5	LOS A	0.0	0.3	0.00	0.47	0.00	31.5
9	R2	19	0.0	19	0.0	0.026	4.2	LOS A	0.0	0.3	0.00	0.47	0.00	37.4
Approach		34	3.1	34	3.1	0.026	3.9	LOS A	0.0	0.3	0.00	0.47	0.00	36.3
NorthWest: Gorman Drive (NthWst Approach)														
10	L2	19	0.0	19	0.0	0.090	3.4	LOS A	0.0	0.0	0.00	0.05	0.00	39.6
11	T1	153	3.4	153	3.4	0.090	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	39.6
Approach		172	3.1	172	3.1	0.090	0.4	NA	0.0	0.0	0.00	0.05	0.00	39.6
All Vehicles		304	5.2	304	5.2	0.090	0.7	NA	0.0	0.3	0.01	0.09	0.01	39.4

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

MOVEMENT SUMMARY

Site: i3 [2023 PM Base - Aprasia Avenue x Wilkins Way + DT (Site Folder: 2023 PM Base + Development Traffic)]

Network: N101 [2023 PM Base + Development Traffic (Network Folder: General)]

Aprasia Avenue x Wilkins Way
Site Category: Base Year
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Wilkins Way														
1	L2	56	0.0	56	0.0	0.038	3.6	LOS A	0.1	0.4	0.15	0.44	0.15	34.8
3	R2	2	0.0	2	0.0	0.038	4.0	LOS A	0.1	0.4	0.15	0.44	0.15	37.6
Approach		58	0.0	58	0.0	0.038	3.6	LOS A	0.1	0.4	0.15	0.44	0.15	35.0
East: Aprasia Avenue (Est Approach)														
4	L2	3	0.0	3	0.0	0.036	3.4	LOS A	0.0	0.0	0.00	0.02	0.00	39.9
5	T1	64	0.0	64	0.0	0.036	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	39.9
Approach		67	0.0	67	0.0	0.036	0.2	NA	0.0	0.0	0.00	0.02	0.00	39.9
West: Aprasia Avenue (Wst Approach)														
11	T1	48	0.0	48	0.0	0.028	0.0	LOS A	0.0	0.1	0.02	0.02	0.02	39.9
12	R2	2	50.0	2	50.0	0.028	4.3	LOS A	0.0	0.1	0.02	0.02	0.02	39.6
Approach		51	2.1	51	2.1	0.028	0.2	NA	0.0	0.1	0.02	0.02	0.02	39.9
All Vehicles		176	0.6	176	0.6	0.038	1.3	NA	0.1	0.4	0.05	0.16	0.05	38.7

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

MOVEMENT SUMMARY

Site: i2 [2023 PM Base - Gorman Drive x Wilkins Way + DT (Site Folder: 2023 PM Base + Development Traffic)]

Network: N101 [2023 PM Base + Development Traffic (Network Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Gorman Drive (SE Approach)														
4	L2	1	0.0	1	0.0	0.061	4.1	LOS A	0.0	0.2	0.06	0.05	0.06	39.9
5	T1	98	9.7	98	9.7	0.061	0.1	LOS A	0.0	0.2	0.06	0.05	0.06	39.5
6	R2	9	0.0	9	0.0	0.061	4.2	LOS A	0.0	0.2	0.06	0.05	0.06	39.5
Approach		108	8.7	108	8.7	0.061	0.5	NA	0.0	0.2	0.06	0.05	0.06	39.5
NorthEast: Wilkins Way														
7	L2	2	0.0	2	0.0	0.009	3.4	LOS A	0.0	0.1	0.00	0.45	0.00	37.5
8	T1	1	0.0	1	0.0	0.009	4.2	LOS A	0.0	0.1	0.00	0.45	0.00	37.7
9	R2	3	33.3	3	33.3	0.009	6.8	LOS A	0.0	0.1	0.00	0.45	0.00	33.6
Approach		6	16.7	6	16.7	0.009	5.2	LOS A	0.0	0.1	0.00	0.45	0.00	36.4
NorthWest: Gorman Drive (NW Approach)														
10	L2	44	0.0	44	0.0	0.092	3.4	LOS A	0.0	0.0	0.00	0.12	0.00	37.4
11	T1	127	5.0	127	5.0	0.092	0.0	LOS A	0.0	0.0	0.00	0.12	0.00	39.4
12	R2	1	0.0	1	0.0	0.092	3.9	LOS A	0.0	0.0	0.00	0.12	0.00	39.2
Approach		173	3.7	173	3.7	0.092	0.9	NA	0.0	0.0	0.00	0.12	0.00	39.2
SouthWest: Helen Circuit														
1	L2	1	0.0	1	0.0	0.004	3.4	LOS A	0.0	0.0	0.00	0.43	0.00	36.5
2	T1	1	0.0	1	0.0	0.004	4.3	LOS A	0.0	0.0	0.00	0.43	0.00	36.5
3	R2	1	0.0	1	0.0	0.004	5.4	LOS A	0.0	0.0	0.00	0.43	0.00	38.1
Approach		3	0.0	3	0.0	0.004	4.4	LOS A	0.0	0.0	0.00	0.43	0.00	37.3
All Vehicles		291	5.8	291	5.8	0.092	0.9	NA	0.0	0.2	0.03	0.10	0.03	39.2

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

MOVEMENT SUMMARY

Site: i4 [2033 AM Base - Aprasia Avenue x McPhail Way + DT (Site Folder: 2033 AM Base + Development Traffic)]

Network: N101 [2033 AM Base + Development Traffic (Network Folder: General)]

Aprasia Avenue x McPhail Way
Site Category: Base Year
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: McPhail Way														
1	L2	22	4.8	22	4.8	0.023	4.3	LOS A	0.0	0.2	0.30	0.50	0.30	33.6
3	R2	9	0.0	9	0.0	0.023	3.9	LOS A	0.0	0.2	0.30	0.50	0.30	30.2
Approach		32	3.3	32	3.3	0.023	4.2	LOS A	0.0	0.2	0.30	0.50	0.30	32.9
East: Aprasia Avenue (Est Approach)														
4	L2	31	0.0	31	0.0	0.153	3.4	LOS A	0.0	0.0	0.00	0.05	0.00	39.1
5	T1	264	0.4	264	0.4	0.153	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	39.4
Approach		295	0.4	295	0.4	0.153	0.4	NA	0.0	0.0	0.00	0.05	0.00	39.4
West: Aprasia Avenue (Wst Approach)														
11	T1	47	8.9	47	8.9	0.038	0.4	LOS A	0.1	0.4	0.25	0.17	0.25	32.5
12	R2	23	0.0	23	0.0	0.038	4.3	LOS A	0.1	0.4	0.25	0.17	0.25	32.5
Approach		71	6.0	71	6.0	0.038	1.6	NA	0.1	0.4	0.25	0.17	0.25	32.5
All Vehicles		397	1.6	397	1.6	0.153	0.9	NA	0.1	0.4	0.07	0.11	0.07	38.1

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

MOVEMENT SUMMARY

Site: i1 [2033 AM Base - Gorman Drive x McPhail Way + DT (Site Folder: 2033 AM Base + Development Traffic)]

Network: N101 [2033 AM Base + Development Traffic (Network Folder: General)]

Gorman Drive x McPhail Way
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Gorman Drive (SthEst Approach)														
5	T1	315	3.3	315	3.3	0.173	0.1	LOS A	0.1	0.4	0.05	0.03	0.05	39.7
6	R2	19	0.0	19	0.0	0.173	4.3	LOS A	0.1	0.4	0.05	0.03	0.05	38.9
Approach		334	3.2	334	3.2	0.173	0.3	NA	0.1	0.4	0.05	0.03	0.05	39.7
NorthEast: McPhail Way														
7	L2	20	0.0	20	0.0	0.041	3.4	LOS A	0.1	0.4	0.00	0.47	0.00	30.5
9	R2	25	4.2	25	4.2	0.041	5.4	LOS A	0.1	0.4	0.00	0.47	0.00	37.0
Approach		45	2.3	45	2.3	0.041	4.5	LOS A	0.1	0.4	0.00	0.47	0.00	35.8
NorthWest: Gorman Drive (NthWst Approach)														
10	L2	24	0.0	24	0.0	0.108	3.4	LOS A	0.0	0.0	0.00	0.06	0.00	39.6
11	T1	178	6.5	178	6.5	0.108	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	39.6
Approach		202	5.7	202	5.7	0.108	0.4	NA	0.0	0.0	0.00	0.06	0.00	39.6
All Vehicles		581	4.0	581	4.0	0.173	0.7	NA	0.1	0.4	0.03	0.07	0.03	39.4

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

MOVEMENT SUMMARY

Site: i3 [2033 AM Base - Aprasia Avenue x Wilkins Way + DT (Site Folder: 2033 AM Base + Development Traffic)]

Network: N101 [2033 AM Base + Development Traffic (Network Folder: General)]

Aprasia Avenue x Wilkins Way
Site Category: Base Year
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Wilkins Way														
1	L2	80	0.0	80	0.0	0.067	4.1	LOS A	0.1	0.7	0.30	0.49	0.30	34.1
3	R2	8	0.0	8	0.0	0.067	4.6	LOS A	0.1	0.7	0.30	0.49	0.30	37.3
Approach		88	0.0	88	0.0	0.067	4.1	LOS A	0.1	0.7	0.30	0.49	0.30	34.7
East: Aprasia Avenue (Est Approach)														
4	L2	11	0.0	11	0.0	0.117	3.4	LOS A	0.0	0.0	0.00	0.02	0.00	39.8
5	T1	211	0.0	211	0.0	0.117	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	39.8
Approach		221	0.0	221	0.0	0.117	0.2	NA	0.0	0.0	0.00	0.02	0.00	39.8
West: Aprasia Avenue (Wst Approach)														
11	T1	44	7.1	44	7.1	0.027	0.1	LOS A	0.0	0.1	0.05	0.03	0.05	39.7
12	R2	3	0.0	3	0.0	0.027	4.3	LOS A	0.0	0.1	0.05	0.03	0.05	38.9
Approach		47	6.7	47	6.7	0.027	0.3	NA	0.0	0.1	0.05	0.03	0.05	39.7
All Vehicles		357	0.9	357	0.9	0.117	1.2	NA	0.1	0.7	0.08	0.14	0.08	38.8

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

MOVEMENT SUMMARY

Site: i2 [2033 AM Base - Gorman Drive x Wilkins Way + DT (Site Folder: 2033 AM Base + Development Traffic)]

Network: N101 [2033 AM Base + Development Traffic (Network Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Gorman Drive (SE Approach)														
4	L2	1	0.0	1	0.0	0.174	4.3	LOS A	0.1	0.5	0.05	0.03	0.05	40.0
5	T1	301	3.5	301	3.5	0.174	0.1	LOS A	0.1	0.5	0.05	0.03	0.05	39.6
6	R2	19	0.0	19	0.0	0.174	4.4	LOS A	0.1	0.5	0.05	0.03	0.05	39.6
Approach		321	3.3	321	3.3	0.174	0.4	NA	0.1	0.5	0.05	0.03	0.05	39.6
NorthEast: Wilkins Way														
7	L2	3	0.0	3	0.0	0.039	3.4	LOS A	0.1	0.4	0.01	0.47	0.01	36.2
8	T1	1	0.0	1	0.0	0.039	6.7	LOS A	0.1	0.4	0.01	0.47	0.01	36.3
9	R2	16	0.0	16	0.0	0.039	8.9	LOS A	0.1	0.4	0.01	0.47	0.01	30.8
Approach		20	0.0	20	0.0	0.039	7.9	LOS A	0.1	0.4	0.01	0.47	0.01	32.8
NorthWest: Gorman Drive (NW Approach)														
10	L2	71	0.0	71	0.0	0.105	3.4	LOS A	0.0	0.0	0.01	0.17	0.01	36.4
11	T1	122	8.6	122	8.6	0.105	0.0	LOS A	0.0	0.0	0.01	0.17	0.01	39.1
12	R2	1	0.0	1	0.0	0.105	5.0	LOS A	0.0	0.0	0.01	0.17	0.01	38.9
Approach		194	5.4	194	5.4	0.105	1.3	NA	0.0	0.0	0.01	0.17	0.01	38.8
SouthWest: Helen Circuit														
1	L2	12	0.0	12	0.0	0.013	3.4	LOS A	0.0	0.1	0.00	0.45	0.00	36.8
2	T1	1	0.0	1	0.0	0.013	7.0	LOS A	0.0	0.1	0.00	0.45	0.00	36.8
3	R2	1	0.0	1	0.0	0.013	8.2	LOS A	0.0	0.1	0.00	0.45	0.00	38.2
Approach		14	0.0	14	0.0	0.013	4.1	LOS A	0.0	0.1	0.00	0.45	0.00	37.0
All Vehicles		548	3.8	548	3.8	0.174	1.1	NA	0.1	0.5	0.03	0.11	0.03	39.0

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

MOVEMENT SUMMARY

Site: i4 [2033 PM Base - Aprasia Avenue x McPhail Way + DT (Site Folder: 2033 PM Base + Development Traffic)]

Network: N101 [2033 PM Base + Development Traffic (Network Folder: General)]

Aprasia Avenue x McPhail Way
Site Category: Base Year
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: McPhail Way														
1	L2	15	0.0	15	0.0	0.013	3.8	LOS A	0.0	0.1	0.20	0.45	0.20	34.2
3	R2	5	0.0	5	0.0	0.013	3.7	LOS A	0.0	0.1	0.20	0.45	0.20	30.9
Approach		20	0.0	20	0.0	0.013	3.8	LOS A	0.0	0.1	0.20	0.45	0.20	33.6
East: Aprasia Avenue (Est Approach)														
4	L2	13	0.0	13	0.0	0.072	3.4	LOS A	0.0	0.0	0.00	0.04	0.00	39.2
5	T1	126	0.0	126	0.0	0.072	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	39.5
Approach		139	0.0	139	0.0	0.072	0.3	NA	0.0	0.0	0.00	0.04	0.00	39.5
West: Aprasia Avenue (Wst Approach)														
11	T1	58	0.0	58	0.0	0.033	0.1	LOS A	0.0	0.1	0.07	0.06	0.07	37.2
12	R2	8	0.0	8	0.0	0.033	3.8	LOS A	0.0	0.1	0.07	0.06	0.07	37.2
Approach		66	0.0	66	0.0	0.033	0.5	NA	0.0	0.1	0.07	0.06	0.07	37.2
All Vehicles		225	0.0	225	0.0	0.072	0.7	NA	0.0	0.1	0.04	0.08	0.04	38.5

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

MOVEMENT SUMMARY

Site: i1 [2033 PM Base - Gorman Drive x McPhail Way + DT (Site Folder: 2033 PM Base + Development Traffic)]

Network: N101 [2033 PM Base + Development Traffic (Network Folder: General)]

Gorman Drive x McPhail Way
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Gorman Drive (SthEst Approach)														
5	T1	114	10.2	114	10.2	0.064	0.0	LOS A	0.0	0.1	0.04	0.03	0.04	39.8
6	R2	6	0.0	6	0.0	0.064	4.2	LOS A	0.0	0.1	0.04	0.03	0.04	39.0
Approach		120	9.6	120	9.6	0.064	0.3	NA	0.0	0.1	0.04	0.03	0.04	39.7
NorthEast: McPhail Way														
7	L2	17	6.3	17	6.3	0.032	3.4	LOS A	0.0	0.3	0.00	0.47	0.00	31.3
9	R2	23	0.0	23	0.0	0.032	4.4	LOS A	0.0	0.3	0.00	0.47	0.00	37.3
Approach		40	2.6	40	2.6	0.032	4.0	LOS A	0.0	0.3	0.00	0.47	0.00	36.3
NorthWest: Gorman Drive (NthWst Approach)														
10	L2	23	0.0	23	0.0	0.105	3.4	LOS A	0.0	0.0	0.00	0.05	0.00	39.6
11	T1	177	3.6	177	3.6	0.105	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	39.6
Approach		200	3.2	200	3.2	0.105	0.4	NA	0.0	0.0	0.00	0.05	0.00	39.6
All Vehicles		360	5.3	360	5.3	0.105	0.8	NA	0.0	0.3	0.01	0.09	0.01	39.3

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

MOVEMENT SUMMARY

Site: i3 [2033 PM Base - Aprasia Avenue x Wilkins Way + DT (Site Folder: 2033 PM Base + Development Traffic)]

Network: N101 [2033 PM Base + Development Traffic (Network Folder: General)]

Aprasia Avenue x Wilkins Way
Site Category: Base Year
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Wilkins Way														
1	L2	57	0.0	57	0.0	0.040	3.6	LOS A	0.1	0.4	0.16	0.44	0.16	34.7
3	R2	3	0.0	3	0.0	0.040	4.1	LOS A	0.1	0.4	0.16	0.44	0.16	37.6
Approach		60	0.0	60	0.0	0.040	3.6	LOS A	0.1	0.4	0.16	0.44	0.16	35.1
East: Aprasia Avenue (Est Approach)														
4	L2	4	0.0	4	0.0	0.041	3.4	LOS A	0.0	0.0	0.00	0.03	0.00	39.8
5	T1	74	0.0	74	0.0	0.041	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	39.8
Approach		78	0.0	78	0.0	0.041	0.2	NA	0.0	0.0	0.00	0.03	0.00	39.8
West: Aprasia Avenue (Wst Approach)														
11	T1	59	0.0	59	0.0	0.033	0.0	LOS A	0.0	0.1	0.02	0.02	0.02	39.9
12	R2	2	50.0	2	50.0	0.033	4.3	LOS A	0.0	0.1	0.02	0.02	0.02	39.7
Approach		61	1.7	61	1.7	0.033	0.2	NA	0.0	0.1	0.02	0.02	0.02	39.9
All Vehicles		199	0.5	199	0.5	0.041	1.2	NA	0.1	0.4	0.05	0.15	0.05	38.8

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

MOVEMENT SUMMARY

Site: i2 [2033 PM Base - Gorman Drive x Wilkins Way + DT (Site Folder: 2033 PM Base + Development Traffic)]

Network: N101 [2033 PM Base + Development Traffic (Network Folder: General)]

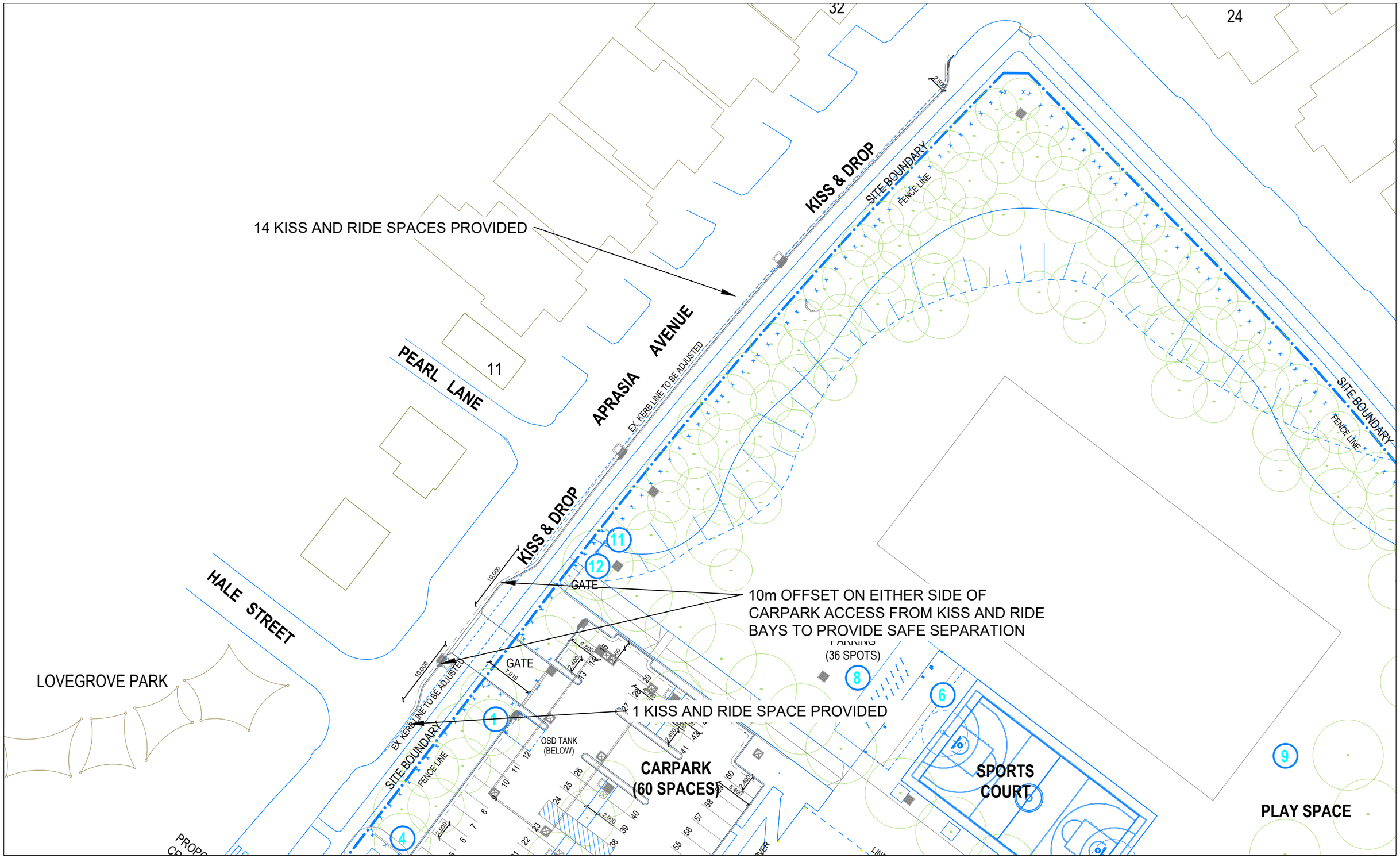
New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Gorman Drive (SE Approach)														
4	L2	1	0.0	1	0.0	0.073	4.2	LOS A	0.0	0.2	0.06	0.04	0.06	39.9
5	T1	119	9.7	119	9.7	0.073	0.1	LOS A	0.0	0.2	0.06	0.04	0.06	39.5
6	R2	9	0.0	9	0.0	0.073	4.3	LOS A	0.0	0.2	0.06	0.04	0.06	39.5
Approach		129	8.9	129	8.9	0.073	0.4	NA	0.0	0.2	0.06	0.04	0.06	39.5
NorthEast: Wilkins Way														
7	L2	3	0.0	3	0.0	0.012	3.4	LOS A	0.0	0.1	0.00	0.45	0.00	37.4
8	T1	1	0.0	1	0.0	0.012	4.6	LOS A	0.0	0.1	0.00	0.45	0.00	37.5
9	R2	4	25.0	4	25.0	0.012	7.2	LOS A	0.0	0.1	0.00	0.45	0.00	33.3
Approach		8	12.5	8	12.5	0.012	5.5	LOS A	0.0	0.1	0.00	0.45	0.00	36.2
NorthWest: Gorman Drive (NW Approach)														
10	L2	45	0.0	45	0.0	0.106	3.4	LOS A	0.0	0.0	0.00	0.11	0.00	37.7
11	T1	153	5.5	153	5.5	0.106	0.0	LOS A	0.0	0.0	0.00	0.11	0.00	39.4
12	R2	1	0.0	1	0.0	0.106	4.0	LOS A	0.0	0.0	0.00	0.11	0.00	39.3
Approach		199	4.2	199	4.2	0.106	0.8	NA	0.0	0.0	0.00	0.11	0.00	39.3
SouthWest: Helen Circuit														
1	L2	1	0.0	1	0.0	0.004	3.4	LOS A	0.0	0.0	0.00	0.43	0.00	36.3
2	T1	1	0.0	1	0.0	0.004	4.7	LOS A	0.0	0.0	0.00	0.43	0.00	36.3
3	R2	1	0.0	1	0.0	0.004	5.9	LOS A	0.0	0.0	0.00	0.43	0.00	37.9
Approach		3	0.0	3	0.0	0.004	4.7	LOS A	0.0	0.0	0.00	0.43	0.00	37.1
All Vehicles		340	6.2	340	6.2	0.106	0.8	NA	0.0	0.2	0.02	0.09	0.02	39.3

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

Appendix B. Design Review



Notes:

This drawing is provided for information purposes only and should not be used for construction.

Note that the plan assessed was issued by Pedavoli Architects on 09.06.2021

Swept path assessment was undertaken at 10km/hr with 300mm clearance

Document Info:
Drawn by: Wendy Zheng
File name: AG1566-02-v3.dwg

Client:
HANSEN YUCKEN

Project:
1566
GOOGONG PUBLIC SCHOOL

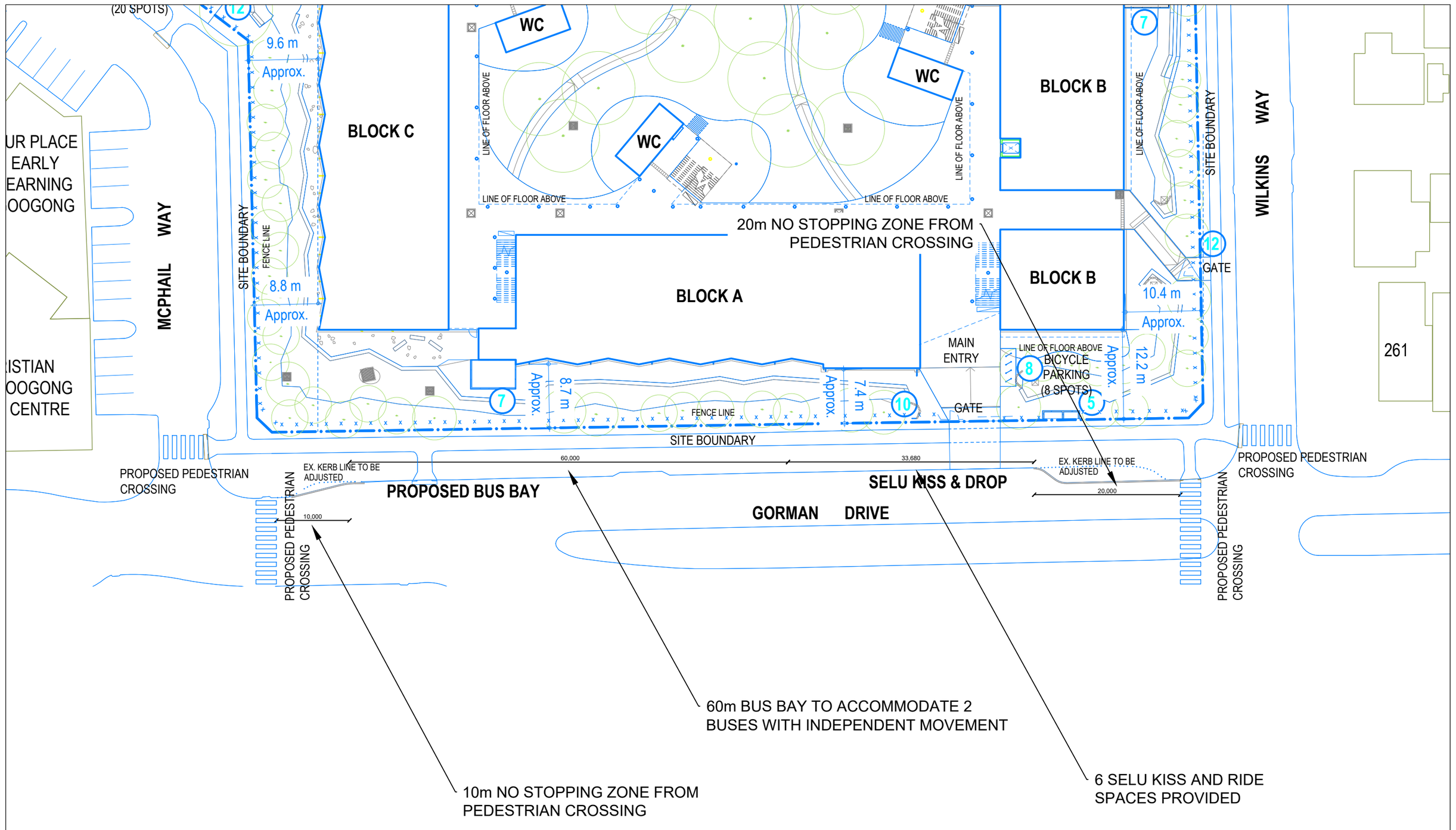
Drawing Title:
SSD CONCEPT DESIGN REVIEW
APRASIA AVENUE KISS AND RIDE

Date:
10-Jun-21

Scale @ A3:
1:500

Drawing Number:
AG01

asongroup
Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000
info@asongroup.com.au



Notes:

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Note that the plan assessed was issued by Pedavoli Architects on 09.06.2021
Swept path assessment was undertaken at 10km/hr with 300mm clearance

Document Info:
Drawn by: Wendy Zheng
File name: AG1566-02-v3.dwg

Client:
HANSEN YUCKEN

Project:
1566
GOOGONG PUBLIC SCHOOL

Drawing Title:
SSD CONCEPT DESIGN REVIEW
GORMAN DRIVE KISS AND RIDE

Date:
10-Jun-21

Scale @ A3:
1:500

Drawing Number:
AG02

asongroup
Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000
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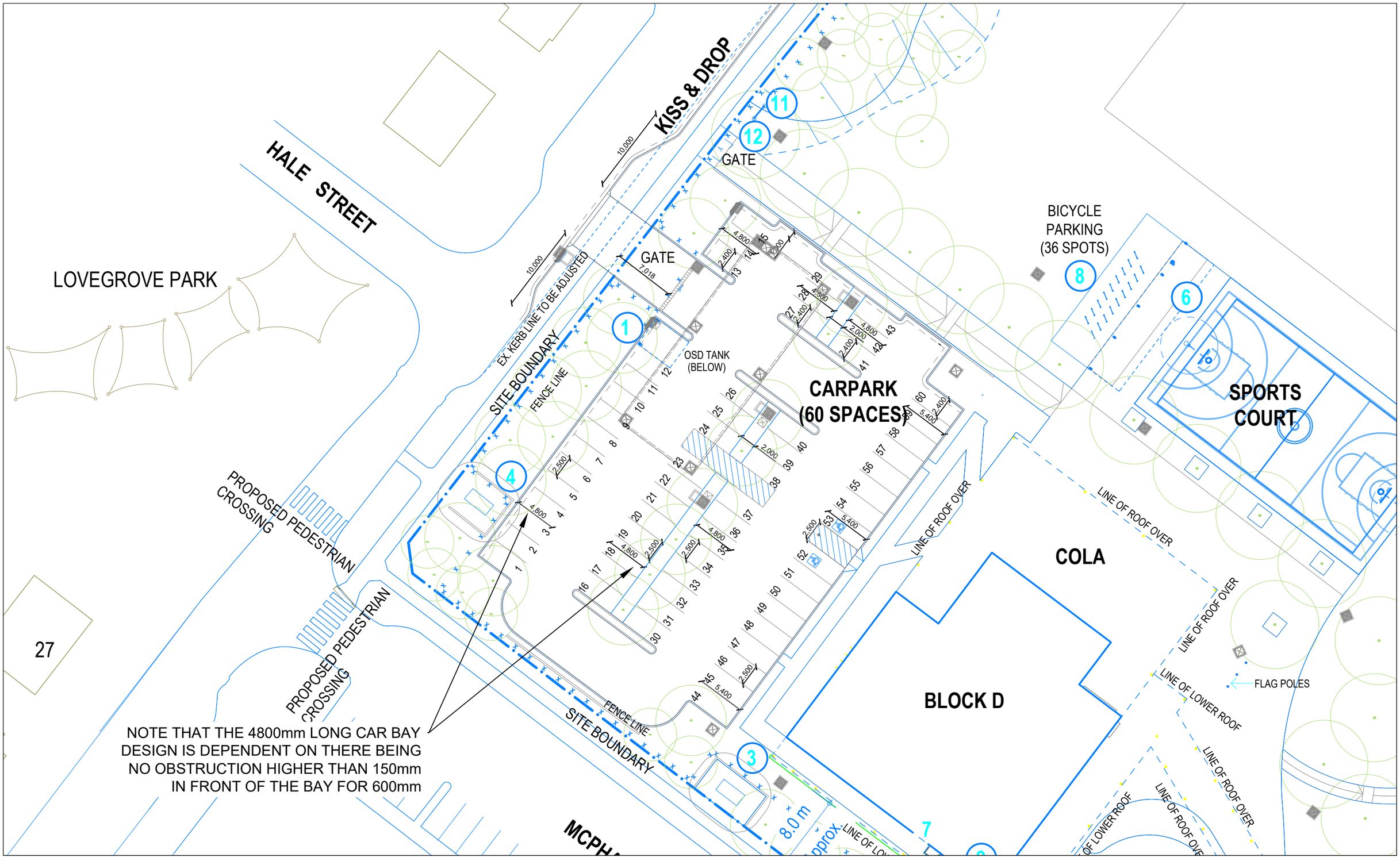

Notes:

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Note that the plan assessed was issued by Pedavoli Architects on 09.06.2021
Swept path assessment was undertaken at 10km/hr with 300mm clearance

Document Info:
Drawn by: Wendy Zheng
File name: AG1566-02-v3.dwg

Client:
HANSEN YUCKEN

Project:
1566
GOOGONG PUBLIC SCHOOL

Drawing Title:
SSD CONCEPT DESIGN REVIEW
STAFF CARPARK

Date:
10-Jun-21

Scale @ A3:
1:400

Drawing Number:
AG03

asongroup
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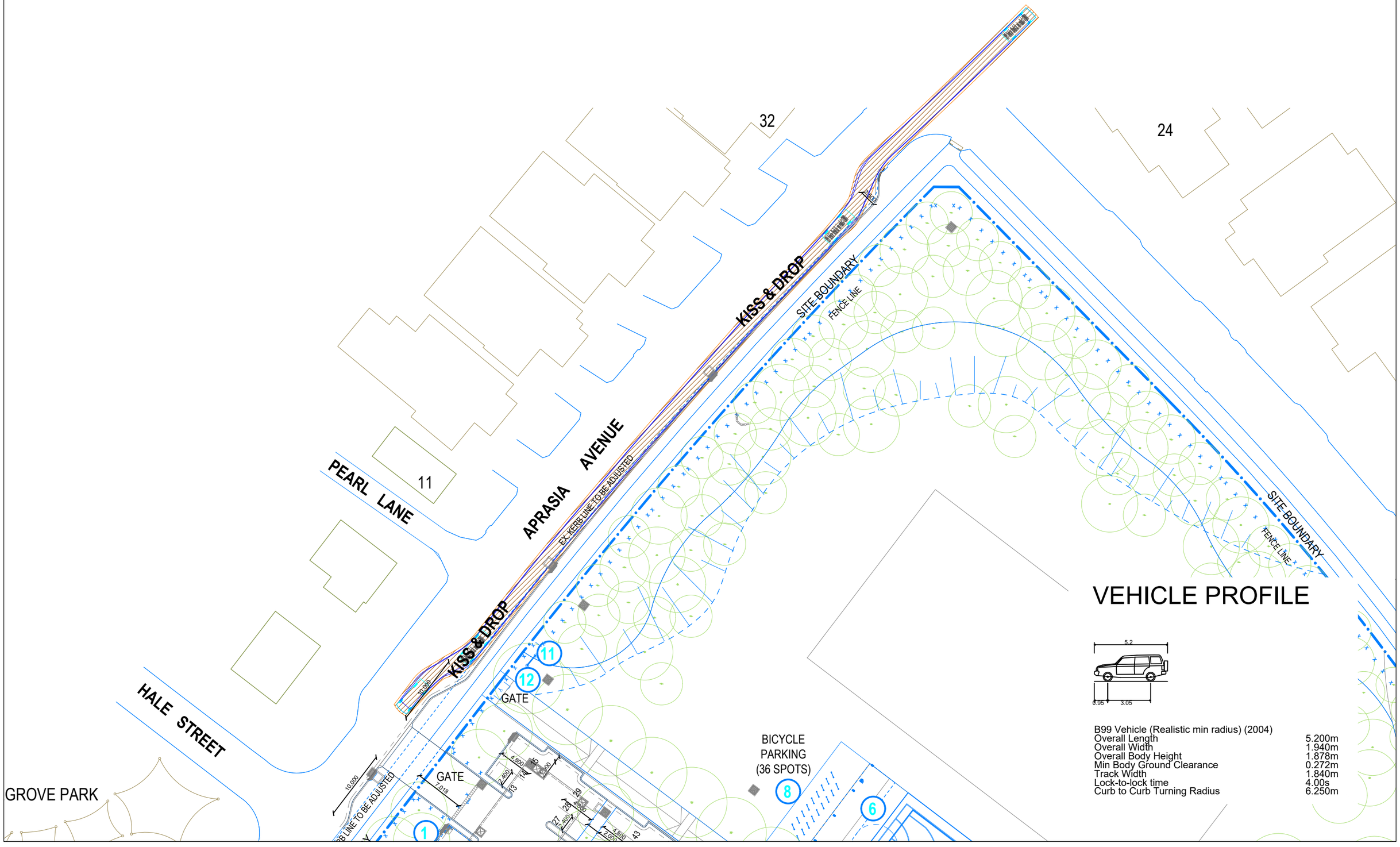

B99 Vehicle (Realistic min radius) (2004)

Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.878m
Min Body Ground Clearance	0.272m
Track Width	1.840m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6.250m

Notes:

This drawing is provided for information purposes only and should not be used for construction.

Note that the plan assessed was issued by Pedavoli Architects on 09.06.2021

Swept path assessment was undertaken at 10km/hr with 300mm clearance

Document Info:
Drawn by: Wendy Zheng
File name: AG1566-02-v3.dwg

Client:
HANSEN YUCKEN

Project:
1566
GOOGONG PUBLIC SCHOOL

Drawing Title:
SSD CONCEPT DESIGN REVIEW
SWEPT PATH ASSESSMENT

Date:
10-Jun-21

Scale @ A3:
1:500

Drawing Number:
AG04

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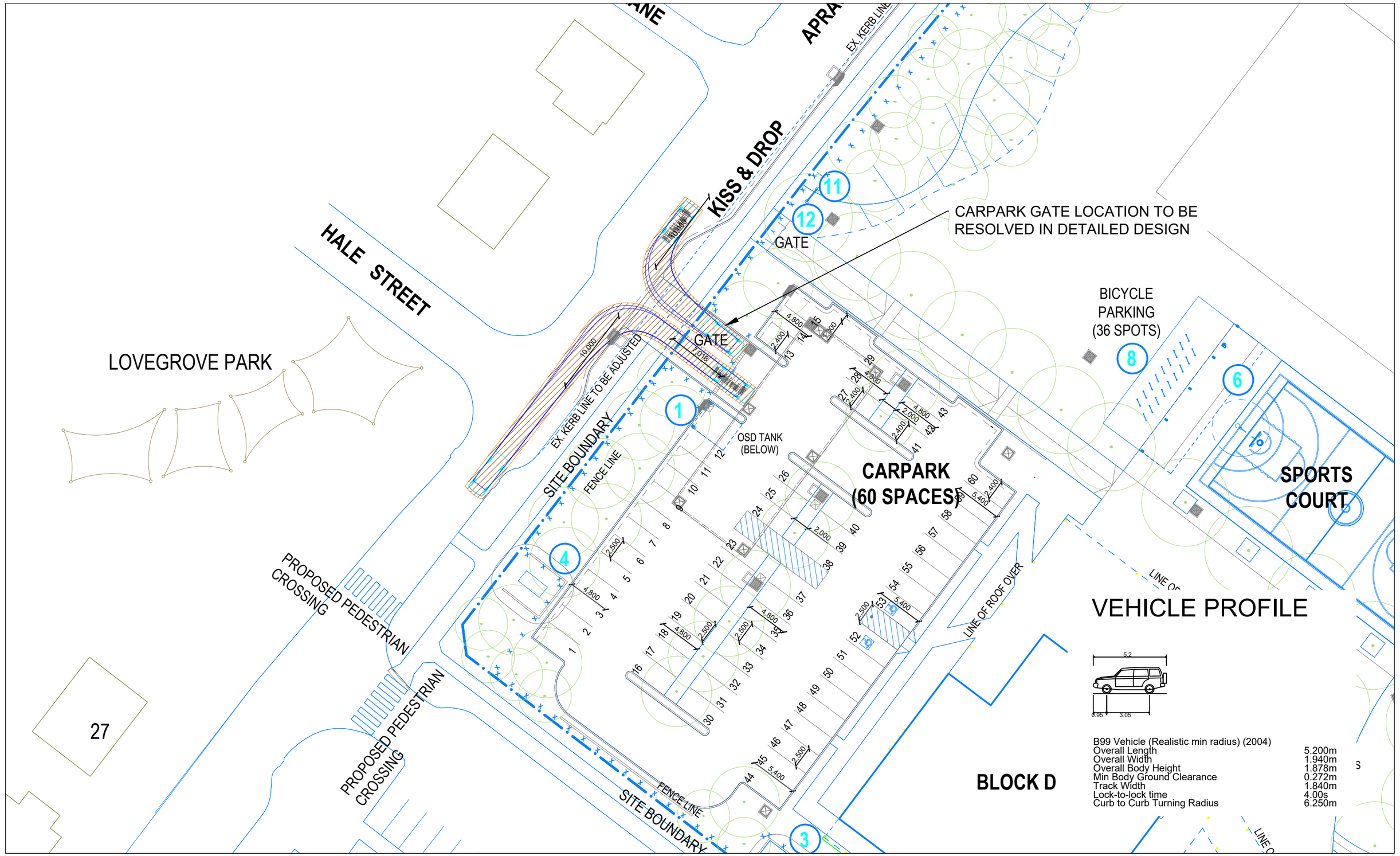

Notes:

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Note that the plan assessed was issued by Pedavoli Architects on 09.06.2021

Swept path assessment was undertaken at 10km/hr with 300mm clearance

Document Info:
Drawn by: Wendy Zheng
File name: AG1566-02-v3.dwg

Client:
HANSEN YUCKEN

Project:
1566
GOOGONG PUBLIC SCHOOL

Drawing Title:
SSD CONCEPT DESIGN REVIEW
SWEPT PATH ASSESSMENT

Date:
10-Jun-21

Scale @ A3:
1:400

Drawing Number:
AG05

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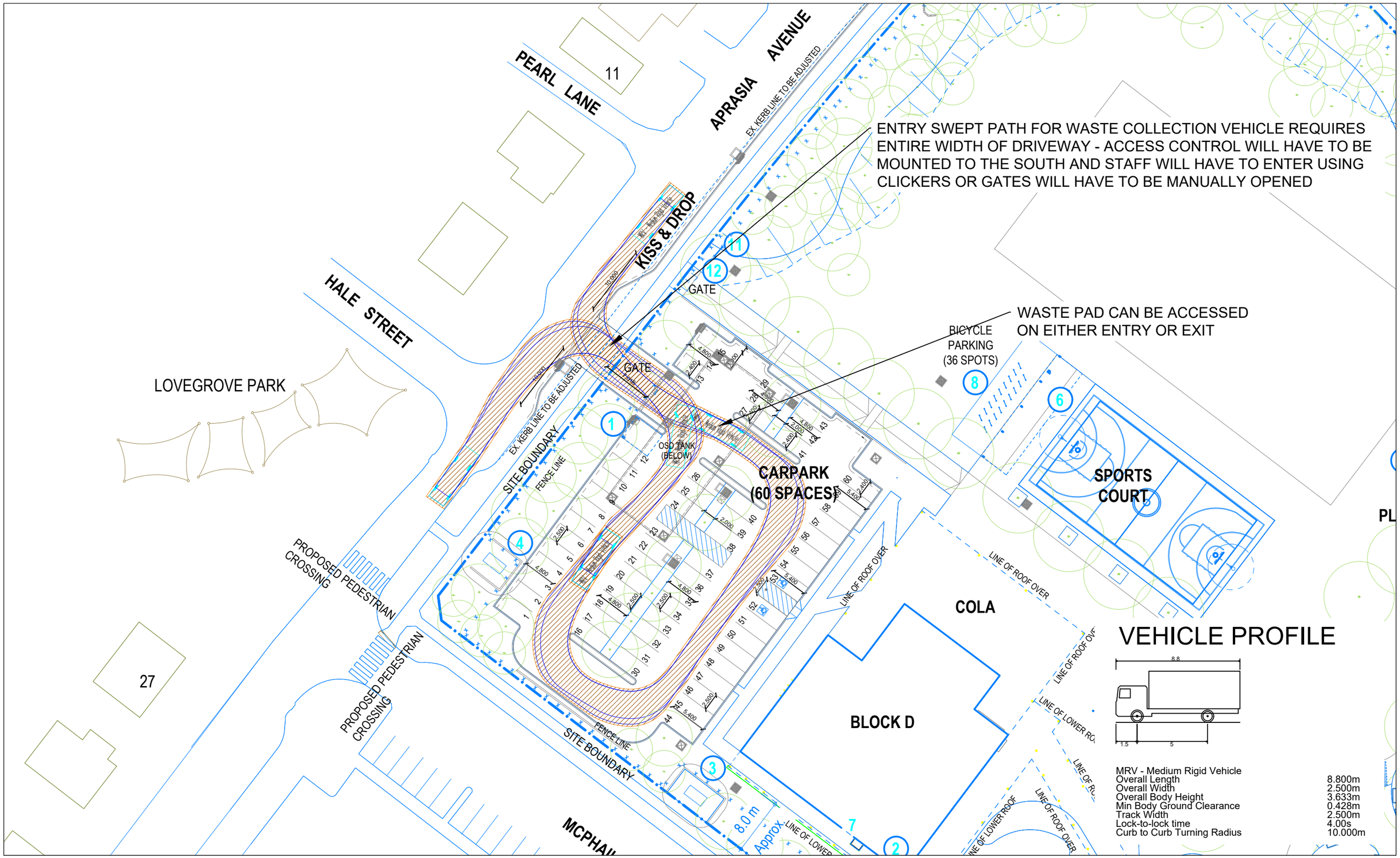

VEHICLE PROFILE

MRV - Medium Rigid Vehicle	
Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	3.633m
Min Body Ground Clearance	0.428m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10.000m

Notes:

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Note that the plan assessed was issued by Pedavoli Architects on 09.06.2021
Swept path assessment was undertaken at 10km/hr with 300mm clearance

Document Info:
Drawn by: Wendy Zheng
File name: AG1566-02-v3.dwg

Client:
HANSEN YUCKEN

Project:
1566
GOOGONG PUBLIC SCHOOL

Drawing Title:
SSD CONCEPT DESIGN REVIEW
SWEPT PATH ASSESSMENT

Date:
10-Jun-21

Scale @ A3:
1:500

Drawing Number:
AG06

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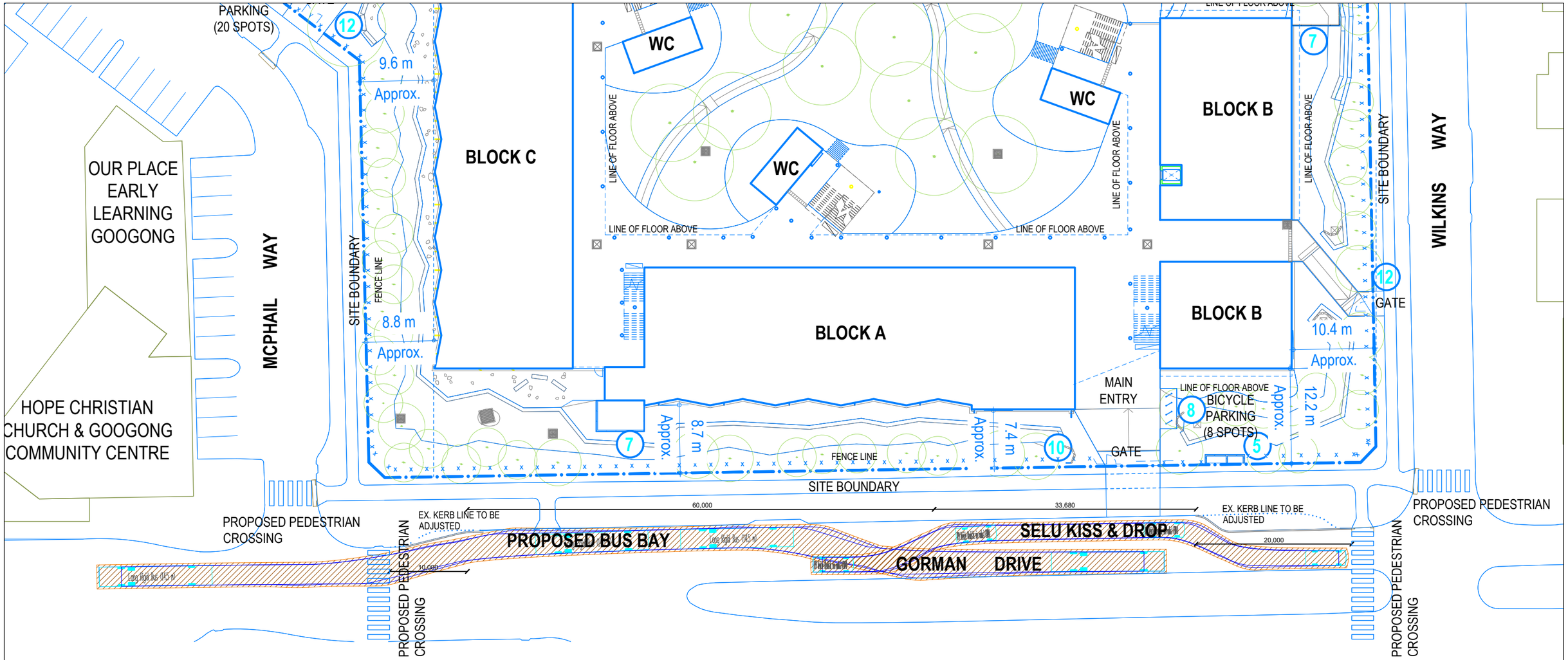
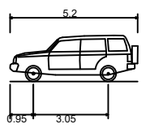
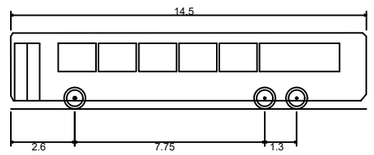


VEHICLE PROFILE





B99 Vehicle (Realistic min radius) (2004)	
Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.878m
Min Body Ground Clearance	0.272m
Track Width	1.840m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6.250m

Long Rigid Bus (14.5 m)	
Overall Length	14.500m
Overall Width	2.500m
Overall Body Height	3.102m
Min Body Ground Clearance	0.337m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	15.000m

N o t e s:

This drawing is provided for information purposes only and should not be used for construction.

Note that the plan assessed was issued by Pedavoli Architects on 09.06.2021

Swept path assessment was undertaken at 10km/hr with 300mm clearance

Document Info:
Drawn by: Wendy Zheng
File name: AG1566-02-v3.dwg

Client:
HANSEN YUCKEN

P r o j e c t:
1566
GOOGONG PUBLIC SCHOOL

D r a w i n g T i t l e:
SSD CONCEPT DESIGN REVIEW
SWEPT PATH ASSESSMENT

D a t e:
10-Jun-21

S c a l e @ A3:
1:500

Drawing Number:
AG07

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