New Primary School and High School in Huntlee
Transport Impact Assessment

Prepared for:
Department of Education

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300305351

Stantec Australia Pty Ltd

Revision Schedule

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1 Introduction

This Transport Impact Assessment has been prepared to support a Review of Environmental Factors (REF) for the NSW Department of Education (The Department) for the construction and operation of the new primary school and high school in Huntlee (the activity).

The purpose of the REF is to assess the potential environmental impacts of the activity prescribed by State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&I SEPP) as "development permitted without consent" on land carried out by or on behalf of a public authority under Part 5 of the Environmental Planning and Assessment Act 1979 (EP&A Act). The activity is to be undertaken pursuant to Chapter 3, Part 3.4, Section 3.37A of the T&I SEPP.

This document has been prepared in accordance with the Guidelines for Division 5.1 assessments (the Guidelines) by the Department of Planning, Housing and Infrastructure (DPHI) as well as the Addendum Division 5.1 guidelines for schools.

The purpose of this report is to:

- Review the school's future travel demand to inform transport baseline and potential achievement to set out the school transport vision and objectives
- Consider and address users of all ages and abilities to get to and from school sustainably
- Identify transport infrastructure and operations required to meeting school travel demands
- Address road safety and operational concerns.

1.1 Site description

The current street address is 32 Persoonia Boulevard and part of 1823 Wine Country Drive, North Rothbury. The legal description of the site is 495/DP1246814 (Primary School), Lot 449/-/DP1289939 and Lot 696/-/DP1263808 (the High School). The Primary School site is regular in shape is has a total approximate area of 3 hectares. The High School site is irregular in shape and has a total approximate area of 5 hectares.

The site is approximately 18km northwest of Cessnock and 20km southeast of Singleton within the Hunter Valley. The catchment area for the proposed primary school is bound by the respective catchments of Kirkton Public School to the northwest, Branxton Public to the north and Greta Public School to the east. The high school intake catchment is bound by the catchments of Singleton High School to the north west, Rutherford Technology High School, Maitland Grossman High School and Maitland High School to the east.

The immediately surrounding land is described as follows:

- **North:** Land to the north currently includes areas of vegetation with Branxton Town Centre located on the northern side of the Hunter Expressway. Branxton Station is also located along the Hunter Trainline located 1km to the north.
- **East:** Low density residential subdivision has occurred to the east of the site and accommodates recently constructed detached dwelling houses serviced by new roads. Huntlee Shopping Centre and Huntlee Learning Centre are located to the northeast of the site providing services to the new residential areas.

- **West:** Low-density residential subdivision has occurred to the west of the site.
- **South:** Areas to the south of the site are currently undeveloped land and includes areas of existing vegetation.

Figure 1-1 Aerial Photograph of the Site

Source: Urbis, 2025

1.2 Project background

Huntlee is a new Urban Release Area gazetted by the Minister for Planning on the 31st of December 2010. Huntlee is located 20km north of Cessnock and 25km southeast of Singleton. The amendment to Schedule 3 of the former State Environmental Planning Policy (Major Development) 2005 identified zoning and land use controls.

The school sites are located within Huntlee Town Centre Stage 1, approved under MP10_0137 by the Planning Assessment Commission (PAC) under the delegation of the Minister for Planning and Infrastructure on the 24 April 2013.

The development approved under MP_0137 (as modified) includes the following:

- Subdivision to create 2,272 residential allotments
- 123 large lot residential allotments
- 94 infrastructure, community, commercial and mixed-use allotments
- 2 allotments for a primary school and a high school

- Landscaped areas, drainage, public open space and recreation areas
- Associated bulk earthworks, and
- Infrastructure including roads, drainage works and utility services provision.

As part of the rezoning, Huntlee was required to enter into a voluntary planning agreement with the Minister for Planning and the Minister for the Environment (SEPP VPA). Notably, pursuant to the SEPP VPA, Huntlee was required to provide Education Contribution Land within the town centre for a future primary school. The developer was required to also make various environmental conservation contributions to offset the impacts of the Development.

The VPA was amended in 2019 due to the approval of MP_0137_MOD 9. This modification was approved on 13 December 2019 and changed the location and configuration of the Education Contribution Land. The VPA includes the provision of a primary school. MOD 15 subsequently approved on the 7 December 2020 subdivided the education super lot located within the Town Centre stage 5 area into two lots. These two lots now make up the subject PS and HS sites.

1.3 Proposed activity description

Main Works Contractor Delivery

Construction of a new preschool, primary school and high school in Huntlee including earthworks, public domain works and landscaping.

Specifically, the proposal involves:

Primary School

- 1 x Preschool for 60 children.
- Two (2) x three (3) storey Primary School buildings and one (1) x one (1) storey hall building for 500 students including:
  - General Learning Spaces (GLS)
  - General Learning Spaces (Support) (SLU)
  - Multipurpose Rooms
  - Canteen
  - Library
  - Administration area

High School

- Three (3) x three (3) storey buildings, one (1) x Hall building (two (2) storey equivalent height) and one (1) x one (1) storey construction shed for 1,000 students including:
  - General Learning Spaces (GLS)
  - General Learning Spaces (Support) (SLU)
  - Science Learning Hubs
  - Visual Arts Learning Hubs

  - Wood and Metal Technology Learning Hubs
  - Food and Textiles Learning Hubs
  - Health and PE Learning Hubs
  - Performing Arts Learning Hubs
  - VET Hospitality and Construction Hubs
  - Multipurpose Rooms
  - Library
  - Gymnasium
  - Administration Areas
  - Staff Support Areas
- Landscaped open space including:
  - Playing Fields
  - Covered Outdoor Learning Areas (COLAs)
- Car parking
- Waste areas
- Public domain upgrades.

1.4 Consultation

Stakeholder engagement was conducted within the Transport Working Group (TWG) process, involving DoE, Cessnock Council, Transport for NSW and Colliers representatives. The meetings discussed various key issues and opportunities as summarised in Table 1-1.

Table 1-1 TWG key discussions and outcomes summary

Stakeholder meeting	Date	Key outcomes/ discussions
Transport Working Group #1 (during Rapid Transport Assessment phase)	29 July 2024	• Presentation of understanding of dwelling numbers and intake catchment analysis • Cessnock Council stated that it is preferred that pick-up and drop-off areas are separated from school bus zones where possible • Council stated that it is preferred that the campus include provision for off-street accessible pick-up and drop-off • School crossing supervisors for the Primary School are to be initiated as early as possible • The location of the pre-school pedestrian entrance and location of pick-up/ drop-off area should minimised conflicts between pedestrians and cars as much as possible • The location of the school bus zone must be integrated with planned bus routes to avoid loops.
Transport Working Group #2 (during Rapid Transport Assessment phase)	15 October 2024	• Presentation of updated dwelling number/ intake catchment understanding • Triton Road is likely to be a key route to/ from the south for buses, walking and cycling • Stantec proposed the bell times for the public school and high school to be offset in order to spread traffic demand over a long period of time • Transport for NSW bus planning team indicated that staggering bell times makes it difficult to service the two schools with buses • Any wombat crossings connecting to the school must meet the appropriate lighting standards • Preference for upright kerbs for the kiss and drop zone and bus zone was stated. DDA-compliant bus zones will also be required • It is not recommended that off-street parking is provided for high school students to discourage them driving to and from school and encourage active transport. Students who drive may use on-street parking where available • Changes to the proposed cross sections as set out in Council's DCP were presented to Council, covering the removal of gardens from the verge on the school side of the roads bounding the site. Council stated agreement with the proposed changes to the DCP cross sections.
Transport Working Group #3	3 June 2025	• Discussions on bus stop and kiss and drop locations • Discussions on traffic modelling scope.
Meeting with TfNSW Bus Planning team	19 June 2025	• TfNSW bus planning team stated preference for school bus stop to be separated from the kiss and drop zone to improve bus efficiency by reducing interactions with kiss and drop vehicles • TfNSW bus planning team stated preference for an extended bus zone, beyond the minimum required length ie 75 to 90m in length to maximise efficiency and provide extra space for special events.

Stakeholder meeting	Date	Key outcomes/ discussions
Transport Working Group #4	16 July 2025	• Updated TWG on public domain plan including location of bus stop and kiss and drop zones. Key reasoning for locations include: - Improved central access for High School students - Greater pedestrian circulation capacity - Clear separation of the two K&D areas for primary and high schools. • Agreement on the intersections to be modelled as part of this REF and the information required relating to the impacts to intersections on Wine Country Drive.
Transport Working Group #5	26 August 2025	• Updated TWG on Student mode share targets including Baseline Mode Share, Moderate Target Mode Share and Reach Target Mode Share. • Outline of Traffic Modelling completed for the REF submission utilising strategy agreed in TWG #4, including impact to background traffic utilising the Baseline Mode Share, Moderate Target Mode Share and Reach Target Mode Share. • Outline of vehicles added to the network on Wine Country Drive utilising the Baseline Mode Share and Moderate Target Mode Share.

1.5 Significance of environmental impacts

Based on the identification of potential issues, and an assessment of the nature and extent of the impacts of the proposed activity, it is determined that:

- The extent and nature of potential impacts are low and will not have significant impact on the locality, community and/or the environment
- Potential impacts can be appropriately mitigated or managed to ensure that there is minimal impact on the locality, community and/or the environment.

1.5.1 Active transport

Pedestrian and cyclist access to the site is catered for via the main and secondary access points proposed for each school. Active transport provisions proposed on Persoonia Boulevard, Morningstar Crescent and Reading Road will enable students to safely walk or ride to school. Proposed wombat crossings on Morningstar Crescent, Persoonia Boulevard and Reading Road provide students walking and riding with priority over vehicles and are proposed in locations that cater for active transport desire lines.

Student bike parking capacity is planned to enable the reach target mode share ie 15 spaces for the primary school and 40 spaces for the high school. End of trip facilities and secure bike parking for staff enables the staff mode share of six staff riding to work.

The provision of these active transport facilities ensures that students and staff are not completely reliant on vehicles for site access, which enables the target mode share, which reduces the impact of vehicular demands on the road network.

1.5.2 Public transport

The proposed bus zone on Persoonia Boulevard is considered above adequate for enabling students to safely catch buses safely and efficiently. The proposed length of bus zone is 45 metres longer than the minimum required length.

Students are able to efficiently access the bus zone from the main entrances of both schools.

Transport for NSW is aware of the need for public and school bus services to cater to the Huntlee town community and intake catchment for both schools through consultation in the Transport Working Group forum. School bus routes are to be developed based on the bus-capable roads within Huntlee town and aligning with the locations for student density within the intake catchment.

1.5.3 Student pick-up and drop-off

For the primary school, student pick-up and drop-off is catered for via the on-street kiss and drop zone proposed on the southern side of Reading Road. The provision of 156 metres was calculated to cater for the baseline student mode share.

For the high school, student pick-up and drop-off is catered for via the on-street kiss and drop zone proposed on the western side of Persoonia Boulevard. The provision of 150 metres was calculated to cater for the baseline student mode share.

Similarly, the provision of 15 parking spaces for the pre-school ensures that queuing for pick-up and drop-off activities is minimised and therefore will not result in significant impacts.

1.5.4 Parking and vehicle access

Staff parking is proposed to be catered on site for the primary school, high school and pre-school, in line with the staff vehicle mode share outlined in Section 7.2. This reduces the impact of any potential parking spillover onto local roads within the vicinity of the site. Some visitor parking may be expected within public parking available on Reading Road and Persoonia Boulevard, however the impact on the road network is expected to be minimal, give the low-density residential nature of the areas surrounding the site.

The site is planned to fully cater for waste and delivery vehicle access.

1.5.5 Traffic impacts

Traffic impacts are adequately managed within the road network as discussed in **Section 6.10**. The following is in place to manage vehicular congestion in the road network:

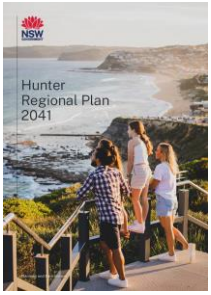
- Initiatives and plans to achieve the moderate or reach mode share targets through implementation of the School Transport Plan including planning public transport services and active transport promotion
- Offsetting the primary school/ preschool and high school bell times by at least 20 minutes to spread vehicular demand across a larger period of time and improve circulation of vehicles. This also creates a safer environment for students who walk and ride around the bell times.

2 Strategic context

2.1 State policy and guidance

State strategic policies and plans relating to transport for the new schools are provided in Table 2-1.

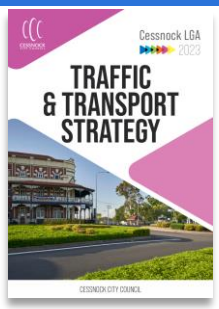
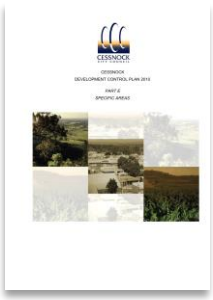
Table 2-1: State strategic policies and plans

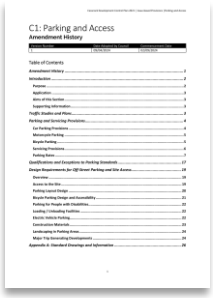
Future Transport Strategy, Transport for NSW	
	The Future Transport Strategy was released in 2022 and replaces the Future Transport 2056, published in 2018. It is a 40-year strategy for Sydney and Regional New South Wales prepared by Transport for NSW to achieve. The strategy details the strategic directions and responses for delivering TfNSW's vision for safe, healthy, sustainable, accessible and integrated passenger and freight journeys in NSW. Regarding schools, a key action included is the provision of safer walking, cycling and public transport access to schools.
Active Transport Strategy, Transport for NSW	
	The "Active Transport Strategy (2022)" sets out the NSW Government's vision to double active transport trips in 20 years. The strategy is built out of the Future Transport and forms the basis for active transport across the state. The plan identifies five focus areas and ambitions, which are supported by short-term (0-5 years) priority moves and deliverable actions. A key action is to provide communities with access to 15-minute neighbourhoods, which provide communities with access to health services, schools, shops, and recreational events within a 15-minute walk or cycle.
Hunter Regional Plan 2041, NSW Department of Planning and Environment	
	The Hunter Regional Plan 2041 is a long term planning framework designed to help guide development and growth in the Hunter Region over the next 20 years. The region consists of Cessnock, Dungog, Lake Macquarie, Maitland, Mid-Coast, Muswellbrook, Newcastle, Port Stephens, Singleton, and Upper Hunter. The Plan outlines strategies to support a diverse and resilient economy, enhance liveability, protect environmental assets, and guide housing and infrastructure delivery in response to projected population growth. The Plan identifies that housing diversity can be achieved through a combination of infill and greenfield development and notes Huntlee and Branxton as emerging residential communities in the region.

2.2 Local policy and guidance

Local strategic policies and plans relating to transport for the new schools are provided in Table 2-2.

Table 2-2: Local strategic policies and plans

Cessnock LGA Traffic and Transport Strategy, Cessnock City Council	
	The Cessnock LGA Traffic and Transport Strategy 2023 provides a long-term vision that can be used to guide transport related decision making between now and 2041. The Strategy aims to enhance the transport network's efficiency, safety, and sustainability, ensuring improved access to housing, employment, and services. Huntlee, as a significant growth area within the Cessnock LGA, stands to benefit from several aspects of the Strategy: • Enhanced connectivity: Improvements to major roads and the potential addition of new on/off ramps near the Hunter Expressway will facilitate better access to and from Huntlee. • Public transport access: Plans to improve bus services and explore rail options could provide Huntlee residents with more reliable and diverse transportation choices. • Active transport infrastructure: The extension of shared pathways may offer Huntlee residents increased opportunities for walking and cycling, promoting sustainable local travel.
Huntlee Stage 2 Green Travel Plan, Huntlee Pty Ltd	
	This Green Travel Plan supports an Environmental Impact Statement and State Significant Development Application (SSDA) that seeks consent for the Huntlee New Town Stage 2 development. In alignment with the local and state government active and public transport policy strategies, key measures of the plan include: • Public transport: Delivery of well-planned bus routes, ongoing liaison with transport providers to expand services over time, advocacy for additional passenger rail services at Branxton Station, and investigation of a direct pedestrian link to the station, implementation of public transport encouragement programs • Active transport: Provision of a connected network of shared paths and cycleways with a focus on connectivity to town centre and public transport nodes, provision of bicycle parking in key locations such as town centre and open space areas, implementation of active transport encouragement programs
Huntlee Development Control Plan 2013, Cessnock City Council	
	The Huntlee Development Control Plan 2013 sets out a guide for development in Huntlee. The Plan identifies the vision, development principles, key elements and structure plan for the region, including a set of planning, design and environmental controls for the region. Parking rates outlined in the Plan have been considered in determining the parking requirements for the primary and high school components of the proposed education campus site.

Cessnock LGA Traffic and Transport Strategy, Cessnock City Council	
Cessnock Development Control Plan 2021 – Part C (General Guidelines), Cessnock City Council	
	The Cessnock Development Control Plan 2021 – Part C provides detailed guidelines and requirements for development in the Cessnock City Council in relation to parking, access and servicing considerations. Parking rates outlined in the Plan have been considered in determining the parking requirements for the pre-school component of the proposed education campus site.

3 School intake area

3.1 Huntlee development area

The development of Huntlee town is planned to be delivered in two main stages. Stage 1 focuses on the establishment of Huntlee Town Centre and surrounding residential precincts. Stage 2 extends the residential development to the immediate west and south of the town centre, and further south at Old Country Road. The subdivision plans for Stage 1 and 2 of the Huntlee development are shown in Figure 3-1 and Figure 3-2 respectively.

It is anticipated that during occupation of the New Primary School and High School in Huntlee, the Stage 1 Huntlee town development will be in place, including all associated infrastructure and road works. This includes Persoonia Boulevarde, Morningstar Crescent and Reading Road, which bound the school site. The two intersections south of the site are not anticipated to be provided during this timeframe.

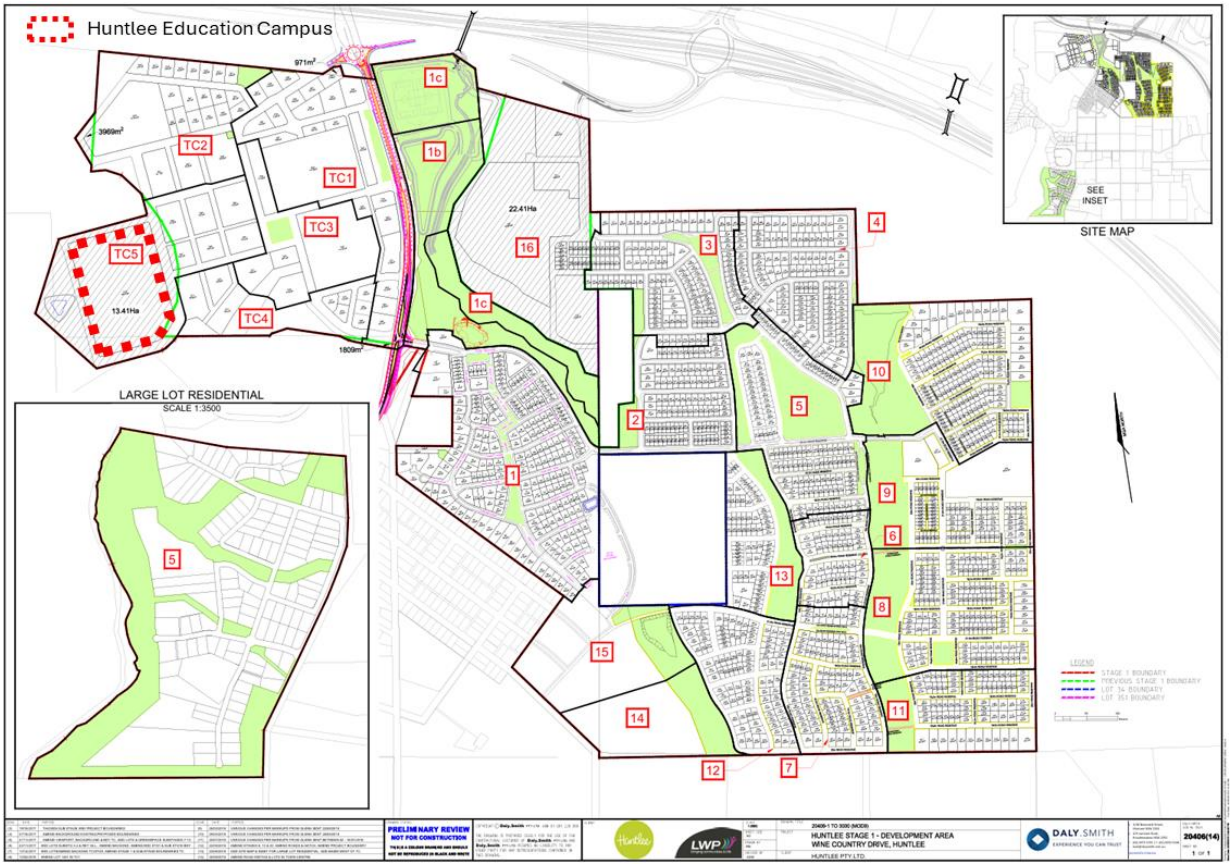


Figure 3-1: Huntlee Stage 1 subdivision plan[1]

[1] Huntlee Stage 1 DA (Mod 20), LWP Group, 09/02/2022

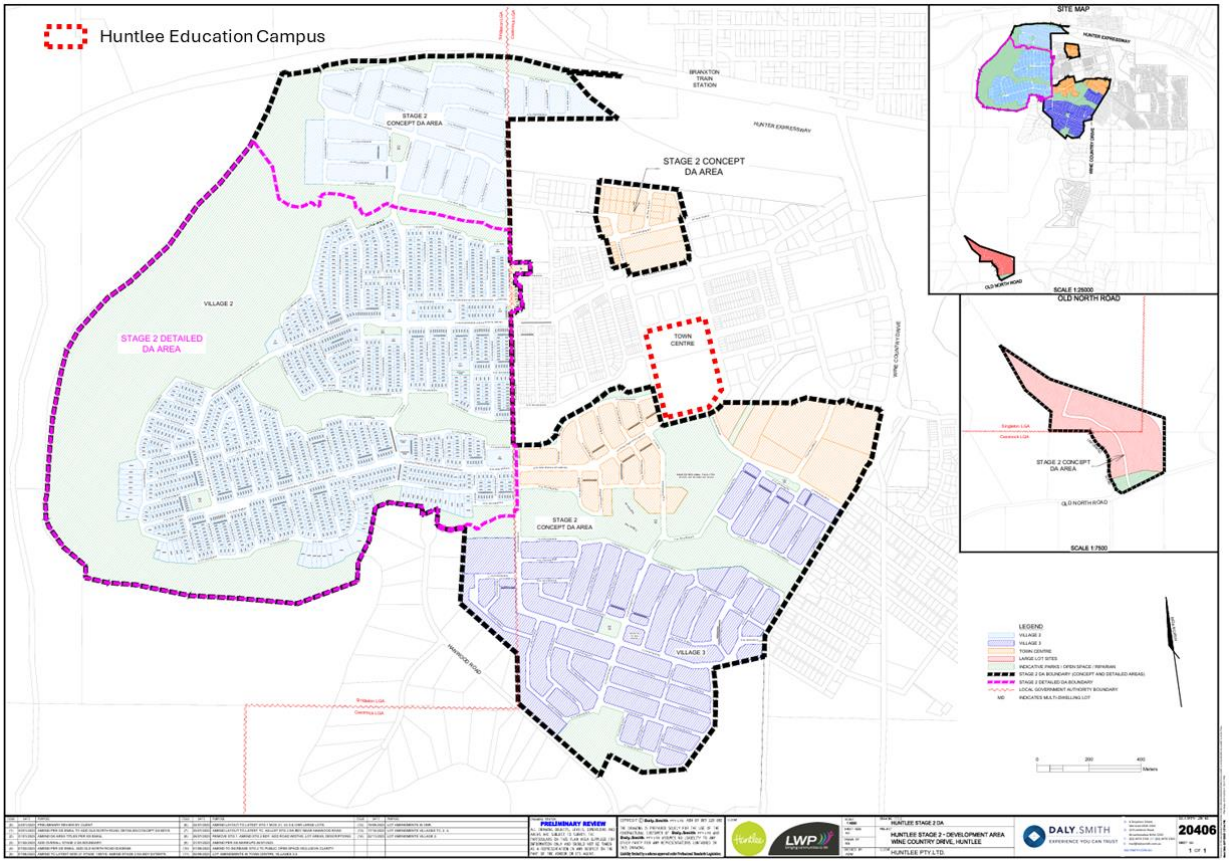


Figure 3-2: Huntlee Stage 2 subdivision plan[2]

3.2 Student population projection

The process undertaken to forecast student distribution under the designed operational capacity scenario for the New Primary School and Highschool in Huntlee is outlined below:

- It is expected that all of Stage 1 Huntlee development (refer to Figure 3-1) will come online by opening of the schools in 2028
- The planned dwelling counts in Huntlee Stage 1 development (in alignment with the subdivision plan as shown in Figure 3-1), combined with travel zone projections for areas outside of these developments, have been used to determine the residential population and distribution with the primary and high school intake areas
- Average dwelling size of 3.2 people per dwelling based on 2021 ABS Census and benchmarked on Leppington SA2, which shares comparable land use characteristics with a mix of low to medium density developments
- Proportions of students attending government primary and secondary schools in Cessnock LGA at 6% and 4% respectively, based on 2021 ABS Census
- Adjustment of projected student population numbers to align with the designed capacity conditions for operation of the proposed schools.

[2] Huntlee Stage 2 DA, LWP Group, 22/11/2023

Figure 3-3 and Figure 3-4 depict the projected student populations within the intake areas of the new primary and high schools, respectively.

The proposed primary school catchment covers the area south and west of the Hunter Expressway. The greatest population density is forecast within the Huntlee Stage 1 area.

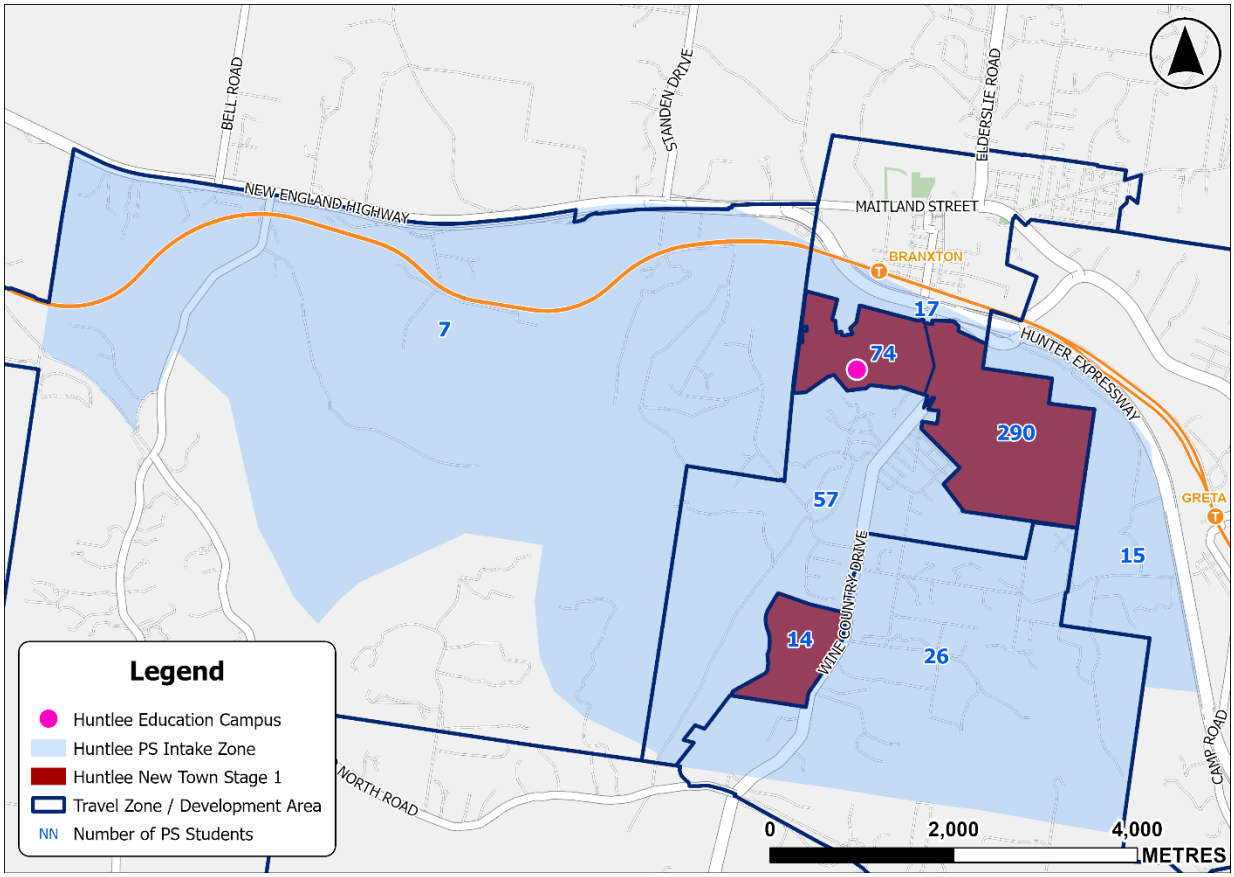


Figure 3-3: Primary school intake catchment and projected student distribution

The proposed high school catchment extends far wider than the primary school catchment, covering areas north of the Hunter Expressway including Greta and Lochinvar as well as Huntlee Stage 1 development.

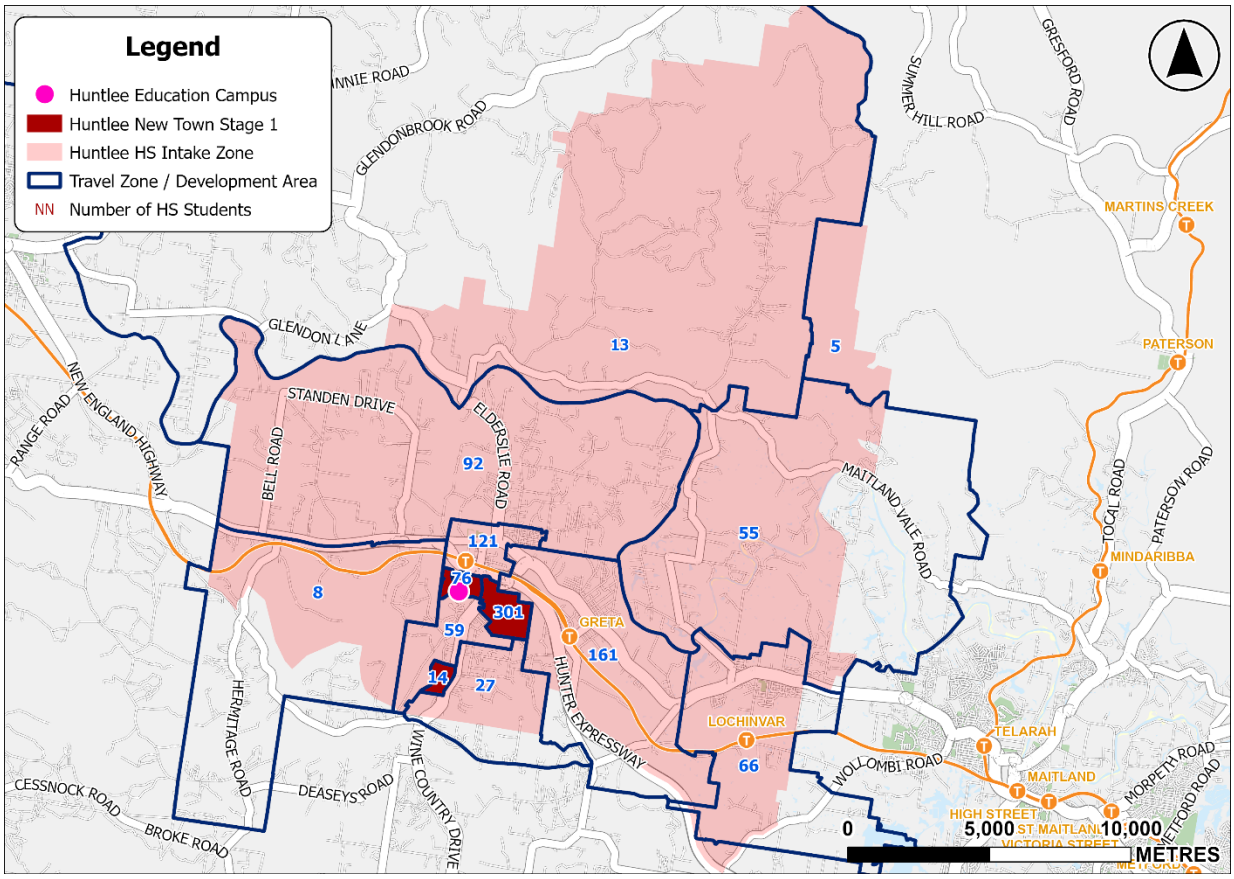


Figure 3-4: High school intake catchment and projected student distribution

4 Existing and proposed transport network

4.1 Road network

The school site is proposed to be bounded by Persoonia Boulevard, Reading Road and Morningstar Crescent, which are currently partially constructed. Figure 4-1 shows the location of the school site in relation to the surrounding street network with the associated road hierarchy classifications.

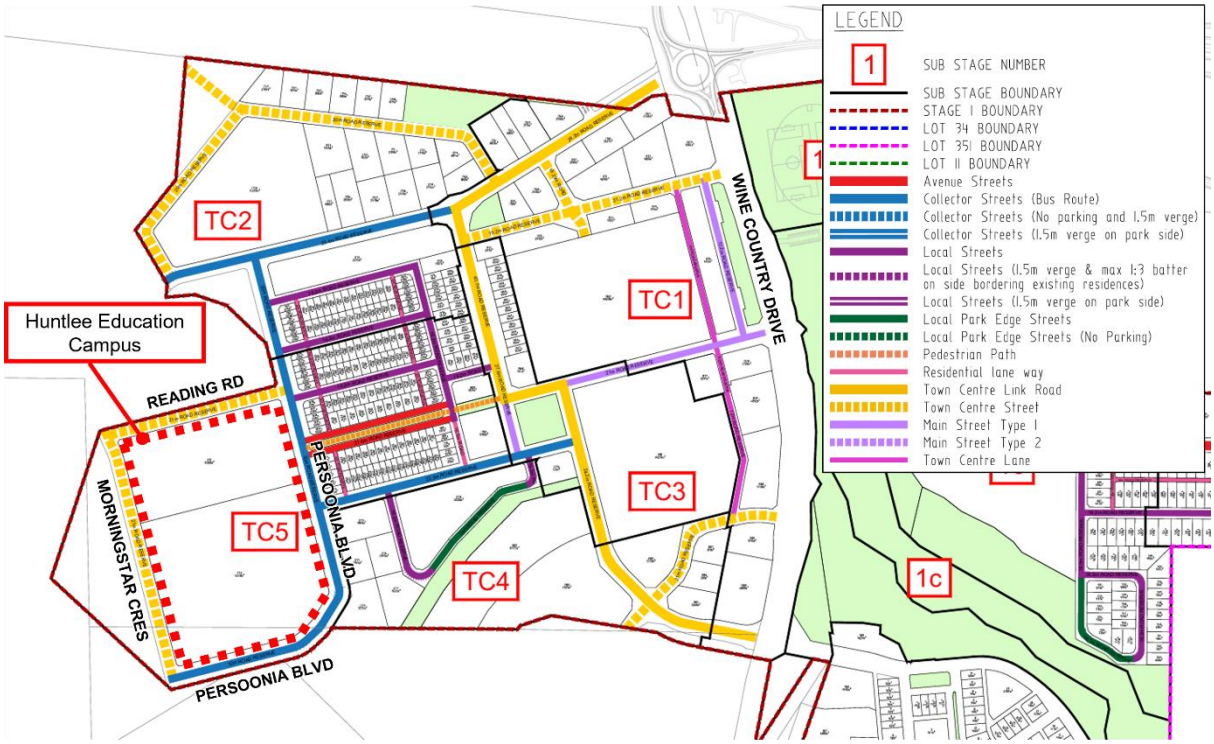


Figure 4-1: Road hierarchy[3]

Proposed cross sections for the roads to be constructed are shown in Figure 4-2, Figure 4-3 and Figure 4-4.

Persoonia Boulevard is proposed to have a shared path with 2.5m width on the school side of the road and footpath of 1.5m width on the other side. Persoonia Boulevard on the eastern side of the site is proposed to have an increased verge width of 11.7m, compared to the southern side, which is proposed to have a 9m width. Morningstar Crescent is proposed to provide footpaths with 1.5m width on both sides of the road.

All roads bounding the site are proposed to contain two travel lanes (one in each direction) and two lanes for on-street parking/ other uses.

[3] Huntlee Stage 1 DA, LWP Group, 18/02/2022

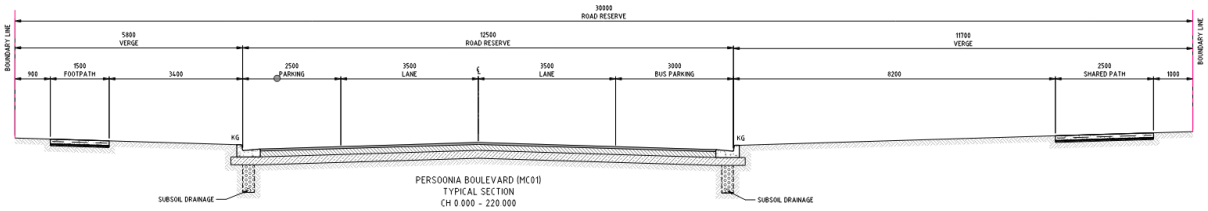


Figure 4-2 Persoonia Boulevard proposed cross section (eastern side of site)

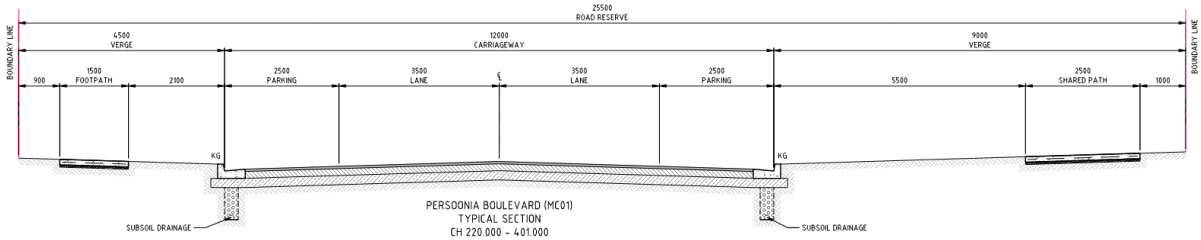


Figure 4-3 Persoonia Boulevard proposed cross section (southern side of site)

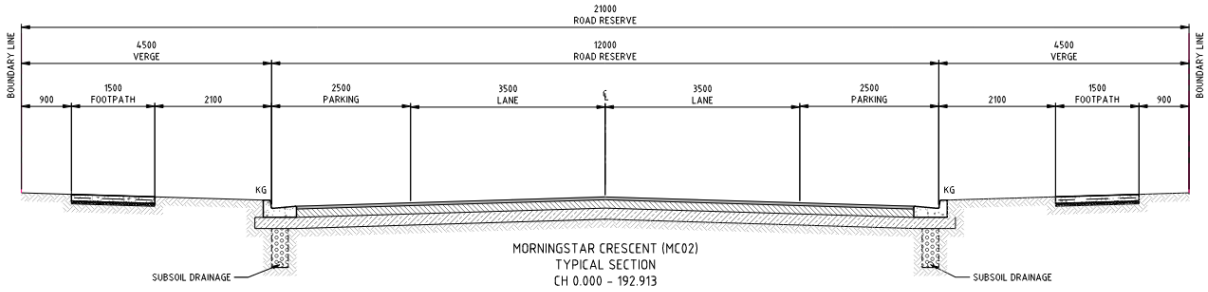


Figure 4-4 Morningstar Crescent proposed cross section (eastern side of site)

4.2 Walking and cycling

The Stage 1 Huntlee Masterplan illustrates a well-connected active transport network designed to promote walking and cycling throughout the precinct as shown in Figure 4-5. Shared paths and dedicated cycleways are strategically aligned with key roads and green corridors, linking residential areas to the Huntlee Town Centre, parks, and future school sites. The network also integrates with open space areas such as Black Creek, providing safe and attractive routes for both recreational and commuter trips.

Design controls for pedestrian and cycling infrastructure are specified in Huntlee DCP 2013 to facilitate safe and efficient movement of pedestrians and cyclists, whereby the DCP outlines a minimum footpath width of 1.5m and a minimum shared path width of 2.5m.

Figure 4-5: Huntlee Stage 1 active transport masterplan[4]

[4] Cycleway and Recreational Trail Network Master Plan, LWP Group, 13/12/2021

4.3 Public transport

Figure 4-6 shows the public and school bus routes currently operating in the proposed primary and high school intake areas. These bus routes are summarised in Table 4-1 and Table 4-2. The closest public bus stops are located on Wine Country Drive and approximately 820m walk away. However, only some of the routes stop at these locations and others only pass through.

Transport for NSW is responsible for service and timetable planning for all public and school bus services in NSW, and any adjustments to existing bus routes and provision of new or additional bus services are subject to discussions with Transport for NSW.

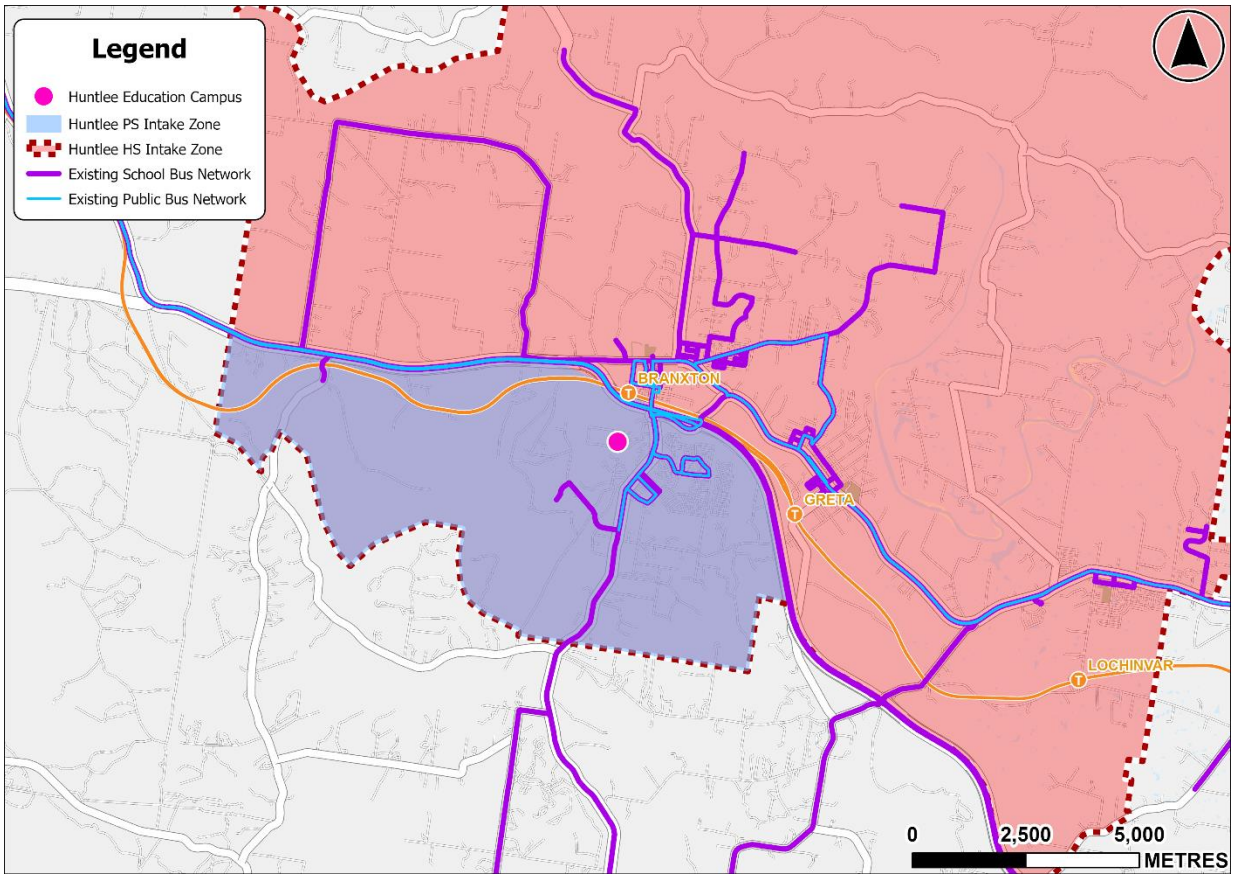


Figure 4-6: Existing public and school bus network

Table 4-1: Existing public bus routes in Huntlee

Route number	Route description
179	Green Hills Shopping Centre to/ from North Rothbury via Maitland
180	Stockland Green Hills to/ from Singleton Heights via Maitland

Table 4-2: Existing school bus routes in Huntlee

Route number	Route description
0331	Bendeigh Property to Miller Park
0332	Bendeigh Property to Branxton PS

Route number	Route description
0333	Branxton East to Branxton PS
0334	St Brigids PS to Branxton PS
0335	Branxton PS to Bell Rd and New England Hwy
0336	Miller Park to Bemdiegh Property
0451	Hunter Valley Grammar to Singleton
1392	Rutherford HS to Branxton East
1393	St Patricks PS to Rutherford HS
2233	All Saints College St Marys Campus to Rutherford
2253	Maitland and Lochinvar to Branxton
2261	Hanwood Estate to Rutherford HS
2281	Wydham St, Branxton to Merewether HS
2282	Merewether HS to Miller Park
2283	Merewether HS to Miller Park
2331	Branxton to All Saints College St Peters Campus
2403	St Patricks PS to Lochinvar
2411	Cessnock Rd and Drinan St to Rutherford HS
2441	Branxton to Greta PS
2442	Greta PS to East Branxton
2451	Hanwood Estate to East Maitland PS
2452	Hunter Valley Grammar School to Maitland
2522	Merewether HS to Bolwarra Heights
2562	Rutherford HS to North Rothbury
2581	North Rothbury to Rutherford HS
6302	Singleton Heights Shops to King St PS
6304	Singleton Heights to Hunter Valley Grammar
6306	Singleton Heights to Maitland Christian College
6318	Greta to Singleton Schools
6325	Singleton Heights PS to Singleton
6327	Singleton PS to Belford
6343	Singleton Christian to Shell Service Station
6344	Belford to St Catherines College
6345	Hunter Valley Grammar to Shell Service Station
6347	Metford Christian to Singleton Heights Shops
6348	Miller Park to Singleton HS
6360	Singleton to Hunter Valley Grammar
S522	Greta Public to Greta via Branxton and North Rothbury
S852	St Philips Nulkaba to North Rothbury
S883	East Branxton to Cessnock PS via Greta Main
S893	Branxton to Cessnock PS via North Rothbury and Nulkaba
S894	St Patricks PS to Branxton via North Rothbury
S895	Mount View HS to Branxton via North Rothbury
S896	Cessnock HS to Branxton via North Rothbury
S905	St Philips College to Branxton
S923	St Philips College to Abernethy via Branxton

A bus route plan has been developed to support Stage 2 of the Huntlee town development as shown in Figure 4-7. The plan shows the bus capable roadways around the school site and potential locations for bus stops.

All roads bounding the proposed school site are designed as bus-capable roads.

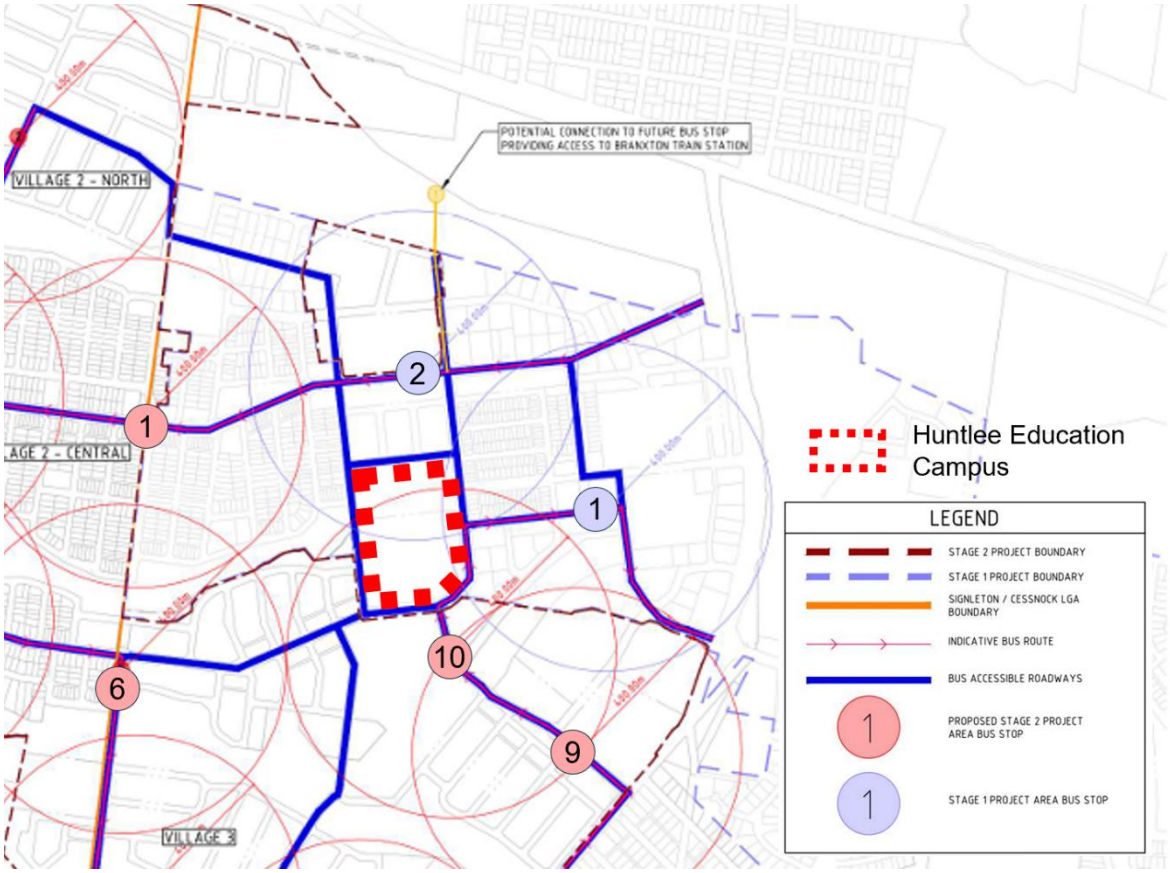


Figure 4-7: Bus route plan[5]

[5] Huntlee Stage 2 DA, LWP Group, 16/11/2023

5 Travel demands

5.1 Active transport coverage

Figure 5-1 shows the extent of the active transport catchment bands and projected student locations for the new primary school. Around 24% of students are projected to live within a 1,200-metre on-path walk or a 15-minute walk of the school site. Around 45% of students are projected to live within a 2,400-metre on-path cycle catchment of the school site, which has been considered as the upper limit for reasonable cycling/scooter distance for primary school students. A summary of the active transport catchment analysis is shown in Table 5-1.

As cycling is permitted in NSW on footpaths for students up to the age of 16, students can access the school from all sides using the surrounding pedestrian and cycling networks.

Table 5-1: Primary school active transport catchment coverage

Distance band (on-path walking)	No. of students	% of students	Cumulative % of students
0 – 400m	25	5%	5%
400 – 800m	56	11%	16%
800 – 1,200m	37	7%	24%
1,200 – 1,600m	19	4%	27%
1,600 – 2,000m	42	8%	36%
2,000 – 2,400m	49	10%	45%
2,400 – 3,600m	180	36%	82%
>3,600m	92	18%	100%
Total	**500**	**100%**	

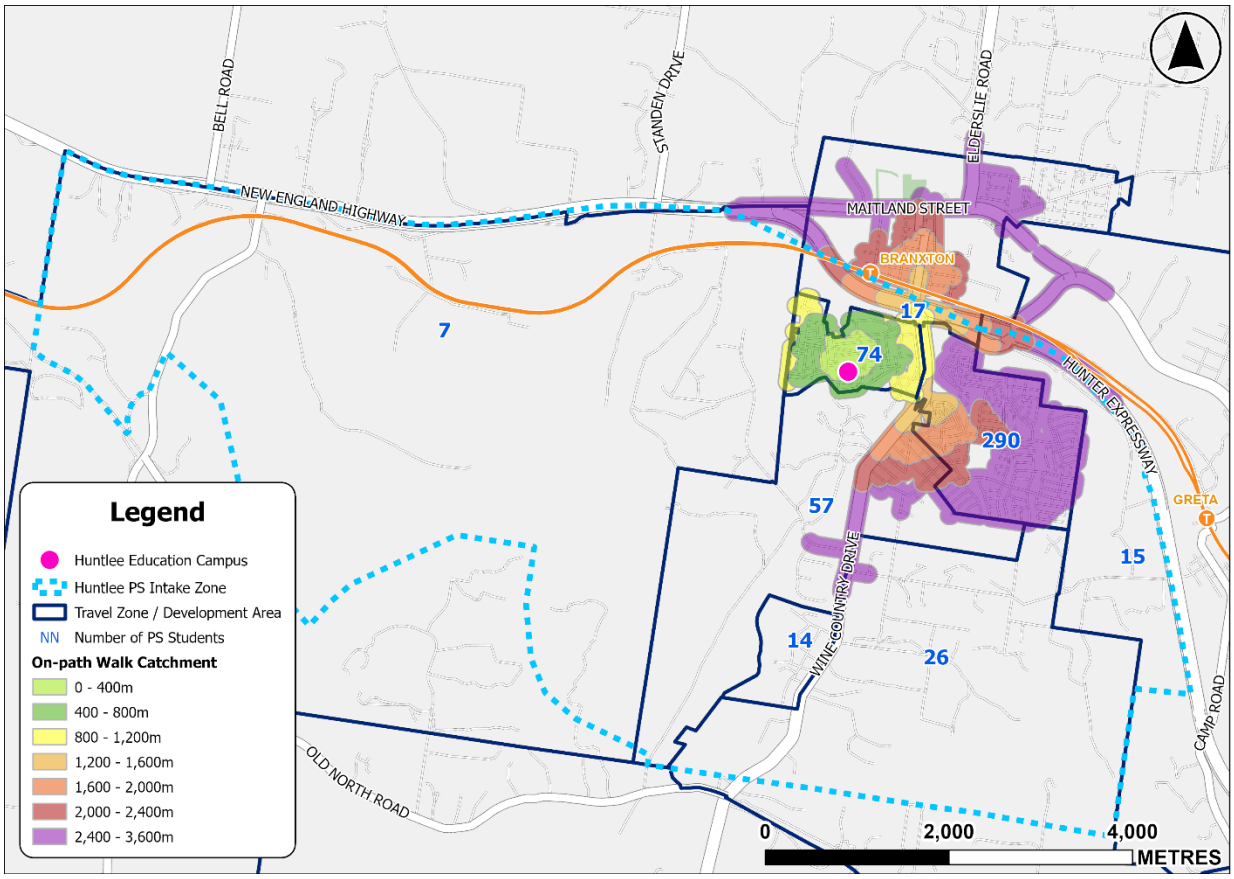


Figure 5-1: Primary school active transport catchment

Figure 5-2 shows the extent of the active catchment bands and projected student locations for the new high school. Around 14% of students are projected to live within a 1,600-metre on-path walk or a 20-minute walk of the school site. Around 47% of students are projected to live within a 3,600-metre on-path cycle catchment of the school site, which has been considered as the upper limit for reasonable cycling distance for high school students. A summary of the active transport catchment analysis is shown in Table 5-2.

Table 5-2: High school active transport catchment coverage

Distance band (on-path walking)	No. of students	% of students	Cumulative % of students
0 - 400m	26	3%	3%
400 - 800m	58	6%	8%
800 – 1,200m	38	4%	12%
1,200 - 1,600m	22	2%	14%
1,600 - 2,000m	53	5%	20%
2,000 - 2,400m	63	6%	26%
2,400 - 3,600m	214	21%	47%
>3,600m	526	53%	100%
Total	**1,000**		

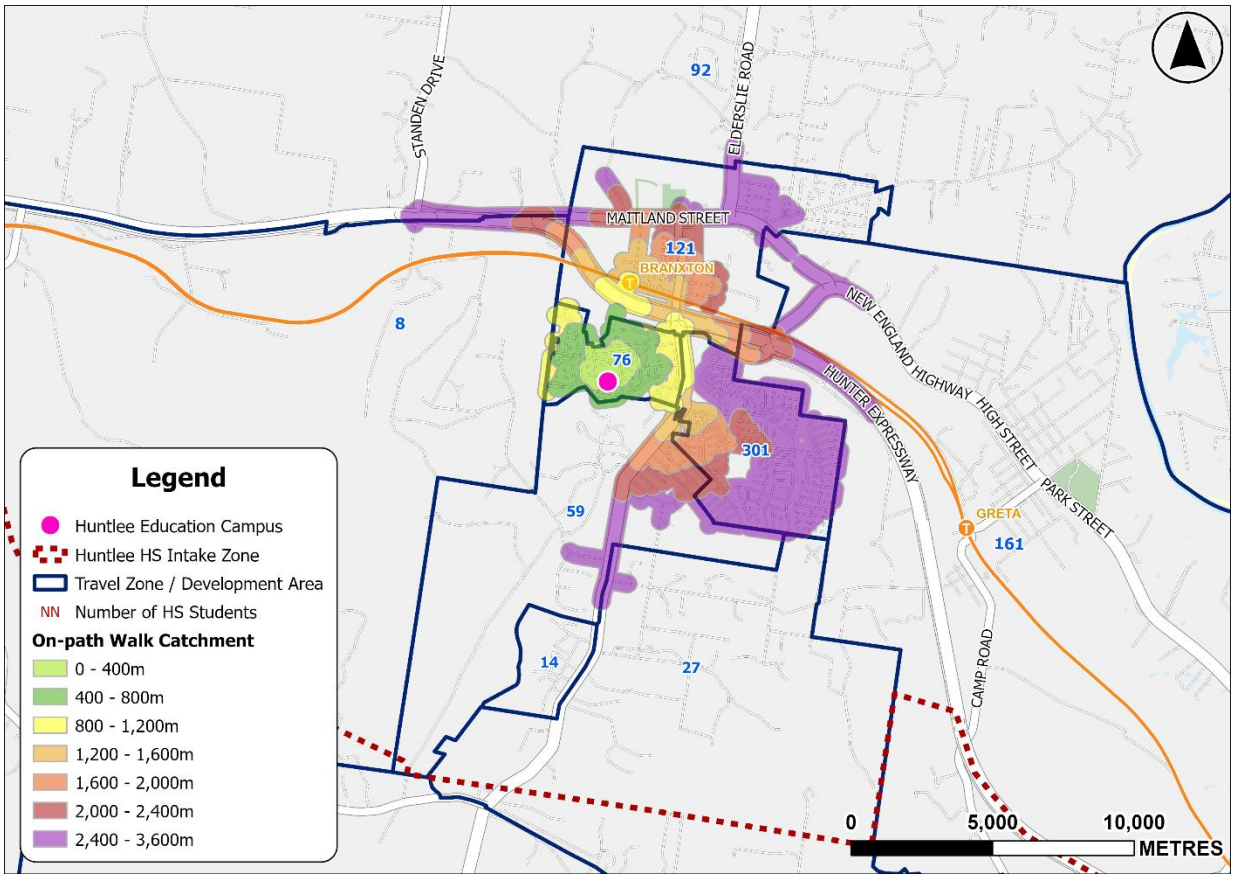


Figure 5-2: High school active transport catchment

Figure 5-3 shows the key walking and cycling access routes immediate to the school site, as well as the forecast pedestrian and cyclist demand for both the primary school and high school along each route.

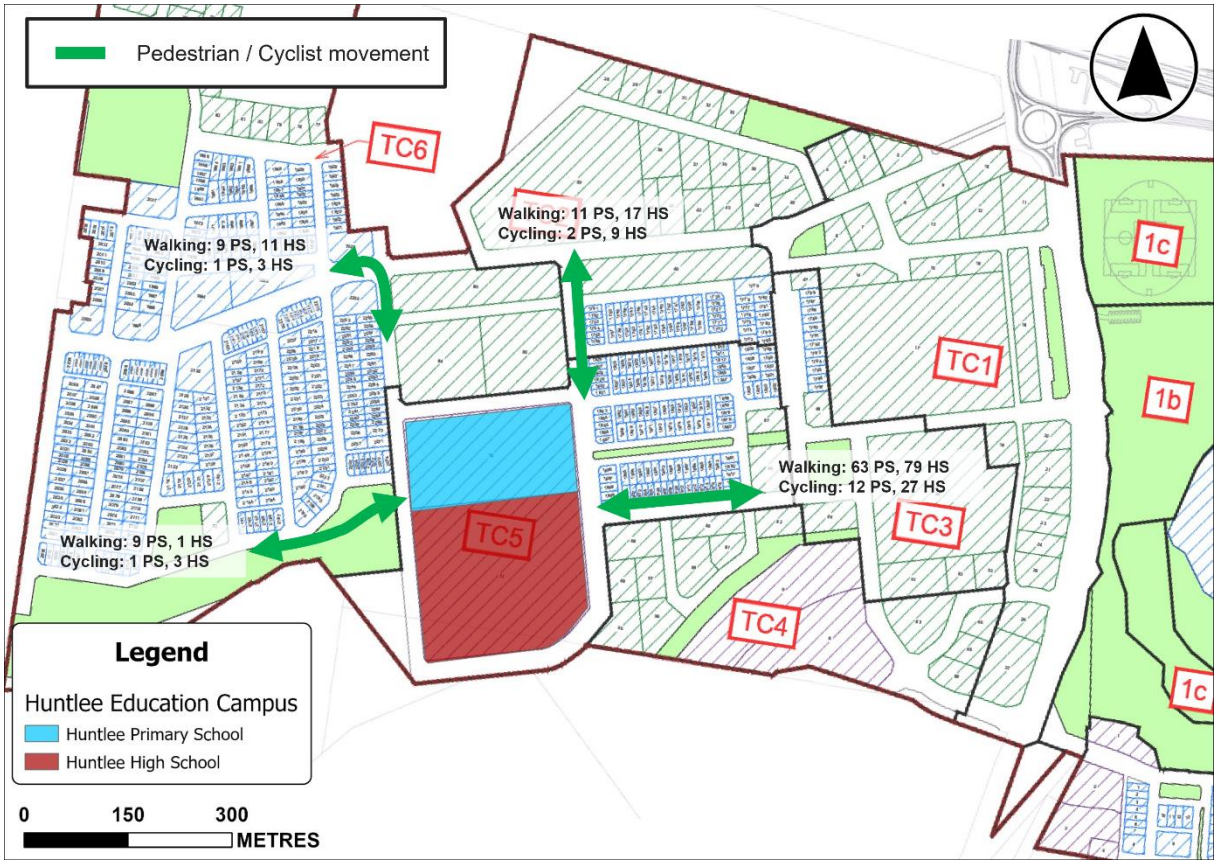


Figure 5-3: Key walking and cycling access routes to site

5.2 Public transport

The School Student Transport Scheme (SSTS) provides eligible school students with subsidised travel between home and school using public transport.

The eligibility requirements for free bus travel via the SSTS for students is as follows:

- Years K to 2 (Infants): no minimum distance
- Years 3 to 6 (Primary): 1.6km straight line distance or 2.3km walking or further
- Years 7 to 12 (Secondary): 2km straight line distance or 2.9km walking or further.

SSTS coverage has been assessed by mapping the notional distance thresholds from the school site to identify eligibility zones. This provides an indication of the student population likely to qualify for subsidised travel. Table 5-3 presents a summary of the SSTS coverage for the student population.

It is estimated that 73% of students are eligible for the public school (364 students) and 63% of students are eligible for the high school (630 students).

Table 5-3: School Student Transport Scheme (SSTS) coverage

School	Forecast number of SSTS eligible students	%
Public School	364	73%
High School	630	63%

5.3 Private vehicle demand

The vehicular traffic demands that are forecast to be added to the road network as a result of the project is summarised in Table 5-4.

Table 5-4: Vehicles added to the road network

Mode share scenario	Public school and pre-school (students)	High School (students)	Staff (all schools)
Baseline mode share	394 students in 329 cars	698 students in 582 cars	111 staff in 89 cars
Moderate target mode share	302 students in 252 cars	291 students in 243 cars	111 staff in 89 cars
Reach target mode share	277 students in 198 cars	259 students in 185 cars	111 staff in 89 cars

An offset bell time approach is to be implemented for the education campus to stagger the peak traffic demand, thereby reducing pressure on the surrounding road network. Traffic modelling outcomes are provided in Section 6.10.

6 Site access arrangements

The proposed site access arrangement is shown in Figure 6-1.

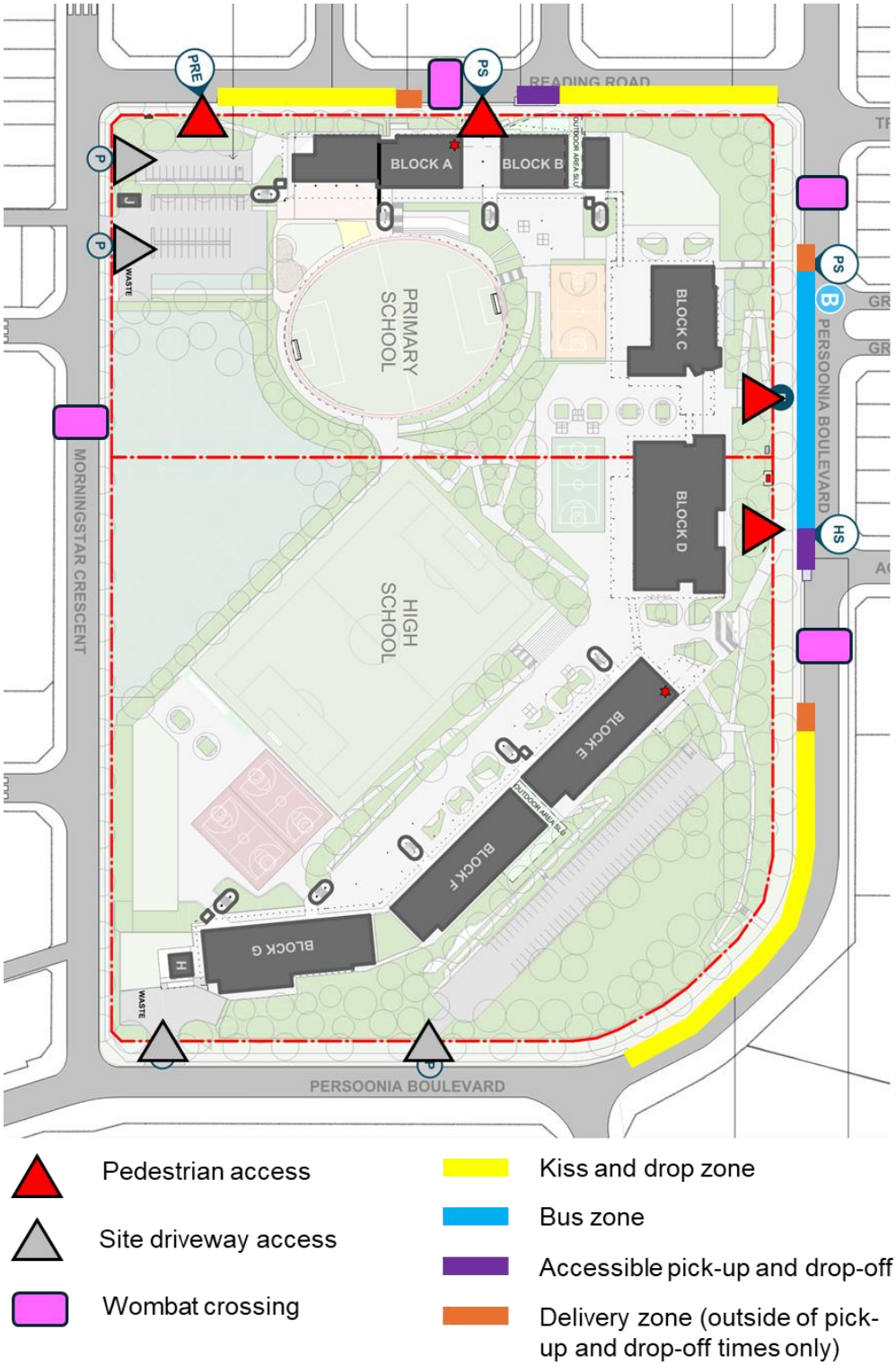


Figure 6-1 Site access arrangements

6.1 Pedestrian access

Pedestrian access is provided at the following locations:

- Reading Road (eastern access) – this is the main access proposed for the public school
- Reading Road (western access) – this is the access proposed for the pre-school
- Persoonia Boulevard (northern access) – this is the secondary access proposed for the public school connecting to the kiss and drop zone on Persoonia Boulevard.
- Persoonia Boulevard (southern access) – this is the main access proposed for the high school.

Five wombat crossings are proposed as part of the project to cater for active transport desire lines connecting to the school site shown in Figure 5-3. These are located at:

- 2x on Persoonia Boulevard, on either side of the school bus zone
- 1x on Reading Road, adjacent to the public school main entrance
- 1x on Morningstar Crescent, south of the intersection with Caphilly Road
- 1x on Morningstar Crescent, north of the intersection with Reading Road – This location is to be coordinated and finalised based on future Developer works, which are to yet to be complete on Reading Road.

6.2 Bicycle/ scooter access and parking

Bicycle and scooter parking is provided for both the public school and high school in the locations shown in Figure 6-2. 15 spaces are provided for the public school and 40 spaces are provided for the high school. This provision aligns with the reach mode share target (refer to report section 7.1).

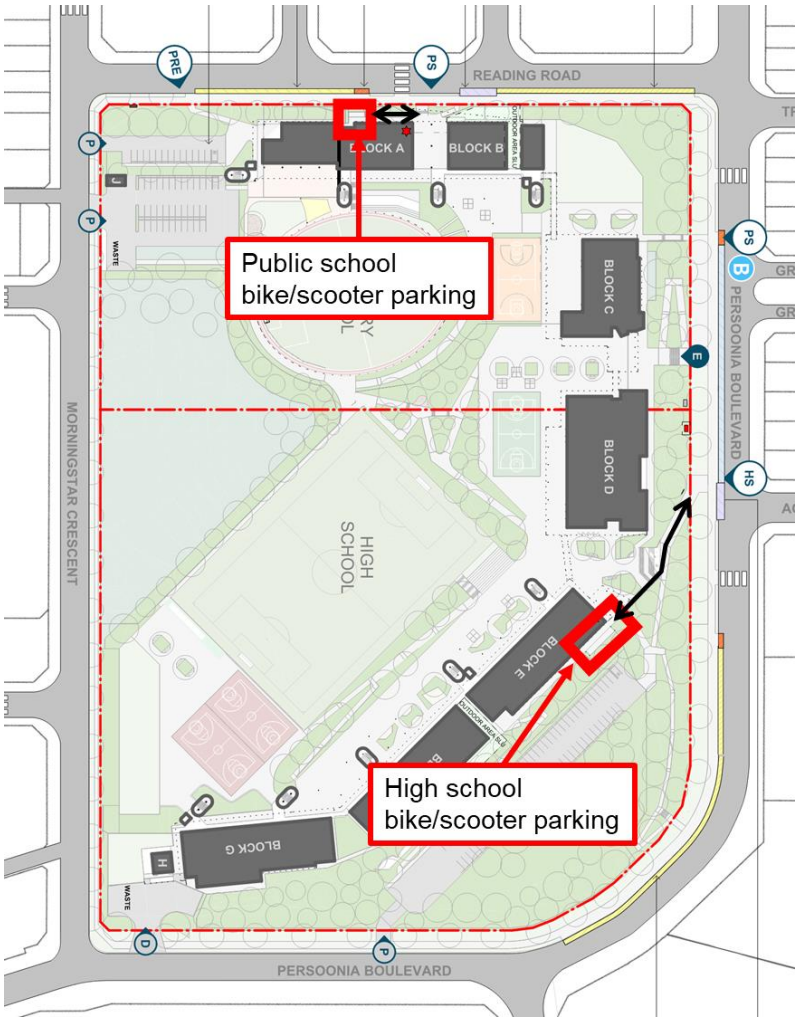


Figure 6-2 Student bike/ scooter parking locations

6.3 End of trip facilities

Two end of trip facilities (showers and bike parking) are provided for staff in the administration building of the public school and high school.

6.4 Bus access

Based on reach target mode share outlined in Section 7.1, analysis was undertaken to determine the number of bus spaces required to service the school. The reach mode share is used to inform bus zone length as this represents a higher bus patronage amongst students. Assumptions used in this calculation are outlined in Table 6-1 and encompass:

- Dwell time per bus as 5 minutes
- Each bus bay to service 5 buses over a 20-minute period
- Staggered bell time arrangement between the primary and high school. As such, the school with the higher bus service demand governs the length of the school bus zone.

Table 6-1: School bus zone requirement

	Primary school	High school
Number of high school students	500 students	1,000 students
Reach target bus mode share for students (refer Section 7.1)	22%	58%
Bus service demand	110 students	580 students
Bus vehicle passenger capacity	60	60
Bus dwell time per pick up	5 minutes	5 minutes
Service pick-up period	20 minutes	20 minutes
Bus space capacity (per pick-up period)	4 buses	4 buses
Number of bus spaces required	1	3
Bus zone length requirement (school with higher bus service demand governs the length of the school bus zone)	57m (3 spaces)	

Through discussions with the Transport for NSW Bus Planning team, it was determined that an increased bus zone length above the minimum required length is desired to allow for increased efficiency, layover opportunities and special event bus loading. The project is providing a bus zone with length of 102m.

The dimensions of the school bus bay are in alignment with the Transport for NSW Bus Infrastructure Guide, which outlines the lengths required for bus draw-in and draw-out as well as width. A width of 2.7m is considered adequate for a 'bus box' as described by the guide, as outlined in Figure 6-4.

The location of the bus zone is shown on Figure 6-1.

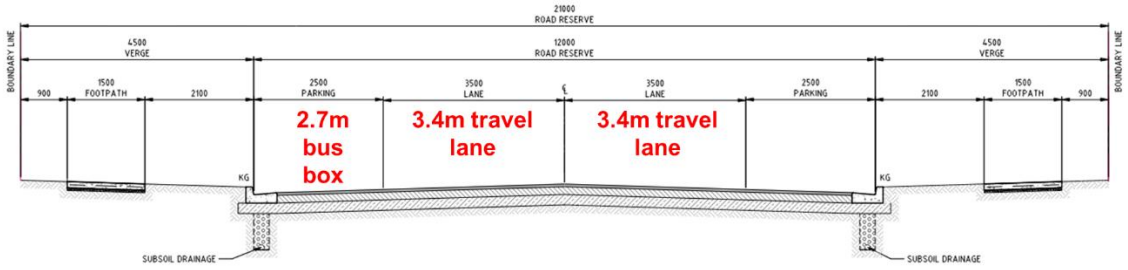


Figure 6-3: Bus box dimensions – Persoonia Boulevard

3.7 Draw in and draw out lengths

The minimum lengths for draw in and draw out are shown in the table below.

Bus Stop Dimension (m)	Standard	Long Rigid	Articulated
Length of Bus	12.5	14.5	18.0
Minimum draw-out length	6.0	6.5	8.0
Minimum draw-in length	11.5	14.0	14.0
Bus Zone length for one bus	30.0	35.0	40.0

Note: (1) Dimensions are based on stopping at the bus stop sign with a suitable length of straight, flat standard height kerb to stop alongside.

4.4 Bus stop painted pavement box marking

Painted boxes can be used at bus stops and bus zones where there is a high incidence of illegal parking. This treatment is only to be used at locations where persistent illegal parking is restricting bus access, as the significance of the treatment will be devalued if it is used at every stop.

Bus boxes should be between 2.7m and 3.0m wide and should cover the full length of the bus zone

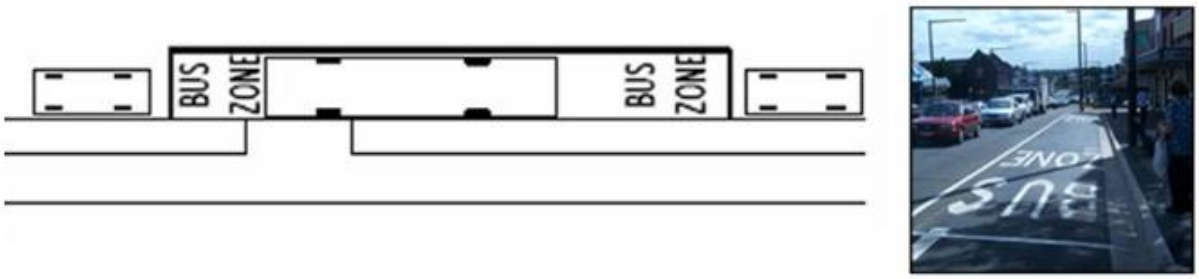


Figure 6-4: Bus Infrastructure Guideline, Transport for NSW

The Transport for NSW Bus Planning team is responsible for service route planning and are currently engaged with during the Transport Working Group process.

6.5 Kiss and drop

Two kiss and drop zones are proposed at the site:

- Reading Road, to cater for public school demands
- Persoonia Boulevard, to cater for high school demands.

A number of factors have been considered to determine the number of kiss and drop spaces required to service operation of both schools, as shown in Table 6-2.

Table 6-2: Kiss and drop requirement

	Primary school	High school
Number of students enrolled (at capacity)	500 students	1,000 students
Moderate target mode share for students travelling via private vehicle	62%	30%
Number of students using private vehicle	310 students	300 students
Average dwell time per pick-up / drop-off	2 min	2 min
Pick-up / drop-off length of time	20 mins	20 mins
20-minute capacity per K&D car space	10 vehicles	10 vehicles
Assumption of students per vehicle	1.2 students per vehicle	1.2 students per vehicle
Number of vehicles picking up and dropping off	259 vehicles	250 vehicles
Number of K&D spaces required	26 spaces	25 spaces
Metres of K&D kerbside zoning required	156m	150m

It should be noted the bell times for the primary and high schools are to be offset by at least 20 minutes between each other. This adjustment minimises the overall afternoon pick-up activities of both schools, thereby reducing pressure on the school kiss-and-drop and the cumulative traffic congestion impacts associated with the schools.

6.5.1 Accessible kiss and drop – on-street

Two on-street accessible kiss and drop spaces are to be provided near the public school main entrance on Reading Road and two on-street accessible kiss and drop spaces are to be provided near the high school main entrance on Persoonia Boulevard. The location of these zones are shown in Figure 6-1.

6.6 Support Learning pick-up and drop-off

Two spaces for pick-up and drop-off for the Support Learning Unit (SLU) is provided for both the public school and high school in the on-site locations shown in Figure 6-5 and Figure 6-7. Each SLU pick-up and drop-off space is accessed via the corresponding school's staff car parking area via a pathed pathway connecting to each SLU. The pick-up and drop-off areas is to be managed by SLU staff as needed.

The area designated for each pick-up and drop-off space is 3.2m wide and 7.8m long. This aligns with AS 2890.5 – Parking facilities, Part 5: On-street parking requirements.

Swept paths for each SLU pick-up and drop-off is shown in Figure 6-6 and Figure 6-8.

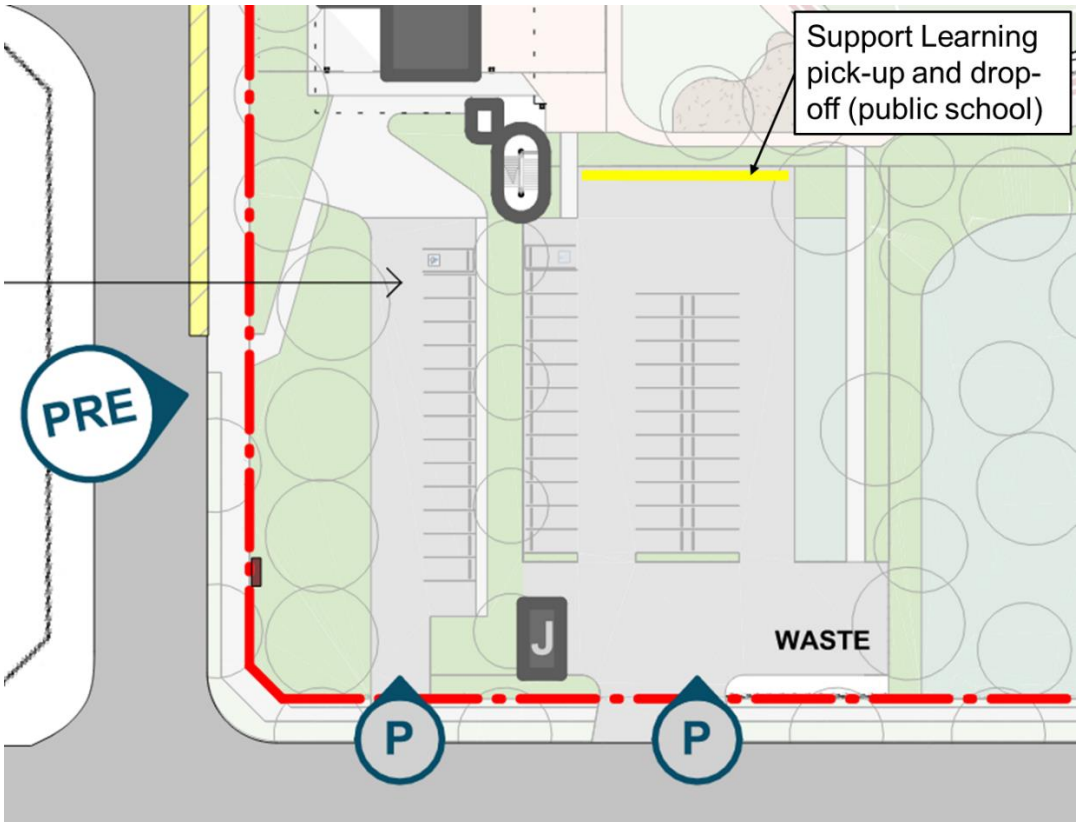


Figure 6-5: Support Learning pick-up and drop-off (public school)

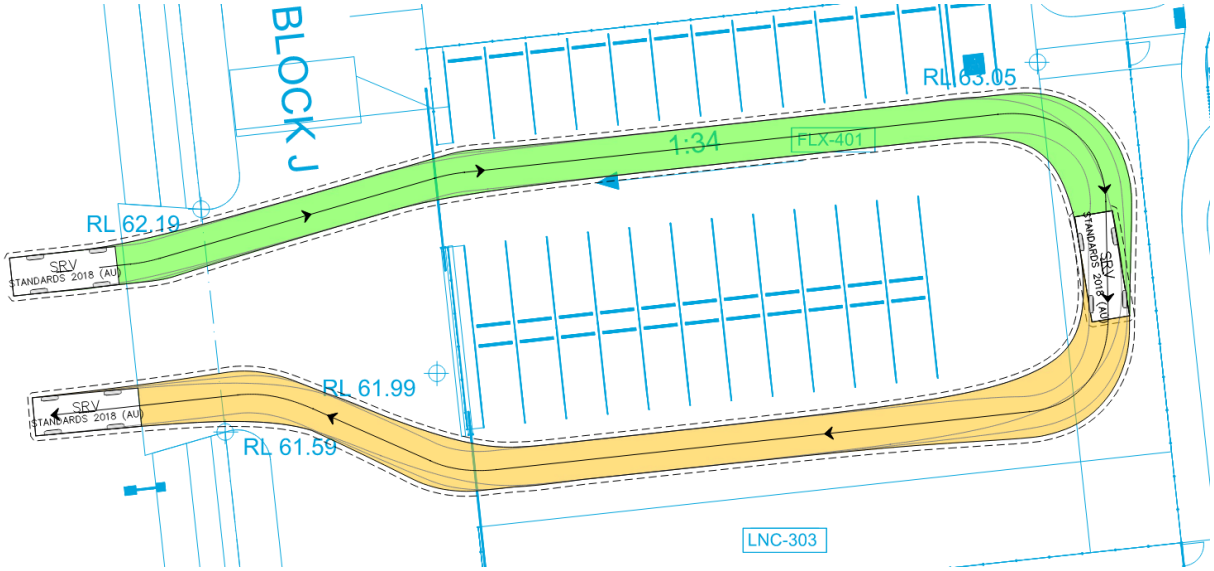


Figure 6-6: Support Learning pick-up and drop-off (public school) – swept path

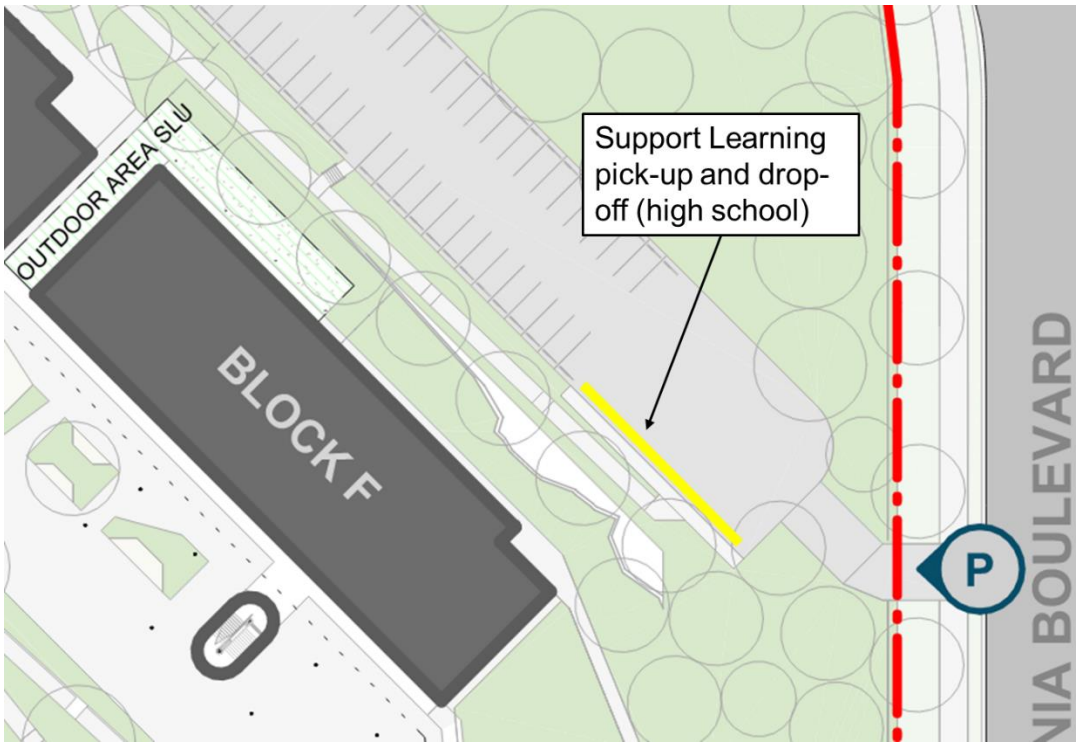


Figure 6-7: Support Learning pick-up and drop-off (high school)

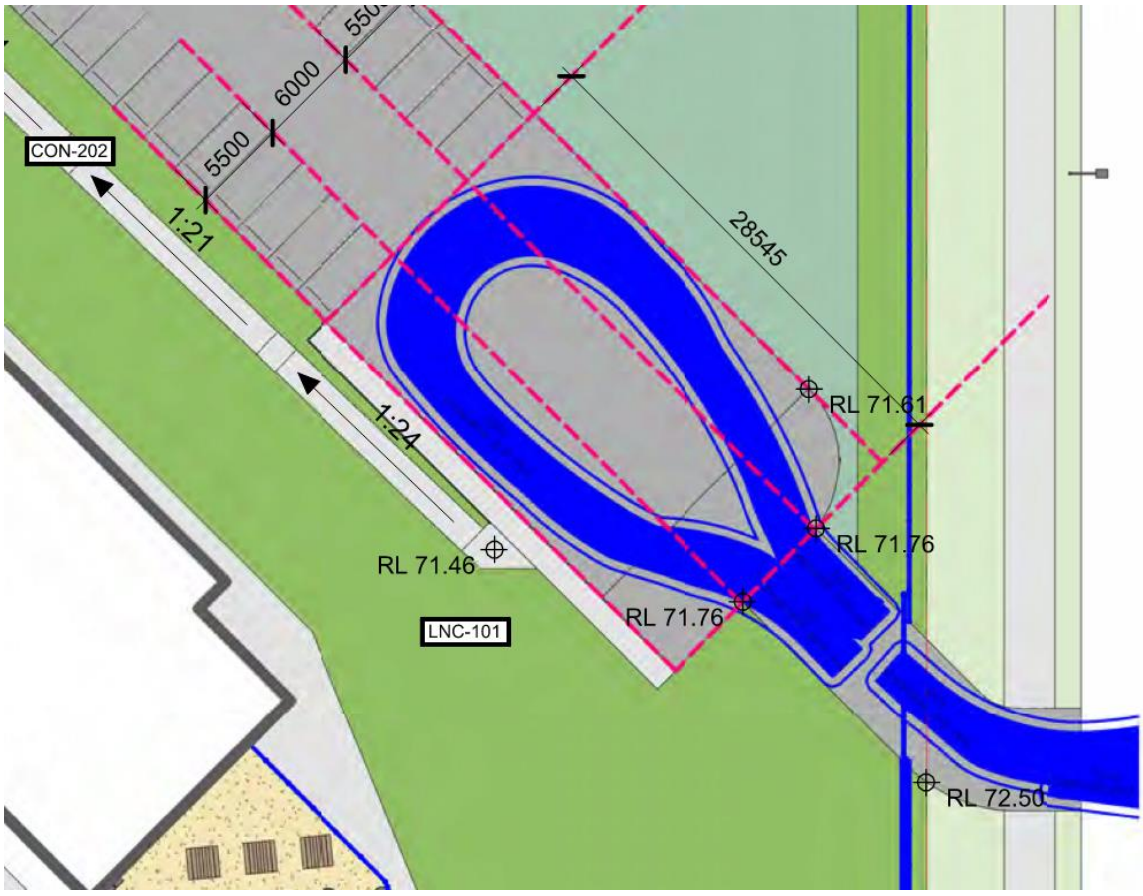


Figure 6-8: Support Learning pick-up and drop-off (high school) – swept path

6.7 Pre-school pick-up and drop-off zone

The DCP does not provide a parking rate provision for a public pre-school ie operates similar to a primary school with a designated bell time. In lieu of this, pre-school pick-up and drop-off parking space are provided in accordance with a first principles approach to calculating the required supply to meet demands, as outlined in Table 6-3.

14 parking spaces and one accessible parking space are provided within the pre-school student pick-up and drop-off car park on the north-eastern side of the site, as shown on Figure 6-1.

Table 6-3 Pre-school pick-up and drop-off parking space calculation

Number of students	60
Student vehicle mode share	100%
Number of students per vehicle	1
Time frame for student pick up after the bell time	20 minutes
Time to park car, pick up student and leave	5 minutes
Capacity of one car parking space across the pick-up period	4
Number of parking spaces required	15

6.8 Vehicle access

6.8.1 Parking areas

The site has four proposed vehicle access points for vehicles, they are:

- Staff parking (public school and pre-school), located on Morningstar Crescent
- Staff parking (high school), located on Persoonia Boulevard
- Pre-school pick-up and drop-off area, located on Morningstar Crescent
- Waste pad area (high school), located on Persoonia Boulevard
- Waste pad area (primary school) combined with staff parking area on Morningstar Crescent.

Each driveway interface is proposed with a left-in/ left-out configuration for vehicles, and a continuous footpath/ shared path treatment.

6.8.2 Waste vehicle

Waste vehicle swept paths have been tested at both the public school and high school waste pads. An 11.6m front-loading vehicle has been tested.

Swept paths are provided in Figure 6-9, Figure 6-10, Figure 6-11 and Figure 6-12.

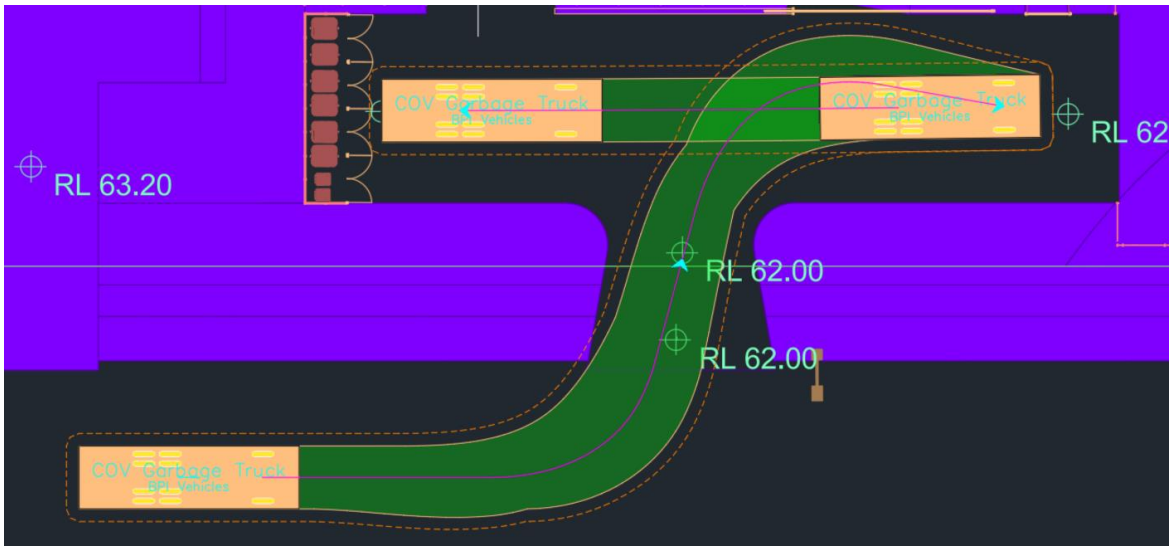


Figure 6-9: Waste truck access – public school waste area

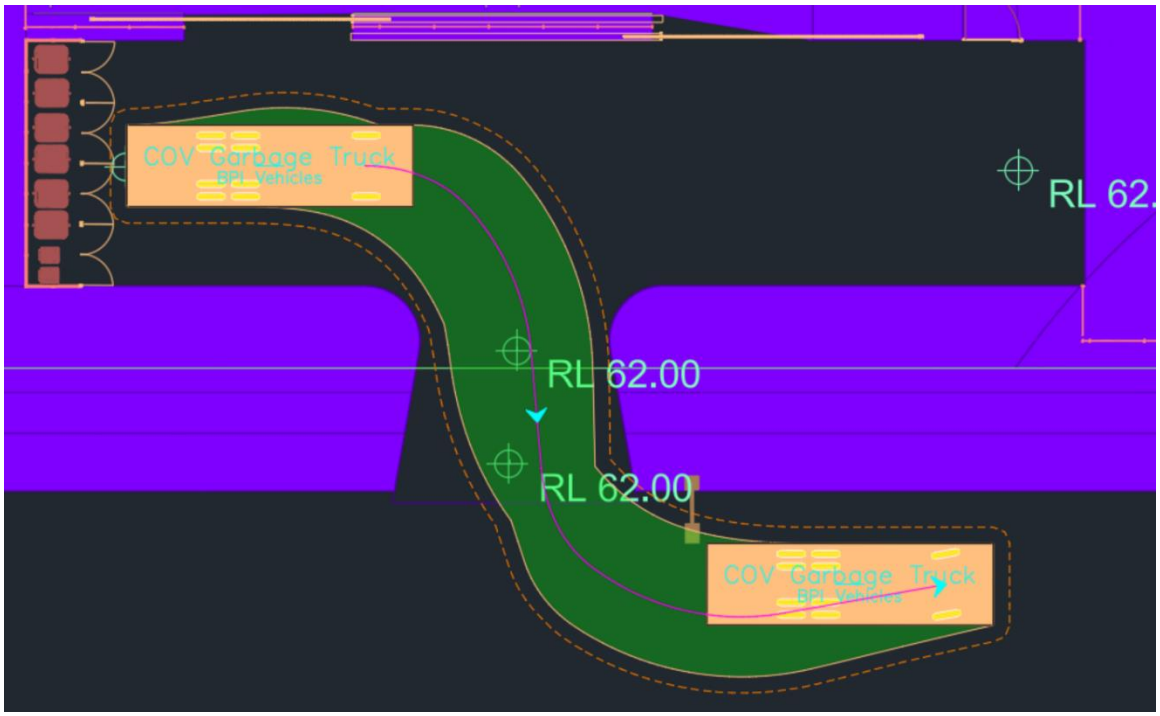


Figure 6-10: Waste truck egress – public school waste area

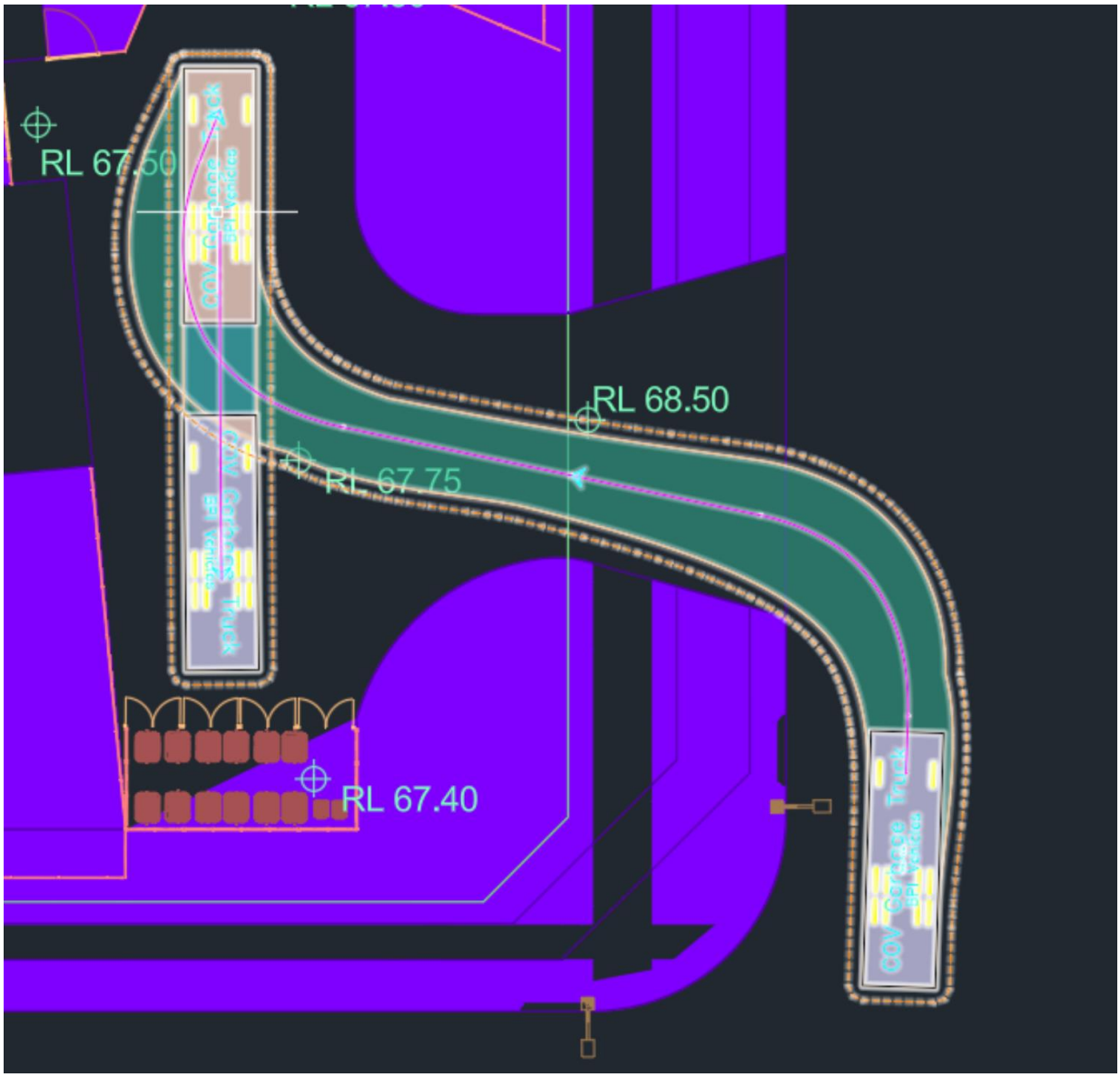


Figure 6-11: Waste truck access – high school waste area

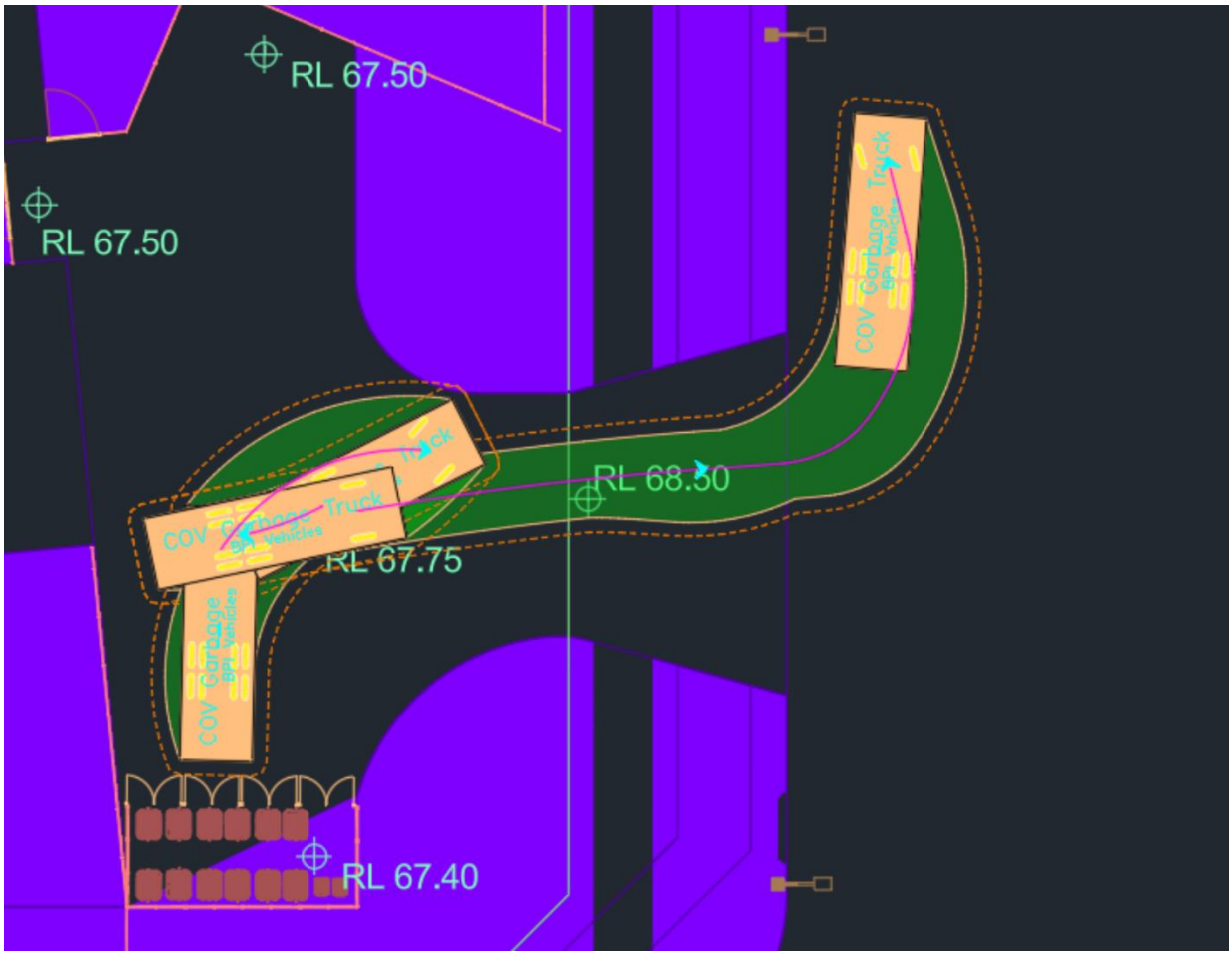


Figure 6-12: Waste truck egress – high school waste area

6.8.3 Delivery vehicle

Two on-street loading zones are proposed to allow for deliveries to both the public school/ pre-school (on Reading Road) and high school (on Persoonia Boulevard). These locations will only be made available for deliveries outside of school zone timeframes, to reduce any impacts to the proposed kiss and drop zones. The locations are shown in Figure 6-1.

An area for deliveries is also provided within the high school site waste pad area for woodworking supplies.

6.9 Car parking

The Cessnock DCP 2021 specifies the following rates for car parking for educational establishment:

- Pre-school staff parking: 1 space per staff. This results in a total of 6 staff car parking spaces being required under the planned staffing conditions of 6 full time equivalent staff.
- Primary school staff parking: 1 space per staff. This results in a total of 36 staff car parking spaces being required under the planned staffing conditions of 36 full time equivalent staff.
- High school staff parking: 1 space per staff. This results in a total of 97 staff car parking spaces being required under the planned staffing conditions of 97 full time equivalent staff.

The parking provision can be reduced based on the target staff mode share that is outlined in report section 7.2. In line with an 80% driving mode share, Table 6-4 outlines the parking spaces required to cater for the staff target mode share.

Table 6-4: Car parking requirement based on target mode share

	Pre-school	Primary school	High school
Number of staff	6	36	97
Target mode share for staff (car, as driver)	80%	80%	80%
Car parking requirement	5 spaces	29 spaces	78 spaces

The project is providing 34 parking spaces and one accessible parking space to be used by primary school and pre-school staff in the car parking area at the north-western side of the site. The project is providing 78 parking spaces and one accessible parking space to be used by high school staff in the car parking area located in the south of the site.

Both off-street car parking locations will be accessible via a card reader machine and gate.

Staff parking will be catered for on-site. Some visitor parking may be expected within public parking available on Reading Road and Persoonia Boulevard, however the impact on the road network is expected to be minimal, give the low-density residential nature of the areas surrounding the site.

6.10 Vehicle traffic impacts

SIDRA intersection modelling software was used to assess and understand the future operation of four intersections in close proximity to the site. They are listed below and shown on Figure 6-13:

- Tollbar Avenue / Morningstar Crescent
- Tollbar Avenue / Persoonia Boulevard
- Persoonia Boulevard / Morningstar Crescent
- Persoonia Boulevard / Unnamed Road.

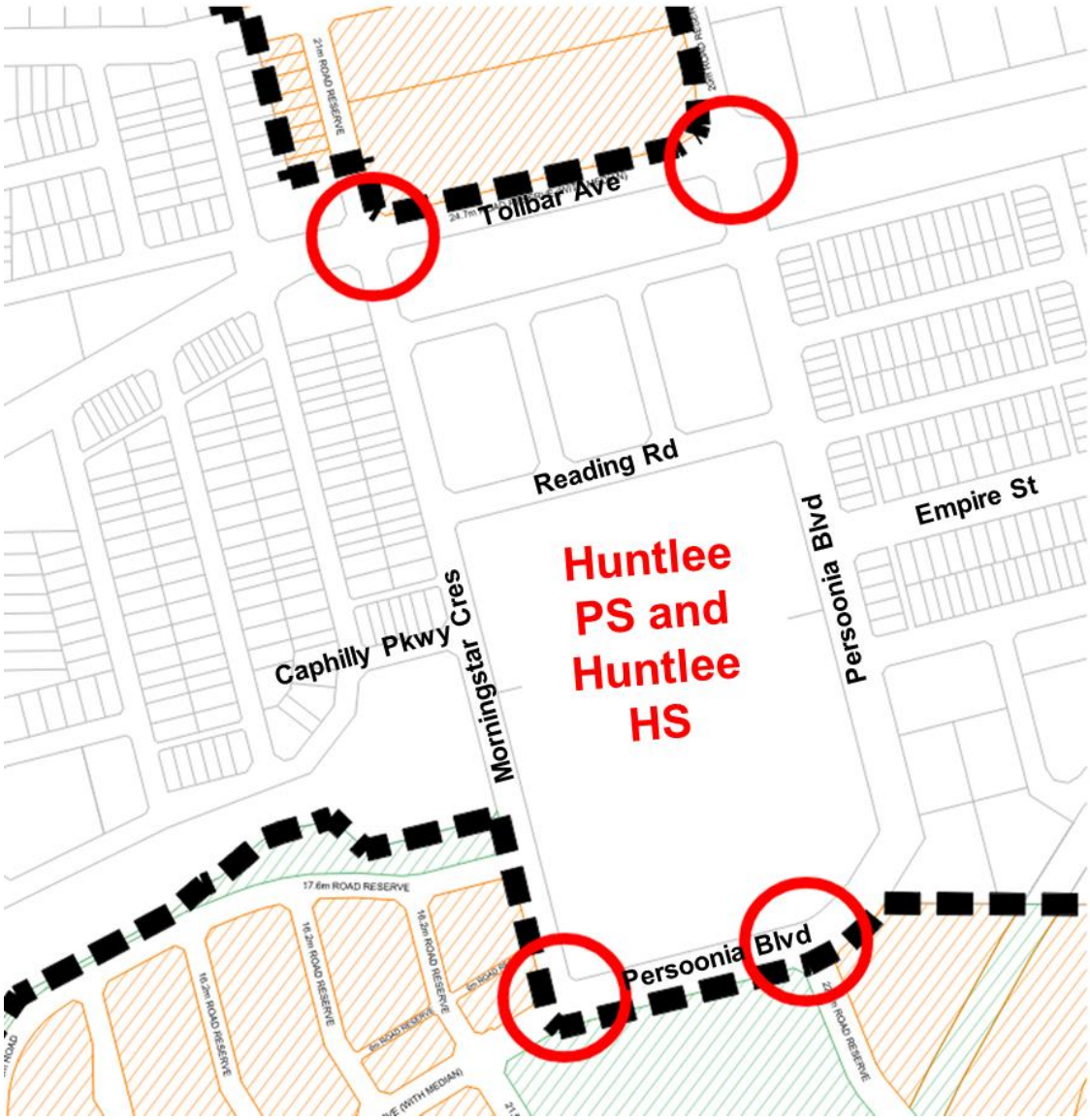


Figure 6-13: Intersections modelled

The following scope was undertaken to measure the anticipated impacts at these intersections:

- Develop future year 2031 SIDRA intersection models consisting of:
  - **Base scenario**: This scenario considers background traffic only, which includes residential and retail/ commercial trips associated with the fill development of Huntlee Stage 2.
  - **School development scenarios**: This scenario builds on the base scenario with the inclusion of school-induced traffic associated with the full enrolments at the primary school, pre-school and high school. Both the baseline and moderate mode share targets have been modelled and results are discussed below.

    The baseline mode share scenario is based on a 'do minimum' approach. The moderate mode share target reflects conditions where public transport usage is maximised through efficient planning of services and routes. Refer to report Section 7.1 for more detail.
- Assess SIDRA network outputs, including intersection level of service, degree of saturation and queue lengths.

The traffic modelling memorandum is provided in Appendix A and a summary of the results and discussion is provided in this section.

6.10.1 Results

6.10.1.1 Base scenario – background traffic only

The summary of results for the base scenario are provided in Table 6-5. The results show that the intersections perform with a high level of service, ranging from B to A.

Table 6-5 Modelling results – base scenario

Intersection	2031 base scenario (AM peak)				
	Volume (veh)	DOS	Avg delay (sec)	LOS	95% QL (m)
Tollbar Avenue / Morningstar Crescent	1,577	0.792	18.8	B	85.5
Tollbar Avenue / Persoonia Boulevard	1,471	0.339	8.7	A	15.1
Persoonia Boulevard / Morningstar Crescent	648	0.206	6.8	A	8.5
Persoonia Boulevard / Unnamed Road	441	0.152	5.5	A	5.7
Intersection	**2031 base scenario (PM peak)**				
	Volume (veh)	**DOS**	**Avg delay (sec)**	**LOS**	**95% QL (m)**
Tollbar Avenue / Morningstar Crescent	586	0.256	7.2	A	4.2
Tollbar Avenue / Persoonia Boulevard	558	0.139	6.6	A	2
Persoonia Boulevard / Morningstar Crescent	262	0.121	5.7	A	1.8
Persoonia Boulevard / Unnamed Road	226	0.066	5.5	A	0.9

6.10.1.2 School development scenario – moderate mode share

The summary of the results for the moderate mode share conditions are provided in Table 6-6. The results show a good LoS for all intersections, B to A, which reflects the base case scenario conditions.

Table 6-6 Modelling results – school development scenario – moderate mode share target

Intersection	2031 school development scenario – moderate mode share (AM peak)				
	Volume (veh)	DOS	Avg delay (sec)	LOS	95% QL (m)
Tollbar Avenue / Morningstar Crescent	1,721	0.809	19.4	B	90.2
Tollbar Avenue / Persoonia Boulevard	1,672	0.343	8.7	A	15.4
Persoonia Boulevard / Morningstar Crescent	1,237	0.658	9.3	A	48.3
Persoonia Boulevard / Unnamed Road	1,089	0.511	5.9	A	30.4
Intersection	**2031 school development scenario – moderate mode share (PM peak)**				
	Volume (veh)	**DOS**	**Avg delay (sec)**	**LOS**	**95% QL (m)**
Tollbar Avenue / Morningstar Crescent	729	0.318	7.3	A	5.7
Tollbar Avenue / Persoonia Boulevard	759	0.177	6.9	A	2.8
Persoonia Boulevard / Morningstar Crescent	862	0.4	6.1	A	7.9
Persoonia Boulevard / Unnamed Road	857	0.415	5.8	A	8.6

6.10.2 Discussion

As assessed in Appendix A, the intersection of Persoonia/ Morningstar performs with LoS D in the AM period under the baseline mode share conditions, however improves to LoS A in the moderate mode share conditions. This emphasises the need for SINSW to continue to work with Transport for NSW Bus Planning Team through the School Transport Plan process to ensure that appropriate bus services are provided to remove children from cars, particularly the high school students.

In addition, the school bell times for the primary school/ pre school and high school are to be offset by at least 20 minutes in order to spread vehicular demand across a larger period of time. This will improve the circulation of vehicles and create a safer environment for students who walk and ride around the bell times.

6.11 Proposed school zone

A school zone is proposed on roads surrounding the site as shown in Figure 6-14. The zone covers areas that are proposed to be highly utilised by students walking and riding to and from the site during pick-up and drop-off timeframes.

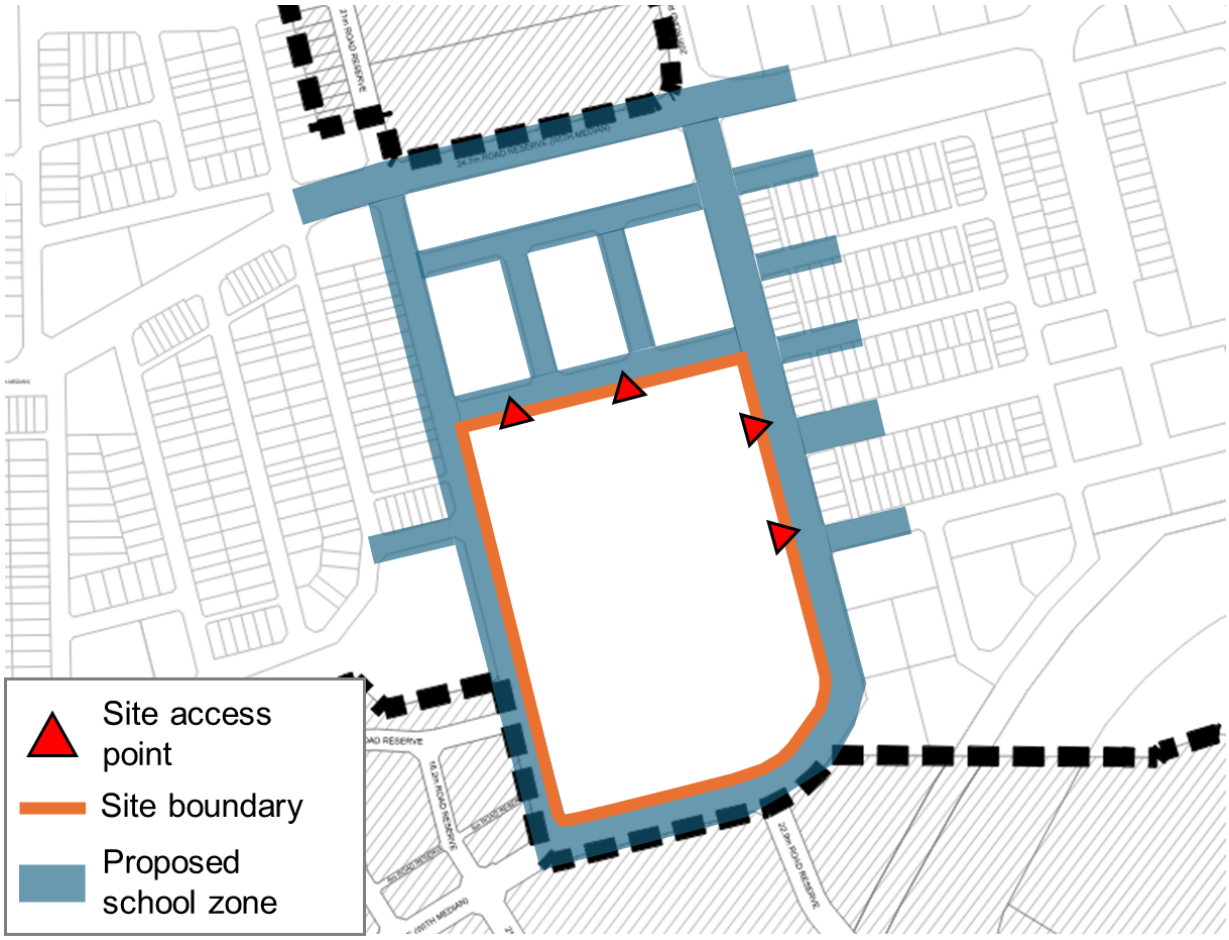


Figure 6-14: Proposed school zone

7 Mode share

7.1 Students

Mode share scenarios for the new primary and high schools have been developed based on future student distribution across the intake catchment and consideration of planned transport accessibility for walking, cycling, public transport and private vehicle. These scenarios are defined as follows:

- Baseline mode share: Reflects the travel patterns of students without any major interventions in place.
- Moderate target mode share: Implementation of additional infrastructure and services to enable a shift towards public transport (bus travel). This scenario factors in:
    - Extension of existing public and school buses within Huntlee to arrive/ depart near the school
    - Provision of new bus services to the school (refer to Figure 4-7 – bus route plan for Huntlee Stage 2)
    - Promotion of bus services.
- Reach target mode share: Uptake of sustainable travel modes is maximised, minimising the demand on kiss and drop zone and reducing surrounding road network congestion during school pick-up and drop-off periods. This scenario factors in the continued promotion of bus services, as well as inclusion of active transport encouragement programs and carpool programs. Car pooling in this scenario increases from 1.2 students per vehicle to 1.4 students per vehicle.

The three mode share scenarios are presented in Table 7-1, Table 7-2 and Table 7-3.

It should be noted that the mode share targets are subject to change depending on the outcomes of discussions with Transport Working Group.

Table 7-1: Baseline student mode share

	Primary school		High school	
Travel mode	**No. of students**	**% of students**	**No. of students**	**% of students**
Walk	69	14%	97	10%
Cycle	10	2%	27	3%
Public transport	26	5%	191	19%
Private vehicle	394	79%	686	69%
Total	**500**		**1,000**	

Table 7-2: Moderate target student mode share

	Primary school		High school	
Travel mode	**No. of students**	**% of students**	**No. of students**	**% of students**
Walk	69	14%	97	10%
Cycle	10	2%	27	3%
Public transport	110	22%	579	58%
Private vehicle	310	62%	298	30%
Total	**500**		**1,000**	

Table 7-3: Reach target student mode share

	Primary school		High school	
Travel mode	**No. of students**	**% of students**	**No. of students**	**% of students**
Walk	92	18%	117	12%
Cycle	17	3%	42	4%
Public transport	110	22%	579	58%
Private vehicle	281	56%	262	26%
Total	**500**		**1,000**	

7.1.1 Benchmark

7.1.1.1 Primary school

The mode share that was achieved at Rutherford Public School is shown in Figure 7-1.

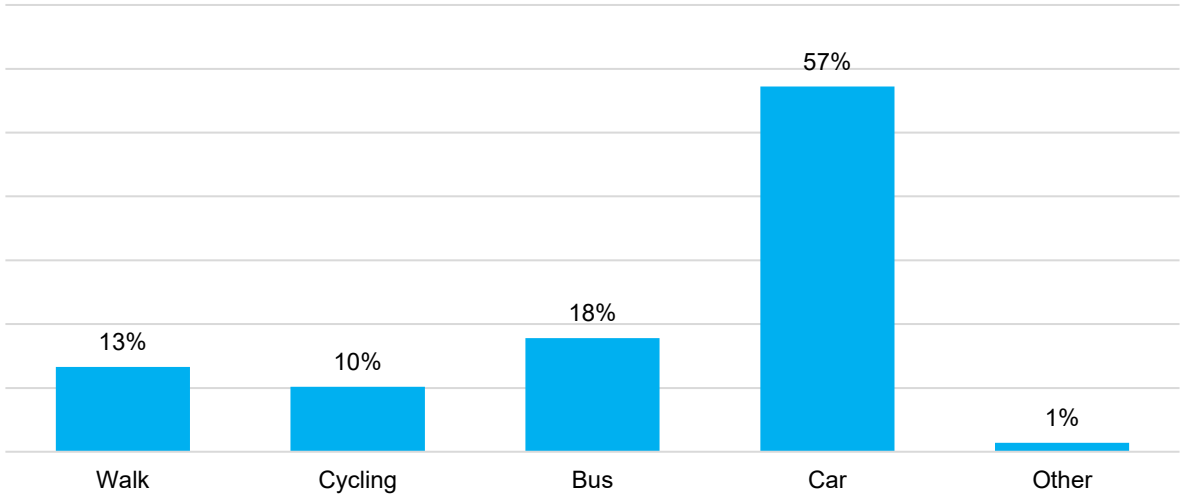


Figure 7-1: Rutherford Public School benchmark mode share

7.1.1.2 High school

Mode shares for high schools located within similar contexts to the future high school site in Huntlee, i.e. Irrawang High School, Hunter River High School and Rutherford Technology High School are shown in Figure 7-2. For these schools, high bus mode share was consistently achieved because of good service coverage and frequency. This gives an indication of the bus mode share that can be achieved at the high school site if sufficient service coverage is provided by Transport for NSW.

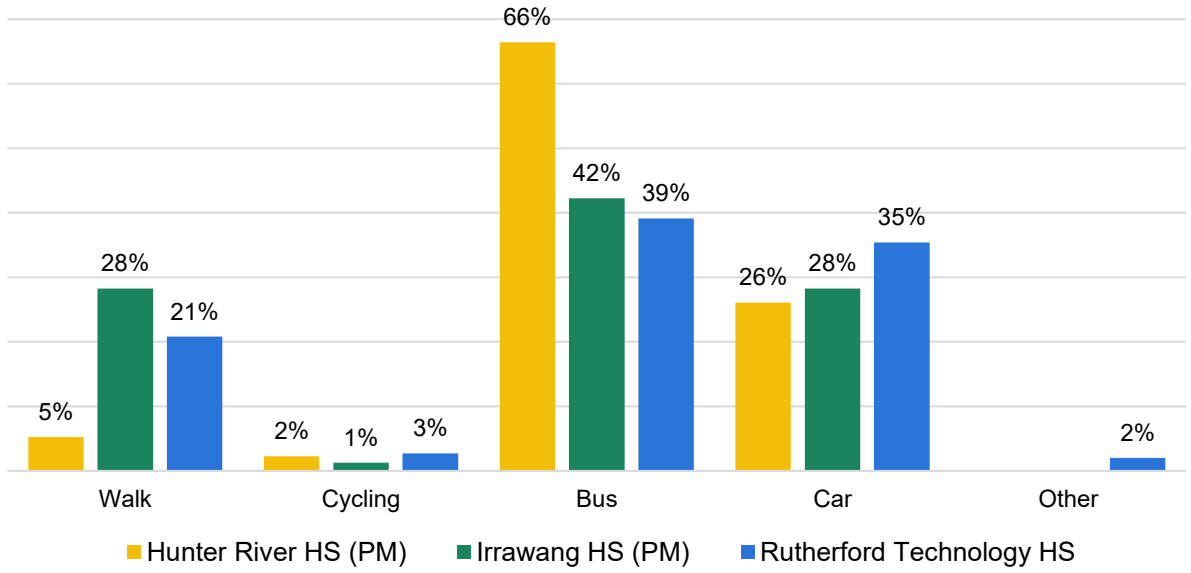


Figure 7-2: Benchmarked high schools mode shares

7.2 Staff

A total of 139 full time equivalent staff (6 staff for pre-school, 36 staff for primary school and 97 staff for high school) are forecasted to be employed at Huntlee Education Campus.

Mode share targets define the desired method of access to the school site in enabling a shift towards walking, cycling and public transport. Staff mode share targets and rationale for each mode are outlined below in Table 7-4.

Table 7-4: Staff mode share targets breakdown

Mode	Number of staff	Percent of staff	Rationale
Walk	7	5%	Low to medium residential density in the surroundings associated with school site's location within Huntlee Town Centre, and the likelihood of staff residence results in ability to use active transport network
Cycling	7	5%	Provision of end of trip facilities will encourage staff to ride to work
Public transport	0	0%	Limited public transport options
Car, as driver	111	80%	Majority of staff will choose private vehicle as their mode of travel due to convenience and variability in time of travel
Car, as carpool passenger	14	10%	Staff who live close together or on the way to the school will choose to carpool together. As a new school, there is an opportunity to establish a carpooling culture from the outset
Total	**139**	**100%**	

8 Mitigation measures

Table 8-1 details a series of mitigation measures to support sustainable and safe access to the site and minimising impacts on the surrounding transport network.

Table 8-1: Mitigation measures

#	Aspect	Location	Mitigation measure	Reason for mitigation measure	Timing	Responsible party
1	Operational Transport	-	Prior to the commencement of operation, a School Transport Plan must be prepared to the satisfaction of the DoE Transport Planning Team. If the school already has a School Transport Plan, the existing plan is to be reviewed and updated if necessary to reflect the impacts of the REF works, to the satisfaction of the DoE Transport Planning Team. A copy of the School Transport Plan is to be provided to the relevant DoE Project Lead for implementation during operations.	To address ongoing operational and safety concerns at the school site.	Prior to the commencement of operations.	DoE
2	Construction	On site	A Construction Environmental Management Plan (CEMP) is to be prepared and implemented having regard to the Environmental Management Guidelines for Construction Procurement (Edition 4), and is to include where required by Mitigation Measures: (i). Construction Traffic and Pedestrian Management (ii). Construction Worker Transport Strategy.	To safely manage vehicle movements associated with the construction phase.	Construction	DoE
3	Operational Transport	-	Prior to Day 1 Term 1 operation of the new school, a travel access guide is to be circulated to staff and students.	To inform the community on the travel choices available for the school site, promote active and public transport,	Prior to operation and through operation	DoE

#	Aspect	Location	Mitigation measure	Reason for mitigation measure	Timing	Responsible party
				and identify safe and efficient pick-up and drop-off procedures.		
4	Operational Transport	-	Prior to operation, a school travel coordinator is to be appointed and a School Transport Committee is to be established to support the operation of the school and mode shift from D1T1 onwards for 12 months.	To address operational and safety concerns at the school site.	School Travel Coordinator to be appointed prior to operation	DoE
5	Operational Transport	-	The School Transport Plan is to be reviewed on an annual basis for the first two years and updated (if required) to the satisfaction of the DoE Transport Planning team to ensure active and sustainable travel measures are implemented.	To address ongoing operational and safety concerns at the school site.	Annual review within the first two years of operation and when required following from that.	DoE
6	School zone	-	Prior to operation, school zone signage application should be made to TfNSW, with relevant signage being installed prior to operation of the school to ensure student safety.	To ensure safe operations of roads around the site.	Prior to operation	DoE
7	Public transport	Intake catchment	Prior to operations, DoE is to continue conversations with Transport for NSW Bus Planning Team through consultation in the Transport Working Group forum to better align existing school bus services with adjusted school bell times and/ or providing new services. Consultation to occur on a yearly basis as a minimum during operations.	To enable public transport mode share.	Prior to and during operation	DoE
8	Operation	School site	During operations, the bell times between the public school and high school are to be offset by at least 20 minutes.	To spread traffic demands associated with student pick-up and drop-off over a larger period of time, reducing queueing at intersections.	During operations	DoE

Appendices

Appendix A Traffic modelling technical memo

Stantec

Memo

To:	Department of Education	From:	Elizabeth Muscat Level 9, The Forum, 203 Pacific Highway St. Leonards NSW 2065 AUSTRALIA ABN 17 007 820 322
Project/File:	300305351	Date:	28 August 2025

Reference: New Primary School and High School in Huntlee – Traffic Modelling Memo

1 Introduction

NSW Department of Education has engaged Stantec to provide transport planning services for the development of the New Primary School and High School in Huntlee, consisting of a pre-school, primary school and high school. This technical note has been prepared to detail the findings from the performance analysis undertaken for four key intersections surrounding the proposed school site.

SIDRA intersection modelling software was used to assess and understand the future operations of these intersections. The modelling scenario adopts the operational details for the proposed school site as outlined in **Table 1-1**.

Table 1-1: School operational details

School	Number of students	Number of staff
Pre-school	60	6
Primary school	500	36
High school	1,000	97

The scope of works for the SIDRA intersection modelling is to:

- Develop future year 2036 SIDRA intersection models consisting of:
  - **Base scenario**: This scenario considers background traffic only, which includes residential and retail/ commercial trips associated with the fill development of Huntlee Stage 2.
  - **School development scenarios**: This scenario builds on the base scenario with the inclusion of school-induced traffic associated with the full enrolments at the primary school, pre-school and high school. Both the baseline and moderate mode share targets have been modelled and results are discussed below.
    - The baseline mode share scenario is based on a ‘do minimum’ approach. The moderate mode share target reflects conditions where public transport usage is maximised through

efficient planning of services and routes. Refer to report Section **Error! Reference source not found.** for more detail.

- Assess SIDRA network outputs, including intersection level of service, degree of saturation and queue lengths.

2 Study area

Figure 2-1 shows the locations of the study intersections with respect to the school site, with the type and layout of each study intersection summarised in **Table 2-1**.

The intersections are:

- Tollbar Avenue / Morningstar Crescent
- Tollbar Avenue / Persoonia Boulevard
- Persoonia Boulevard / Morningstar Crescent
- Persoonia Boulevard / Unnamed Road.

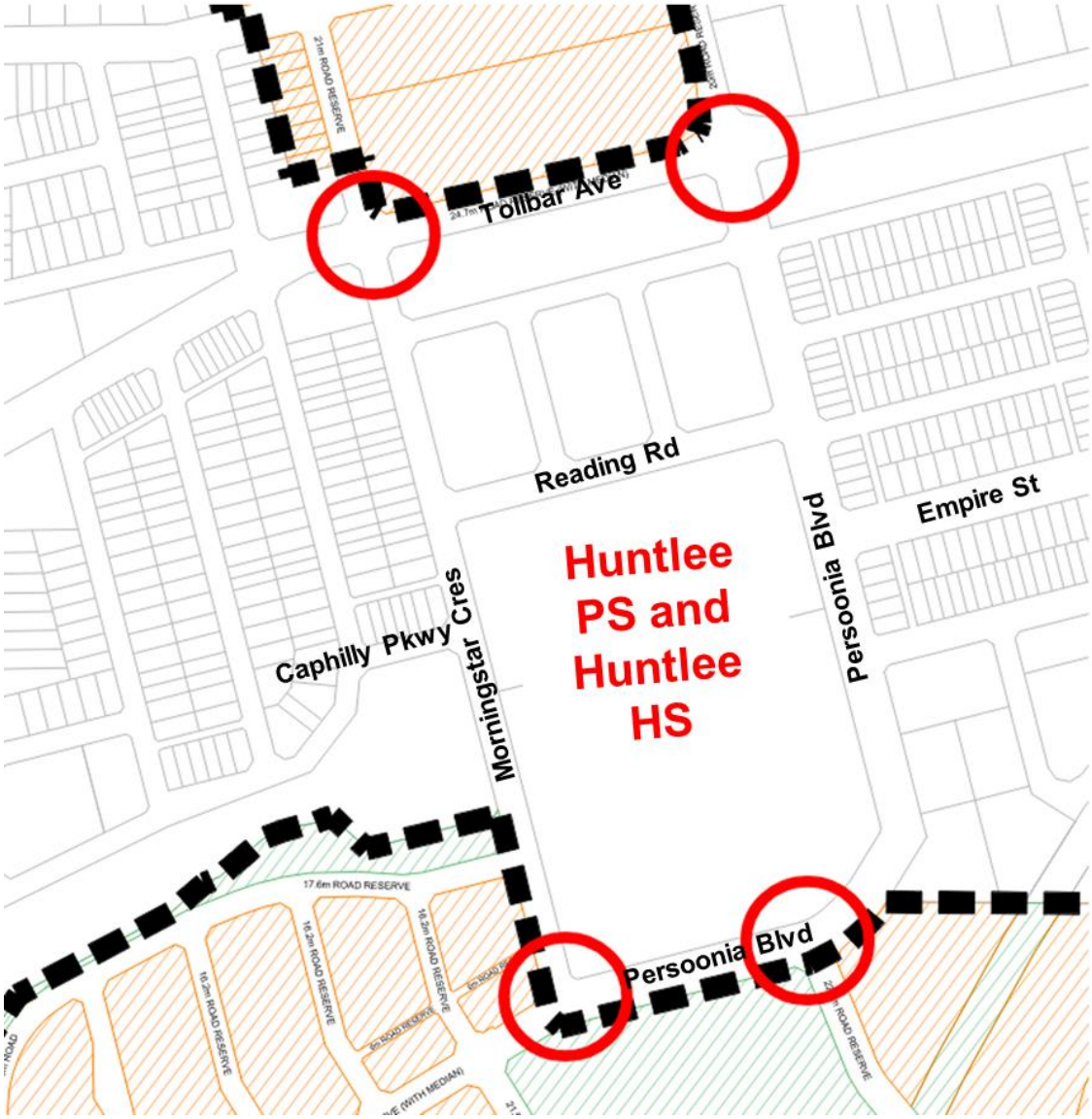
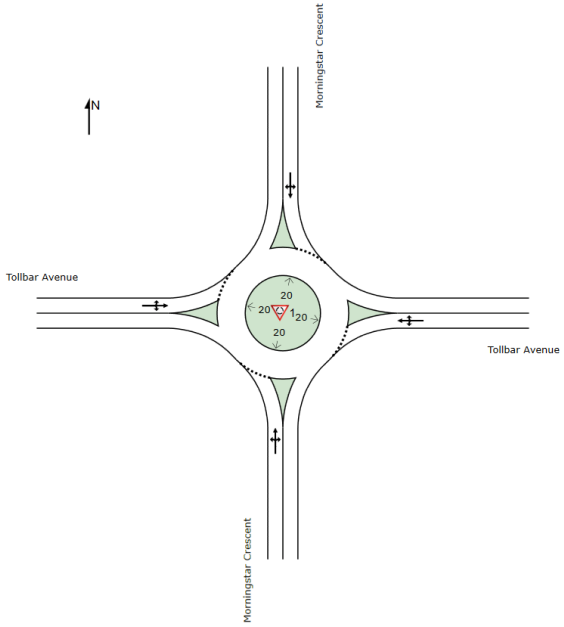
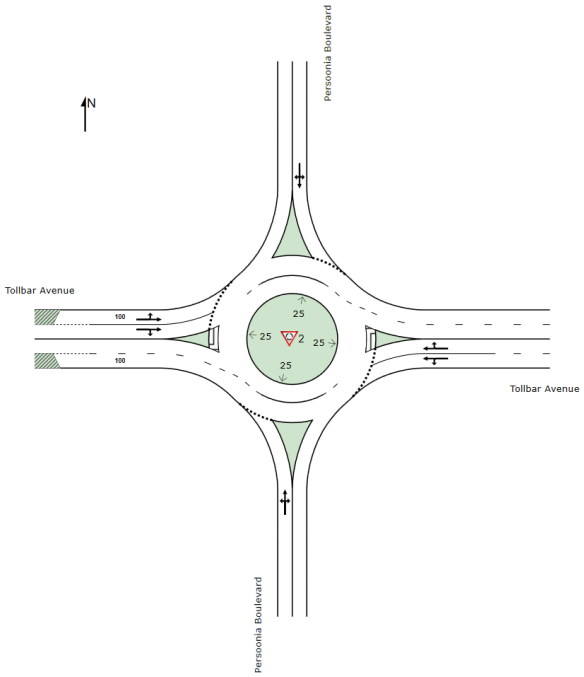
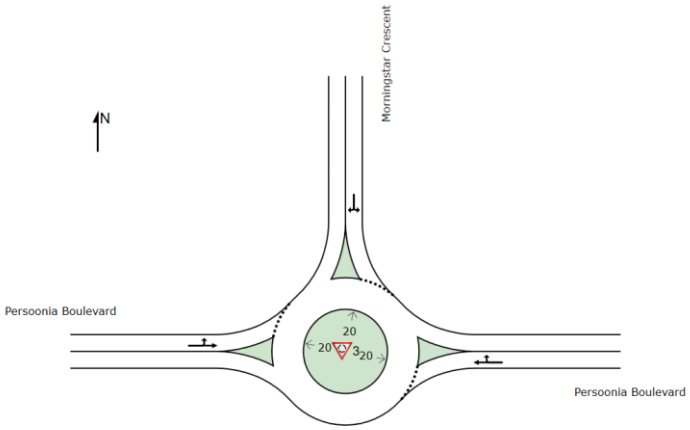
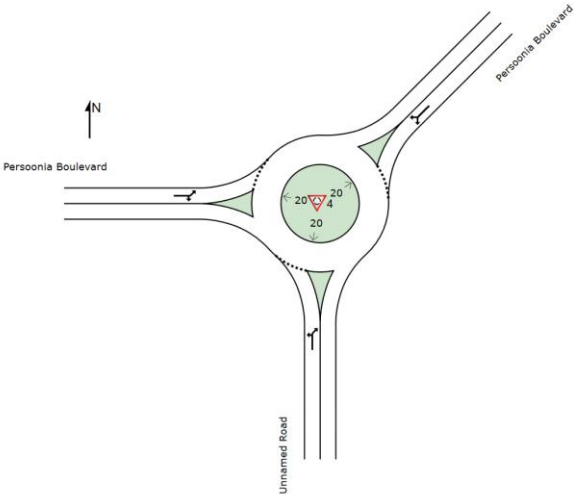


Figure 2-1: Study intersections

Table 2-1: Study intersections – type and layout

ID	Intersection	Type	Layout
1	Tollbar Avenue / Morningstar Crescent	Roundabout	
2	Tollbar Avenue / Persoonia Boulevard	Roundabout	

Reference: **New Primary School and High School in Huntlee – Traffic Modelling Memo**

ID	Intersection	Type	Layout
3	Persoonia Boulevard / Morningstar Crescent	Roundabout	
4	Persoonia Boulevard / Unnamed Road	Roundabout	

3 School context

Figure 3-1 illustrates the overall layout of the proposed pre-school, primary school and high school.

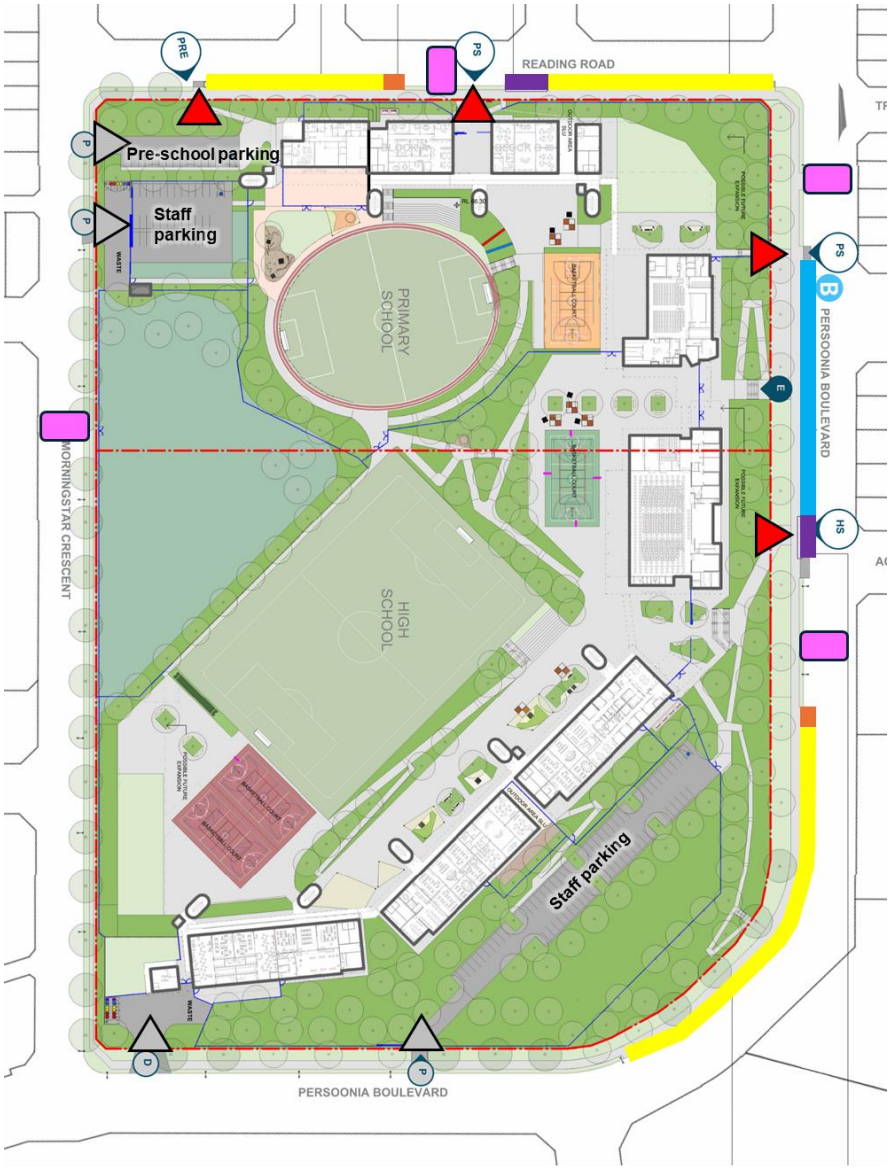


Figure 3-1: Site masterplan

4 Future demand development

The primary and secondary school catchments for the schools have been divided into distinct zones to inform the development of future traffic demand, as shown in **Figure 4-1**. These zones encompass Huntlee and extend to the surrounding areas further north and east including Branxton and Greta.

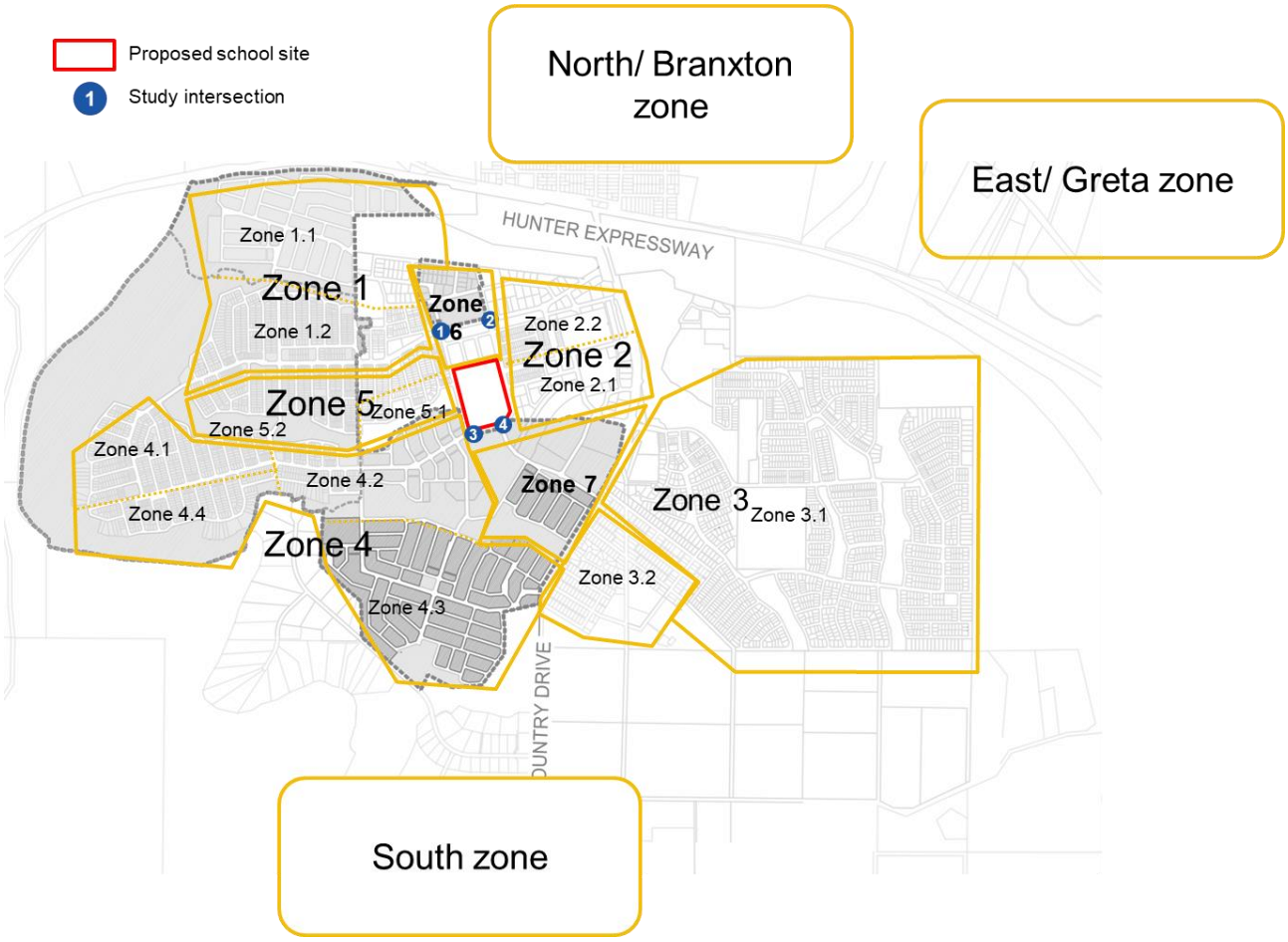


Figure 4-1: Zones

4.1 Trip generation

Trip generation for the study area considers both background and development-related traffic. Background traffic includes residential and retail/ commercial trips, while development-related traffic comprises school-induced vehicle trips generated by students and staff at the proposed school site.

4.1.1 Background traffic

Table 4-1 shows the trip generation rates adopted for each land use type, in line with the rates applied in the *Huntlee New Town Stage 2 Traffic and Transport Impact Assessment (Arcadis, 2024)*. As the school traffic PM peak period does not coincide with the general traffic PM peak period, a reduction factor has been applied to the PM peak trip generation rate employed in the Arcadis report.

Stantec has determined a suitable reduction factor based on the following method:

- Analyse traffic count data obtained for a separate project for the intersection of New England Highway/ Terriere Drive located in Lochinvar, NSW. The location of this intersection and the count is such that the traffic volumes captured are representative of trips generated from a predominantly residential subdivision as the sole connection to and from the development. This context is relevant to the future Huntlee town.
- The data for trips in and out of the development for the shoulder period before the PM peak period were one third lower than the trips in the PM peak period.
- A reduction factor of 33% therefore has been applied.

Table 4-1: Trip generation rates

Development	Trip generation rates		
	AM peak	PM peak	Unit
Residential – single dwelling	0.78	0.71	trips per dwelling
Retail	3.7	6.2	trips per 100m^2 GLFA
Mixed use/ commercial	0.63	0.72	trips per 100m^2 GFA

Table 4-2,

Table 4-3 and **Table 4-4** summarise the trips generated for residential, retail/ commercial and the proposed school site, respectively.

It is assumed that 20% of retail/commercial traffic will be self-contained within the area of Huntlee west of Wine Country Drive, with these volumes distributed based on the dwelling distribution across the zones within the Huntlee area. To account for trip chaining behaviour (where trips are undertaken in combination with other purposes, such as commuting or school drop-offs), linked trip reduction factors of 80% in the AM peak and 20% in the PM peak have been further applied to these volumes.

Table 4-2. Residential traffic

Development	Zone	Yield (dwellings)	Trip generation (vehicles/hour)	
			AM peak	PM peak
Residential	1.1	717	559	170
	1.2	522	407	124
	2	496	387	117
	3	2,313	1,804	547
	4.1	508	396	120
	4.2	466	363	110
	4.3	1,192	930	282
	4.4	278	217	66
	5.1	128	100	30
	5.2	552	431	131
	6	70	55	17
	7	399	311	94

Table 4-3. Retail/ commercial traffic (within Huntlee west of Wine Country Drive)

Development	Zone	Proportional factor (based on residential dwelling distribution)	Trip generation (vehicles/hour)	
			AM peak	PM peak
Retail/ commercial	1	23%	17	83
	2	9%	7	33
Retails	4.1	10%	7	34
1.0 ha GFA	4.2, 4.4	9%	6	31
Mixed used/ commercial	4.3	22%	16	80
24.2 ha GFA	5	13%	9	46
	6	1%	2	5
	7	7%	5	27

4.1.2 School related traffic

School-generated traffic associated with student travel has been based on the private vehicle mode share established in both the baseline and moderate mode share scenarios in the Transport Impact Assessment (Stantec, 2025). The student mode share scenarios are described as follows:

- Baseline mode share: The baseline mode share scenario is based on a 'do minimum' approach.
- Moderate mode share: The moderate mode share target reflects conditions where public transport usage is maximised through efficient planning of services and routes.

An average vehicle occupancy of 1.2 students per vehicle has been adopted for both the primary and high school, while an occupancy rate of 1 student per vehicle has been adopted for the pre-school.

School-generated traffic associated with staff travel has been based on the private vehicle mode share target (80%) established in the Transport Impact Assessment (Stantec, 2025).

Table 4-4. School-induced traffic – baseline mode share

Development	Zone	School traffic associated with student travel (veh)		
		Pre-school	Primary school	High school
School	1	4	14	12
	2.1	2	4	1
	2.2	3	6	2
	3.1	31	204	165
	3.2	5	29	24
	4	8	40	34
	5	2	8	5

Development	Zone	School traffic associated with student travel (veh)		
		Pre-school	**Primary school**	**High school**
	6	1	2	1
	7	2	5	3
	South zone	2	15	13
	East zone	0	0	189
	North zone	0	0	133
	Total	**60**	**329**	**582**
	School traffic associated with staff travel (veh)			
	Pre-school		**Primary school**	**High school**
	6		26	79

Table 4-5. School-induced traffic – moderate mode share

Development	Zone	School traffic associated with student travel (veh)		
		Pre-school	**Primary school**	**High school**
School	1	4	0	0
	2.1	2	4	1
	2.2	3	6	2
	3.1	31	161	107
	3.2	5	23	15
	4	8	33	20
	5	2	7	4
	6	1	2	1
	7	2	5	3
	South zone	2	11	4
	East zone	0	0	50
	North zone	0	0	36
	Total	**60**	**252**	**243**
	School traffic associated with staff travel (veh)			
	Pre-school		**Primary school**	**High school**
	6		26	79

4.2 Trip distribution

Trip distribution has been undertaken separately for each trip type, whereby the following assumptions have been employed:

- Residential traffic has been assigned directional splits of 20% inbound / 80% outbound in the AM peak and 80% inbound / 20% outbound in the PM peak. Destinations of travel have been obtained from the 2021 ABS Census Journey to Work data to inform traffic distribution patterns, comprising East (40%), West (36%), South (17%) and North (8%) for work-related trips originating from Huntlee and East (43%), West (6%), South (39%) and North (12%) for work-related trips destined to Huntlee.
- Retail/ commercial traffic has considered only the self-contained trips (see

- **Table** 4-3**)** within the Huntlee area, with these volumes distributed across the four study intersections according to the dwelling distribution across the area. Retail/ commercial traffic has been assigned directional splits of 50% inbound / 50% outbound in both AM and PM peaks.
- School traffic associated with student travel for each school type has been distributed based on the locations of the relevant transport facilities (see **Figure 3-1**), as follows:
    - » Pre-school pick-up/ drop-off area located within the northern on-site parking area, accessed via Morningstar Crescent.
    - » Primary school kiss-and-ride zone located along the northern school frontage on Reading Road.
    - » High school kiss-and-ride zone located along the south-eastern school frontage on Persoonia Boulevard.
- School traffic associated with staff travel has assumed that 10% to be of self-contained trips within Huntlee, with the remaining trips distributed further north, south, east and west based on the traffic distribution patterns informed by the 2021 ABS Census Journey to Work data - East (43%), West (6%), South (39%) and North (12%) for work-related trips to Huntlee. Staff traffic for each school type has been distributed based on the locations of the relevant transport facilities (see **Figure 3-1**), as follows:
    - » Pre-school and primary school staff parking located within the northern on-site parking area, accessed via Morningstar Crescent.
    - » High school staff parking located within the southern on-site parking area, accessed via Persoonia Boulevard.

The 2031 base and school development scenario traffic demands at the study intersections in the AM and PM peak are provided in **Appendix A**.

5 Operational performance assessment

5.1 Performance criteria

Intersection performance was assessed based on the following performance metrics:

- Delay time: Delay experienced by vehicles at the intersection
- Level of service (LOS): An intersection performance measure that is based on delay per vehicle
- Degree of saturation (DOS): The ratio of the demand relative to the capacity of an intersection.
- Queue length: The 95th percentile queue length per approach.

5.1.1 Delay time and level of service

Level of Service is the standard measure used to assess the operational performance of a network or intersections. LOS is ranked from A to F, with LOS A representing the best performance and LOS F the worst. *The Guidelines for SIDRA analysis Draft V1.0 (TCCS, n.d.)* has stated to adopt the Level of Service (LOS) – Delay RTA NSW method and uses the *RMS Traffic Modelling Guidelines (RMS, 2013)* as its primary technical reference. For signalised intersections, level of service is based on the weighted average delay of all approaches. For priority-controlled intersections and roundabouts, level of service is based on the average delay of the critical movement (worst movement). **Table 5-1** shows the level of service categories in the *RMS Traffic Modelling Guidelines (RMS, 2013)*.

Table 5-1: Level of service criteria

LOS	Average Delay (secs/veh)	Traffic Signals, Roundabout	Give Way & Stop Signs
A	< 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	42 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity; at signals incidents will cause excessive delay Roundabouts require other control mode	At capacity, requires other control mode
F	> 70	Unsatisfactory	Unsatisfactory

5.1.2 Degree of saturation

Table 5-2 shows the recommended DOS thresholds for different intersection types provided in the *RMS Traffic Modelling Guidelines (RMS, 2013)*.

Table 5-2: Level of service criteria

Intersection treatment	Saturation threshold
Signals	Less than 0.90
Roundabout	Less than 0.85
Priority controlled	Less than 0.80

5.1.3 Queue length

The 95th percentile queue is commonly reported from SIDRA which represents the queue length for which five per cent of queues were longer and 95 per cent of queues were shorter. This provides an indication of the maximum queue length while accounting for abnormally long queues that only occur briefly. From a network perspective, excessive queue lengths have the potential to impact on the performance of adjacent intersections and local accesses and need to be considered in the performance analysis.

5.2 Intersection performance

Intersection analysis was undertaken using SIDRA 9.0 which modelled the weekday AM and PM peaks.

The SIDRA model network and movement summaries are included in **Appendix B**.

5.2.1 Base scenario – background traffic only

The summary of results for the base scenario are provided in Table 5-3. The results show that the intersections perform with a high level of service, ranging from B to A.

Table 5-3 Modelling results – base scenario

Intersection	2031 base scenario (AM peak)				
	Volume (veh)	DOS	Avg delay (sec)	LOS	95% QL (m)
Tollbar Avenue / Morningstar Crescent	1,577	0.792	18.8	B	85.5
Tollbar Avenue / Persoonia Boulevard	1,471	0.339	8.7	A	15.1
Persoonia Boulevard / Morningstar Crescent	648	0.206	6.8	A	8.5
Persoonia Boulevard / Unnamed Road	441	0.152	5.5	A	5.7
Intersection	**2031 base scenario (PM peak)**				
	Volume (veh)	**DOS**	**Avg delay (sec)**	**LOS**	**95% QL (m)**
Tollbar Avenue / Morningstar Crescent	586	0.256	7.2	A	4.2
Tollbar Avenue / Persoonia Boulevard	558	0.139	6.6	A	2

Intersection	2031 base scenario (AM peak)				
	Volume (veh)	DOS	Avg delay (sec)	LOS	95% QL (m)
Persoonia Boulevard / Morningstar Crescent	262	0.121	5.7	A	1.8
Persoonia Boulevard / Unnamed Road	226	0.066	5.5	A	0.9

5.2.2 School development scenario – baseline mode share

The summary of results for the school development scenario under the baseline mode share conditions are provided in Table 5-4. The results indicate acceptable performance for all intersections. The intersection performance for Persoonia Boulevard / Morningstar Crescent, performs the worst with LoS D.

Table 5-4 Modelling results – school development scenario – baseline mode share

Intersection	2031 school development scenario – baseline mode share (AM peak)				
	Volume (veh)	DOS	Avg delay (sec)	LOS	95% QL (m)
Tollbar Avenue / Morningstar Crescent	2,024	0.828	20.4	B	98.8
Tollbar Avenue / Persoonia Boulevard	1,934	0.348	8.7	A	15.9
Persoonia Boulevard / Morningstar Crescent	1,664	1.024	53.7	D	385
Persoonia Boulevard / Unnamed Road	1,488	0.778	6.7	A	76
Intersection	**2031 school development scenario – baseline mode share (PM peak)**				
	Volume (veh)	**DOS**	**Avg delay (sec)**	**LOS**	**95% QL (m)**
Tollbar Avenue / Morningstar Crescent	1,034	0.482	7.4	A	10.8
Tollbar Avenue / Persoonia Boulevard	1,022	0.273	7.7	A	4.8
Persoonia Boulevard / Morningstar Crescent	1,288	0.695	6.7	A	21.2
Persoonia Boulevard / Unnamed Road	1,274	0.692	6.4	A	22.1

5.2.3 School development scenario – moderate mode share

The summary of the results for the moderate mode share conditions are provided in Table 5-5. The results show a good LoS for all intersections, B to A, which reflects the base case scenario conditions.

Table 5-5 Modelling results – school development scenario – moderate mode share target

Intersection	2031 school development scenario – moderate mode share (AM peak)				
	Volume (veh)	DOS	Avg delay (sec)	LOS	95% QL (m)
Tollbar Avenue / Morningstar Crescent	1,721	0.809	19.4	B	90.2
Tollbar Avenue / Persoonia Boulevard	1,672	0.343	8.7	A	15.4
Persoonia Boulevard / Morningstar Crescent	1,236	0.657	9.3	A	48.2
Persoonia Boulevard / Unnamed Road	1,078	0.503	5.9	A	29.6
Intersection	**2031 school development scenario – moderate mode share (PM peak)**				
	Volume (veh)	**DOS**	**Avg delay (sec)**	**LOS**	**95% QL (m)**
Tollbar Avenue / Morningstar Crescent	729	0.318	7.3	A	5.7
Tollbar Avenue / Persoonia Boulevard	759	0.177	6.9	A	2.8
Persoonia Boulevard / Morningstar Crescent	862	0.4	6.1	A	7.9
Persoonia Boulevard / Unnamed Road	845	0.407	5.8	A	8.4

5.2.4 Discussion

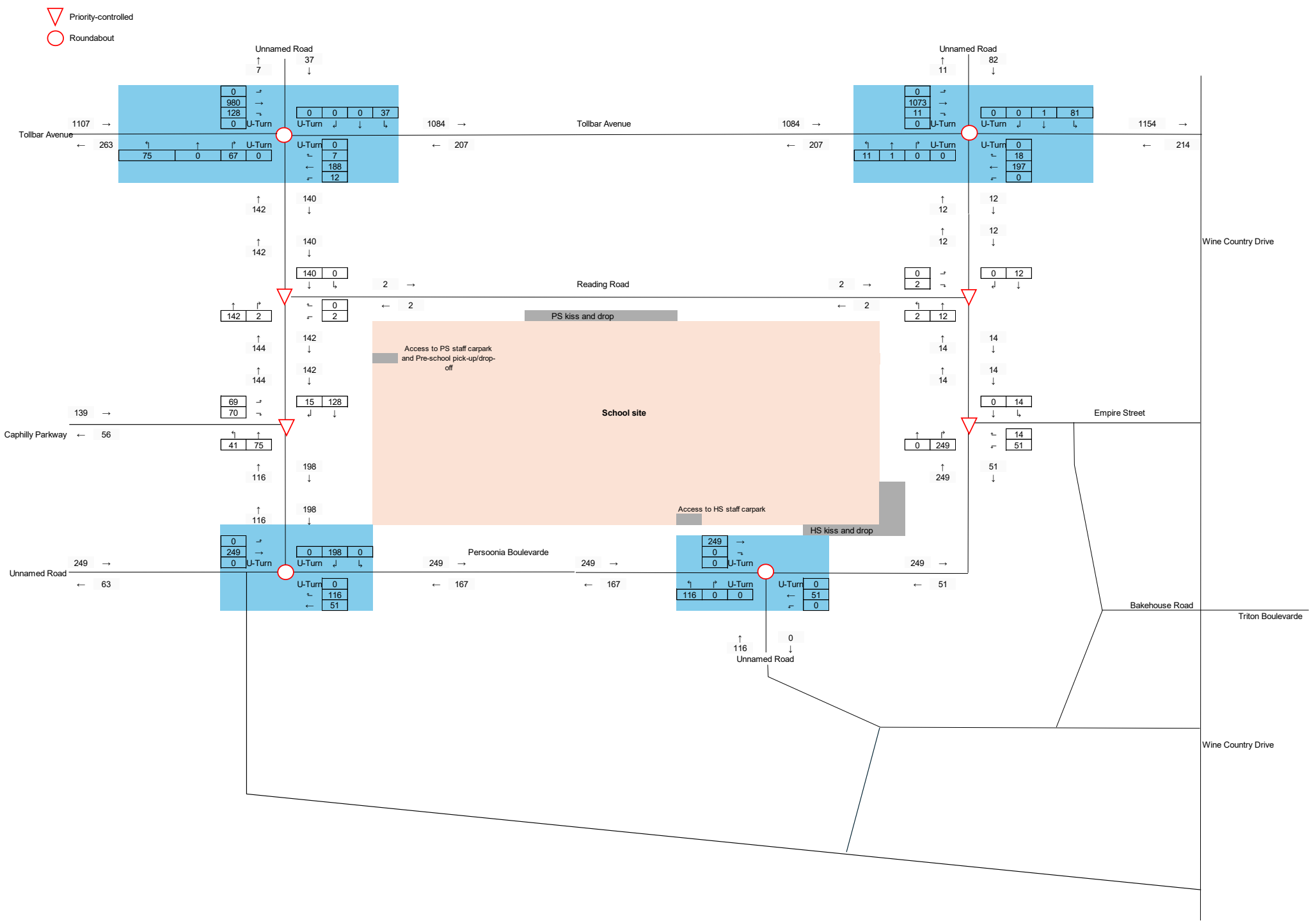
The intersection of Persoonia/ Morningstar performs with LoS D in the AM period under the baseline mode share conditions, however improves to LoS A in the moderate mode share conditions. This emphasises the need for SINSW to continue to work with Transport for NSW Bus Planning Team through the School Transport Plan process to ensure that appropriate bus services are provided to remove children from cars, particularly the high school students.

In addition, the school bell times for the primary school/ pre school and high school are to be offset by at least 30 minutes in order to spread vehicular demand across a larger period of time. This will improve the circulation of vehicles and create a safer environment for students who walk and ride around the bell times.

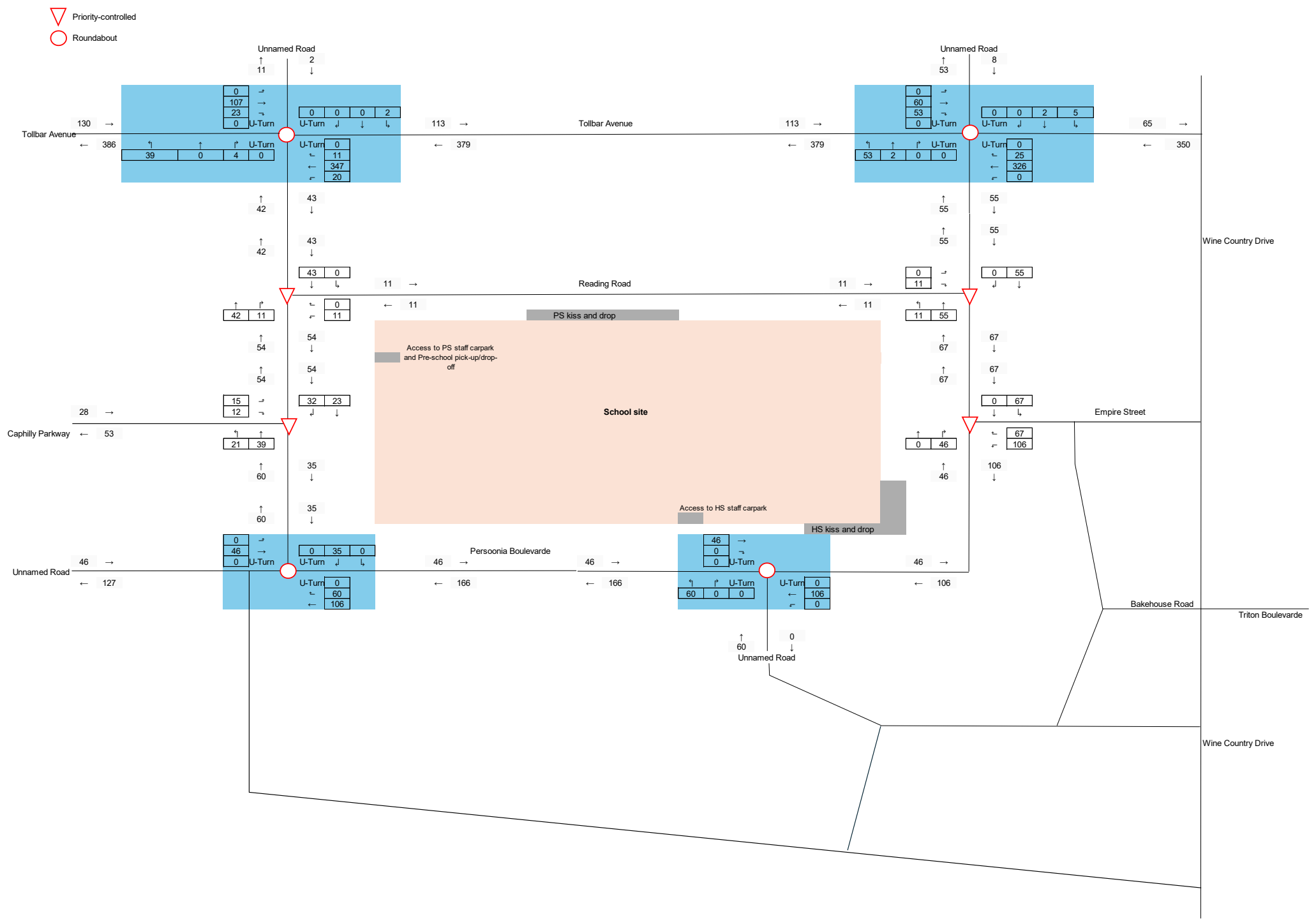
There is also an opportunity to discuss potential capacity improvements to the proposed intersections with the developer to future proof the site for any potential expansion to the schools that may occur.

Appendix A Base and school development scenario traffic demands

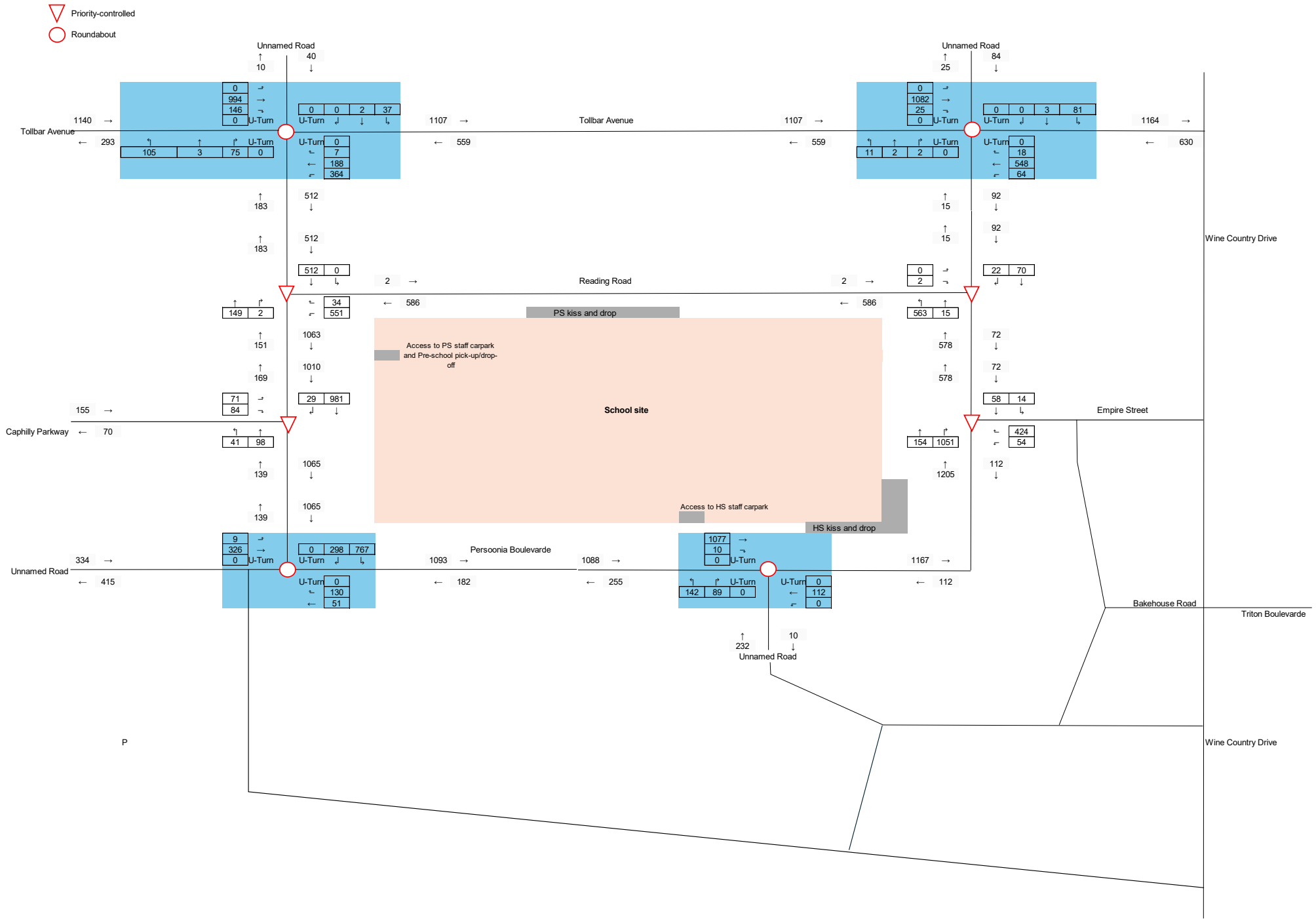
2031 Base Scenario AM



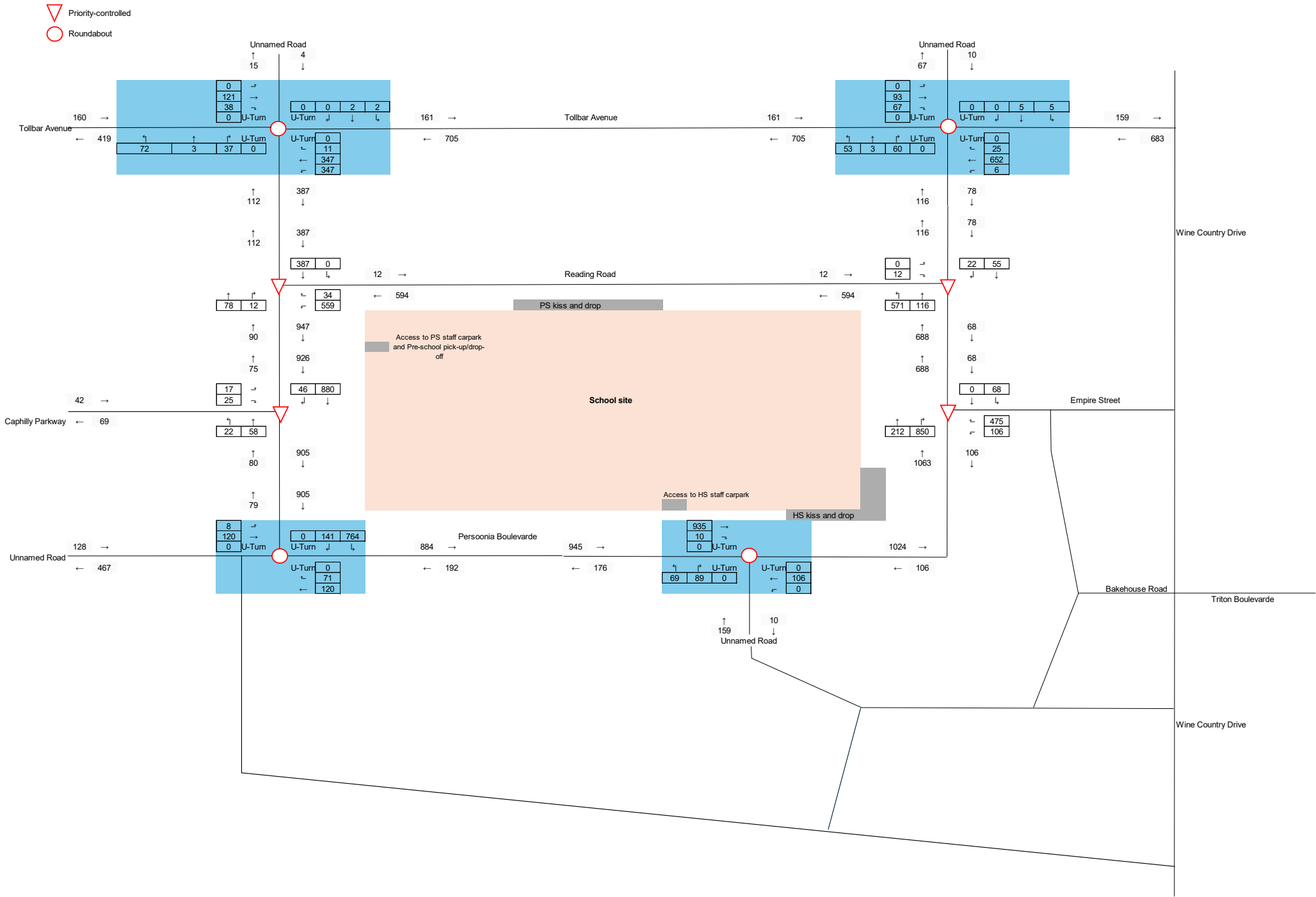
2031 Base Scenario PM



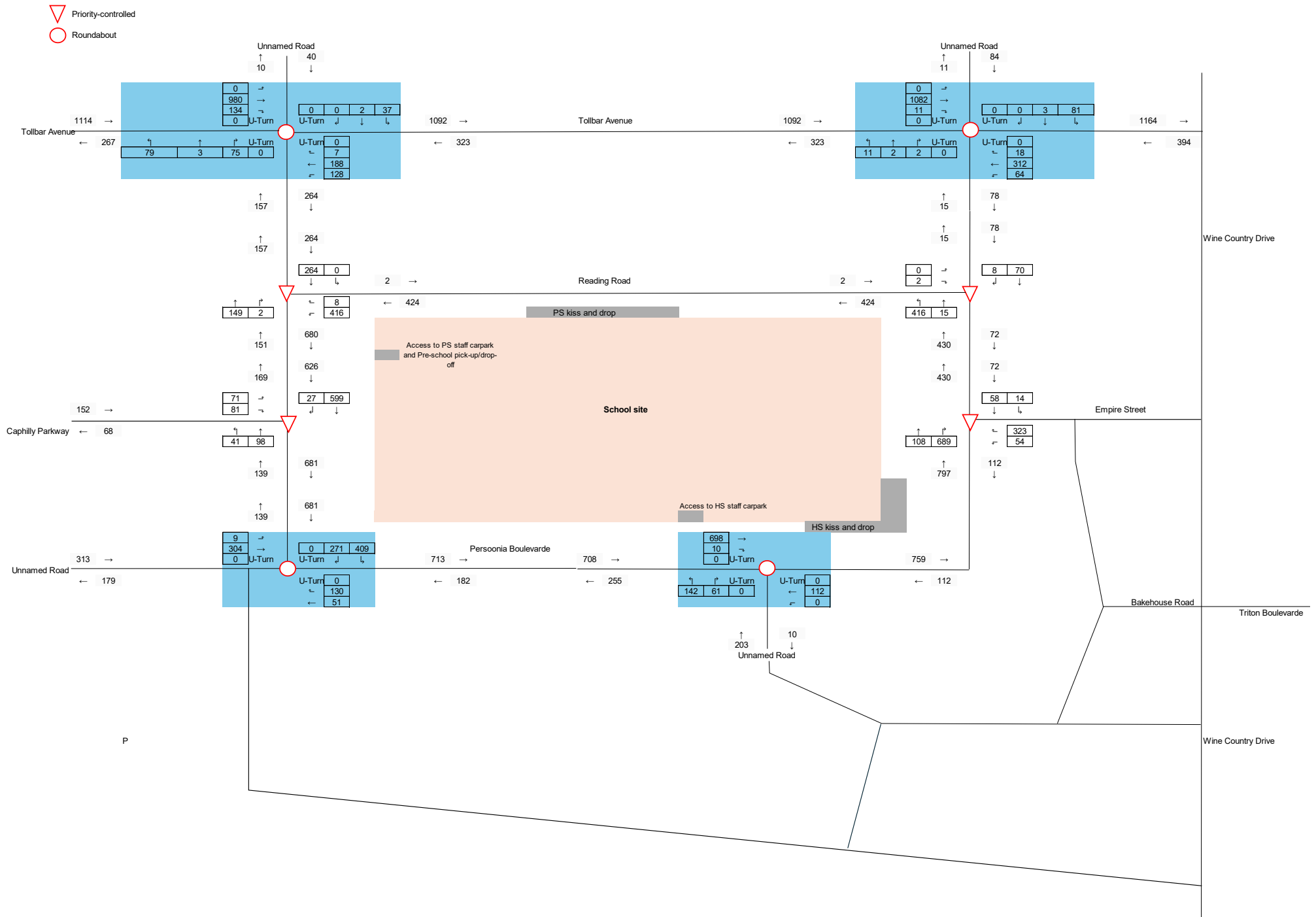
2031 School Development Scenario AM - Baseline



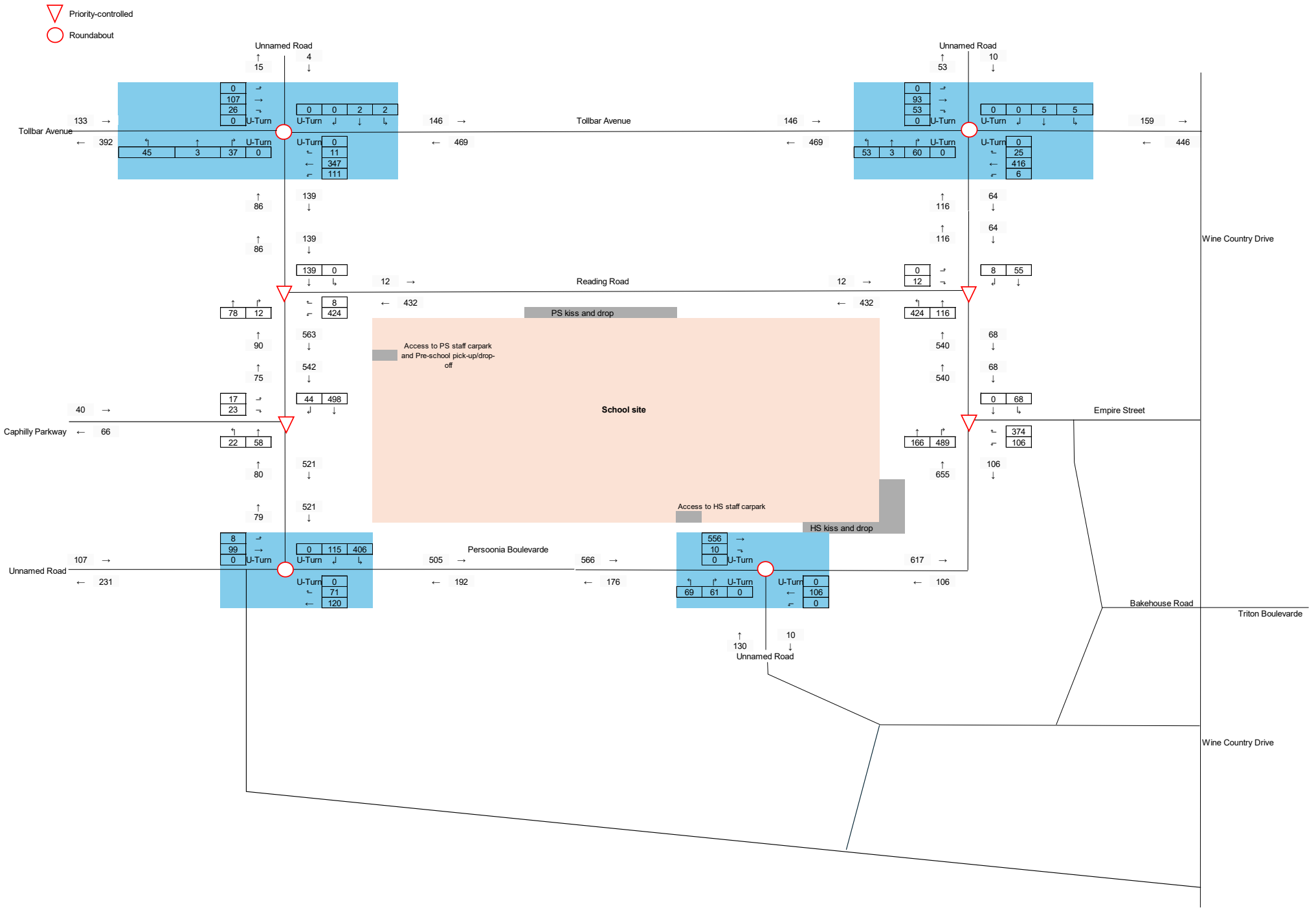
2031 School Development Scenario PM - Baseline



2031 School Development
Scenario AM - Moderate



2031 School Development
Scenario PM - Moderate



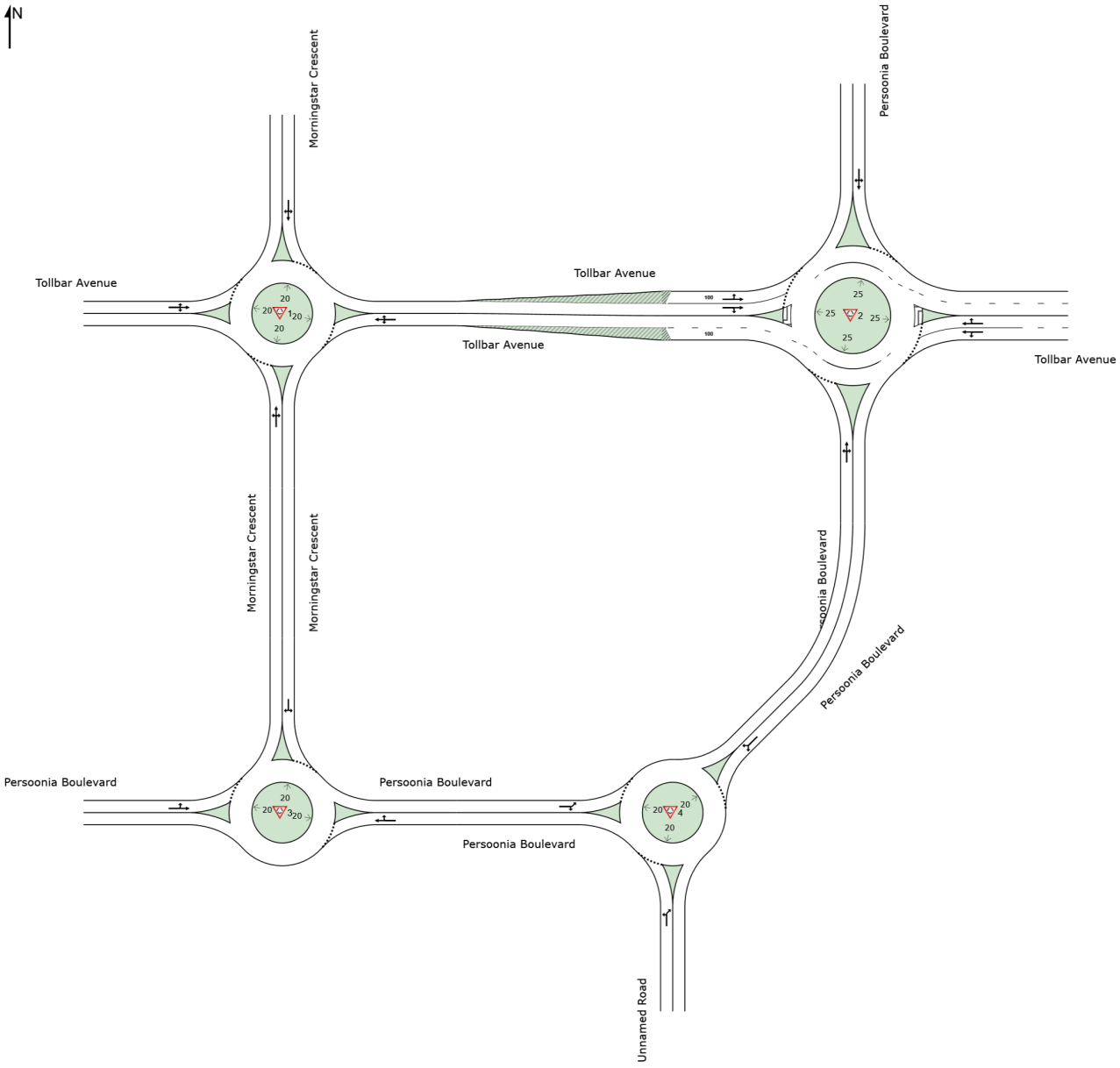
Appendix B SIDRA model network and results

NETWORK LAYOUT

Network: N102 [2031 Future Base AM (Network Folder: General)]

New Network
Network Category: (None)

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



SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
1	NA	1. Tollbar Avenue / Morningstar Crescent
2	NA	2. Tollbar Avenue / Persoonia Boulevard
3	NA	3. Persoonia Boulevard / Morningstar Crescent
4	NA	4. Persoonia Boulevard / Unnamed Road

MOVEMENT SUMMARY

Site: 1 [1. Tollbar Avenue / Morningstar Crescent (Site Folder: 2031 Future Base AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N102 [2031 Future Base AM (Network Folder: General)]

2031 Future Base AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Morningstar Crescent															
1	L2	All MCs	79	0.0	79	0.0	0.131	2.7	LOS A	0.7	4.9	0.39	0.48	0.39	38.5
2	T1	All MCs	1	0.0	1	0.0	0.131	2.2	LOS A	0.7	4.9	0.39	0.48	0.39	37.2
3	R2	All MCs	71	0.0	71	0.0	0.131	6.5	LOS A	0.7	4.9	0.39	0.48	0.39	36.6
Approach			151	0.0	151	0.0	0.131	4.4	LOS A	0.7	4.9	0.39	0.48	0.39	38.0
East: Tollbar Avenue															
4	L2	All MCs	13	0.0	13	0.0	0.177	2.3	LOS A	1.1	7.4	0.35	0.28	0.35	35.1
5	T1	All MCs	198	0.0	198	0.0	0.177	1.9	LOS A	1.1	7.4	0.35	0.28	0.35	38.7
6	R2	All MCs	7	0.0	7	0.0	0.177	6.2	LOS A	1.1	7.4	0.35	0.28	0.35	35.9
Approach			218	0.0	218	0.0	0.177	2.0	LOS A	1.1	7.4	0.35	0.28	0.35	38.6
North: Morningstar Crescent															
7	L2	All MCs	39	0.0	39	0.0	0.116	15.0	LOS B	0.8	5.9	0.98	0.82	0.98	19.5
8	T1	All MCs	1	0.0	1	0.0	0.116	14.5	LOS B	0.8	5.9	0.98	0.82	0.98	19.5
9	R2	All MCs	1	0.0	1	0.0	0.116	18.8	LOS B	0.8	5.9	0.98	0.82	0.98	34.2
Approach			41	0.0	41	0.0	0.116	15.1	LOS B	0.8	5.9	0.98	0.82	0.98	20.8
West: Tollbar Avenue															
10	L2	All MCs	1	0.0	1	0.0	0.792	2.7	LOS A	12.2	85.5	0.59	0.35	0.59	37.9
11	T1	All MCs	1032	0.0	1032	0.0	0.792	2.3	LOS A	12.2	85.5	0.59	0.35	0.59	37.8
12	R2	All MCs	135	0.0	135	0.0	0.792	6.5	LOS A	12.2	85.5	0.59	0.35	0.59	37.8
Approach			1167	0.0	1167	0.0	0.792	2.7	LOS A	12.2	85.5	0.59	0.35	0.59	37.8
All Vehicles			1577	0.0	1577	0.0	0.792	3.1	LOS A	12.2	85.5	0.55	0.36	0.55	37.8

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

MOVEMENT SUMMARY

Site: 2 [2. Tollbar Avenue / Persoonia Boulevard (Site Folder: 2031 Future Base AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N102 [2031 Future Base AM (Network Folder: General)]

2031 Future Base AM

Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Persoonia Boulevard															
1	L2	All MCs	12	0.0	12	0.0	0.012	2.2	LOS A	0.0	0.3	0.29	0.32	0.29	38.0
2	T1	All MCs	1	0.0	1	0.0	0.012	1.4	LOS A	0.0	0.3	0.29	0.32	0.29	38.4
3	R2	All MCs	1	0.0	1	0.0	0.012	6.1	LOS A	0.0	0.3	0.29	0.32	0.29	38.3
Approach			14	0.0	14	0.0	0.012	2.4	LOS A	0.0	0.3	0.29	0.32	0.29	38.1
East: Tollbar Avenue															
4	L2	All MCs	1	0.0	1	0.0	0.056	1.5	LOS A	0.3	1.9	0.07	0.10	0.07	38.4
5	T1	All MCs	207	0.0	207	0.0	0.081	0.8	LOS A	0.4	2.8	0.07	0.14	0.07	38.0
6	R2	All MCs	19	0.0	19	0.0	0.081	5.3	LOS A	0.4	2.8	0.07	0.17	0.07	37.9
Approach			227	0.0	227	0.0	0.081	1.2	LOS A	0.4	2.8	0.07	0.14	0.07	38.0
North: Persoonia Boulevard															
7	L2	All MCs	85	0.0	85	0.0	0.116	4.6	LOS A	0.4	3.1	0.59	0.63	0.59	35.6
8	T1	All MCs	1	0.0	1	0.0	0.116	4.0	LOS A	0.4	3.1	0.59	0.63	0.59	30.9
9	R2	All MCs	1	0.0	1	0.0	0.116	8.7	LOS A	0.4	3.1	0.59	0.63	0.59	30.9
Approach			87	0.0	87	0.0	0.116	4.6	LOS A	0.4	3.1	0.59	0.63	0.59	35.6
West: Tollbar Avenue															
10	L2	All MCs	1	0.0	1	0.0	0.339	1.6	LOS A	2.1	15.0	0.11	0.10	0.11	38.4
11	T1	All MCs	1129	0.0	1129	0.0	0.339	0.7	LOS A	2.2	15.1	0.11	0.11	0.11	38.8
12	R2	All MCs	12	0.0	12	0.0	0.339	5.4	LOS A	2.2	15.1	0.12	0.12	0.12	37.7
Approach			1142	0.0	1142	0.0	0.339	0.8	LOS A	2.2	15.1	0.11	0.11	0.11	38.8
All Vehicles			1471	0.0	1471	0.0	0.339	1.1	LOS A	2.2	15.1	0.14	0.15	0.14	38.6

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 3 [3. Persoonia Boulevard / Morningstar Crescent (Site Folder: 2031 Future Base AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N102 [2031 Future Base AM (Network Folder: General)]

2031 Future Base AM

Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Persoonia Boulevard															
5	T1	All MCs	54	0.0	54	0.0	0.153	2.2	LOS A	0.9	6.1	0.41	0.50	0.41	32.1
6	R2	All MCs	122	0.0	122	0.0	0.153	6.5	LOS A	0.9	6.1	0.41	0.50	0.41	30.6
Approach			176	0.0	176	0.0	0.153	5.2	LOS A	0.9	6.1	0.41	0.50	0.41	31.1
North: Morningstar Crescent															
7	L2	All MCs	1	0.0	1	0.0	0.189	3.0	LOS A	1.1	7.5	0.46	0.58	0.46	35.3
9	R2	All MCs	208	0.0	208	0.0	0.189	6.8	LOS A	1.1	7.5	0.46	0.58	0.46	29.8
Approach			209	0.0	209	0.0	0.189	6.8	LOS A	1.1	7.5	0.46	0.58	0.46	29.8
West: Persoonia Boulevard															
10	L2	All MCs	1	0.0	1	0.0	0.206	2.3	LOS A	1.2	8.5	0.32	0.26	0.32	29.1
11	T1	All MCs	262	0.0	262	0.0	0.206	1.8	LOS A	1.2	8.5	0.32	0.26	0.32	29.1
Approach			263	0.0	263	0.0	0.206	1.8	LOS A	1.2	8.5	0.32	0.26	0.32	29.1
All Vehicles			648	0.0	648	0.0	0.206	4.4	LOS A	1.2	8.5	0.39	0.43	0.39	30.0

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

MOVEMENT SUMMARY

Site: 4 [4. Persoonia Boulevard / Unnamed Road (Site Folder: 2031 Future Base AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N102 [2031 Future Base AM (Network Folder: General)]

2031 Future Base AM

Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Unnamed Road															
1	L2	All MCs	122	0.0	122	0.0	0.090	1.9	LOS A	0.4	3.0	0.17	0.30	0.17	37.9
3a	R1	All MCs	1	0.0	1	0.0	0.090	5.0	LOS A	0.4	3.0	0.17	0.30	0.17	37.9
Approach			123	0.0	123	0.0	0.090	1.9	LOS A	0.4	3.0	0.17	0.30	0.17	37.9
NorthEast: Persoonia Boulevard															
24a	L1	All MCs	1	0.0	1	0.0	0.033	1.1	LOS A	0.1	1.0	0.01	0.51	0.01	38.1
26a	R1	All MCs	54	0.0	54	0.0	0.033	4.7	LOS A	0.1	1.0	0.01	0.51	0.01	36.9
Approach			55	0.0	55	0.0	0.033	4.7	LOS A	0.1	1.0	0.01	0.51	0.01	37.0
West: Persoonia Boulevard															
10a	L1	All MCs	262	0.0	262	0.0	0.152	1.1	LOS A	0.8	5.7	0.02	0.17	0.02	37.5
12	R2	All MCs	1	0.0	1	0.0	0.152	5.5	LOS A	0.8	5.7	0.02	0.17	0.02	38.6
Approach			263	0.0	263	0.0	0.152	1.1	LOS A	0.8	5.7	0.02	0.17	0.02	37.5
All Vehicles			441	0.0	441	0.0	0.152	1.7	LOS A	0.8	5.7	0.06	0.25	0.06	37.5

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

MOVEMENT SUMMARY

Site: 1 [1. Tollbar Avenue / Morningstar Crescent (Site Folder: 2031 Future Base PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2031 Future Base PM (Network Folder: General)]

2031 Future Base PM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Morningstar Crescent															
1	L2	All MCs	41	0.0	41	0.0	0.045	3.4	LOS A	0.1	0.6	0.47	0.47	0.47	38.7
2	T1	All MCs	1	0.0	1	0.0	0.045	2.9	LOS A	0.1	0.6	0.47	0.47	0.47	37.7
3	R2	All MCs	4	0.0	4	0.0	0.045	7.2	LOS A	0.1	0.6	0.47	0.47	0.47	37.2
Approach			46	0.0	46	0.0	0.045	3.7	LOS A	0.1	0.6	0.47	0.47	0.47	38.7
East: Tollbar Avenue															
4	L2	All MCs	21	0.0	21	0.0	0.256	1.8	LOS A	0.6	4.2	0.13	0.20	0.13	36.8
5	T1	All MCs	365	0.0	365	0.0	0.256	1.3	LOS A	0.6	4.2	0.13	0.20	0.13	39.2
6	R2	All MCs	12	0.0	12	0.0	0.256	5.6	LOS A	0.6	4.2	0.13	0.20	0.13	37.1
Approach			398	0.0	398	0.0	0.256	1.5	LOS A	0.6	4.2	0.13	0.20	0.13	39.1
North: Morningstar Crescent															
7	L2	All MCs	2	0.0	2	0.0	0.003	2.2	LOS A	0.0	0.0	0.28	0.35	0.28	32.3
8	T1	All MCs	1	0.0	1	0.0	0.003	1.8	LOS A	0.0	0.0	0.28	0.35	0.28	32.3
9	R2	All MCs	1	0.0	1	0.0	0.003	6.0	LOS A	0.0	0.0	0.28	0.35	0.28	38.2
Approach			4	0.0	4	0.0	0.003	3.0	LOS A	0.0	0.0	0.28	0.35	0.28	36.1
West: Tollbar Avenue															
10	L2	All MCs	1	0.0	1	0.0	0.091	1.7	LOS A	0.2	1.3	0.09	0.25	0.09	38.9
11	T1	All MCs	113	0.0	113	0.0	0.091	1.2	LOS A	0.2	1.3	0.09	0.25	0.09	38.9
12	R2	All MCs	24	0.0	24	0.0	0.091	5.5	LOS A	0.2	1.3	0.09	0.25	0.09	38.9
Approach			138	0.0	138	0.0	0.091	2.0	LOS A	0.2	1.3	0.09	0.25	0.09	38.9
All Vehicles			586	0.0	586	0.0	0.256	1.8	LOS A	0.6	4.2	0.14	0.23	0.14	39.0

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

MOVEMENT SUMMARY

Site: 2 [2. Tollbar Avenue / Persoonia Boulevard (Site Folder: 2031 Future Base PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2031 Future Base PM (Network Folder: General)]

2031 Future Base PM

Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Persoonia Boulevard															
1	L2	All MCs	56	0.0	56	0.0	0.058	2.9	LOS A	0.1	0.6	0.39	0.40	0.39	37.9
2	T1	All MCs	2	0.0	2	0.0	0.058	1.9	LOS A	0.1	0.6	0.39	0.40	0.39	38.3
3	R2	All MCs	1	0.0	1	0.0	0.058	6.6	LOS A	0.1	0.6	0.39	0.40	0.39	38.2
Approach			59	0.0	59	0.0	0.058	2.9	LOS A	0.1	0.6	0.39	0.40	0.39	37.9
East: Tollbar Avenue															
4	L2	All MCs	1	0.0	1	0.0	0.095	1.7	LOS A	0.2	1.3	0.18	0.13	0.18	37.5
5	T1	All MCs	343	0.0	343	0.0	0.139	1.0	LOS A	0.3	2.0	0.17	0.16	0.17	37.3
6	R2	All MCs	26	0.0	26	0.0	0.139	5.5	LOS A	0.3	2.0	0.17	0.18	0.17	37.4
Approach			371	0.0	371	0.0	0.139	1.3	LOS A	0.3	2.0	0.17	0.16	0.17	37.3
North: Persoonia Boulevard															
7	L2	All MCs	5	0.0	5	0.0	0.007	1.6	LOS A	0.0	0.1	0.21	0.27	0.21	37.4
8	T1	All MCs	2	0.0	2	0.0	0.007	1.1	LOS A	0.0	0.1	0.21	0.27	0.21	34.5
9	R2	All MCs	1	0.0	1	0.0	0.007	5.7	LOS A	0.0	0.1	0.21	0.27	0.21	34.5
Approach			8	0.0	8	0.0	0.007	2.0	LOS A	0.0	0.1	0.21	0.27	0.21	36.8
West: Tollbar Avenue															
10	L2	All MCs	1	0.0	1	0.0	0.037	1.6	LOS A	0.1	0.5	0.11	0.11	0.11	38.4
11	T1	All MCs	63	0.0	63	0.0	0.037	0.7	LOS A	0.1	0.5	0.11	0.11	0.11	38.9
12	R2	All MCs	56	0.0	56	0.0	0.038	5.4	LOS A	0.1	0.5	0.11	0.50	0.11	32.9
Approach			120	0.0	120	0.0	0.038	2.9	LOS A	0.1	0.5	0.11	0.29	0.11	36.7
All Vehicles			558	0.0	558	0.0	0.139	1.9	LOS A	0.3	2.0	0.18	0.21	0.18	37.2

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 3 [3. Persoonia Boulevard / Morningstar Crescent (Site Folder: 2031 Future Base PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2031 Future Base PM (Network Folder: General)]

2031 Future Base PM

Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Persoonia Boulevard															
5	T1	All MCs	112	0.0	112	0.0	0.121	1.3	LOS A	0.3	1.8	0.14	0.34	0.14	34.9
6	R2	All MCs	63	0.0	63	0.0	0.121	5.6	LOS A	0.3	1.8	0.14	0.34	0.14	33.8
Approach			175	0.0	175	0.0	0.121	2.9	LOS A	0.3	1.8	0.14	0.34	0.14	34.6
North: Morningstar Crescent															
7	L2	All MCs	1	0.0	1	0.0	0.029	1.8	LOS A	0.1	0.4	0.16	0.51	0.16	36.1
9	R2	All MCs	37	0.0	37	0.0	0.029	5.7	LOS A	0.1	0.4	0.16	0.51	0.16	30.3
Approach			38	0.0	38	0.0	0.029	5.6	LOS A	0.1	0.4	0.16	0.51	0.16	30.4
West: Persoonia Boulevard															
10	L2	All MCs	1	0.0	1	0.0	0.038	1.9	LOS A	0.1	0.5	0.19	0.20	0.19	31.3
11	T1	All MCs	48	0.0	48	0.0	0.038	1.5	LOS A	0.1	0.5	0.19	0.20	0.19	31.3
Approach			49	0.0	49	0.0	0.038	1.5	LOS A	0.1	0.5	0.19	0.20	0.19	31.3
All Vehicles			262	0.0	262	0.0	0.121	3.0	LOS A	0.3	1.8	0.15	0.34	0.15	32.8

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

MOVEMENT SUMMARY

Site: 4 [4. Persoonia Boulevard / Unnamed Road (Site Folder: 2031 Future Base PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2031 Future Base PM (Network Folder: General)]

2031 Future Base PM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Unnamed Road															
1	L2	All MCs	63	0.0	63	0.0	0.051	2.1	LOS A	0.1	0.7	0.25	0.33	0.25	37.6
3a	R1	All MCs	1	0.0	1	0.0	0.051	5.2	LOS A	0.1	0.7	0.25	0.33	0.25	37.6
Approach			64	0.0	64	0.0	0.051	2.2	LOS A	0.1	0.7	0.25	0.33	0.25	37.6
NorthEast: Persoonia Boulevard															
24a	L1	All MCs	1	0.0	1	0.0	0.066	1.1	LOS A	0.1	0.9	0.01	0.51	0.01	38.1
26a	R1	All MCs	112	0.0	112	0.0	0.066	4.7	LOS A	0.1	0.9	0.01	0.51	0.01	36.9
Approach			113	0.0	113	0.0	0.066	4.7	LOS A	0.1	0.9	0.01	0.51	0.01	36.9
West: Persoonia Boulevard															
10a	L1	All MCs	48	0.0	48	0.0	0.030	1.1	LOS A	0.1	0.4	0.02	0.18	0.02	37.4
12	R2	All MCs	1	0.0	1	0.0	0.030	5.5	LOS A	0.1	0.4	0.02	0.18	0.02	38.6
Approach			49	0.0	49	0.0	0.030	1.1	LOS A	0.1	0.4	0.02	0.18	0.02	37.5
All Vehicles			226	0.0	226	0.0	0.066	3.2	LOS A	0.1	0.9	0.08	0.39	0.08	37.1

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

MOVEMENT SUMMARY

Site: 1 [1. Tollbar Avenue / Morningstar Crescent (Site Folder: 2031 Future Base w/ School AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2031 Future Base w/ School AM (Network Folder: General)]

2031 Future Base w/ School AM

Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Morningstar Crescent															
1	L2	All MCs	111	0.0	111	0.0	0.169	2.7	LOS A	1.0	6.8	0.42	0.48	0.42	38.5
2	T1	All MCs	3	0.0	3	0.0	0.169	2.2	LOS A	1.0	6.8	0.42	0.48	0.42	37.2
3	R2	All MCs	79	0.0	79	0.0	0.169	6.5	LOS A	1.0	6.8	0.42	0.48	0.42	36.7
Approach			193	0.0	193	0.0	0.169	4.3	LOS A	1.0	6.8	0.42	0.48	0.42	38.1
East: Tollbar Avenue															
4	L2	All MCs	383	0.0	383	0.0	0.467	2.7	LOS A	3.8	26.9	0.50	0.38	0.50	34.2
5	T1	All MCs	198	0.0	198	0.0	0.467	2.2	LOS A	3.8	26.9	0.50	0.38	0.50	38.5
6	R2	All MCs	7	0.0	7	0.0	0.467	6.5	LOS A	3.8	26.9	0.50	0.38	0.50	35.3
Approach			588	0.0	588	0.0	0.467	2.6	LOS A	3.8	26.9	0.50	0.38	0.50	37.1
North: Morningstar Crescent															
7	L2	All MCs	39	0.0	39	0.0	0.136	16.6	LOS B	1.0	7.1	1.00	0.84	1.00	18.5
8	T1	All MCs	2	0.0	2	0.0	0.136	16.2	LOS B	1.0	7.1	1.00	0.84	1.00	18.5
9	R2	All MCs	1	0.0	1	0.0	0.136	20.4	LOS B	1.0	7.1	1.00	0.84	1.00	33.7
Approach			42	0.0	42	0.0	0.136	16.7	LOS B	1.0	7.1	1.00	0.84	1.00	19.8
West: Tollbar Avenue															
10	L2	All MCs	1	0.0	1	0.0	0.828	3.0	LOS A	14.1	98.8	0.70	0.38	0.70	37.7
11	T1	All MCs	1046	0.0	1046	0.0	0.828	2.5	LOS A	14.1	98.8	0.70	0.38	0.70	37.5
12	R2	All MCs	154	0.0	154	0.0	0.828	6.8	LOS A	14.1	98.8	0.70	0.38	0.70	37.5
Approach			1201	0.0	1201	0.0	0.828	3.1	LOS A	14.1	98.8	0.70	0.38	0.70	37.5
All Vehicles			2024	0.0	2024	0.0	0.828	3.3	LOS A	14.1	98.8	0.62	0.40	0.62	37.3

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 2 [2. Tollbar Avenue / Persoonia Boulevard (Site Folder: 2031 Future Base w/ School AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2031 Future Base w/ School AM (Network Folder: General)]

2031 Future Base w/ School AM

Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Persoonia Boulevard															
1	L2	All MCs	12	0.0	11	0.0	0.017	3.9	LOS A	0.1	0.4	0.46	0.46	0.46	37.4
2	T1	All MCs	2	0.0	2	0.0	0.017	2.5	LOS A	0.1	0.4	0.46	0.46	0.46	37.9
3	R2	All MCs	2	0.0	2	0.0	0.017	7.2	LOS A	0.1	0.4	0.46	0.46	0.46	37.8
Approach			16	0.0	16	0.0	0.017	4.2	LOS A	0.1	0.4	0.46	0.46	0.46	37.6
East: Tollbar Avenue															
4	L2	All MCs	67	0.0	67	0.0	0.163	1.6	LOS A	0.9	6.1	0.13	0.15	0.13	37.7
5	T1	All MCs	577	0.0	577	0.0	0.238	1.0	LOS A	1.4	9.6	0.13	0.14	0.13	37.7
6	R2	All MCs	19	0.0	19	0.0	0.238	5.4	LOS A	1.4	9.6	0.13	0.13	0.13	37.9
Approach			663	0.0	663	0.0	0.238	1.2	LOS A	1.4	9.6	0.13	0.14	0.13	37.7
North: Persoonia Boulevard															
7	L2	All MCs	85	0.0	85	0.0	0.120	4.7	LOS A	0.5	3.2	0.59	0.63	0.59	35.6
8	T1	All MCs	3	0.0	3	0.0	0.120	4.1	LOS A	0.5	3.2	0.59	0.63	0.59	30.8
9	R2	All MCs	1	0.0	1	0.0	0.120	8.7	LOS A	0.5	3.2	0.59	0.63	0.59	30.8
Approach			89	0.0	89	0.0	0.120	4.7	LOS A	0.5	3.2	0.59	0.63	0.59	35.5
West: Tollbar Avenue															
10	L2	All MCs	1	0.0	1	0.0	0.348	1.6	LOS A	2.3	15.8	0.12	0.11	0.12	38.3
11	T1	All MCs	1139	0.0	1139	0.0	0.348	0.8	LOS A	2.3	15.9	0.12	0.12	0.12	38.7
12	R2	All MCs	26	0.0	26	0.0	0.348	5.4	LOS A	2.3	15.9	0.13	0.14	0.13	37.5
Approach			1166	0.0	1166	0.0	0.348	0.9	LOS A	2.3	15.9	0.12	0.12	0.12	38.7
All Vehicles			1935	0.0	1934	0.0	0.348	1.2	LOS A	2.3	15.9	0.15	0.15	0.15	38.3

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 3 [3. Persoonia Boulevard / Morningstar Crescent (Site Folder: 2031 Future Base w/ School AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2031 Future Base w/ School AM (Network Folder: General)]

2031 Future Base w/ School AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Persoonia Boulevard															
5	T1	All MCs	54	0.0	54	0.0	0.190	2.8	LOS A	1.2	8.5	0.56	0.56	0.56	31.4
6	R2	All MCs	137	0.0	137	0.0	0.190	7.1	LOS A	1.2	8.5	0.56	0.56	0.56	29.8
Approach			191	0.0	191	0.0	0.190	5.9	LOS A	1.2	8.5	0.56	0.56	0.56	30.3
North: Morningstar Crescent															
7	L2	All MCs	807	0.0	807	0.0	1.024	49.9	LOS D	55.0	385.0	1.00	2.58	3.33	20.5
9	R2	All MCs	314	0.0	314	0.0	1.024	53.7	LOS D	55.0	385.0	1.00	2.58	3.33	19.1
Approach			1121	0.0	1121	0.0	1.024	50.9	LOS D	55.0	385.0	1.00	2.58	3.33	20.0
West: Persoonia Boulevard															
10	L2	All MCs	9	0.0	9	0.0	0.278	2.4	LOS A	1.8	12.8	0.38	0.28	0.38	28.3
11	T1	All MCs	343	0.0	343	0.0	0.278	1.9	LOS A	1.8	12.8	0.38	0.28	0.38	28.3
Approach			353	0.0	353	0.0	0.278	1.9	LOS A	1.8	12.8	0.38	0.28	0.38	28.3
All Vehicles			1664	0.0	1664	0.0	1.024	35.4	LOS C	55.0	385.0	0.82	1.86	2.39	20.7

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

MOVEMENT SUMMARY

Site: 4 [4. Persoonia Boulevard / Unnamed Road (Site Folder: 2031 Future Base w/ School AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2031 Future Base w/ School AM (Network Folder: General)]

2031 Future Base w/ School AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Unnamed Road															
1	L2	All MCs	149	0.0	149	0.0	0.188	2.2	LOS A	1.0	7.0	0.29	0.41	0.29	36.6
3a	R1	All MCs	94	0.0	94	0.0	0.188	5.3	LOS A	1.0	7.0	0.29	0.41	0.29	36.6
Approach			243	0.0	243	0.0	0.188	3.4	LOS A	1.0	7.0	0.29	0.41	0.29	36.6
NorthEast: Persoonia Boulevard															
24a	L1	All MCs	1	0.0	1	0.0	0.077	1.1	LOS A	0.4	3.1	0.07	0.49	0.07	38.0
26a	R1	All MCs	118	0.0	118	0.0	0.077	4.8	LOS A	0.4	3.1	0.07	0.49	0.07	36.7
Approach			119	0.0	119	0.0	0.077	4.7	LOS A	0.4	3.1	0.07	0.49	0.07	36.8
West: Persoonia Boulevard															
10a	L1	All MCs	1134	0.0	1115	0.0	0.778	2.2	LOS A	10.9	76.0	0.60	0.37	0.60	32.3
12	R2	All MCs	11	0.0	10	0.0	0.778	6.7	LOS A	10.9	76.0	0.60	0.37	0.60	36.8
Approach			1144	0.0	1126	0.0	0.778	2.3	LOS A	10.9	76.0	0.60	0.37	0.60	32.4
All Vehicles			1506	0.0	1488	0.0	0.778	2.7	LOS A	10.9	76.0	0.51	0.38	0.51	34.2

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

MOVEMENT SUMMARY

Site: 1 [1. Tollbar Avenue / Morningstar Crescent (Site Folder: 2031 Future Base w/ School PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2031 Future Base w/ School PM (Network Folder: General)]

2031 Future Base w/ School PM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Morningstar Crescent															
1	L2	All MCs	76	0.0	76	0.0	0.116	3.5	LOS A	0.2	1.7	0.51	0.53	0.51	38.5
2	T1	All MCs	3	0.0	3	0.0	0.116	3.1	LOS A	0.2	1.7	0.51	0.53	0.51	37.2
3	R2	All MCs	39	0.0	39	0.0	0.116	7.4	LOS A	0.2	1.7	0.51	0.53	0.51	36.6
Approach			118	0.0	118	0.0	0.116	4.8	LOS A	0.2	1.7	0.51	0.53	0.51	38.1
East: Tollbar Avenue															
4	L2	All MCs	365	0.0	365	0.0	0.482	1.9	LOS A	1.5	10.8	0.23	0.26	0.23	36.0
5	T1	All MCs	365	0.0	365	0.0	0.482	1.5	LOS A	1.5	10.8	0.23	0.26	0.23	39.0
6	R2	All MCs	12	0.0	12	0.0	0.482	5.7	LOS A	1.5	10.8	0.23	0.26	0.23	36.5
Approach			742	0.0	742	0.0	0.482	1.8	LOS A	1.5	10.8	0.23	0.26	0.23	38.4
North: Morningstar Crescent															
7	L2	All MCs	2	0.0	2	0.0	0.005	2.5	LOS A	0.0	0.1	0.34	0.35	0.34	32.2
8	T1	All MCs	2	0.0	2	0.0	0.005	2.0	LOS A	0.0	0.1	0.34	0.35	0.34	32.2
9	R2	All MCs	1	0.0	1	0.0	0.005	6.3	LOS A	0.0	0.1	0.34	0.35	0.34	38.1
Approach			5	0.0	5	0.0	0.005	3.1	LOS A	0.0	0.1	0.34	0.35	0.34	35.5
West: Tollbar Avenue															
10	L2	All MCs	1	0.0	1	0.0	0.121	1.9	LOS A	0.3	1.9	0.19	0.30	0.19	38.6
11	T1	All MCs	127	0.0	127	0.0	0.121	1.4	LOS A	0.3	1.9	0.19	0.30	0.19	38.5
12	R2	All MCs	40	0.0	40	0.0	0.121	5.7	LOS A	0.3	1.9	0.19	0.30	0.19	38.5
Approach			168	0.0	168	0.0	0.121	2.4	LOS A	0.3	1.9	0.19	0.30	0.19	38.5
All Vehicles			1034	0.0	1034	0.0	0.482	2.2	LOS A	1.5	10.8	0.25	0.30	0.25	38.4

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

MOVEMENT SUMMARY

Site: 2 [2. Tollbar Avenue / Persoonia Boulevard (Site Folder: 2031 Future Base w/ School PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2031 Future Base w/ School PM (Network Folder: General)]

2031 Future Base w/ School PM

Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Persoonia Boulevard															
1	L2	All MCs	56	0.0	56	0.0	0.144	4.7	LOS A	0.2	1.6	0.53	0.63	0.53	36.3
2	T1	All MCs	3	0.0	3	0.0	0.144	3.1	LOS A	0.2	1.6	0.53	0.63	0.53	37.0
3	R2	All MCs	63	0.0	63	0.0	0.144	7.7	LOS A	0.2	1.6	0.53	0.63	0.53	37.0
Approach			122	0.0	122	0.0	0.144	6.2	LOS A	0.2	1.6	0.53	0.63	0.53	36.8
East: Tollbar Avenue															
4	L2	All MCs	6	0.0	6	0.0	0.187	1.9	LOS A	0.4	2.9	0.24	0.15	0.24	37.1
5	T1	All MCs	686	0.0	686	0.0	0.273	1.3	LOS A	0.7	4.8	0.23	0.16	0.23	37.0
6	R2	All MCs	26	0.0	26	0.0	0.273	5.6	LOS A	0.7	4.8	0.23	0.16	0.23	37.3
Approach			719	0.0	719	0.0	0.273	1.5	LOS A	0.7	4.8	0.23	0.16	0.23	37.0
North: Persoonia Boulevard															
7	L2	All MCs	5	0.0	5	0.0	0.011	2.0	LOS A	0.0	0.1	0.30	0.28	0.30	37.1
8	T1	All MCs	5	0.0	5	0.0	0.011	1.4	LOS A	0.0	0.1	0.30	0.28	0.30	34.1
9	R2	All MCs	1	0.0	1	0.0	0.011	6.1	LOS A	0.0	0.1	0.30	0.28	0.30	34.1
Approach			12	0.0	12	0.0	0.011	2.1	LOS A	0.0	0.1	0.30	0.28	0.30	36.1
West: Tollbar Avenue															
10	L2	All MCs	1	0.0	1	0.0	0.056	1.8	LOS A	0.1	0.8	0.23	0.13	0.23	37.7
11	T1	All MCs	98	0.0	98	0.0	0.056	0.9	LOS A	0.1	0.8	0.23	0.16	0.23	38.1
12	R2	All MCs	71	0.0	71	0.0	0.056	5.7	LOS A	0.1	0.8	0.24	0.48	0.24	32.7
Approach			169	0.0	169	0.0	0.056	2.9	LOS A	0.1	0.8	0.23	0.29	0.23	36.4
All Vehicles			1022	0.0	1022	0.0	0.273	2.3	LOS A	0.7	4.8	0.27	0.24	0.27	36.8

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 3 [3. Persoonia Boulevard / Morningstar Crescent (Site Folder: 2031 Future Base w/ School PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2031 Future Base w/ School PM (Network Folder: General)]

2031 Future Base w/ School PM

Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Persoonia Boulevard															
5	T1	All MCs	126	0.0	126	0.0	0.166	1.9	LOS A	0.4	2.7	0.36	0.39	0.36	33.6
6	R2	All MCs	75	0.0	75	0.0	0.166	6.2	LOS A	0.4	2.7	0.36	0.39	0.36	32.3
Approach			201	0.0	201	0.0	0.166	3.5	LOS A	0.4	2.7	0.36	0.39	0.36	33.2
North: Morningstar Crescent															
7	L2	All MCs	804	0.0	804	0.0	0.695	2.9	LOS A	3.0	21.2	0.57	0.45	0.57	36.9
9	R2	All MCs	148	0.0	148	0.0	0.695	6.7	LOS A	3.0	21.2	0.57	0.45	0.57	30.5
Approach			953	0.0	953	0.0	0.695	3.5	LOS A	3.0	21.2	0.57	0.45	0.57	35.6
West: Persoonia Boulevard															
10	L2	All MCs	8	0.0	8	0.0	0.102	2.0	LOS A	0.2	1.5	0.23	0.22	0.23	30.6
11	T1	All MCs	126	0.0	126	0.0	0.102	1.5	LOS A	0.2	1.5	0.23	0.22	0.23	30.6
Approach			135	0.0	135	0.0	0.102	1.6	LOS A	0.2	1.5	0.23	0.22	0.23	30.6
All Vehicles			1288	0.0	1288	0.0	0.695	3.3	LOS A	3.0	21.2	0.50	0.42	0.50	35.3

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

MOVEMENT SUMMARY

Site: 4 [4. Persoonia Boulevard / Unnamed Road (Site Folder: 2031 Future Base w/ School PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2031 Future Base w/ School PM (Network Folder: General)]

2031 Future Base w/ School PM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Unnamed Road															
1	L2	All MCs	73	0.0	73	0.0	0.130	2.2	LOS A	0.3	1.8	0.27	0.44	0.27	36.3
3a	R1	All MCs	94	0.0	94	0.0	0.130	5.3	LOS A	0.3	1.8	0.27	0.44	0.27	36.3
Approach			166	0.0	166	0.0	0.130	3.9	LOS A	0.3	1.8	0.27	0.44	0.27	36.3
NorthEast: Persoonia Boulevard															
24a	L1	All MCs	1	0.0	1	0.0	0.073	1.1	LOS A	0.2	1.1	0.07	0.49	0.07	38.0
26a	R1	All MCs	112	0.0	112	0.0	0.073	4.8	LOS A	0.2	1.1	0.07	0.49	0.07	36.8
Approach			113	0.0	113	0.0	0.073	4.7	LOS A	0.2	1.1	0.07	0.49	0.07	36.8
West: Persoonia Boulevard															
10a	L1	All MCs	984	0.0	984	0.0	0.692	2.0	LOS A	3.2	22.1	0.50	0.33	0.50	33.1
12	R2	All MCs	11	0.0	11	0.0	0.692	6.4	LOS A	3.2	22.1	0.50	0.33	0.50	37.1
Approach			995	0.0	995	0.0	0.692	2.0	LOS A	3.2	22.1	0.50	0.33	0.50	33.2
All Vehicles			1274	0.0	1274	0.0	0.692	2.5	LOS A	3.2	22.1	0.43	0.36	0.43	34.6

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

MOVEMENT SUMMARY

Site: 1 [1. Tollbar Avenue / Morningstar Crescent (Site Folder: 2031 Future Base w/ School AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2031 Future Base w/ School (moderate scenario) AM (Network Folder: General)]

2031 Future Base w/ School AM

Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Morningstar Crescent															
1	L2	All MCs	83	0.0	83	0.0	0.144	2.7	LOS A	0.8	5.6	0.40	0.48	0.40	38.5
2	T1	All MCs	3	0.0	3	0.0	0.144	2.2	LOS A	0.8	5.6	0.40	0.48	0.40	37.2
3	R2	All MCs	79	0.0	79	0.0	0.144	6.5	LOS A	0.8	5.6	0.40	0.48	0.40	36.6
Approach			165	0.0	165	0.0	0.144	4.5	LOS A	0.8	5.6	0.40	0.48	0.40	37.9
East: Tollbar Avenue															
4	L2	All MCs	135	0.0	135	0.0	0.273	2.4	LOS A	1.8	12.7	0.39	0.32	0.39	34.8
5	T1	All MCs	198	0.0	198	0.0	0.273	2.0	LOS A	1.8	12.7	0.39	0.32	0.39	38.7
6	R2	All MCs	7	0.0	7	0.0	0.273	6.2	LOS A	1.8	12.7	0.39	0.32	0.39	35.7
Approach			340	0.0	340	0.0	0.273	2.2	LOS A	1.8	12.7	0.39	0.32	0.39	38.1
North: Morningstar Crescent															
7	L2	All MCs	39	0.0	39	0.0	0.126	15.5	LOS B	0.9	6.5	0.99	0.83	0.99	19.2
8	T1	All MCs	2	0.0	2	0.0	0.126	15.1	LOS B	0.9	6.5	0.99	0.83	0.99	19.2
9	R2	All MCs	1	0.0	1	0.0	0.126	19.4	LOS B	0.9	6.5	0.99	0.83	0.99	34.1
Approach			42	0.0	42	0.0	0.126	15.6	LOS B	0.9	6.5	0.99	0.83	0.99	20.5
West: Tollbar Avenue															
10	L2	All MCs	1	0.0	1	0.0	0.809	2.9	LOS A	12.9	90.2	0.66	0.37	0.66	37.8
11	T1	All MCs	1032	0.0	1032	0.0	0.809	2.4	LOS A	12.9	90.2	0.66	0.37	0.66	37.6
12	R2	All MCs	141	0.0	141	0.0	0.809	6.7	LOS A	12.9	90.2	0.66	0.37	0.66	37.6
Approach			1174	0.0	1174	0.0	0.809	3.0	LOS A	12.9	90.2	0.66	0.37	0.66	37.6
All Vehicles			1721	0.0	1721	0.0	0.809	3.3	LOS A	12.9	90.2	0.59	0.39	0.59	37.6

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

MOVEMENT SUMMARY

Site: 2 [2. Tollbar Avenue / Persoonia Boulevard (Site Folder: 2031 Future Base w/ School AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2031 Future Base w/ School (moderate scenario) AM (Network Folder: General)]

2031 Future Base w/ School AM

Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Persoonia Boulevard															
1	L2	All MCs	12	0.0	12	0.0	0.015	2.8	LOS A	0.1	0.4	0.36	0.37	0.36	37.7
2	T1	All MCs	2	0.0	2	0.0	0.015	1.8	LOS A	0.1	0.4	0.36	0.37	0.36	38.1
3	R2	All MCs	2	0.0	2	0.0	0.015	6.4	LOS A	0.1	0.4	0.36	0.37	0.36	38.1
Approach			16	0.0	16	0.0	0.015	3.1	LOS A	0.1	0.4	0.36	0.37	0.36	37.8
East: Tollbar Avenue															
4	L2	All MCs	67	0.0	67	0.0	0.101	1.5	LOS A	0.5	3.6	0.09	0.17	0.09	37.8
5	T1	All MCs	328	0.0	328	0.0	0.147	0.8	LOS A	0.8	5.5	0.08	0.14	0.08	37.9
6	R2	All MCs	19	0.0	19	0.0	0.147	5.4	LOS A	0.8	5.5	0.08	0.14	0.08	38.0
Approach			415	0.0	415	0.0	0.147	1.1	LOS A	0.8	5.5	0.08	0.15	0.08	37.9
North: Persoonia Boulevard															
7	L2	All MCs	85	0.0	85	0.0	0.120	4.6	LOS A	0.5	3.2	0.59	0.63	0.59	35.6
8	T1	All MCs	3	0.0	3	0.0	0.120	4.0	LOS A	0.5	3.2	0.59	0.63	0.59	30.8
9	R2	All MCs	1	0.0	1	0.0	0.120	8.7	LOS A	0.5	3.2	0.59	0.63	0.59	30.8
Approach			89	0.0	89	0.0	0.120	4.6	LOS A	0.5	3.2	0.59	0.63	0.59	35.5
West: Tollbar Avenue															
10	L2	All MCs	1	0.0	1	0.0	0.343	1.6	LOS A	2.2	15.3	0.12	0.11	0.12	38.3
11	T1	All MCs	1139	0.0	1139	0.0	0.343	0.8	LOS A	2.2	15.4	0.12	0.11	0.12	38.8
12	R2	All MCs	12	0.0	12	0.0	0.343	5.4	LOS A	2.2	15.4	0.13	0.12	0.13	37.6
Approach			1152	0.0	1152	0.0	0.343	0.8	LOS A	2.2	15.4	0.12	0.11	0.12	38.8
All Vehicles			1672	0.0	1672	0.0	0.343	1.1	LOS A	2.2	15.4	0.14	0.15	0.14	38.5

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

MOVEMENT SUMMARY

Site: 3 [3. Persoonia Boulevard / Morningstar Crescent (Site Folder: 2031 Future Base w/ School AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2031 Future Base w/ School (moderate scenario) AM (Network Folder: General)]

2031 Future Base w/ School AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Persoonia Boulevard															
5	T1	All MCs	54	0.0	54	0.0	0.181	2.7	LOS A	1.1	7.8	0.52	0.54	0.52	31.6
6	R2	All MCs	137	0.0	137	0.0	0.181	6.9	LOS A	1.1	7.8	0.52	0.54	0.52	30.0
Approach			191	0.0	191	0.0	0.181	5.7	LOS A	1.1	7.8	0.52	0.54	0.52	30.5
North: Morningstar Crescent															
7	L2	All MCs	431	0.0	431	0.0	0.657	5.5	LOS A	6.9	48.2	0.76	0.68	0.85	35.4
9	R2	All MCs	285	0.0	285	0.0	0.657	9.3	LOS A	6.9	48.2	0.76	0.68	0.85	29.7
Approach			716	0.0	716	0.0	0.657	7.0	LOS A	6.9	48.2	0.76	0.68	0.85	32.7
West: Persoonia Boulevard															
10	L2	All MCs	9	0.0	9	0.0	0.261	2.4	LOS A	1.7	11.6	0.37	0.28	0.37	28.4
11	T1	All MCs	320	0.0	320	0.0	0.261	1.9	LOS A	1.7	11.6	0.37	0.28	0.37	28.4
Approach			329	0.0	329	0.0	0.261	1.9	LOS A	1.7	11.6	0.37	0.28	0.37	28.4
All Vehicles			1236	0.0	1236	0.0	0.657	5.5	LOS A	6.9	48.2	0.62	0.55	0.67	32.2

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

MOVEMENT SUMMARY

Site: 4 [4. Persoonia Boulevard / Unnamed Road (Site Folder: 2031 Future Base w/ School AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2031 Future Base w/ School (moderate scenario) AM (Network Folder: General)]

2031 Future Base w/ School AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Unnamed Road															
1	L2	All MCs	149	0.0	149	0.0	0.167	2.2	LOS A	0.9	6.1	0.28	0.40	0.28	36.8
3a	R1	All MCs	64	0.0	64	0.0	0.167	5.3	LOS A	0.9	6.1	0.28	0.40	0.28	36.8
Approach			214	0.0	214	0.0	0.167	3.2	LOS A	0.9	6.1	0.28	0.40	0.28	36.8
NorthEast: Persoonia Boulevard															
24a	L1	All MCs	1	0.0	1	0.0	0.077	1.1	LOS A	0.4	2.8	0.07	0.49	0.07	38.0
26a	R1	All MCs	118	0.0	118	0.0	0.077	4.8	LOS A	0.4	2.8	0.07	0.49	0.07	36.8
Approach			119	0.0	119	0.0	0.077	4.7	LOS A	0.4	2.8	0.07	0.49	0.07	36.8
West: Persoonia Boulevard															
10a	L1	All MCs	735	0.0	735	0.0	0.503	1.5	LOS A	4.2	29.6	0.30	0.24	0.30	34.7
12	R2	All MCs	11	0.0	11	0.0	0.503	5.9	LOS A	4.2	29.6	0.30	0.24	0.30	37.7
Approach			745	0.0	745	0.0	0.503	1.6	LOS A	4.2	29.6	0.30	0.24	0.30	34.9
All Vehicles			1078	0.0	1078	0.0	0.503	2.2	LOS A	4.2	29.6	0.27	0.30	0.27	35.9

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

MOVEMENT SUMMARY

Site: 1 [1. Tollbar Avenue / Morningstar Crescent (Site Folder: 2031 Future Base w/ School PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2031 Future Base w/ School (moderate scenario) PM (Network Folder: General)]

2031 Future Base w/ School PM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Morningstar Crescent															
1	L2	All MCs	47	0.0	47	0.0	0.087	3.5	LOS A	0.2	1.3	0.49	0.54	0.49	38.4
2	T1	All MCs	3	0.0	3	0.0	0.087	3.0	LOS A	0.2	1.3	0.49	0.54	0.49	37.0
3	R2	All MCs	39	0.0	39	0.0	0.087	7.3	LOS A	0.2	1.3	0.49	0.54	0.49	36.5
Approach			89	0.0	89	0.0	0.087	5.1	LOS A	0.2	1.3	0.49	0.54	0.49	37.9
East: Tollbar Avenue															
4	L2	All MCs	117	0.0	117	0.0	0.318	1.8	LOS A	0.8	5.7	0.15	0.22	0.15	36.6
5	T1	All MCs	365	0.0	365	0.0	0.318	1.3	LOS A	0.8	5.7	0.15	0.22	0.15	39.1
6	R2	All MCs	12	0.0	12	0.0	0.318	5.6	LOS A	0.8	5.7	0.15	0.22	0.15	36.9
Approach			494	0.0	494	0.0	0.318	1.5	LOS A	0.8	5.7	0.15	0.22	0.15	38.9
North: Morningstar Crescent															
7	L2	All MCs	2	0.0	2	0.0	0.004	2.4	LOS A	0.0	0.1	0.32	0.34	0.32	32.4
8	T1	All MCs	2	0.0	2	0.0	0.004	1.9	LOS A	0.0	0.1	0.32	0.34	0.32	32.4
9	R2	All MCs	1	0.0	1	0.0	0.004	6.2	LOS A	0.0	0.1	0.32	0.34	0.32	38.2
Approach			5	0.0	5	0.0	0.004	2.9	LOS A	0.0	0.1	0.32	0.34	0.32	35.7
West: Tollbar Avenue															
10	L2	All MCs	1	0.0	1	0.0	0.102	1.9	LOS A	0.2	1.6	0.19	0.28	0.19	38.6
11	T1	All MCs	113	0.0	113	0.0	0.102	1.4	LOS A	0.2	1.6	0.19	0.28	0.19	38.6
12	R2	All MCs	27	0.0	27	0.0	0.102	5.7	LOS A	0.2	1.6	0.19	0.28	0.19	38.6
Approach			141	0.0	141	0.0	0.102	2.3	LOS A	0.2	1.6	0.19	0.28	0.19	38.6
All Vehicles			729	0.0	729	0.0	0.318	2.1	LOS A	0.8	5.7	0.20	0.27	0.20	38.7

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

MOVEMENT SUMMARY

Site: 2 [2. Tollbar Avenue / Persoonia Boulevard (Site Folder: 2031 Future Base w/ School PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2031 Future Base w/ School (moderate scenario) PM (Network Folder: General)]

2031 Future Base w/ School PM

Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Persoonia Boulevard															
1	L2	All MCs	56	0.0	56	0.0	0.126	3.4	LOS A	0.2	1.4	0.44	0.55	0.44	36.7
2	T1	All MCs	3	0.0	3	0.0	0.126	2.3	LOS A	0.2	1.4	0.44	0.55	0.44	37.2
3	R2	All MCs	63	0.0	63	0.0	0.126	6.9	LOS A	0.2	1.4	0.44	0.55	0.44	37.3
Approach			122	0.0	122	0.0	0.126	5.2	LOS A	0.2	1.4	0.44	0.55	0.44	37.0
East: Tollbar Avenue															
4	L2	All MCs	6	0.0	6	0.0	0.121	1.8	LOS A	0.3	1.8	0.20	0.14	0.20	37.4
5	T1	All MCs	438	0.0	438	0.0	0.177	1.1	LOS A	0.4	2.8	0.19	0.16	0.19	37.2
6	R2	All MCs	26	0.0	26	0.0	0.177	5.5	LOS A	0.4	2.8	0.19	0.17	0.19	37.4
Approach			471	0.0	471	0.0	0.177	1.3	LOS A	0.4	2.8	0.19	0.16	0.19	37.2
North: Persoonia Boulevard															
7	L2	All MCs	5	0.0	5	0.0	0.010	1.9	LOS A	0.0	0.1	0.29	0.28	0.29	37.2
8	T1	All MCs	5	0.0	5	0.0	0.010	1.4	LOS A	0.0	0.1	0.29	0.28	0.29	34.2
9	R2	All MCs	1	0.0	1	0.0	0.010	6.0	LOS A	0.0	0.1	0.29	0.28	0.29	34.2
Approach			12	0.0	12	0.0	0.010	2.0	LOS A	0.0	0.1	0.29	0.28	0.29	36.1
West: Tollbar Avenue															
10	L2	All MCs	1	0.0	1	0.0	0.051	1.8	LOS A	0.1	0.7	0.22	0.13	0.22	37.7
11	T1	All MCs	98	0.0	98	0.0	0.051	0.9	LOS A	0.1	0.7	0.22	0.18	0.22	38.0
12	R2	All MCs	56	0.0	56	0.0	0.051	5.7	LOS A	0.1	0.7	0.23	0.44	0.23	33.3
Approach			155	0.0	155	0.0	0.051	2.7	LOS A	0.1	0.7	0.23	0.28	0.23	36.8
All Vehicles			759	0.0	759	0.0	0.177	2.2	LOS A	0.4	2.8	0.24	0.25	0.24	37.1

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

MOVEMENT SUMMARY

Site: 3 [3. Persoonia Boulevard / Morningstar Crescent (Site Folder: 2031 Future Base w/ School PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2031 Future Base w/ School (moderate scenario) PM (Network Folder: General)]

2031 Future Base w/ School PM

Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Persoonia Boulevard															
5	T1	All MCs	126	0.0	126	0.0	0.159	1.8	LOS A	0.4	2.5	0.30	0.38	0.30	33.9
6	R2	All MCs	75	0.0	75	0.0	0.159	6.1	LOS A	0.4	2.5	0.30	0.38	0.30	32.6
Approach			201	0.0	201	0.0	0.159	3.4	LOS A	0.4	2.5	0.30	0.38	0.30	33.5
North: Morningstar Crescent															
7	L2	All MCs	427	0.0	427	0.0	0.400	2.3	LOS A	1.1	7.9	0.34	0.39	0.34	37.3
9	R2	All MCs	121	0.0	121	0.0	0.400	6.1	LOS A	1.1	7.9	0.34	0.39	0.34	30.8
Approach			548	0.0	548	0.0	0.400	3.1	LOS A	1.1	7.9	0.34	0.39	0.34	35.5
West: Persoonia Boulevard															
10	L2	All MCs	8	0.0	8	0.0	0.086	2.0	LOS A	0.2	1.2	0.22	0.22	0.22	30.7
11	T1	All MCs	104	0.0	104	0.0	0.086	1.5	LOS A	0.2	1.2	0.22	0.22	0.22	30.7
Approach			113	0.0	113	0.0	0.086	1.6	LOS A	0.2	1.2	0.22	0.22	0.22	30.7
All Vehicles			862	0.0	862	0.0	0.400	3.0	LOS A	1.1	7.9	0.32	0.37	0.32	35.1

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 4 [4. Persoonia Boulevard / Unnamed Road (Site Folder: 2031 Future Base w/ School PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2031 Future Base w/ School (moderate scenario) PM (Network Folder: General)]

2031 Future Base w/ School PM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Unnamed Road															
1	L2	All MCs	73	0.0	73	0.0	0.108	2.2	LOS A	0.2	1.5	0.26	0.42	0.26	36.5
3a	R1	All MCs	64	0.0	64	0.0	0.108	5.3	LOS A	0.2	1.5	0.26	0.42	0.26	36.5
Approach			137	0.0	137	0.0	0.108	3.6	LOS A	0.2	1.5	0.26	0.42	0.26	36.5
NorthEast: Persoonia Boulevard															
24a	L1	All MCs	1	0.0	1	0.0	0.073	1.1	LOS A	0.1	1.0	0.07	0.49	0.07	38.0
26a	R1	All MCs	112	0.0	112	0.0	0.073	4.8	LOS A	0.1	1.0	0.07	0.49	0.07	36.8
Approach			113	0.0	113	0.0	0.073	4.7	LOS A	0.1	1.0	0.07	0.49	0.07	36.8
West: Persoonia Boulevard															
10a	L1	All MCs	585	0.0	585	0.0	0.407	1.4	LOS A	1.2	8.4	0.27	0.23	0.27	35.0
12	R2	All MCs	11	0.0	11	0.0	0.407	5.8	LOS A	1.2	8.4	0.27	0.23	0.27	37.8
Approach			596	0.0	596	0.0	0.407	1.5	LOS A	1.2	8.4	0.27	0.23	0.27	35.2
All Vehicles			845	0.0	845	0.0	0.407	2.3	LOS A	1.2	8.4	0.24	0.30	0.24	35.9

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

Appendix B Preliminary School Transport Plan

B.1 Introduction

This School Transport Plan has been prepared in conjunction with the NSW Department of Education, Cessnock Council, Transport for NSW, and with reference to the NSW Department of Education Transport Assessment and School Transport Plan Report Guidelines.

This School Transport Plan has been informed by the preceding transport assessment, which comprise of a spatial analysis of future student enrolments and the geographic distribution of students in relation to the school, site investigations, and the setting of base case, moderate and reach travel mode share targets.

While the targets for active and sustainable travel are aspirational, there is an opportunity to shift and shape active and sustainable travel behaviours through the development of the New Primary School and High School in Huntlee. To this end, the Plan has been developed with focused and specific actions to increase the rate of use in active travel and public transport options to travel to school. The measures included in the School Transport Plan include:

- Sustainable transport encouragement programs to increase the rate of walk and cycling to school.
- Efforts to increase registration into the School Student Transport Scheme (SSTS), which is used by school bus operators and Transport for NSW to measure the demand for a dedicated school bus.
- Communications program to convey positive road safety messaging and expected standards of behaviour for a kiss and drop.

B.1.1 Site description

The current street address is 32 Persoonia Boulevard and part of 1823 Wine Country Drive, North Rothbury. The legal description of the site is 495/DP1246814 (Primary School), Lot 449/-/DP1289939 and Lot 696/-/DP1263808 (the High School). The Primary School site is regular in shape is has a total approximate area of 3 hectares. The High School site is irregular in shape and has a total approximate area of 5 hectares.

The site is approximately 18km northwest of Cessnock and 20km southeast of Singleton within the Hunter Valley. The catchment area for the proposed primary school is bound by the respective catchments of Kirkton Public School to the northwest, Branxton Public to the north and Greta Public School to the east. The high school intake catchment is bound by the catchments of Singleton High School to the north west, Rutherford Technology High School, Maitland Grossman High School and Maitland High School to the east.

The immediately surrounding land is described as follows:

- **North:** Land to the north currently includes areas of vegetation with Branxton Town Centre located on the northern side of the Hunter Expressway. Branxton Station is also located along the Hunter Trainline located 1km to the north.
- **East:** Low density residential subdivision has occurred to the east of the site and accommodates recently constructed detached dwelling houses serviced by new roads. Huntlee Shopping Centre and Huntlee Learning Centre are located to the northeast of the site providing services to the new residential areas.
- **West:** Low-density residential subdivision has occurred to the west of the site.

- **South:** Areas to the south of the site are currently undeveloped land and includes areas of existing vegetation.

Figure 8-1 Aerial Photograph of the Site

Source: Urbis, 2025

B.1.2 Project background

Huntlee is a new Urban Release Area gazetted by the Minister for Planning on the 31st of December 2010. Huntlee is located 20km north of Cessnock and 25km southeast of Singleton. The amendment to Schedule 3 of the former State Environmental Planning Policy (Major Development) 2005 identified zoning and land use controls.

The school sites are located within Huntlee Town Centre Stage 1, approved under MP10_0137 by the Planning Assessment Commission (PAC) under the delegation of the Minister for Planning and Infrastructure on the 24 April 2013.

The development approved under MP_0137 (as modified) includes the following:

- Subdivision to create 2,272 residential allotments
- 123 large lot residential allotments
- 94 infrastructure, community, commercial and mixed-use allotments
- 2 allotments for a primary school and a high school
- Landscaped areas, drainage, public open space and recreation areas

- Associated bulk earthworks, and
- Infrastructure including roads, drainage works and utility services provision.

As part of the rezoning, Huntlee was required to enter into a voluntary planning agreement with the Minister for Planning and the Minister for the Environment (SEPP VPA). Notably, pursuant to the SEPP VPA, Huntlee was required to provide Education Contribution Land within the town centre for a future primary school. The developer was required to also make various environmental conservation contributions to offset the impacts of the Development.

The VPA was amended in 2019 due to the approval of MP_0137_MOD 9. This modification was approved on 13 December 2019 and changed the location and configuration of the Education Contribution Land. The VPA includes the provision of a primary school. MOD 15 subsequently approved on the 7 December 2020 subdivided the education super lot located within the Town Centre stage 5 area into two lots. These two lots now make up the subject PS and HS sites.

B.1.3 Proposed activity description

Main Works Contractor Delivery

Construction of a new preschool, primary school and high school in Huntlee including earthworks, public domain works and landscaping.

Specifically, the proposal involves:

Primary School

- 1 x Preschool for 60 children.
- Two (2) x three (3) storey Primary School buildings and one (1) x one (1) storey hall building for 500 students including:
  - General Learning Spaces (GLS)
  - General Learning Spaces (Support) (SLU)
  - Multipurpose Rooms
  - Canteen
  - Library
  - Administration area

High School

- Three (3) x three (3) storey buildings, one (1) x Hall building (two (2) storey equivalent height) and one (1) x one (1) storey construction shed for 1,000 students including:
  - General Learning Spaces (GLS)
  - General Learning Spaces (Support) (SLU)
  - Science Learning Hubs
  - Visual Arts Learning Hubs
  - Wood and Metal Technology Learning Hubs

  - Food and Textiles Learning Hubs
  - Health and PE Learning Hubs
  - Performing Arts Learning Hubs
  - VET Hospitality and Construction Hubs
  - Multipurpose Rooms
  - Library
  - Gymnasium
  - Administration Areas
  - Staff Support Areas
- Landscaped open space including:
  - Playing Fields
  - Covered Outdoor Learning Areas (COLAs)
- Car parking
- Waste areas
- Public domain upgrades.

B.1.4 Transport goals

This section of the report utilises the understanding of external transport conditions for the site identified through the preceding transport assessment and defines the vision and objectives for the school to be achieved through the School Transport Plan. The vision and objectives support the adoption of the ideal transport scenario for which the school should aspire to achieve. This is to be supported through the implementation of measures proposed as part of the transport Assessment, by following the communications plan to promote the use of active and public transport and through the continuous monitoring of performance in support of the travel coordinator role.

As identified in the report guidelines, the overall vision for the School Transport Plan is to delver efficient, safe, and sustainable access to school during the planning, construction and operation of school assets. To support this statement, the objectives that support the vision are:

- To proactively identify and meet school travel demand safely, efficiently and sustainably, and to deliver transport infrastructure to meet school travel demand.
- To maximise the use of active and public transport modes to reduce car traffic before and after school day start and end times.
- To decongest the road networks around schools.
- To increase active travel to and from school in a safe transport environment.
- To enhance connectedness to the neighbourhood and community through safe travel to and from school.
- To empower children and young people to be safe road users now and into the future
- To meet the DoE's duty of care of students which extends beyond the school boundary, if there is foreseeable risk of injury or harm to students as they travel to and from school.
- To "reduce the administrative burden" on a school principal (managing kiss and drop behaviour, parents and community complaints, calling bus companies etc) by reducing the time and effort

for schools/principals to coordinate and liaise with council, TfNSW to create a safe, connected transport environment around their school.

B.1.5 Mode share targets

The proposed mode share targets for both schools are shown in Table C 1.

Table C 1 Mode share targets

Mode	Huntlee Public School			Huntlee High School		
	Baseline mode share	Moderate mode share	Reach mode share	Baseline mode share	Moderate mode share	Reach mode share
Walking	14%	14%	18%	10%	10%	12%
Cycling	2%	2%	3%	3%	3%	4%
Public transport	5%	22%	22%	19%	58%	58%
Private vehicle	79%	62%	56%	69%	30%	26%

B.2 School transport operations

As part of the NSW Department of Education's code of conduct, all personnel have a legal obligation to keep students safe and support their well-being. Student safety is most important around school bell times when the chances of physical harm resulting from accidents are increased. The appropriate management of school transport operations should be considered a high priority for the school, which falls under their duty of care. The school's duty of care is supported by a four-step process, as shown in Figure C 1 below.

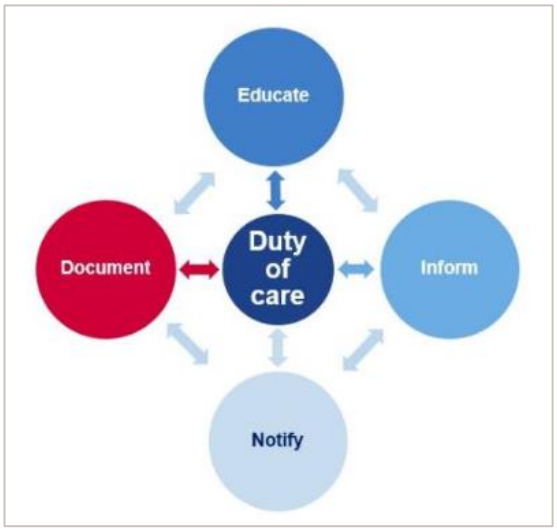


Figure C 1 Duty of Care Process

To support the Duty of Care Process shown above, Table C 2 details the aspects under the four headers that need to be considered by the school in managing risk and improving the overall safety and

well-being of students. Further information in support of this can be found on the NSW Department of Education website.

Table C 2 Considerations for managing risk and improving safety

Managing a School's Duty of Care and Road Safety
Educate
Which student groups need to be educated about road safety concerns? • Individual or small groups of students? • Year/stage group of students? • The whole school? How will road safety education be made relevant? This can be achieved through: • Localized, school-specific teaching and learning activities • Identified outcomes • A strengths-based approach.
Inform
Which parents/carers need informing about the road safety concern? The parents of: • Individual or small groups of students? • Year/stage group of students? • The whole school? How will it be communicated? • Social media • Newsletters • School website • Enrolment pack information • Orientation day • School noticeboard sign • Email • Meeting • Take-home activities/notes
Notify
If emergency services assistance is required, call them before calling the WHS Incident Report and Support Hotline. All WHS related incidents and injuries, including a near miss, must be reported in line with Incident Notification & Response Procedures. This includes any non-workplace incidents that impacts students, staff and the school community, e.g. travel to/from school. Situations that have the potential to cause injury to an employee, student, member of the community, volunteer, or contractor should also be reported to the Incident Report and Support Hotline. This includes any non-workplace incidents that impacts students, staff and the school community, e.g. travel to/from school. It is valuable to report all concerns to: • Highlight that a risk exists • Contribute to managing your duty of care • Get the concern noted so appropriate support and corrective actions can be initiated to prevent further incidents

Managing a School's Duty of Care and Road Safety
• Build a data profile that Health and Safety, and School Infrastructure NSW Directorates can use to being about change for your school. Who needs notifying if student/s are unsafe road users, or the infrastructure is unsupportive of a safe school site or school zone: • Parents/carers • Internally: school staff, P&C, school WHS committee, WHS Advisor, WHS Incident Hotline, Assets Management Unit, local Director Educational Leadership, local Road Safety Education officer. • Externally: Council Road Safety Officer or general manager, Transport for NSW, police highway patrol/liaison officer, council parking rangers, bus operator. Notifications can either be made by phone call, face to face informal discussion, formal meeting, email, or formal letters.
Document
Who will document, record and track the actions? • Class teachers, SASS staff, and school executive will be responsible for reporting these actions. • The school principal will be responsible for managing these actions.

B.2.1 Day-to-day school operations

Table C 3 details the transport site access that is active during day-to-day school operations. For this, appropriate measures should be considered to support students safely.

Table C 3 Day-to-day school operations

	On-site:	Adjacent-to-site	Management measures
Site entries, pedestrian and vehicle	Y	Y	N
Kiss-and-drop including Assisted School Transport Program	N	Y	Y
Buses	N	Y	N
Parking	Y	N	Y
Deliveries and service vehicles	Y	Y	Y

The following measures have been taken from the NSW Government website for managing school road safety. These measures will need to be implemented to appropriately manage student safety regarding the day-to-day school operations site access:

- Regularly review the school site entry and exit risk management plan
- Use various communication strategies to inform parents and carers about safe road user behaviours on site and in the school zone.
- Update casual teachers about student arrival and departure procedures.
- Assist vulnerable students entering and exiting the school safely.
- Where applicable, liaising with the School Crossing Supervisor and/or the Assisted School Travel Program providers on effective management.

- Label, number, or colour code access points for easier reference and recognition by students, families and staff, e.g. pedestrian entry and exits, kiss and drop area, bus travellers, cyclists, etc.
- Spread the arrival and departure of students and families across different pick up and drop off accesses to reduce congestion in any one spot, either on or off site.
- Use signage, social media, school website, not home or assemblies to inform students, families, staff and visitors of changes to entry and exit or pick up and drop off arrangements such as construction on site, hazards, and delays to public transport and school buses.

Running in parallel to these measures, parents should be encouraged to:

- Walk their children to school, where possible.
- If driving is unavoidable, drop off their children at kiss and drop zone to help reduce traffic congestion around the school site.
- Remind staff to maintain their own safety to reduce the risk of trips, slips and falls when supervising students at kiss and drop zones. For example:
    - Remain away from edge of the footpath
    - Do not stand on the road between vehicles to avoid crash injury.
    - Wear a high-visibility jacket when in or near to traffic environment
    - Ask drivers to wait until the child is properly buckled up, if the child can do it themselves, before driving off.
    - Remind teachers and other school staff they are not permitted to operate as a School Crossing Supervisor and control traffic. They can assist students to cross the road when it is safe to cross.

B.2.2 Transport encouragement programs

There are a range of measures which can be implemented by the school to encourage safe and sustainable transport access to and from the school. A summary of the measures which can be implemented at the schools are highlighted below.

School Student Transport Scheme (SSTS)

The school Student Transport Scheme provides eligible school students with free or subsidised travel on public transport to and from school and is dependent on where students reside and the availability of public transport. If a student does not qualify for free school travel, they may be able to buy a School Term Bus Pass for discounted travel on buses between home and school. Further information can be found on the TfNSW website.

Ride-to-School Day

National Ride2School Day is an annual event that encourages students to ride into school. it provides students with the opportunity to trial cycling into school, which can further increase uptake in the future. Further measures can be provided during Ride2School Day such as free breakfasts and bike tuning to encourage a greater number of participants.

B.3 Communication plan

The communications plan provides a range of initiatives and actions, including some to be completed and implemented before the opening of the new school buildings, that will help to chieve the mode share targets and reduce the overall car travel associated with the school these actions need to be reviewed regularly, at least annually, to review actions and refine them as the school community need may change overtime.

B.3.1 Channels

All communications should be promoted through the appropriate channels used by the school, to help target the widest audience possible. The recommended channels have been provided in the table below.

B.3.2 Messages

The following communications plan has been co-designed and developed across a number of School Transport Plans. The communications plan provides a guide for some of the messages that the School Principal and current staff involved with sustainable transport initiatives may communicate to promote the uptake of walking, cycling and public transport to school.

Table C 4 Sustainable travel communications plan

What	When	Which Channel	To Whom
Share the vision and targets for the number of students targeted to walk, ride, or take public transport to school	Before school opens and periodically throughout the year	• Social media • School website • Email • Newsletters	Staff, parents, and students
Share the walking, cycling, train and bus transport options to travel to the schools, drawing from the TAG. Note: Public school websites have standardised transport information available to students and parents.	On the school website at all times	• Social Media • School website • Email newsletters	Staff, parents, and students
Promote and encourage students to use discounted or free travel by signing up to the SSTS to encourage use of public transport as a sustainable travel option.	Regular periodic updates, including at the start of each term	• Social Media • Newsletters	Students and parents
Promote and encourage participation in National Ride2School Day.	Prior to the annual event in March.	• Social media	Staff, parents, and students

What	When	Which Channel	To Whom
Promote Walk Safely to School Day. Materials available at www.walk.com.au	Prior to the annual event in May	• Social media	Staff, students and parents (targeted at primary school)
Communicate the expected standards of behaviour for Kiss n Drop and Road Safety	Regularly, multiple times each term	• Social media	Students and parents
Conduct discussions with Road Safety officers and School Principals about the access and operations at the Kiss and Drop zone.	Before school opens and periodically throughout the year	• School website • School Noticeboards	Students and parents
Communicate links to NSW Department of Education Road Safety Website, which is typically included in all public-school websites.	Regularly, multiple times each term	• School website • Social media	Students and parents
Communicate road safety education YouTube video links including: Safety – Link School Zone – Link School Crossings – Link	Regularly, multiple times each term	• School website • Social media	Students and parents
Communicate external resources supplied by groups such as Bicycle NSW to help reduce barriers to cycling	Regularly, multiple times each term	• School website • Social media	Students and parents
Communicate regarding the availability of vouchers which can be applied for through the NSW Government Active Kids Program. Which includes vouchers for sports and recreation purposes up to the value of $50 per child.	Before school opens and periodically throughout the year	• Online school communication channels (e.g. Facebook page, newsletters)	Staff, parents, and students

B.3.3 Travel Access Guide

A Travel Access Guide (TAG) provides suggested safe and accessible options for travelling to school. The guide provides advice on safe access initiatives, site access, public transport use, bicycle parking and much more. A TAG will need to be produced as part of the school reopening to provide parents with information relevant to:

- Pedestrian scooter parking
- Bicycle parking
- Carpool parking
- Parking management
- End-of-trip facilities (staff)
- Flexible and reconfigurable spaces
- Provision of bubblers and taps to encourage water drinking and less waste.

The TAG should also provide supportive measures and messages that can be communicated to parents and carers which help encourage changes in attitude towards forms of transport mode choice. The following are examples of messages which can be used to achieve this:

- The location of the kiss and drop zone being on the northern side of Constable Street ie no pick-up and drop-off is to occur on the southern side or on Escarpment Drive
- Get involved in using active and public transport to school with your student
- Help your student practice the active and public transport they are learning (try for part trip or whole trip)
- Speak to staff and government transport stakeholders about travel to school programs and infrastructure
- Use active and public transport from school drop-off to work
- Report transport issues as the concern arises (e.g. Send Snap Solve app, Council email, phone number)
- Improved quality of life (increased healthy lifestyles, well-being, physical activity)
    - Life-long learning opportunities
    - Transport as a learning and resilience-building opportunity
    - Additional learning opportunities
    - Educational opportunities for parents and the community
    - Joint/community use for transport programs.

B.4 Data collection and monitoring

For the School Transport Plan to be effective it must be reviewed on a regular basis. It is important to ensure that the School Transport Plan is meeting its objectives and having the intended impact on car use and transport choices for the school's staff and students. The School Transport Plan should be reviewed on an annual basis with staff and student travel surveys. The School Transport Plan should be updated and changed to reflect changing circumstances and local context/ facilities.

B.4.1 Data collection

To monitor the School Transport Plan, a travel mode questionnaire should be conducted for all staff and students at a regular basis. An initial survey should be used to provide the baseline for travel planning programs. Subsequent survey results should be reported annually by the schools and used to inform funding allocation for successful programs/ removal of unsuccessful programs. Based on the review, the School Transport Plan should then be updated as noted previously.

B.4.2 Ongoing feedback framework

The School Principal or staff will manage the ongoing feedback framework to continuously improve the oversight of sustainable travel outcomes for the schools in concert with relevant school stakeholders. This may include activities such as:

- Reviewing the adequacy of bicycle racks required periodically.
- Observing road safety activity outside the school grounds to identify any improvements required.
- Observing how pathways are being used, or whether pathway design is inadequate or in the wrong location (for example if 'goat tracks' are worn through particular areas, should a request to Council be put in to improve the pathway in future works programs.
- Observing the operation of any future school buses and the drop-off/pick-up facilities for any potential safety concerns. Make recommendations up to Transport for NSW, Cessnock Council, and the bus operator accordingly.
- Liaising with the Cessnock Council Road Safety Officer concerning the management of parking behaviours around the school.

Responding to any other feedback from Transport for NSW, Cessnock Council, Police, residents, teachers, parents or students that might arise from time to time.

B.4.3 Report findings

Findings are to be reported back to the working groups detailed in the following chapter. Findings are to be presented by linking back to the communications plan and governance arrangements discussed. The reporting process will provide the results of the monitoring process with SINSW, Cessnock Council, and TfNSW to demonstrate the effectiveness of the School Transport Plan approach to expand, revise, strengthen or improve the use of this tool across the portfolio transport programs (report to SINSW, TfNSW). Points of feedback can address issues such as:

- Adopting or revising programs to increase sustainable transport use (school)
- Installing additional infrastructure to accommodate sustainable transport demand (school, council and/ or state government)
- Web tools or apps that enable the school community to report transport issues / missing links (Send Snap Solve or Social PinPoint).

B.5 Governance framework

To capitalise on the potential of the School Transport Plan, ongoing engagement with transport stakeholders is required. On-going engagement with internal and external stakeholder groups will be required with the groups detailed in Table C 5.

Table C 5 Internal and external stakeholders

Internal Working Group	**A working group with school leadership, state government agencies and local government**	
External Working Group	TfNSW	• Active travels to schools • Bus Service Planning • Bus Contract Manager • Assisted School Transport Program • Subsidised School Transport Scheme
	Cessnock Council	• Transport Planning Manager • Active Travel Road Safety Officer • LGA Travel Coordinator • Sustainability
	SINSW/Other	• Travel Coordinator • Principal • Road Safety Education Officer • AMU Representative • Private bus operator

B.5.1 Travel Coordinator

A Travel Coordinator is required for the duration of construction and the first year of post-occupancy, whilst transport programs must be implemented to achieve travel behaviour change. The role will initially be funded by the project during delivery. After year 1, subsequent arrangements for the carriage of this role will need to be arranged between SINSW, DET and TfNSW.

The Department of Education and the School Principal will progress the appointment of a Travel Coordinator for the schools. This includes determining the role and procuring a contractor, or other to promote, coordinate and monitor the implementation of the sustainable travel initiatives. The role of the Travel Coordinator will be enforced until one year after the completion of the upgrade works.

The Travel Coordinator will be responsible for implementing the actions shown Table C 6. The actions provide the means to encourage sustainable transport options at the schools and will need to be reviewed regularly, at least annually, to review the actions and refine them as the school community needs may change over time.

Table C 6 Transport encouragement programs

Strategy	Action	Target Audience	Timeframe	Responsibility
Enabling Active Travel Through Resourcing				
Walk Safely to School Day	Promote and take part in 'Walk Safely to School Day'. Further information: www.walk.com.au	Staff and primary school students	Annually	Travel Coordinator
School Student Transport Scheme (SSTS)	Promote this scheme among the school community. Applications to the SSTS, for subsidized school term bus pass (students living beyond 2.3 km walking distance from the school or in years K to 2), are used as an indicator for demand for dedicated school buses by Transport for NSW. Therefore, an uplift in applications to the scheme is needed to support the continued provision of school buses to help achieve the school travel targets.	Parents and students (both schools)	Annually	Travel Coordinator
Reduce Car Travel				
Communications Plan	Discuss and refine the Communications Plans and key messages with the School Principals and TfNSW to encourage a higher usage of non-private vehicle modes from staff, parents and students.	Staff, parents and students (both schools)	In 2024 and then annually	Travel Coordinator
Staff car-pooling	Establish and organise a car-pooling scheme that enables staff to share their car trip to the school with more than one person in the car, reducing cars travelling to the school.	All staff (both schools)	In 2024 and ongoing	Travel Coordinator
Parking management plan	Liaise with the Principal and Cessnock Council to develop policies to manage the demand for staff parking using the on-site spaces and on-street parking in the surrounding streets if required.	All staff (both schools)	In 2024 and ongoing	Travel Coordinator and Cessnock Council
Additional Actions				
Inspire the school community towards using active and public transport to travel to school	Communicate to Staff and Students key messages to promote sustainable travel including targets and actions outlined in the School Transport Plan in the Communications Plan.	Staff, students and parents (both schools)	Per communication plan	Travel Coordinator to prepare messaging for the School Principals to send out
Travel Access Guide (TAG)	Distribute a travel access guide and publish on the school website and other school communication mediums so that it is easy to understand the options to travel to school using active modes or public transport.	Staff, students and parents (both schools)	Per communication plan	Travel Coordinator to prepare for the School Principals to send out
Other incentives for staff to use active and public transport	Propose and discuss the following initiatives with the School Principal to consider and implement: • Pre-loaded Opal cards during orientation.	Staff at both schools	Start in Term1 following occupancy and continue throughout the school year	Travel Coordinator

Strategy	Action	Target Audience	Timeframe	Responsibility
	• School-subsidised panniers or backpacks for staff committed to active travel. • Salary sacrifice options for purchases of bikes or other micro-mobility options. • Time in staff meetings to share tips and support for staff wanting to start cycling. • Wayfinding at the school with directions to the End of Trip facilities. • A role for a school sustainable travel champion that focuses on modelling the desired behaviours and positive communication around active and public transport.			
Travel Surveys for staff and students	• Use travel surveys to be issued to staff and students to obtain workforce data analysis (including staff residential postcodes) to identify changes to the actual staff/student travel origin and destination patterns, to inform strategies that help to reduce car parking demand for staff and students to get to and from the site. • Collaborate with the School Principal on the method and timing to circulate the travel surveys to staff and students as appropriate.	Staff, students and parents (both schools)	Start in Term1 following occupancy and continue throughout the school year	Travel Coordinator

B.5.2 Internal school working group

The Internal School Working Group is to be formed with the school community before construction commencement. This group is to be a sounding board for the Travel Coordinator and school leadership. The Road Safety Education Officer, AMU and WHS are to make up the core participants of this group.

B.5.3 External transport working group

The external Transport Working Group is to follow on from the Transport Working Group formed in the development of this Plan. The Department of Education and the Travel Coordinator should identify and advance relationships with these stakeholders including Council, bus operators and TfNSW – to govern transport issues and opportunities during the implementation of the Travel Plan. If this group already exists due to a previous SINSW project, amend the Terms of Reference to include this school project. Feedback during the external working group should highlight:

- If students are spilling out onto the road, new footpaths or pedestrian crossings required
- If road safety issues are raised by parents or staff, a Road Safety audit may be required to address issues
- If buses are turning away students because the buses are full, ie new bus services are required.

Document arrangements for this group are to include:

- Meeting regularly ie monthly / quarterly.
- Confirm annual travel demand changes (kindergarten starting, and year 6 graduating).
- Report transport usage.
- Inform updates to the School Transport Plan.
- Seek funding for reported missing links or operational issues.
- Collaborative response to key issues.

Appendix C Preliminary Construction Traffic Management Plan

C.1 Introduction

This Preliminary Construction Traffic Management Plan (CTMP) has been prepared to support a Review of Environmental Factors (REF) for the NSW Department of Education (The Department) for the construction and operation of the new primary school and high school in Huntlee (the activity).

C.1.1 Site description

The current street address is 32 Persoonia Boulevard and part of 1823 Wine Country Drive, North Rothbury. The legal description of the site is 495/DP1246814 (Primary School), Lot 449/-/DP1289939 and Lot 696/-/DP1263808 (the High School). The Primary School site is regular in shape is has a total approximate area of 3 hectares. The High School site is irregular in shape and has a total approximate area of 5 hectares.

The site is approximately 18km northwest of Cessnock and 20km southeast of Singleton within the Hunter Valley. The catchment area for the proposed primary school is bound by the respective catchments of Kirkton Public School to the northwest, Branxton Public to the north and Greta Public School to the east. The high school intake catchment is bound by the catchments of Singleton High School to the north west, Rutherford Technology High School, Maitland Grossman High School and Maitland High School to the east.

The immediately surrounding land is described as follows:

- **North:** Land to the north currently includes areas of vegetation with Branxton Town Centre located on the northern side of the Hunter Expressway. Branxton Station is also located along the Hunter Trainline located 1km to the north.
- **East:** Low density residential subdivision has occurred to the east of the site and accommodates recently constructed detached dwelling houses serviced by new roads. Huntlee Shopping Centre and Huntlee Learning Centre are located to the northeast of the site providing services to the new residential areas.
- **West:** Low-density residential subdivision has occurred to the west of the site.
- **South:** Areas to the south of the site are currently undeveloped land and includes areas of existing vegetation.

Figure 8-2 Aerial Photograph of the Site

Source: Urbis, 2025

C.1.2 Project background

Huntlee is a new Urban Release Area gazetted by the Minister for Planning on the 31st of December 2010. Huntlee is located 20km north of Cessnock and 25km southeast of Singleton. The amendment to Schedule 3 of the former State Environmental Planning Policy (Major Development) 2005 identified zoning and land use controls.

The school sites are located within Huntlee Town Centre Stage 1, approved under MP10_0137 by the Planning Assessment Commission (PAC) under the delegation of the Minister for Planning and Infrastructure on the 24 April 2013.

The development approved under MP_0137 (as modified) includes the following:

- Subdivision to create 2,272 residential allotments
- 123 large lot residential allotments
- 94 infrastructure, community, commercial and mixed-use allotments
- 2 allotments for a primary school and a high school
- Landscaped areas, drainage, public open space and recreation areas
- Associated bulk earthworks, and
- Infrastructure including roads, drainage works and utility services provision.

As part of the rezoning, Huntlee was required to enter into a voluntary planning agreement with the Minister for Planning and the Minister for the Environment (SEPP VPA). Notably, pursuant to the SEPP VPA, Huntlee was required to provide Education Contribution Land within the town centre for a future primary school. The developer was required to also make various environmental conservation contributions to offset the impacts of the Development.

The VPA was amended in 2019 due to the approval of MP_0137_MOD 9. This modification was approved on 13 December 2019 and changed the location and configuration of the Education Contribution Land. The VPA includes the provision of a primary school. MOD 15 subsequently approved on the 7 December 2020 subdivided the education super lot located within the Town Centre stage 5 area into two lots. These two lots now make up the subject PS and HS sites.

C.1.3 Proposed activity description

Main Works Contractor Delivery

Construction of a new preschool, primary school and high school in Huntlee including earthworks, public domain works and landscaping.

Specifically, the proposal involves:

Primary School

- 1 x Preschool for 60 children.
- Two (2) x three (3) storey Primary School buildings and one (1) x one (1) storey hall building for 500 students including:
  - General Learning Spaces (GLS)
  - General Learning Spaces (Support) (SLU)
  - Multipurpose Rooms
  - Canteen
  - Library
  - Administration area

High School

- Three (3) x three (3) storey buildings, one (1) x Hall building (two (2) storey equivalent height) and one (1) x one (1) storey construction shed for 1,000 students including:
  - General Learning Spaces (GLS)
  - General Learning Spaces (Support) (SLU)
  - Science Learning Hubs
  - Visual Arts Learning Hubs
  - Wood and Metal Technology Learning Hubs
  - Food and Textiles Learning Hubs
  - Health and PE Learning Hubs

  - Performing Arts Learning Hubs
  - VET Hospitality and Construction Hubs
  - Multipurpose Rooms
  - Library
  - Gymnasium
  - Administration Areas
  - Staff Support Areas
- Landscaped open space including:
  - Playing Fields
  - Covered Outdoor Learning Areas (COLAs)
- Car parking
- Waste areas
- Public domain upgrades.

C.2 Construction traffic management plan

C.2.1 Overview

This Preliminary CTMP aims to ensure the safety of workers and road users in the vicinity of the construction site. The primary objectives of the Preliminary CTMP include the following:

- To identify the need for adequate and compliant traffic management requirements within the vicinity of the school.
- To ensure continuous, safe and efficient movement of traffic for both the general public and construction vehicles.
- Establishment of a safe pedestrian environment around the site.
- To inform the Contractor and set the ground rules for managing construction traffic associated with the site.

C.2.2 Key objectives

The overall principles of traffic management during the construction activity include:

- Provide an appropriate and convenient environment for pedestrians
- Minimise the impact on pedestrian movements
- Maintain appropriate capacity for pedestrians at all times on footpaths around the site
- Maintain appropriate public transport access
- Maintain current levels of parking within the precinct
- Maintain permanent access to/ from the hospital accesses for emergency services
- Restrict construction vehicle movements to designated routes to/ from the site
- Manage and control construction vehicle activity around the site
- Minimise impacts to general traffic in the vicinity of the site.

C.2.3 Work hours

It is anticipated that work associated with the development will generally be carried out between the following hours of construction:

- Monday to Friday (other than public holidays) (7:00am to 6:00pm)
- Saturday (8:00am to 1:00pm)
- Sunday/ public holiday (no work).

In addition to regular work hours, there will be occasions where specific out-of-hours work is required. The contractor will be responsible for instructing and controlling all sub-contractors regarding the hours of work. Any work conducted outside of the approved construction hours would be subject to specific prior approval from Council.

C.2.4 Construction worker parking and traffic

It is expected that up to 200 construction workers would be on site during peak construction activities. Construction worker parking is to be provided on site where possible. Public parking may be available

on surrounding local streets such as Persoonia Boulevard, Morningstar Crescent and Reading Road for any parking spillover. If at the time of construction, local residents have moved into surrounding areas, construction parking overspill is not considered to have a significant impact on local residents because of the proposed low-density residential nature of the land uses on the streets within close proximity of the site.

Any construction worker arrivals and departures by vehicle would typically be outside of road network peak hours and as such, are unlikely to impact the surrounding road network. The Principal Contractor would be required to outline a schedule of worker start and finish times and demonstrate that this does not have any significant impact on local traffic activity. It is also expected that the Principal Contractor would be required to implement measures to reduce worker car travel, such as shuttle buses from key transport nodes or designated remote pick-up points as necessary.

C.2.5 Construction traffic volumes

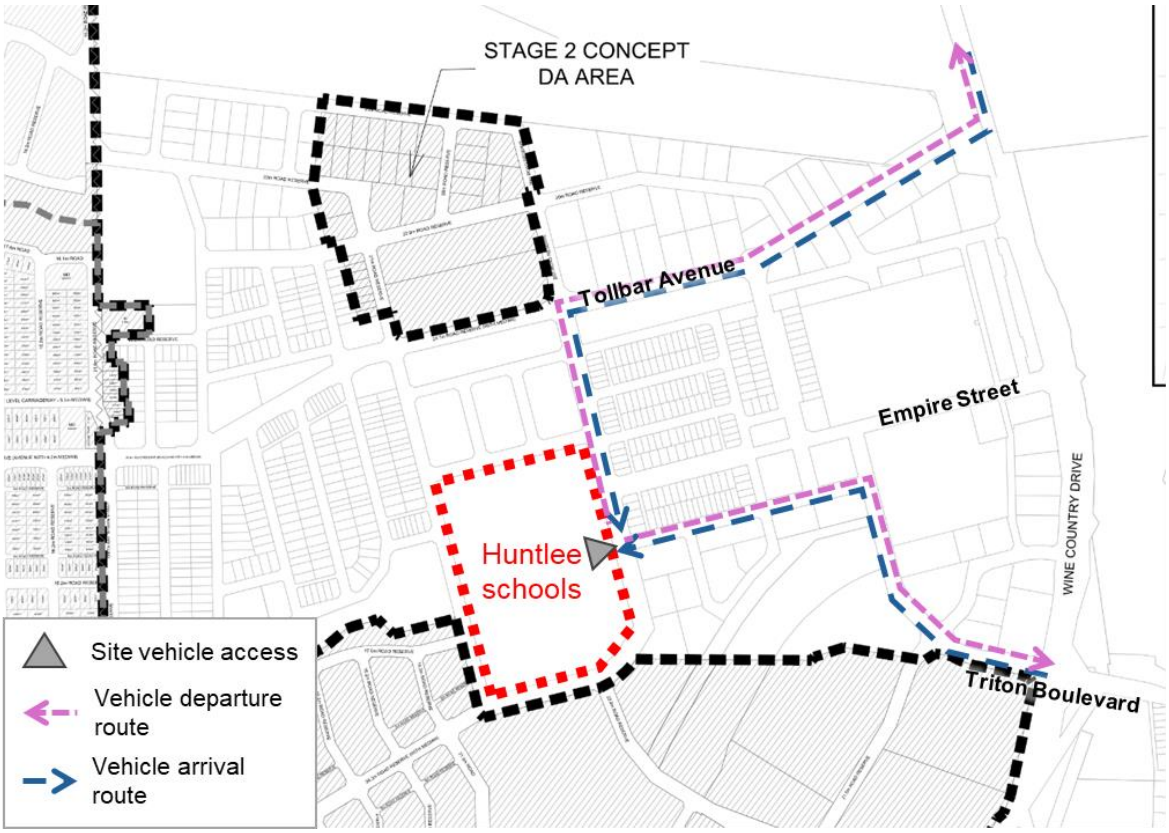
The site will have various types of construction vehicles accessing the site. The largest standard construction vehicles regularly accessing the site would include 12.5-metre heavy rigid vehicles. It is likely that a limited number of larger special-purpose vehicles (e.g. floats for plant and equipment, large mobile cranes) will be required, however, these would be subject to a separate oversize and over-mass application process, with an analysis of the specific vehicle access and manoeuvring requirements.

It is expected that for most of the project, no more than 20 heavy vehicles (40 heavy vehicle movements) are expected per day. This is not expected to have a significant impact on the surrounding road network.

C.2.6 Site access

It is assumed that construction vehicles will enter the site via an entry on Persoonia Boulevard for constructions works as indicated in the figure below. Site access points are to be suitably selected with adequate clearance ie 10m from the intersections and all vehicle movements to and from site access points are to be in forward motion direction, limiting the need for reversing manoeuvres wherever possible.

As part of the detailed CTMP, a traffic guidance scheme (formerly a traffic control plan) will be prepared in accordance with the principles of the Transport for NSW Traffic Control at Work Sites manual. The traffic guidance scheme (TGS) would primarily show where “Trucks” signs would be located at specific locations (such as uncontrolled intersections) along the approved truck routes to warn other road users of the increase in construction vehicle movements.



C.2.7 On street work zones

No on-street works zones are proposed at this stage. However, this may change subject to the proposed methodology of the appointed contractor.

C.2.8 Construction vehicle routes

Generally, construction vehicles will have origins and destinations from a wide variety of locations throughout the Hunter Region. However, all construction vehicles will be restricted to the State and Regional Road network where practicable. It is expected that vehicles will approach and leave the site Using Wine Country Drive. Construction vehicles should be advised to follow the routes shown in the figure above. No queuing or marshalling of construction vehicles will be permitted on public roads.

C.2.9 Traffic guidance scheme

Detailed information for work site operations is contained in the Traffic Control at Work Sites manual version 6.0 (Transport for NSW, 2020). The control of traffic at work sites must be undertaken with reference to Workcover requirements and any other Workplace Health and Safety manuals.

The Principal Contractor will be required to provide TGSs for the proposed works which will generally consider the following:

- Construction vehicle activity, including the loading/ unloading of trucks to be conducted within the work site.
- Pedestrians and all passing vehicles will maintain priority.

- A clear definition of the work site boundary is to be provided by the erection of site fencing and/ or A and B Class hoardings around the site boundaries.
- All construction vehicle activity will be minimised during peak periods, where possible.

C.2.10 Pedestrian and cyclist management

During the construction period, pedestrian and cyclist movements are to be maintained as much as possible. Where works require the closure of an existing pedestrian route, a suitable alternative is to be provided. Class A hoarding/ ATF fencing would be provided between pedestrian paths and any work site. Where overhead works are occurring, B-Class hoarding will be provided where pedestrian movement is being maintained. It is not expected that cyclist or pedestrian routes would be majorly impacted by the proposed construction works.

Where pedestrian or cyclist routes are affected, accredited traffic controllers will be provided to manage the impact and minimise conflict between vehicles and pedestrians or cyclists surrounding the site.

C.2.11 Traffic movements in adjoining areas

No adverse effects are expected from the movement of heavy vehicles through adjacent residential areas.

C.3 Mitigation measures

The following table outlines mitigation measures to potential issues during construction activities.

#	Issue	Mitigation measure	Timing
1	Management of construction related activities on the surrounding transport network	A Construction Environmental Management Plan (CEMP) is to be prepared and implemented having regard to the Environmental Management Guidelines for Construction Procurement (Edition 4), and is to include where relevant, but not limited to, the following: • Construction Traffic and Pedestrian Management Plan • Construction Worker Transport Strategy	Construction
2	Construction working hours impacting local residential area	The undertaking of any construction work, including the entry and exit of construction and delivery vehicles at the site, is restricted to the following standard work hours: (a) Monday to Friday inclusive: Between 7.00am to 6.00pm; (b) Saturday: Between 8.00am to 1.00pm; and (c) Sunday and Public Holidays: No work permitted.	Construction
3	Limited construction worker parking accommodated on site	Construction workers are to be guided to where appropriate parking is available around the site on induction, and also be encouraged to use public transport services. Appropriate arrangements are to be made for any equipment/ tool storage and drop-off requirements. The Principal Contractor is required to outline a schedule of worker start and finish times and demonstrate that this does not have any significant impact on local traffic activity. It is also required that the Principal Contractor implement measures to reduce worker car travel, such as shuttle buses from key transport nodes or designated remote pick-up points as necessary.	
4	Addition of construction related vehicles to the local transport network	Construction vehicles are to follow specified routes (see section C.2.6). The Principal Contractor will be required to provide Traffic Guidance Schemes for the proposed works.	Construction
5	Obstructions to pedestrian and cyclist movements	Where pedestrian or cyclist routes are affected, accredited traffic controllers will be provided to manage the impact and minimise conflict between vehicles and pedestrians or cyclists.	Construction
6	Potential safety concerns associated with construction vehicle traffic	Prior to construction commencing, the Contractor is to prepare a detailed Construction Traffic Management Plan to the satisfaction of Council and DoE.	Construction

Appendix D Travel Access Guide

Huntlee High School

Travel Access Guide

Effective: August 2025

Project overview

Our school community of parents, staff and students live within a reasonable walk, cycle or bus trip of the school. This Travel Access Guide provides suggested safe and accessible options for travelling to school.

Active ways to get to school

Walking is an active and healthy way to get to school

- Always use crossing facilities such as traffic lights, pedestrian crossings, or a school crossing. Remember to Stop, Look, Listen and Think when crossing the road.
- Hold an adult's hand when crossing the road.
- Share the footpath and walk on the left.
- Look out for cars entering or leaving driveways.
- Put distractions away, such as phones and earphones.

Ride your bike

- Always wear a correctly fitted Australian standards approved helmet when riding your bike.
- Ride to the left on footpaths.
- Take extra care when crossing roads, even when using a pedestrian crossing.
- Check your wheels, handlebars, brakes and frame are in good condition before riding.
- Give 1 metre space when riding past pedestrians

Ride your scooter

- Always wear a correctly fitted Australian standards approved helmet when riding your scooter.
- Wear a bright-coloured bag, clothing or reflectors such as a vest to be highly visible.
- Give pedestrians right of way on footpaths.
- Check your wheels, handlebars, brakes and frame are in good condition before riding.

Kiss and drop expectations

- Pick up/drop off zone allows a maximum 2 minutes of stopping time, and is accessible on school side of Persoonia Boulevard.
- Make sure children use the Safety Door (rear footpath side) when getting in and out of a car.
- U-turns are not permitted around the pick up/drop off zone.
- Parents/carers must not stop in a No Stopping zone for any reason or for any length of time. No stopping restrictions apply at the school's zebra crossing and Bus Zones.

School Bell Times

- 8:30am-2:30pm (TBC)

For more information contact:

School Infrastructure NSW
Email: schoolinfrastructure@det.nsw.edu.au
Phone: 1300 482 651
www.schoolinfrastructure.nsw.gov.au

NSW GOVERNMENT

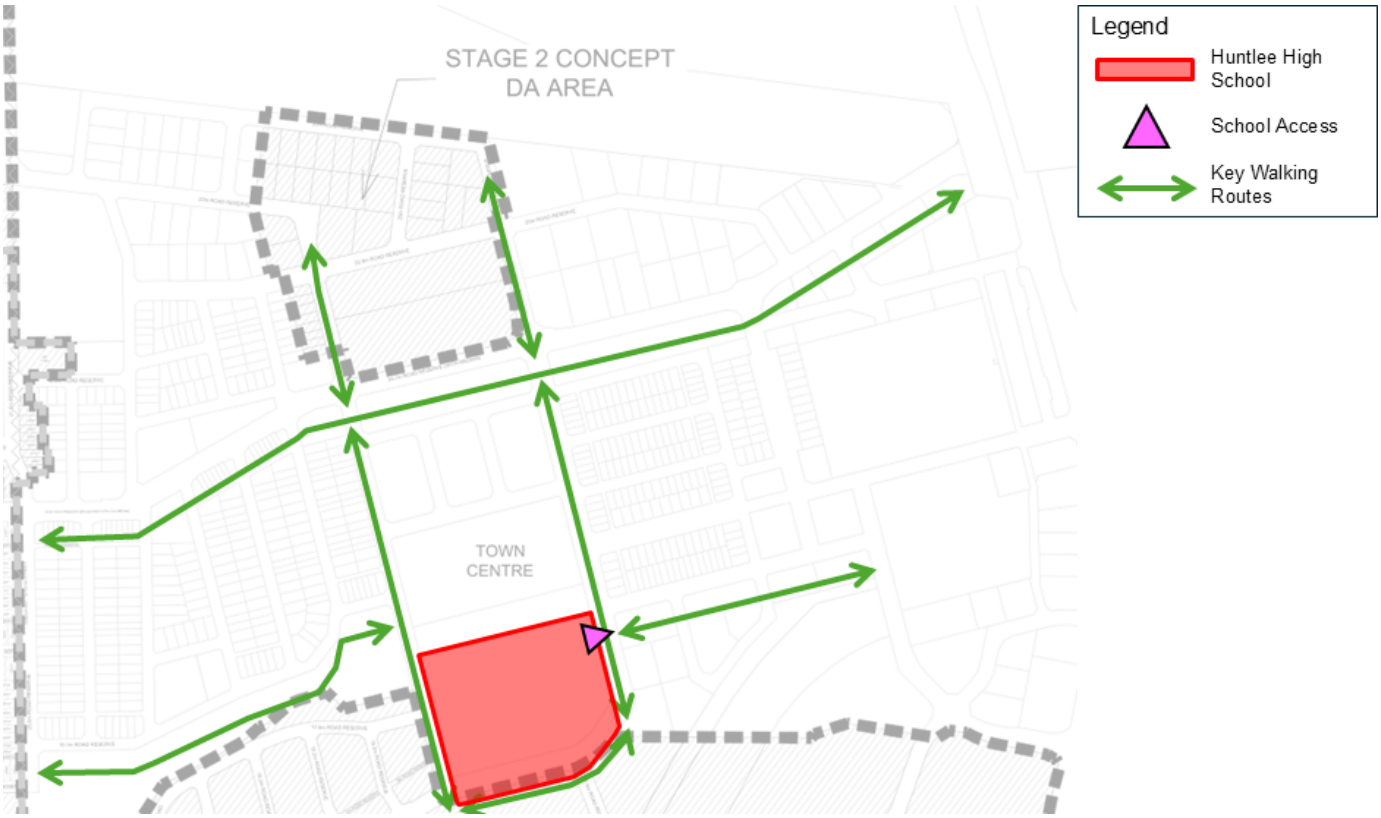
Active Travel Map:

- Students can walk or cycle on footpaths on neighbouring streets of the school.

  Reminder: children under the age of 16 are allowed to cycle on the footpath, keeping them safer and more protected from road traffic.
- Students on bicycles are required to dismount and walk their bicycles to the bike parking area once they enter the school grounds.

Car Parking and Road Safety

- Park safely and turn legally, even if it means walking further to the school entrance.
- Give way to people walking or cycling particularly when entering and leaving driveways.
- Always look around carefully, check mirrors and blind spots for children and other cars before:
  - Opening your door
  - Slowly reversing
  - Pulling out from the side of the road or a parking area.



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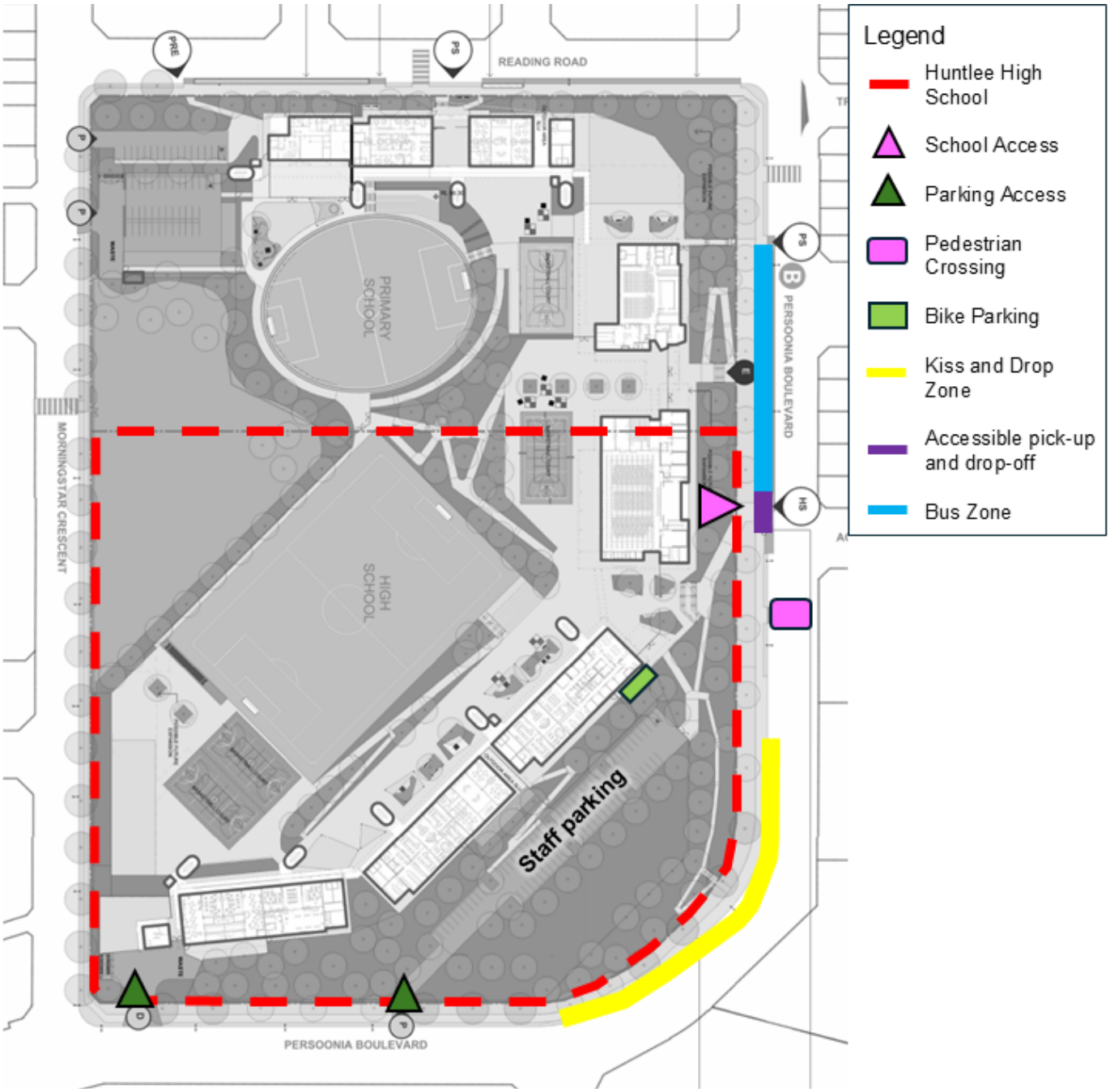
NSW GOVERNMENT

School Access



- The main pedestrian access to Huntlee High School is via the entry point on Persoonia Boulevard.
- Bicycle parking is provided within school grounds.
- Parents/carers can pick up/drop off students at kiss and drop zone located on Persoonia Boulevard.

For more information contact:

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Phone: 1300 482 651
www.schoolinfrastructure.nsw.gov.au

Public Bus Routes

Public bus services are to be determined closer to school opening.

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Where do you ride?

Footpath/shared path/cycleway:

- Children under 16 can ride on a footpath.
- Adults supervising children under 16 can also ride on the footpath.
- Be careful of cars entering and exiting driveways.

Watch out for pedestrians, other riders and animals.

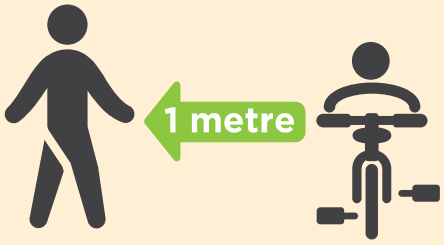
Look out for pedestrians on shared paths.

Crossing the road:

- Be extra careful.
- Walk your bicycle when you cross at a pedestrian crossing.

Give a metre:

Give pedestrians 1 metre of space when riding past.



3 steps to follow when riding a bike:

Clip, check, chime.

Clip your helmet

1

You must always wear a helmet when riding your bike.

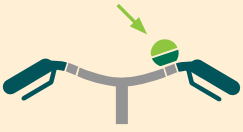
Check your brakes

2

Make sure your brakes are working.

Chime your bell

3



If you pass another rider or pedestrian, chime your bell.

Things to remember

- Always ask your parents permission to ride.
- Loose clothing and items can get caught in your wheels. Secure any loose items, like backpack straps

- Shoes with a good tread on the soles will help you grip the pedals and protect your feet. Make sure your laces are tied.

Always remember to watch out for hazards

1. Wet leaves
2. Big puddles
3. Storm grates
4. Gravel or rocks
5. Little kids
6. Animals
7. Changes in the road/ footpath/cycleway surfaces

For more information contact:

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NSW GOVERNMENT

SELECT AN ACTIVITY AND GET GOING!

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Phone: 1300 482 651
www.schoolinfrastructure.nsw.gov.au

NSW GOVERNMENT

Additional information

Something broken on the way to school?

Use the Snap Send Solve app or website to report issues to the people who can fix them.

Things like abandoned trolleys, broken footpaths or water leaks can all be reported in the app.

Download it today from the App Store or Google Play. Or visit **www.snapsendsolve.com**

Get a discount on your Bicycle NSW membership

Bicycle NSW is offering a 15% discount on membership for families at our school. This includes insurance and discounts for recreational bike rides.

Take up the offer today:

- Visit bicyclensw.org.au
- Sign up for a membership
- Use this discount code for 15% off your membership:

nswtag

The code expires on 31 May 2023.
Don't miss out!

bicycle NSW

Benefits of not using a car to travel to and from school

Did you know children who live within 2 kilometres of school are often driven to school?

That means many NSW children could be missing out on the physical, social and mental benefits of active travel - walking, riding or using public transport.

Additionally, even active travel part way for one day per week can make a difference to our local traffic congestion.

We can help bring these positive changes to our local community by choosing active ways to get to school.

Apply for a school travel pass

Depending on where you're travelling, you may receive a free school travel pass, a School Opal card, or both or travel between home and school on NSW public transport. As a general guide:

- Students who live 1.6km away from the school or further are eligible for free bus travel to school.
- Students who live within 1.6km radius of the school for a fee of approximately $55 per year can receive subsidised school travel.

Check your eligibility for a school travel pass here: https://www.service.nsw.gov.au/transaction/apply-school-travel-pass#eligibility

Safe travel

Parents and carers are responsible for their child's safety on the way to and from school.

Parents and carers can reinforce what their children learn at school by planning and using safe school travel routes, model safe considerate behaviour and always follow the road rules. Young children, in particular, require active supervision by an adult whenever they are in a traffic environment.

Remember — road safety is everyone's responsibility.

For more information contact:

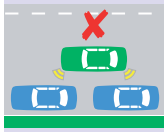
School Infrastructure NSW
Email: schoolinfrastructure@det.nsw.edu.au
Phone: 1300 482 651
www.schoolinfrastructure.nsw.gov.au

NSW GOVERNMENT

Parking and traffic rules in school zones

You need to take extra care when driving and parking in school zones. Make sure that you and your child understand the road rules. If you break the traffic rules in a school zone you are putting not only your child but other children at risk. The parking and traffic rules around our schools are there to protect your children. If you break the rules you will be fined. **Please choose safety over convenience.**

QUICK REFERENCE GUIDE TO IMPORTANT SAFETY TRAFFIC RULES

ZONE	WHAT DOES IT MEAN?	WHY IS IT THERE?	PENALTY	DEMERIT POINTS*
	You cannot stop in a **NO STOPPING** zone for any reason (including queuing or waiting for a space). 	**Keeps clear sight lines between drivers and children / pedestrians.**	EXCEEDS **$349**	(School Zone) **2**
	You can stop in a **NO PARKING** zone for a max. of two minutes to drop off and pick up passengers. If no spaces are available you cannot queue on the road way or in any other zones while waiting for a space. You will need to drive away and park elsewhere, only returning when there is space to pull up. You must stay within 3 metres of your vehicle at all times and cannot leave your vehicle unattended.	**Provides a safe place for children / pedestrian set down and pick up.**	EXCEEDS **$194**	(School Zone) **2**
	You must not stop or park in a **BUS ZONE** for any reason (including queuing or waiting for a space) unless you are driving a bus. If times are shown on the sign, you are not allowed to stop during those times.	**Provides a safe place for large buses to set down and pick up school children.**	EXCEEDS **$349**	(School Zone) **2**
	You must not stop on or within 20 metres before a **PEDESTRIAN CROSSING** or 10 metres after a crossing unless there is a control sign permitting parking.	**So drivers can clearly see pedestrians on the crossing.**	EXCEEDS **$464**	(School Zone) **2**
	**DOUBLE PARKING** You must not stop on the road adjacent to another vehicle at any time even to drop off or pick up passengers.	**Double parking blocks visibility and forces other cars to go around you.**	EXCEEDS **$349**	(School Zone) **2**
	You must not stop on any **FOOTPATH** or **NATURE STRIP**, or even a **DRIVEWAY** crossing a footpath or nature strip for any reason.	**You could easily run over a child or force pedestrians onto the road to get around you.**	EXCEEDS **$194**	(School Zone) **2**

Please note: The above information is current as of 1 January 2020.
Penalties set by NSW State Government and reviewed on 1 July each year.

For more information contact:

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Phone: 1300 482 651
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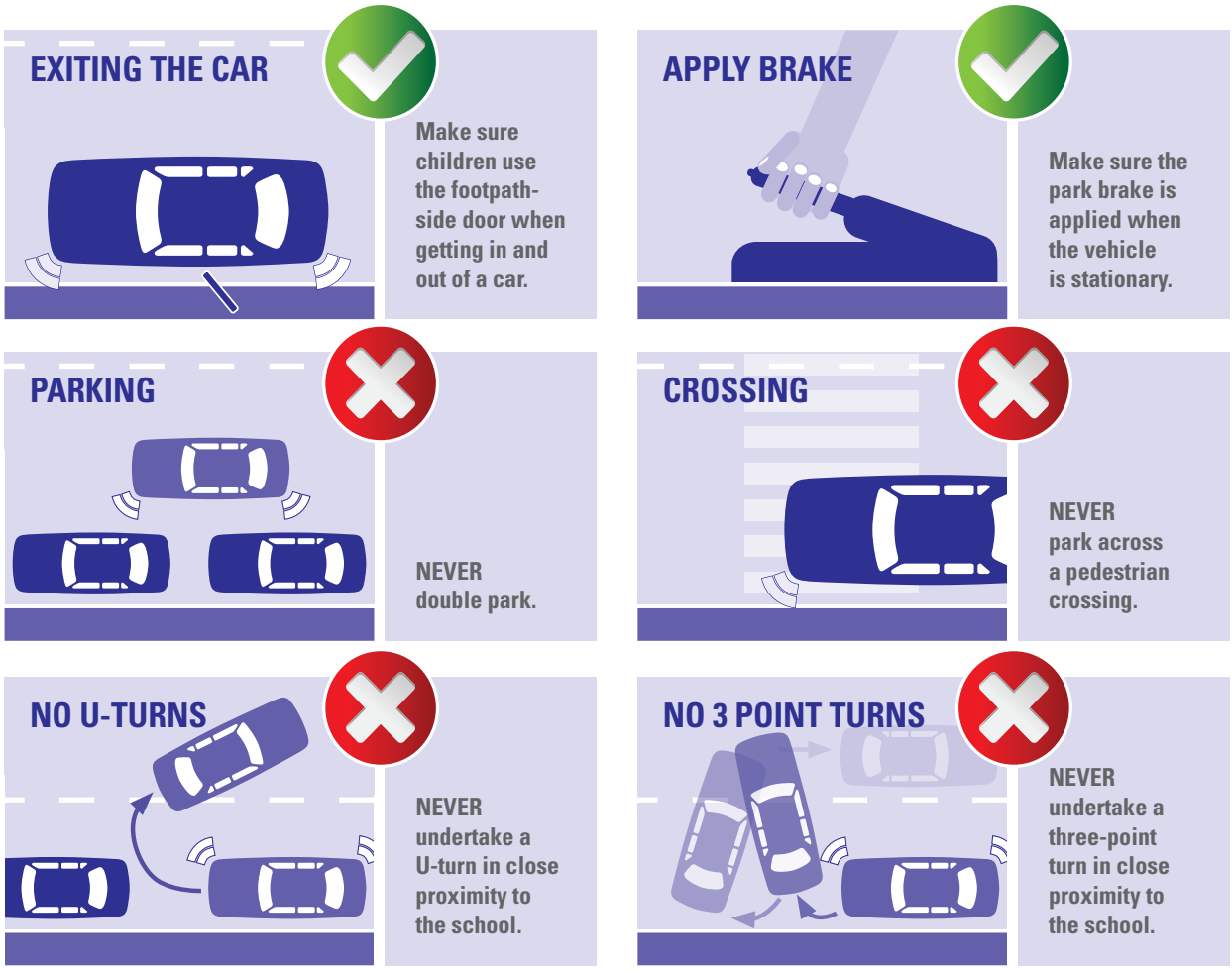
NSW GOVERNMENT

Safety tips for school zones:



Safety tips for students:

Demerit Points:

* The **Demerit Points** Scheme is a national program that allocates penalty points (demerits) for a range of driving offences. A driver who has not committed any offences has '**zero**' points. If you commit an offence that carries demerit points, the points are added to your driving record.
If you incur the threshold number of demerit points within a three-year period, a licence suspension or refusal is applied. The three-year period is calculated between the dates the offences were committed. It ends on the day your most recent offence was committed.

For further information regarding demerit points please visit: **rms.nsw.gov.au/roads/safety-rules/demerits/**

For more information contact:

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Email: schoolinfrastructure@det.nsw.edu.au
Phone: 1300 482 651
www.schoolinfrastructure.nsw.gov.au

NSW GOVERNMENT

Huntlee Public School

Travel Access Guide

Effective: August 2025

Project overview

Our school community of parents, staff and students live within a reasonable walk, cycle or bus trip of the school. This Travel Access Guide provides suggested safe and accessible options for travelling to school.

Active ways to get to school

Walking is an active and healthy way to get to school

- Always use crossing facilities such as traffic lights, pedestrian crossings, or a school crossing, remember to *Stop, Look, Listen and Think* when crossing the road.
- Hold an adult's hand when crossing the road.
- Share the footpath and walk on the left.
- Look out for cars entering or leaving driveways.

Ride your bike

- Always wear a correctly fitted Australian standards approved helmet when riding your bike.
- Ride to the left on footpaths.
- Take extra care when crossing roads, even when using a pedestrian crossing.
- Watch out for cars entering or leaving driveways.
- Give 1 metre space when riding past other people.

Ride your scooter

Children may ride their scooters on the footpath. Children can then secure their scooters at the school's bicycle/scooter racks.

- Always wear a correctly fitted Australian standards approved helmet when riding your scooter.
- Wear a bright-coloured bag, clothing or reflectors such as a vest to be highly visible.
- Give pedestrians right of way on footpaths.
- Check your wheels, handlebars, brakes and frame are in good condition before riding.

Kiss and drop expectations

- Pick up/drop off zone allows a maximum 2 minutes of stopping time, and is accessible on school side of Reading Road.
- Make sure children use the Safety Door (rear footpath side) when getting in and out of a car.
- U-turns are not permitted around the pick up/drop off zone.
- Parents/carers must not stop in a No Stopping zone for any reason or for any length of time. No stopping restrictions

School Bell Times

- 8:30am - 2:30pm (TBC)

For more information contact:

School Infrastructure NSW
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Phone: 1300 482 651
www.schoolinfrastructure.nsw.gov.au

NSW GOVERNMENT

Active Travel Map:

- Students can walk or cycle on neighbouring streets of the school.

  Reminder: children under the age of 16 are allowed to cycle on the footpath, keeping them safer and more protected from road traffic.
- Students on bicycles are required to dismount and walk their bicycles to the bike parking area once they enter the school grounds.

Car Parking and Road Safety

- Park safely and turn legally, even if it means walking further to the school entrance.
- Give way to people walking or cycling particularly when entering and leaving driveways.
- Always look around carefully, check mirrors and blind spots for children and other cars before:
  - Opening your door
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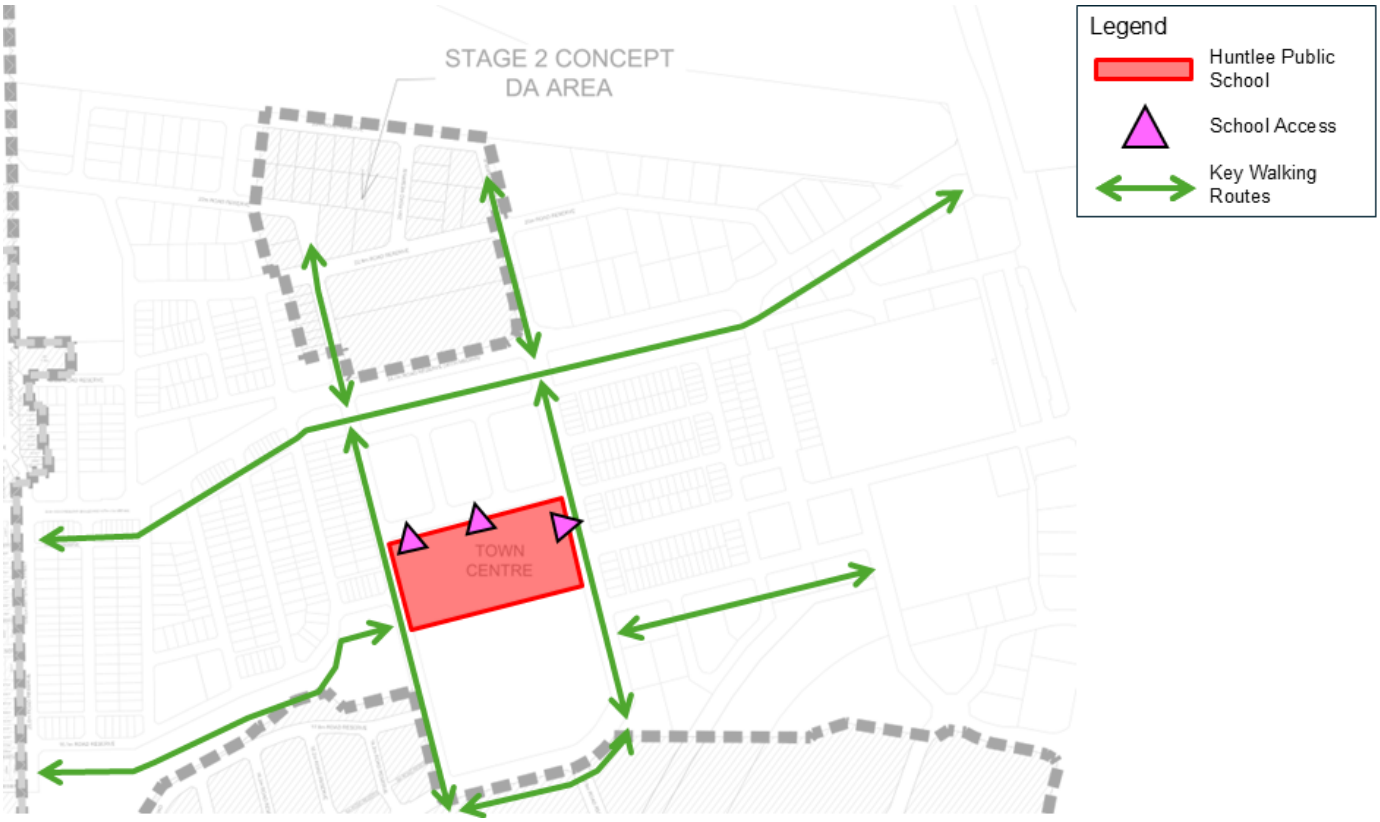

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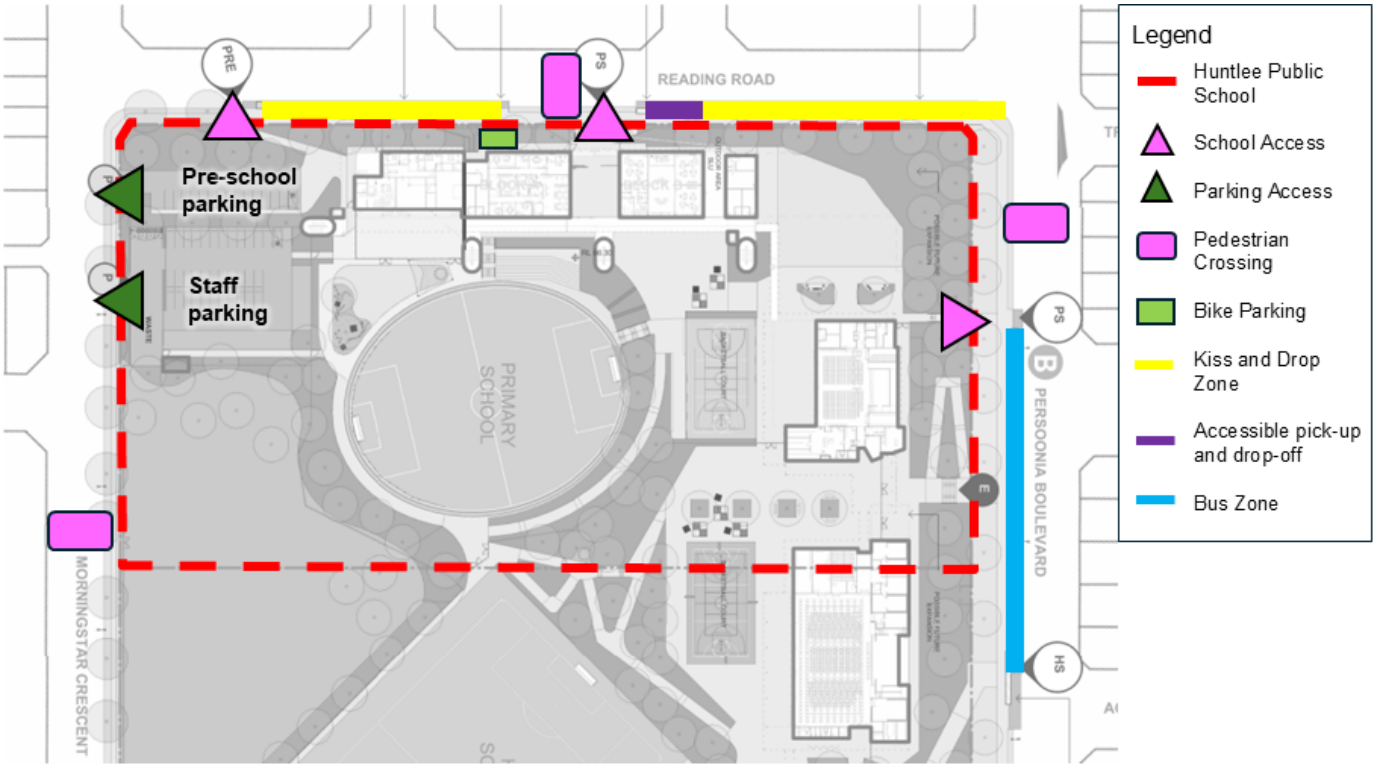
NSW GOVERNMENT

School Access



- Pedestrian access to the school is via the entry points on Reading Road and Persoonia Boulevard.
- Bicycle parking is provided within school grounds.
- Parents/carers can pick up/drop off students at kiss and drop zone located on Reading Road.
- Students are encouraged to use the pedestrian crossings on Morningstar Crescent, Reading Road and Persoonia Boulevard to cross the road.

For more information contact:

School Infrastructure NSW
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NSW GOVERNMENT

Public Bus Routes

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Where do you ride?

Footpath/shared path/cycleway:

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- Be careful of cars entering and exiting driveways.

Watch out for pedestrians, other riders and animals.

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- Be extra careful.
- Walk your bicycle when you cross at a pedestrian crossing.

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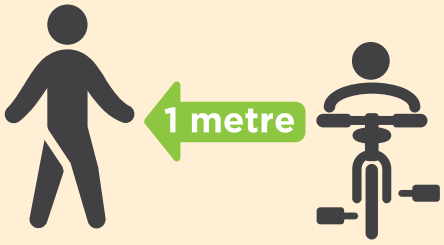

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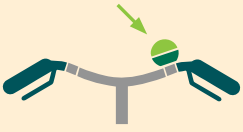

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NSW GOVERNMENT

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Get a discount on your Bicycle NSW membership

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Take up the offer today:

- Visit bicyclensw.org.au
- Sign up for a membership
- Use this discount code for 15% off your membership:

nswtag

The code expires on 31 May 2023.
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bicycle NSW

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NSW GOVERNMENT

Parking and traffic rules in school zones

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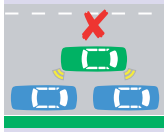
	You can stop in a **NO PARKING** zone for a max. of two minutes to drop off and pick up passengers. If no spaces are available you cannot queue on the road way or in any other zones while waiting for a space. You will need to drive away and park elsewhere, only returning when there is space to pull up. You must stay within 3 metres of your vehicle at all times and cannot leave your vehicle unattended.	**Provides a safe place for children / pedestrian set down and pick up.**	EXCEEDS **$194**	(School Zone) **2**
	You must not stop or park in a **BUS ZONE** for any reason (including queuing or waiting for a space) unless you are driving a bus. If times are shown on the sign, you are not allowed to stop during those times.	**Provides a safe place for large buses to set down and pick up school children.**	EXCEEDS **$349**	(School Zone) **2**
	You must not stop on or within 20 metres before a **PEDESTRIAN CROSSING** or 10 metres after a crossing unless there is a control sign permitting parking.	**So drivers can clearly see pedestrians on the crossing.**	EXCEEDS **$464**	(School Zone) **2**
	**DOUBLE PARKING** You must not stop on the road adjacent to another vehicle at any time even to drop off or pick up passengers.	**Double parking blocks visibility and forces other cars to go around you.**	EXCEEDS **$349**	(School Zone) **2**
	You must not stop on any **FOOTPATH** or **NATURE STRIP**, or even a **DRIVEWAY** crossing a footpath or nature strip for any reason.	**You could easily run over a child or force pedestrians onto the road to get around you.**	EXCEEDS **$194**	(School Zone) **2**

Please note: The above information is current as of 1 January 2020.
Penalties set by NSW State Government and reviewed on 1 July each year.

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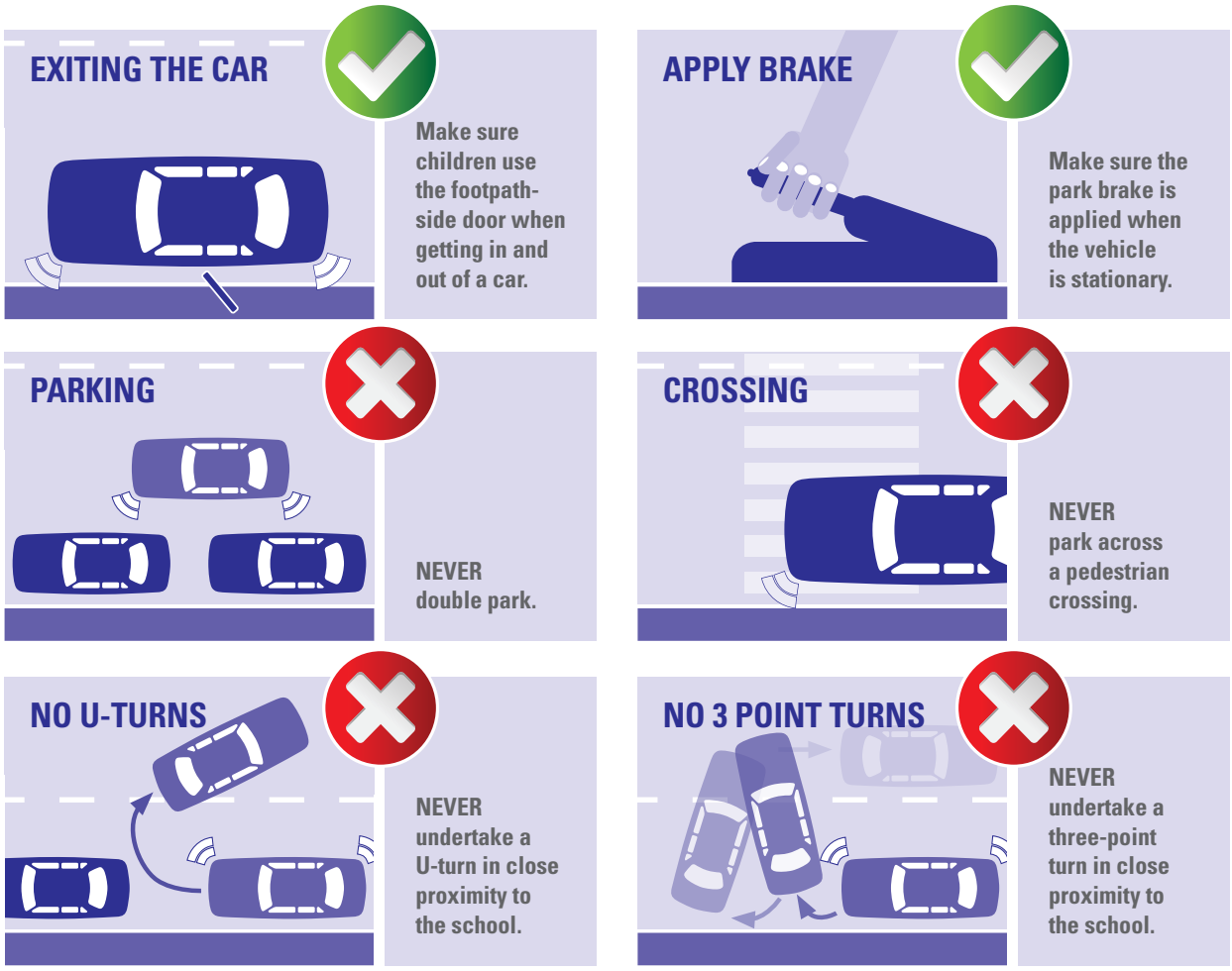
NSW GOVERNMENT

Safety tips for school zones:



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Demerit Points:

* The **Demerit Points** Scheme is a national program that allocates penalty points (demerits) for a range of driving offences. A driver who has not committed any offences has '**zero**' points. If you commit an offence that carries demerit points, the points are added to your driving record.
If you incur the threshold number of demerit points within a three-year period, a licence suspension or refusal is applied. The three-year period is calculated between the dates the offences were committed. It ends on the day your most recent offence was committed.

For further information regarding demerit points please visit: **rms.nsw.gov.au/roads/safety-rules/demerits/**

For more information contact:

School Infrastructure NSW
Email: schoolinfrastructure@det.nsw.edu.au
Phone: 1300 482 651
www.schoolinfrastructure.nsw.gov.au

NSW GOVERNMENT

Stantec

Stantec is a global leader in sustainable engineering, architecture, and environmental consulting. The diverse perspectives of our partners and interested parties drive us to think beyond what's previously been done on critical issues like climate change, digital transformation, and future-proofing our cities and infrastructure. We innovate at the intersection of community, creativity, and client relationships to advance communities everywhere, so that together we can redefine what's possible.

Stantec Australia Pty Ltd
Level 9, The Forum, 203 Pacific Highway
St. Leonards NSW 2065
AUSTRALIA
ABN 17 007 820 322
stantec.com