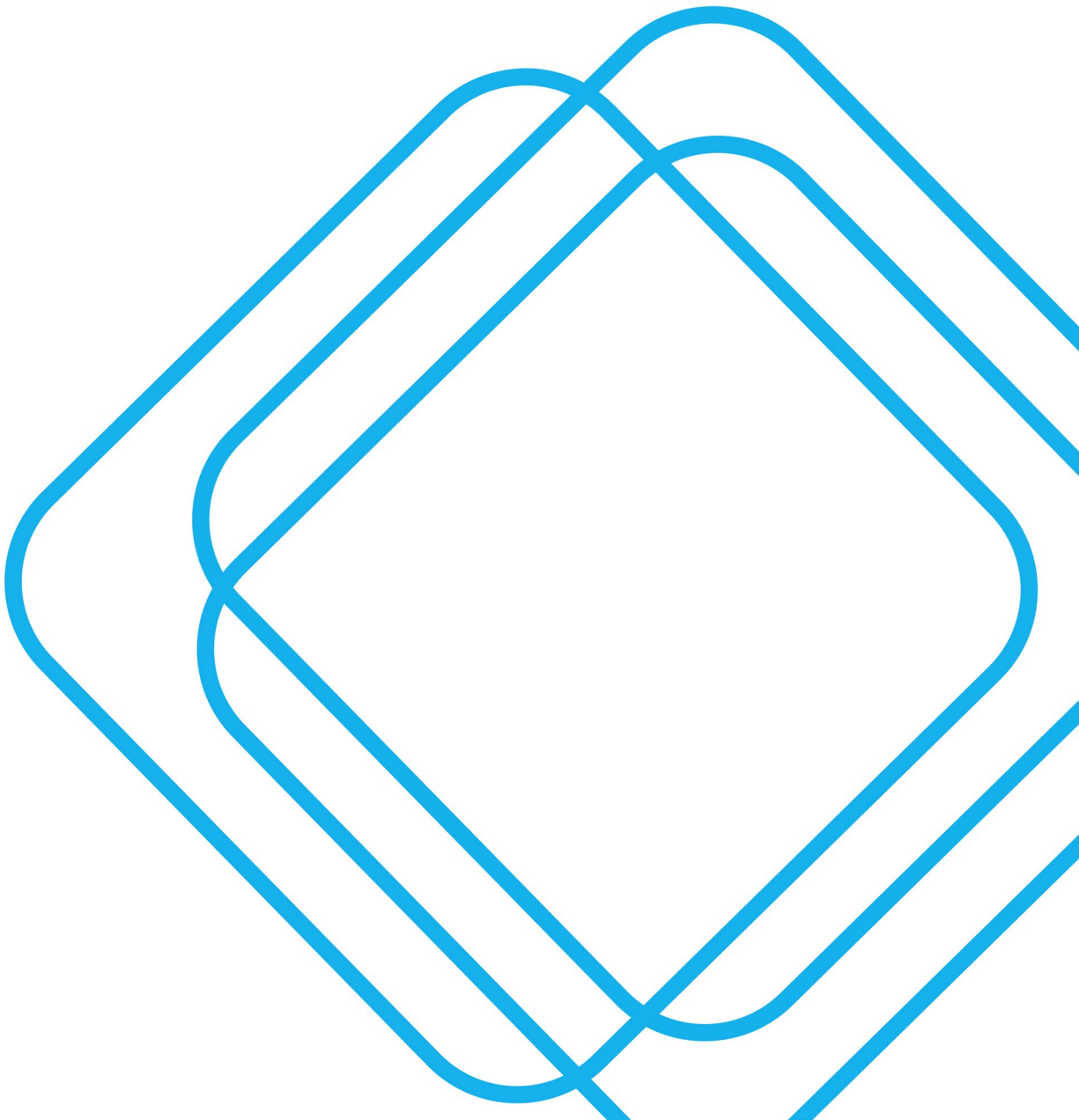
SCT Consulting

CANTERBURY SOUTH PUBLIC SCHOOL DA 41/2019

Revised Traffic Impact Assessment

9 OCTOBER 2020



Quality Assurance

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Prepared by:	SCT Consulting PTY. LTD. (SCT Consulting)	**ABN:**	53 612 624 058

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Prepared:	Andy Yung, Director Adam Smith, Consultant
Reviewed:	Jonathan Busch, Associate Director
Authorised:	Andy Yung, Director

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Contents

Appendices

Executive Summary

Canterbury South Public School is located on High Street, Canterbury between France Street and Napier Street. The school covers an area of about 1.4 hectares and is surrounded by residential development on three sides while at the rear of the site is Pat O'Connor Reserve.

The school is proposed to expand from 287 pupils to 690 pupils. This is forecast to lead to an addition of 270 and 214 vehicle movements in the AM and PM drop off and pickup operational periods respectively.

As a result of this expected growth, following transport analysis and consultation with various stakeholders, including the City of Canterbury-Bankstown Council, an internal road option has been proposed connecting Napier Street and France Street to create additional kiss and drop spaces. The option is also expected to relieve parking and manoeuvring issues on the surrounding street network.

Figure 1–1 is a layout of the planned expanded school with the internal road located to the rear of the site.

Figure 1–1 Canterbury South school expansion proposal

Source: NBRS Architecture, 2020

The option will involve a one-way (northbound) internal road connecting Napier Street with France Street along the eastern frontage of the school.

For safety purposes, the internal road is to be gated and generally opened only during school kiss and drop hours 8-9am and 2.30-4pm. Vehicle gates are proposed at the entrance from Napier Street and exit to France Street to restrict entry. The street will be sign posted speed at 10km/h. which will be visible near the entrance to the road. A crossing facility will be located close to the France Street to allow for a connection between the school site and footpath towards Pat O'Connor Reserve.

The internal road will improve the circulation of kiss and drop movements in the surrounding road network and reduce the need for all vehicles to conduct turning manoeuvres on Napier Street and France Street while entering and exiting from High Street.

There will be around 38 spaces available for kiss and drop on Napier Street and France Street, a small reduction of two spaces on Napier Street with the opening of the new internal road. The internal road also provides around 11 additional dedicated kiss and drop spaces. Hence there will be at least 49 spaces available for kiss and drop around the perimeter of the school. It is also acknowledged that some kiss and drop activities will still occur at High Street and Canton Street in proximity to the school.

As the school expands to a scale of 690 pupils, management of kiss and drop activities will increasingly require management. Support from Council with signposting such as time limited parking will become more important to reduce the impacts of overspill kiss and drop movements on surrounding roads.

The upgraded car park layout has been designed and complies with AS2890.1-2004. The school is currently serviced by a Small Rigid Vehicle with the loading bay located adjacent to the car park and accessed via the same driveway as the car park, this arrangement is not proposed to change. The driveway has been widened to 6.0m has been undertaken to improve maneuverability of SRV in accessing loading bay. The car park is expected to have 27 spaces for 58 staff, a minor deviation from the council's DCP. Site constraints restrict provision of additional spaces. Given the proximity from the station, the quantity of parking is considered appropriate.

An excursion-only bus zone on Canton Street has been proposed to limit the impact on High Street. Staff and pupils will access the bus zone via the zebra crossing on High Street. Council had concerns with this location, however no alternative location was found to be suitable. The internal road dimensions are not compatible with use by a bus, particularly given the short sight distances around gates at the edges of the site.

A Green Travel Plan is under preparation for the school which aims to deliver travel behaviour change through the promotion of initiatives to encourage active travel. The initiatives could relieve road capacity issues on the streets adjacent the school.

1.0 Context

1.1 Introduction

Canterbury South Public School is located on High Street, Canterbury between France Street and Napier Street. The school covers an area of about 1.4 hectares and is surrounded by residential development on three sides while at the rear of the site is Pat O'Connor Reserve.

All vehicular access to and from the school is via a gated driveway in France Street which provides access to an on-site parking area for staff as well as access for emergency vehicles, deliveries and for waste collection. The main pedestrian access is via High Street, with pedestrian access also available via France Street and Napier Street.

1.2 History

1.2.1 Original development application transport documents

The original development application (DA41/2019) for the redevelopment of Canterbury South Public School including demolition of existing structures and construction of a three storey school with a capacity of 690 students and associated landscape works and realignment of car parking along Napier Street, was submitted to Canterbury-Bankstown Council on 25 February 2019.

As part of the DA submission, the following traffic and transport documents were prepared:

1. Canterbury South Public School Traffic Impact Assessment, prepared by SECA Solution (February 2019)
2. Canterbury South Public School Green Travel Plan, prepared by SECA Solution (February 2019)

A Road Safety Review of Drop-Off / Pick-Up Operations, Parking and Access surrounding Canterbury South Public School has been undertaken by Samsa Consulting Pty Ltd – Transport Planning and Traffic Engineering Consultants (December 2019).

1.2.2 Submissions

Comments were raised by community and council in response to the DA. A total of 32 submissions and 2 petitions were received. The relevant traffic and transport comments are summarised in **Table 1-1**.

Table 1-1 Traffic and transport submissions from community and council

Submissions	Responses	Reference in revised TIA
Community: There is insufficient parking for staff/parents/carers impacting on residents.	After listening to council and community feedback there is no longer a reduction in car parking spaces. The staff car park is proposed to increase from 14 to 27 spaces. In addition, increased kiss and drop spaces are provided via a new internal road.	Section 3.2.1
Community: The expansion of the school will result in higher traffic volumes and more congestion.	There is a risk that the expansion of the school could lead to more traffic. The Rapid Transport Assessment (RTA) and Green Travel Plan propose how behaviour change could be achieved - as a partnership across the entire community. The delivery of an internal road will also reduce the number of parking movements on France and Napier Streets, as well as removing the need to turn around, resulting in a more efficient traffic network and reduced impacts.	Section 3.2.5 and Section 3.3

Submissions	Responses	Reference in revised TIA
Community: Illegal parking is common i.e. double parking in peak periods.	Unsafe and illegal driving and parking practices are a problem around the school. Double parking is something that can be tackled through cooperation between council, the school, the PnC, and residents – e.g. increased surveillance by council, increased management of the kiss and drop facilities.	Section 3.2.3
Community: Additional traffic and associated movements will impact on pedestrian safety.	Pedestrian safety is of first importance in planning for the school expansion. The Green Travel Plan identifies several programs that could be implemented that would improve pedestrian safety. The internal road simplifies traffic movements, resulting in improved safety for students.	Section 3.2.3
Council: A connector road between France Street and Napier Street should be considered.	An internal road between Napier Street and France Street is proposed as part of this project in line with this request.	Section 3.2.2
Council: The traffic generation rate is too low and too optimistic for sustainable modes.	Trip generation rates have been updated in this traffic statement in line with recent Roads and Maritime Services *Trip Generation Surveys Schools Analysis Report*, being 0.67 vehicle movements per hour per student in the AM peak and 0.53 in the PM peak for primary schools in a metropolitan area. These rates are based on the most recent research into school traffic behaviours.	Section 3.3
Council: Intersections along High Street in proximity to the school will be adversely affected.	The potential impacts of the likely traffic increase have been qualitatively discussed in the revised TIA. No traffic surveys have been undertaken during the current COVID conditions. It is noted that there is limited scope to undertake widening at key intersections around the school, rather the internal road as proposed will simplify traffic movements and mitigate these impacts.	Section 3.3
Council: The location of a bus bay on Canton Street risks pedestrian safety.	Due to the size of the existing school catchment, a school bus provides only limited benefits. Majority of students are within walking distance. The bus bay proposed on Canton Street would only be used for excursions. Students would use the zebra crossing on High Street under supervision.	Section 3.2.4
Council: A shortfall in parking spaces will result in additional on-street parking.	After listening to council and community feedback there is no longer a reduction in car parking spaces. The staff car park is proposed to increase from 14 to 27 spaces.	Section 3.2.1

Source: SCT Consulting, 2020

1.2.3 South Sydney Panel hearing and deferral

A public meeting was held by the Sydney South Planning Panel to discuss the subject DA on Wednesday 8 July 2020. Public meetings are held to allow the panel to hear concerns the local community may have about a development application and to hear how the applicant has addressed those concerns.

The Panel considered the proposal as well as the material presented at briefings and the public meeting. The Panel was of the view that there were a broad range of outstanding issues that still need to be addressed including the impacts of the increased traffic generation on the safety and amenity of the area.

The Panel therefore resolved to defer consideration of the matter subject to the provision of additional reports and information to satisfactorily address traffic and parking impacts including the consideration of new infrastructure such as council's proposed link road, extended footpaths, new pedestrian crossings; and behavioural changes such as a

Green travel plan and staffing of onsite parking to control demand. The Panel is of the view that solutions reliant on behavioural change alone will not be sufficient to address these traffic and parking issues.

On receipt of a supplementary council assessment report, the Panel will hold another public meeting to determine the matter.

1.3 Purpose of this report

The purpose of this report is to specifically address and respond to all aforementioned items raised in the South Sydney Panel hearing and deferral and for the re-consideration by council and the Sydney South Planning Panel in the next public meeting.

2.0 Existing conditions

SCT Consulting prepared a Rapid Transport Assessment (RTA) for Canterbury South Public School as part of the planning process. A component of the RTA is to provide a high-level overview of the existing transport conditions both in terms of travel behaviour and capital infrastructure. A summary of the findings of the RTA are included as part of this transport impact assessment.

The school is located within a medium-density residential area compromised predominately of local roads. A school zone is in operation along High Street and Napier Street with a 40kph speed limit between 8am-9am and 230pm-4pm. A mixture of traffic calming infrastructure is in place along High Street in the form of crocodile teeth line markings and two speed humps. A zebra crossing is in place in proximity to the High Street school gate entrance.

There are varying road widths for the streets surrounding the school with High Street, adjacent to the front of the site, around 5.7m in width compared to Napier Street, Canton Street and Howard Street which are about 10m. The narrowing width of High Street limits the size of vehicles that can safely manoeuvre within its carriageway.

France Street and Napier Street form the perimeter of the site to the north-west and south, respectively. Both have cul-de-sac configurations. France Street has a turning circle in place in proximity to Pat O'Connor Reserve and 13 car parking spaces available for both residents, staff, and members of the public. No stopping signs are in place either side of the parking area, with the kerbside space in proximity to the turning circle in operation during school days between 8am-930am and 230pm-4pm. Napier Street has no formalised car parking spaces in operation but cars are normally parked along both sides of the street. There is no turning circle in place, but the road width would allow for U-turn manoeuvrers to be performed. During peak times car parking has been observed to be an issue from the perspectives of residents, the school, and the council.

There are no bus stops within a five-minute walk of the school with the nearest bus stops located on Fore Street. Canterbury Station is about a 15-minute walk or 1,200m walking distance from the school. The school site itself has six gates, three on France Street, two on Napier Street and one on High Street.

2.1 Walking facilities

Figure 2–1 shows the walking and cycling catchment map for the school site. Based on advice provided by School Infrastructure NSW 1,200m was the maximum distance a primary school pupil would be expected to walk to school.

Figure 2–1 Walking and cycling catchment map

SCT Consulting, 2020

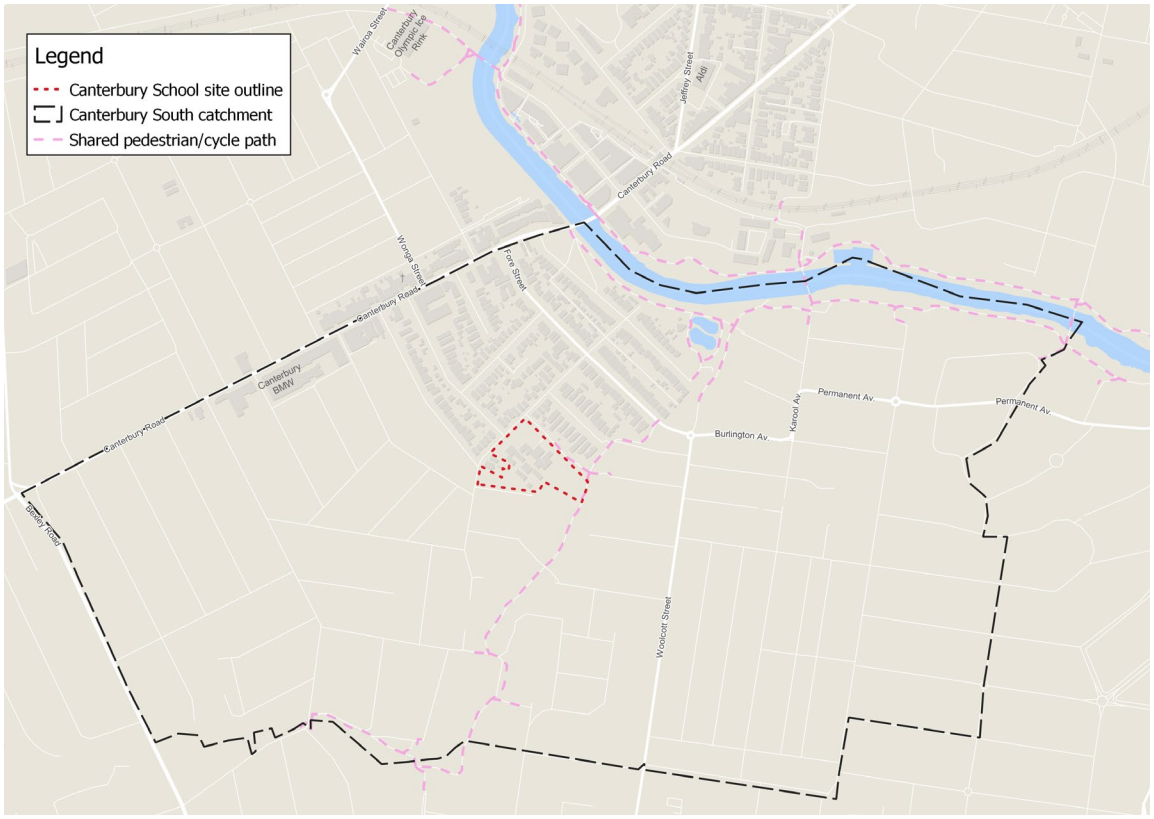
The figure indicates most of the existing school catchment is within a realistic walking distance for primary school pupils with only a partial section to the west of the catchment not within a 1,200m walk of the school. The area surrounding the school is a long-established neighbourhood with footpaths found along both sides of the street in most of the catchment. This creates a network which from a high-level perspective is permeable and connected. In proximity to the school the only formalised crossing facility is the zebra crossing on High Street. Refuge islands are in place at the intersections with High Street on Canton Street and Howard Street.

Pat O' Connor Reserve located to the east of the school, of which a component forms part of the overall site, allows for opportunities to avoid for pedestrians to avoid roads and traffic.

2.2 Cycling facilities

Figure 2–2 shows the cycling facilities in place in the area surrounding the school site.

Figure 2–2 Cycling facilities map



SCT Consulting, 2020

The figure shows a shared pedestrain/ cycle path partially connecting from the Cooks River Cyclepath to the Pat O' Connor Reserve. This creates a majority traffic free commuting opportunity through the centre of the exisitng school catahement.

The path surface is predominately made up of hard materials meaning the route is dependable regardless of most weather conditons. A zebra crossing is in place on Fore Street at the entry/exit of Pat O' Connor Reserve. In order to cross from one side of the Cooks River Cyclepath to the other pedestrains and cyclists are required to use the crossing facilities immediately outisde Canterbry Station or the traffic lights at Canterbury Road and Fore Road.

Findings derived from the RTA found 59% of existing school pupils had access to the route. The council capital works program indicates work in the surrounding areas for further walking and cycling infrastruture. This presents more opprtountiies to increase the active travel mode share for the school.

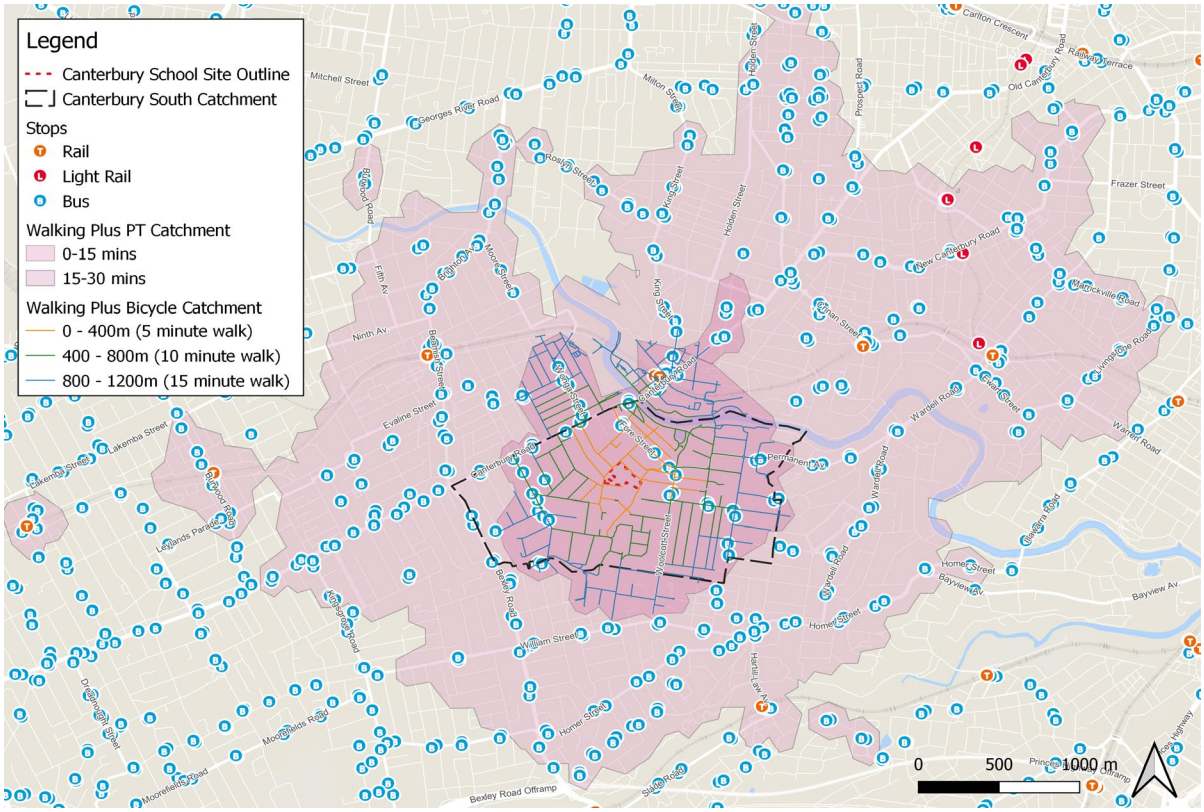
2.3 Public transport access

Figure 2–3 shows the public transport coverage in the area surrounding the school and the maximum extent a person can travel within 30-minutes using public transport.

The figure demonstrates a broad area can be accessed within 30-minutes of the school site with train, light rail, and bus services available. Nevertheless, the 15-minute public transport catchment is broadly consistent with the walking catchment implying for journeys of 1,200m or less people will tend to walk.

Canterbury Station located on the T3 Line is a 15-minute walk from the school and provides eight services during the AM peak (8am-9am), four city-bound services and four Lidcombe-bound services, respectively. Crossings at a set of traffic lights is located immediately outside the station on Canterbury Road.

Figure 2–3 Public transport and walking catchment map



SCT Consulting, 2020

Table 2-1 shows information relating to buses for the stops closest to the school. The table indicates there are no bus stops along any of the streets adjacent to the school. The road width, congestion, and opportunities to place bus stops in proximity to the school are all reasons why High Street may not be included as part of any operators stopping sequences. Nevertheless, route 491 which covers about 40% of the catchment, stopping along Fore Street and Woolcott Street, provides the most viable bus access in proximity to the school. Findings from the RTA suggest the route could benefit about 100 existing pupils.

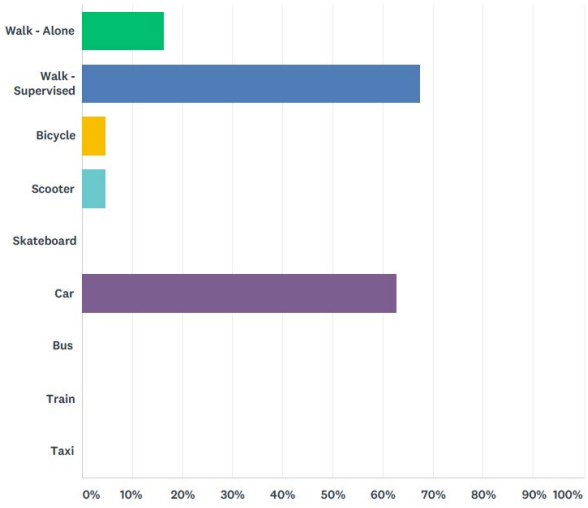
Table 2-1 Bus stops, services, frequencies and routes surrounding the school

Stop Name	Route	Route Name	Direction	AM/PM Peak	
Fore St at Ivy St	491	Hurstville to Ashfield Station/Five Dock - First Ave	Ashfield Station, Five Dock - First Ave	4	2
Fore St opp Ivy St	491	Hurstville to Ashfield Station/Five Dock - First Ave	Hurstville, Earlwood-Clarke Street	3	3
Canterbury Rd opp Canton St	445	Campsie to Balmain via Leichhardt Marketplace	Balmain	4	4
Wonga St at Clunes Lane	487	Bankstown Century to Canterbury Central	Bankstown	1	2
Canterbury Rd at Howard St	445	Campsie to Balmain via Leichhardt Marketplace	Campsie Station	3	4
Canterbury Rd at Allen St	445	Campsie to Balmain via Leichhardt Marketplace	Campsie Station	3	4
Canterbury Rd at Park St	473	Rockdale to Campsie	Balmain	4	4
Northcote St at Canterbury Rd	473	Rockdale to Campsie	Campsie Station	2	3
Northcote St after Canterbury Rd	473	Rockdale to Campsie	Rockdale Station	2	2
Northcote St opp Clisdell Ave	473	Rockdale to Campsie	Campsie Station	2	3
Northcote St opp Wearne St	473	Rockdale to Campsie	Rockdale Station	3	2
Woolcott St at Elsie St	491	Hurstville to Ashfield Station/Five Dock - First Ave	Hurstville, Earlwood-Clarke Street	4	2
Earlwood Children's Centre, Fore St	491	Hurstville to Ashfield Station/Five Dock - First Ave	Ashfield Station, Five Dock - First Ave	2	2

2.4 Mode share survey by principal

Figure 2–4 is the results of a travel behaviour survey conducted by the principal at the school. The survey sent to parents and carers allowed for multiple answers and as consequence the results do not add up to 100%.

Figure 2–4 CSPS principal's travel behaviour survey results



Canterbury South Public School, 2019

The results of the survey indicate most parents and pupils adopt a flexible approach to their travel mode with equally high levels of active transport and car use. The travel behaviour of parents and pupils may change daily based on a range of factors such as childcare duties and/or work hour patterns. Overall, the survey demonstrates there is already a strong norm for walking at the school.

3.0 Proposed Development

3.1 Overview of school expansion proposal

Canterbury South Public School is forecast to grow in enrollments in line with population in the City of Canterbury Bankstown Council area. School Infrastructure NSW has identified that the school will need to expand in population from 287 to 690 (+403), and an associated increase in staff from 26 to 58 (+32).

The proposed development that seeks to provide permanent facilities for this increase in enrolments comprises:

– minor demolition works to landscape areas / hardstand areas

– construction of a three (3) storey school building on the southern side of the site to provide for 30 homebases

– extension of existing car park

– landscape works to create a central “Town Square”

– playground area

– construction of a new one-way link road between Napier Street and France Street, accommodating 11 kiss and drop space.

A site plan of the school expansion proposal is shown in **Figure 3–1**.

Figure 3–1 Canterbury South school expansion proposal

Source: NBRS Architecture, 2020

3.2 Transport proposals

In response to the community and Council feedback, a package of transport solutions has been developed to address the potential traffic and parking impacts of the expansion of the school, in consideration of the existing urban context and environment of the surrounding areas. The package of transport solutions includes:

– upgrade of staff car park to increase from 14 to 27 spaces (refer to Section 3.2.1)

– construction of a new one-way (northbound) internal road that connects Napier Street with France Street along the eastern frontage of the school (refer to Section 3.2.2)

– addition of 11 dedicated school kiss and drop spaces on the new internal road (refer to Section 3.2.3)

– a Green Travel Plan that documents recommended behaviour change measures to be implemented by the school progressively as the school expands over time (refer to Section 3.2.5)

3.2.1 Staff car park

3.2.1.1 Parking requirements

According to Canterbury DCP 2012, one space is required for every two staff in a primary school, and adequate provision on-street spaces are required for dropping off and picking up of students.

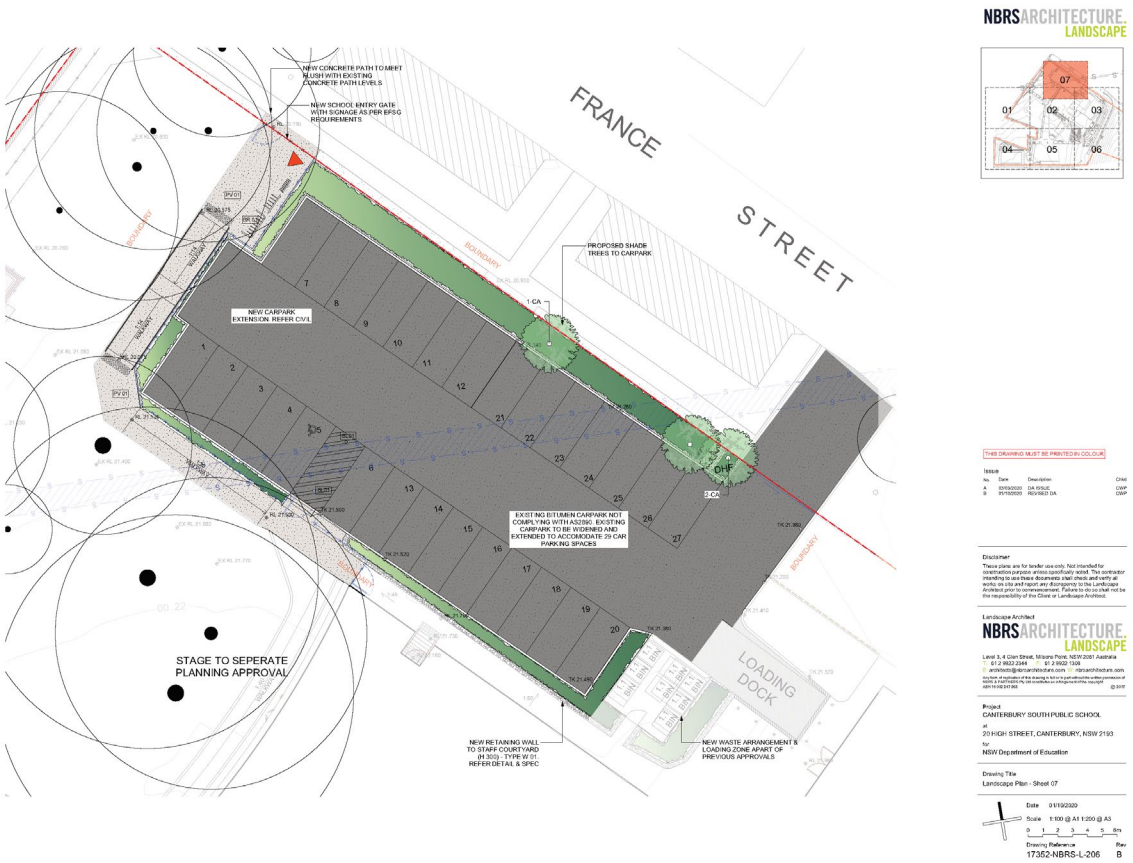
The DCP also specifies there should be a minimum provision of one bicycle parking space per ten staff, with adequate provision of bicycle parking for students.

3.2.1.2 Parking proposal

There are currently 14 off-street parking spaces allocated for staff parking only, of which one is an accessible parking space. The car park is gated to avoid the use by the public and visitors. The staff car park currently complies with the DCP requirements as 13 spaces are required for 26 staff.

The upgraded car park layout has been designed and complies with AS2890.1-2004. The school is currently serviced by a Small Rigid Vehicle with the loading bay located adjacent to the car park and accessed via the same driveway as the car park, this arrangement is not proposed to change. The driveway has been widened to 6.0m has been undertaken to improve maneuverability of SRV in accessing loading bay.

Figure 3–2 Proposed staff car park



Source: NBRS Architecture, 2020

With the proposed increase of staff to 58, the DCP requires an off-street staff car park of 29 spaces. Due to site constraints, especially the location of the mature trees surrounding the car park, the proposed car park has a capacity of 27 spaces, which is a minor deviation from the DCP requirements. This is considered acceptable for the following reasons:

– given the site constraints mentioned above, the number of car park spaces has been maximised while upgraded to improve safe manoeuvring in and out of the car park by widening the driveway

– the school has good access and connectivity to the regional Cooks River Cycleway, including separated crossing of river. Council plans to make High Street part of the cycle network (mixed traffic)

– the school is within walking and cycling distance of the train station.

The extension of the car park to the west is consistent with AS 2890.1 (2004) in respect of aisle and space dimensions, as well as offsets from parking spaces to obstructions. The car park is oriented as a long 'blind aisle', which exceeds Section 2.4.2 requirements of a blind aisle for a public car park. As a result, the car park should remain gated and not open to the public (as per current operations) to remain compliant with this requirement. The car park will be used predominately by staff and as such have tidal traffic movements and typically dedicated spaces for individual staff members, so U-turn manoeuvres are expected to be limited.

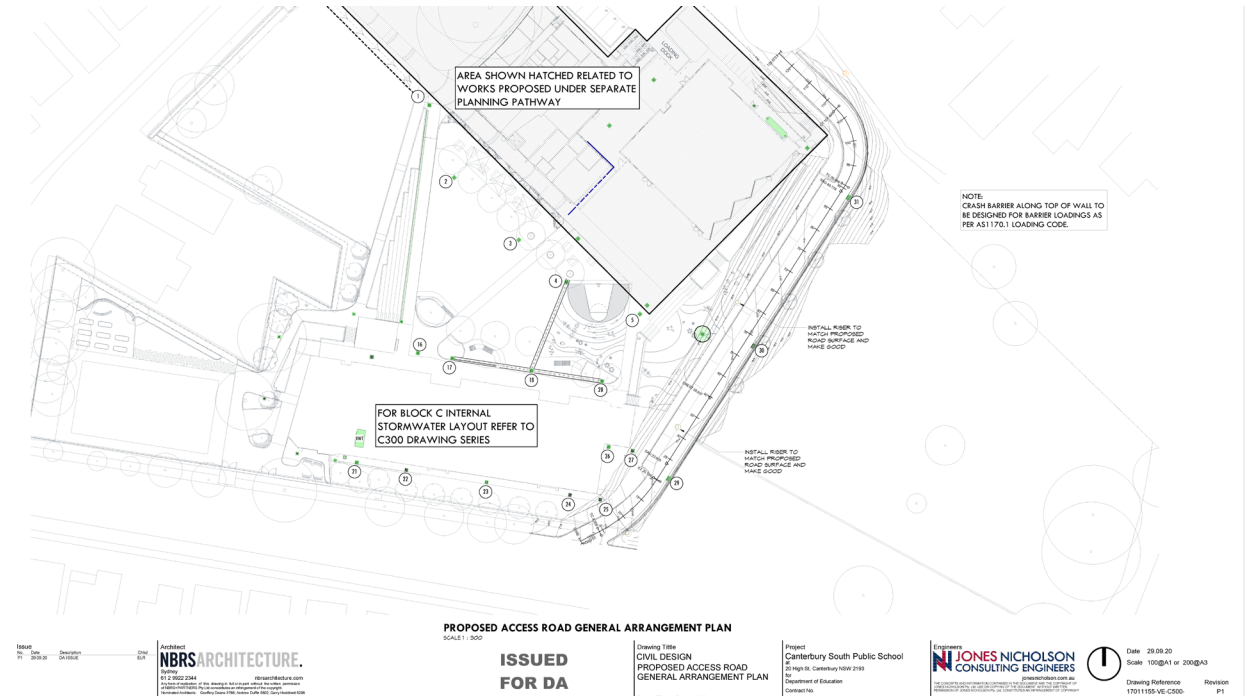
3.2.2 New internal road between Napier Street and France Street

A one-way (northbound) internal road is also proposed as part of the project that connects Napier Street with France Street along the eastern frontage of the school, as shown in **Figure 3–3**.

The internal road will improve the circulation of kiss and drop movements in the surrounding road network and reduce the need for all vehicles to effectively operate twice along Napier Street and France Street while entering and exiting from High Street. Unbroken road line markings could be installed along Napier Street to reinforce the one-way circulation system and discourage U-turn manoeuvring. Napier Street residents would be permitted to cross the line markings when accessing their respective properties. Signage could be located near the entrance to Napier Street and in the vicinity of the kiss and drop spaces to communicate and reinforce NSW road rules.

For safety purposes, the internal road is to be gated and generally opened only during school kiss and drop hours 8-9am and 2.30-4pm. Vehicle gates are proposed at the entrance from Napier Street and exit to France Street to restrict entry. The street will be sign posted speed at 10km/h. which will be visible near the entrance to the road. A crossing facility will be located close to the France Street to allow for a connection between the school site and footpath towards Pat O'Connor Reserve.

Figure 3–3 Proposed internal road



Source: Jones Nicholson, 2020

3.2.2.1 Road safety review

The location of the new internal road surrounding the school's perimeter, combined with vehicle traffic during peak periods (pick-up and drop-off times) presents a risk to vulnerable road users (particularly school children). The road therefore has been designed to limit speeds and to provide pedestrian priority at crossing locations to mitigate this risk.

The internal road needs to cater for a pedestrian crossing facility to allow students to cross from Pat O'Connor Reserve into the school. The cross location requires a clear line of sight for sufficient distance from the driver to the location of waiting and crossing pedestrians to ensure that drivers can stop without striking pedestrians.

Austroads Guide to Road Design Part 3: Geometric Design defines Safe Sight Distance as "the distance to enable a normally alert driver, travelling at the design speed on wet pavement, to perceive, react and brake to a stop before reaching a hazard on the road ahead".

Figure 3–4 Potential location of crossing facility

Source: SCT Consulting, 2020

This location of the pedestrian crossing provides 22m from the location of a vehicle along an unobstructed view to the crossing facility, with an offset of 4m.

3.2.2.2 Speed limit

The geometry of the internal road would protect against speeds higher than 20km/h. To aid in compliance of this speed limit it is suggested that:

– a speed hump be provided on the site entry and throughout to provide traffic calming throughout the site

– a speed hump with a "hard profile" (in lieu of a large and relatively flat ramp profile) be used to maximise vehicle calming effects

– signposting of 10km/h be provided on the internal road.

3.2.2.3 Crossing facility type

A zebra crossing facility provides priority to pedestrians, which is desirable to ensure the safety of students entering and leaving the school. Alternative crossing types such as a "pelican" crossing are undesirable as pedestrians need to give way to vehicles.

3.2.3 Kiss and drop

3.2.3.1 Kiss and drop needs

The school has three frontages to the street network and gates at Napier Street, High Street and France Street.

– On the southern side of France Street, there is an area with around 12 indented 90-degree parking spaces. However, given the unrestricted nature of these spaces, it is assumed these spaces are available for short-stay kiss and drop

– most of the kiss and drop activities are expected along Napier Street. Napier Street has a capacity of around 28 vehicles parking spaces, parallel to the kerb along both sides of the street.

– it is also observed that some kiss and drop activities occur at High Street and Canton Street in proximity to the school.

Congestion around the school is an existing issue, affecting safety and reliability for all road users. By promoting alternatives to private car transport, we can increase the safety, health and well-being of staff and students.

Community feedback stated typically the typical kiss and drop takes around ten minutes, which reflects a much higher parking requirement. A queueing analysis undertaken for the expanded school indicated that up to 90 spaces would be required if all kiss and drop activities take ten minutes. This is not possible with the limitation of the existing street network without impacting on the availability of parking on other streets. As the school expands to this size, management of kiss and drop areas will become necessary, including time limits on kiss and drop spaces.

A more managed approach to kiss and drop activities by dedicated staff / helpers to say five-minute duration will reduce the need of parking spaces to around 44 spaces, which can be accommodated by the current proposal. Time limited parking (of even as low as 2 minutes) has been implemented in other schools such as Stanmore Public School. Pacific Hills (a private school in Sydney's north), for example, implements a system where parents undertaking kiss and drop don't leave their vehicles and children are taken to their cars directly as a means to manage kiss and drop activities.

3.2.3.2 Kiss and drop proposal

There will be around 38 spaces available for kiss and drop on Napier Street and France Street, a small reduction of two spaces on Napier Street with the opening of the new internal road. The internal road also provides around 11 additional dedicated kiss and drop spaces. Hence there will be at least 49 spaces available for kiss and drop around the perimeter of the school. It is also acknowledged that some kiss and drop activities will still occur at High Street and Canton Street in proximity to the school.

This will exceed the requirements of around 44 spaces as estimated in Section 3.2.3.1, assuming a five-minute kiss and drop duration. It is also highlighted that this is the ultimate needs when the school expands to its full capacity of 690 students and assuming current mode share remains. The kiss and drop demand will reduce when the behavioural changes and sustainable transport initiatives are introduced according to the Green Travel Plan. The 'Making school travel plans work' research study undertaken in 2010* summarises several Travel Plans case studies, prepared at 23 different schools in England, with findings that after the implementation of a Travel Plan the average reduction in car use was 23%, with some schools cutting car use by more than 50%.

Hence it is expected the majority of kiss and drop movements will occur as a one-way loop, entering from Napier Street, drop off / pick up from one of the three kiss and drop zones at Napier Street, the internal road or France Street, and exit via the internal road and France Street. The spaces on the opposite side of Napier Street should not be required for kiss and drop activities.

All kiss and drop spaces on Napier Street (northern side), internal road and France Street should be sign posted with 5-minute parking limits between 8-9am and 2.30-4pm during school kiss and drop hours.

3.2.4 Bus zone

Historically, bus is not an attractive option for students at Canterbury South Public School according to the mode share survey (see Section 2.4). This is mainly due to most students live within a 15-minute walk to the school and the lack of good public transport services that operate close to the school.

However, there will be occasions that school buses / coaches will be required to pick up and drop off students for off-site sports and activities. Hence two options were considered for potential school bus stop locations:

3.2.4.1 Option 1 – High Street

Opportunities:

– Closer the school in proximity to a zebra crossing.

– Partially / fully located on school site reducing any loss of parking spaces and mitigating congestion impacts.

– Exclusively used for excursions limiting congestion impacts.

Constraints:

– High Street is congested and narrow.

– Located across two sides of the street limiting resident parking during operation.

– Restricts sight lines from the intersection with Canton Street posing a safety risk.

Figure 3–5 Option 1 High Street bus zone

Figure 3–6 Option 2 Canton Street bus zone

3.2.4.2 Option 2 – Canton Street

Opportunities:

– Safe route to school via zebra crossing on High Street.

– Exclusively used for excursions limiting congestion impacts.

Constraints:

– Further away for the school requiring pupils to cross High Street.

– Limits resident parking during operation.

Based on this analysis the preferred option would be for an excursion only bus zone on Canton Street. It is acknowledged that Council had concerns over the safety of a Canton Street bus facility, which could be effectively mitigated firstly by the bus zone being only used for excursions and secondly that the zebra crossing be managed by adults as students cross to access the bus.

3.2.5 Green Travel Plan

SCT prepared a Green Travel Plan (GTP) for Canterbury South Public School as part of the planning process. The purpose of the GTP is to deliver behavioural change through the promotion of initiatives encouraging active travel.

The GTP uses best Australian and international practice to propose a range of initiatives to encourage staff, parents, and pupils to walk and cycle. Some of the initiatives are specifically targeted while others can be enacted across the school. Part of the GTP is to identify relevant local and state funding initiatives to initiate mode share change.

The success of a GTP is in its promotion and acceptance amongst the school community. A workshop will be conducted with the Canterbury South Parent and Community committee to record any feedback and plan how the GTP can be delivered. The date of the workshop is slated for 13 October, which is after the required TIA submission date.

The Green Travel Plan is a living document and will be updated to reflect feedback from the school community prior to the commencement of construction works and the occupation of Building C.

3.3 Traffic generation and impacts

Trip generation rates identified by *Roads and Maritime Services Trip Generation Surveys Schools Analysis Report* are 0.67 vehicle movements per hour per student in the AM peak and 0.53 in the PM peak for primary schools in a metropolitan area. These average typical peak hour trip generation rates were derived from surveys of 14 schools in the Sydney Metropolitan Area, approved by Roads and Maritime Services.

It should be highlighted that these rates are higher than those considered in the original TIA (SECA Solution, 2019) and based on a bigger sample size of schools but could reflect completely different behaviour and conditions of different schools.

With a total student population of 690 students, this would result in a total of 462 vehicle movements in the AM peak hour and 366 vehicle movements in the PM peak hour. In both peak periods, the directional split of traffic is within one percentage point of 50% inbound traffic and 50% outbound traffic, indicating that all traffic entering the site also leaves the site. This is consistent with traffic being almost exclusively for kiss and drop movements, so indicates that 231 vehicles and 183 vehicles would perform a or pick up in the AM and PM peak hour respectively.

The increase from 287 to 690 students mean that there would be a net increase of up to 270 additional traffic movements during the AM peak hour before the school starts. The net increase is slightly lower, up to 214 additional traffic movements in the PM peak hour after the school finishes. It should be acknowledged that there will be an increase of small amount of traffic movements as a result of increase in staff from 26 to 58 (+32). However, these traffic movements associated with staff are expected to occur outside of the peak times during the kiss and drop movements.

Table 3-1 Additional traffic movements as a result of proposed school expansion

	AM peak hour	PM peak hour
Existing conditions – 287 students	192 vehicle movements	152 vehicle movements
Proposed conditions – 690 students	462 vehicle movements	366 vehicle movements
Net increase	**270 vehicle movements**	**214 vehicle movements**

Source: SCT Consulting, 2020

The internal road will improve the circulation of kiss and drop movements in the surrounding road network and reduce the need for all vehicles to effectively operate twice along Napier Street and France Street while entering and exiting from High Street.

Table 3-2 detailed the expected increase in traffic on the surrounding street network before and after the proposed school expansion.

Table 3-2 Additional traffic movements on surrounding street network

	Napier Street	France Street	High Street (east of school)	High Street (west of school)	Assumptions
AM peak hour					
Existing conditions – 287 students	132 vehicle movements *	60 vehicle movements *	96 vehicle movements ^	96 vehicle movements ^	*- based on 70:30 split of parking spaces available for kiss and drop on Napier and France Streets respectively ^- based on a 50:50 split arrival pattern on High Street based on school catchment
Proposed conditions – 690 students	231 vehicle movements #	231 vehicle movements #	231 vehicle movements ^	231 vehicle movements ^	#-All kiss and drop traffic enter from Napier Street and exit via France Street via the one-way internal road ^- based on a 50:50 split arrival pattern on High Street based on school catchment
Net increase	+99 vehicle movements	+171 vehicle movements	+135 vehicle movements	+135 vehicle movements	
Total traffic (estimated)	**<300 veh/hr**	**<300 veh/hr**	**<500 veh/hr**	**<500 veh/hr**	
PM peak hour					
Existing conditions – 287 students	106 vehicle movements *	46 vehicle movements *	76 vehicle movements ^	76 vehicle movements ^	*- based on 70:30 split of parking spaces available for kiss and drop on Napier and France Streets respectively ^- based on a 50:50 split arrival pattern on High Street based on school catchment
Proposed conditions – 690 students	183 vehicle movements #	183 vehicle movements #	183 vehicle movements ^	183 vehicle movements ^	#-All kiss and drop traffic enter from Napier Street and exit via France Street via the one-way internal road ^- based on a 50:50 split arrival pattern on High Street based on school catchment
Net increase	+77 vehicle movements	+137 vehicle movements	+107 vehicle movements	+10 vehicle movements	
Total traffic (estimated)	**<300 veh/hr**	**<300 veh/hr**	**<500 veh/hr**	**<500 veh/hr**	

Source: SCT Consulting, 2020

The analysis shows that the increase in traffic can be accommodated in the surrounding street network and maintaining the environmental capacity of Napier Street and France Street as local residential streets. The traffic surveys undertaken in 2018 suggested that High Street (in the vicinity of the school) carries around 270 to 300 vehicles during the peak hours. Hence the additional of 135 vehicles at different sections of High Street would mean that traffic levels can still be maintained below the environmental capacity limit of 500 vehicles per hour for collector streets.

It is also noted that the best available response to traffic generation should be the partnership between school and Council in the promotion of sustainable means of travel. With substantial constraints on High Street, it is unlikely that intersection upgrade works could be delivered around the school without impact to properties.

The 'Making school travel plans work' research study undertaken in 2010* summarises several Travel Plans case studies, prepared at 23 different schools in England, with findings that after the implementation of a Travel Plan the average reduction in car use was 23%, with some schools cutting car use by more than 50%. This is a strong case to take a behavioural response to traffic congestion as the school continues to expand.

Successful implementation of the GTP would increase the mode to walking and cycling. Given the size of the catchment as all being within walking distance, substantial walking and cycling mode share is considered possible.

4.0 Conclusion

The findings of the RTA and consultation with the council would conclude the internal road scenario is the preferred option for meeting the forecasted trip growth at the school.

The internal road will aim to reduce the impact on the local street network while helping deliver the extra kiss and drop spaces. The proposal addresses safety issues concerning double parking and illegal turning maneuvers by implementing a one-way circulation system and demarcation of parking spaces. The internal road has been designed to best Australian standards taking into consideration sight lines, speed limit and crossing facility type.

The proposal will require active management for it to operate efficiently. Five-minute parking limits are recommended based on the available curbside space on France Street, Napier Street, and the internal road. It is expected staff for the school would be involved in the management of the kiss and drop pickup and drop operational times.

Locating an excursion only bus zone on Canton Street would limit traffic impacts on High Street and still allow for safe pupil access via the zebra crossing located outside the school gate on High Street.

The results of the school principal's travel behaviour demonstrates walking is a well-established travel mode for parents and pupils. This should be further built upon through the initiatives proposed as part of the Green Travel Plan.

APPENDIX A

Rapid Transport Assessment

Canterbury South Public School Rapid Transport Assessment

Final Report

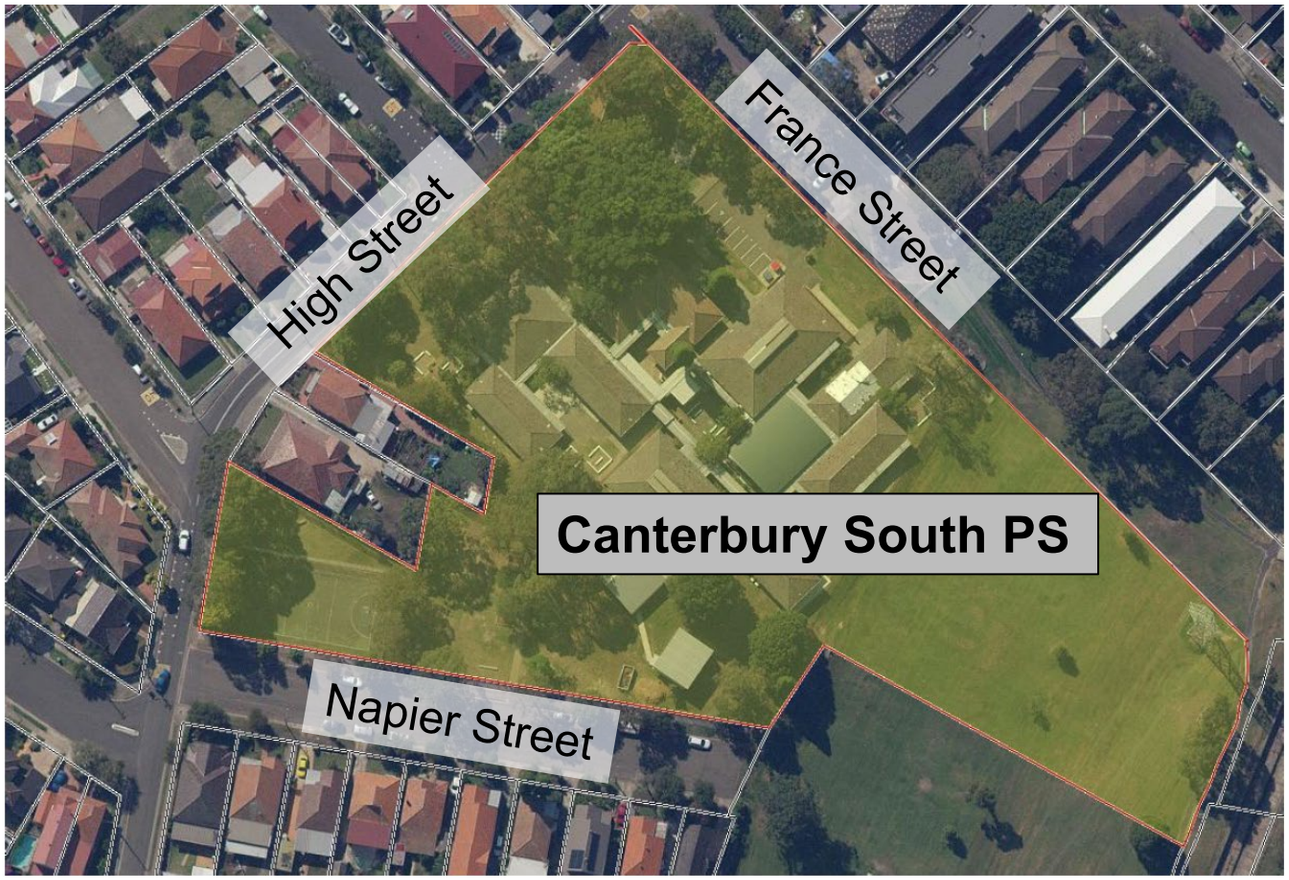
Prepared by: Adam Smith

Reviewed by: Jonathan Busch

9 October 2020

Purpose

- School Infrastructure NSW (SINSW) in conjunction with Canterbury Bankstown Council is investigating opportunities for a primary school expansion. The expansion could support up to 690 students.
- The vision for the school is that it would not rely on car-based kiss and drop – all travel for students should be walking, cycling and public transport.
- SCT Consulting was engaged to undertake a rapid transport assessment of the site and identify opportunities to deliver this school.
- This document is prepared for the purpose of informing the preparation of a revised Green Travel Plan to support the Development Application.



- It is likely as the school expands that the school will need funding for resources to manage the kiss ‘n drop areas to ensure safe and efficient movement of cars.

Community Feedback

1.
There is insufficient parking for staff/parents/carers impacting on residents

2.
The expansion of the school will result in higher traffic volumes and more congestion

3.
Illegal parking is common i.e. double parking in peak periods

4.
Additional traffic and associated movements will impact on pedestrian safety

Community Feedback Responses

1. After listening to Council and community feedback there is no longer a reduction in car parking spaces.

2. There is a risk that the expansion of the school could lead to more traffic. This Rapid Transport Assessment (RTA) and Green Travel Plan propose how behaviour change could be achieved - as a partnership across the entire community.

3. We agree that unsafe and illegal driving and parking practices are a problem around the school. Double parking is something that can be tackled through cooperation between Council, the school, the PnC, and residents – e.g. increased surveillance by Council, increased management of the kiss ‘n drop by the school.

4. We agree that pedestrian safety is of first importance in planning for the school expansion. This RTA proposes investments and programs to improve walking and cycling safety (such as new footpaths) as well as strategies to reduce attractiveness of driving.

Council Feedback

1. A connector road between France Street and Napier Street should be considered

2. The traffic generation rate is too low and too optimistic for sustainable modes

4. The location of a bus bay on Canton Street risks pedestrian safety

3. Intersections along High Street in proximity to the school will be adversely effected

5. A shortfall in parking spaces will result in additional on-street parking

Council Feedback Responses

1. This RTA considers the proposed connector road as well as an alternative scheme. We are looking for Council feedback on both approaches.

2. Based on Council comments for the occupancy rate in the TIA, the RTA used a rate of 1.7 students per car, established on estimate from past school projects. We have also adopted a safety factor to predict impacts of uneven arrival of cars. We have also tested a ten-minute vehicle dwell time in response to community feedback. The amount of space allocated for Kiss n' Drop is shown in slide 31.

3. As part of the updated TIA, discussions will be necessary with Council concerning intersection modelling. The ongoing impact of COVID-19 will need to be addressed regarding the ability to undertake modelling.

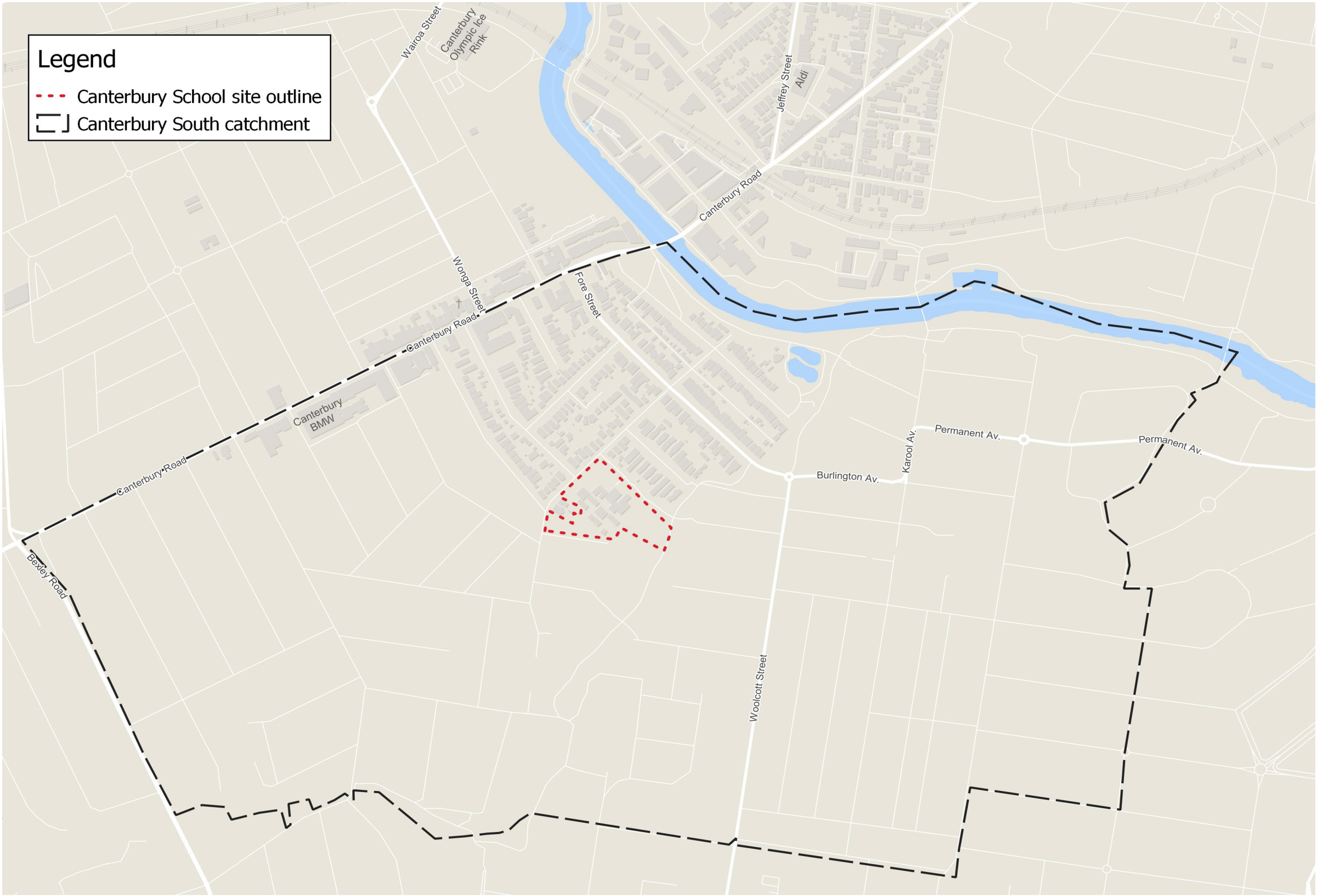
4. Due to the size of the existing school catchment, a school bus provides only limited benefits. Majority of students are within walking distance. The bus bay proposed on Canton Street would only be used for excursions. Pupils would use the zebra crossing on High Street under supervision.

5. After listening to Council and community feedback there is no longer a reduction in car parking spaces.

SCT Consulting

Overview

Current students are mostly within the catchment area and widely distributed

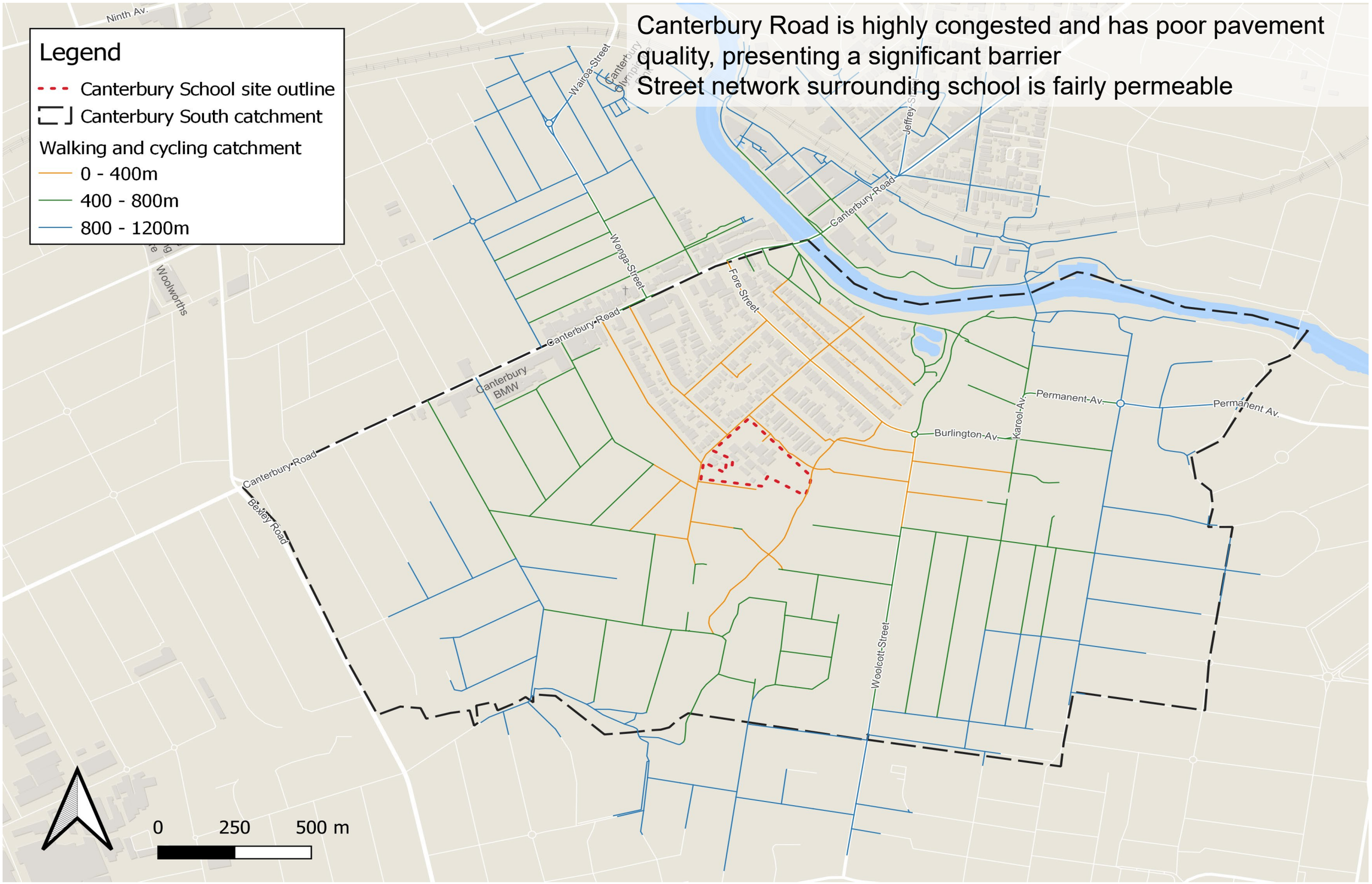


Gate and fence locations

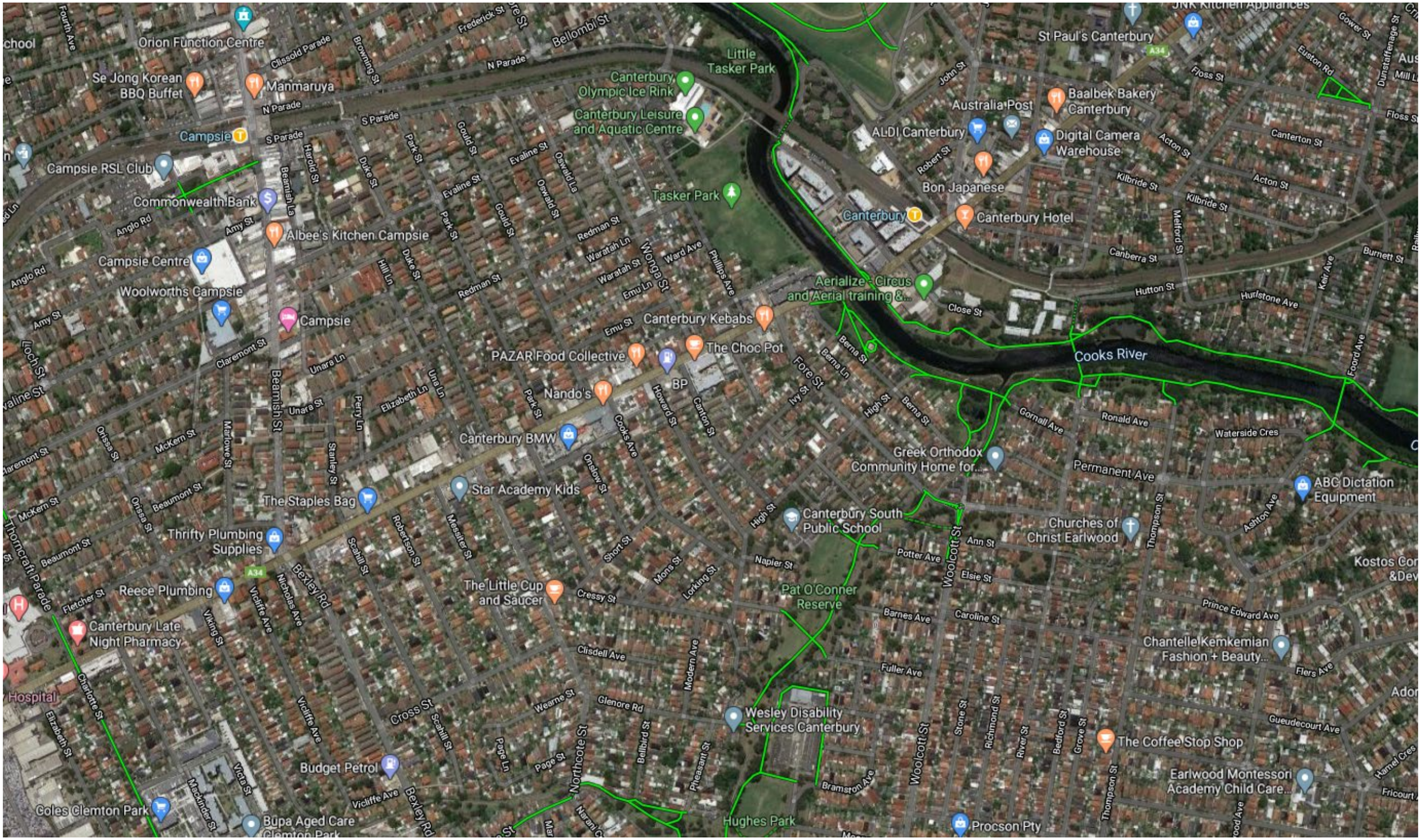
Transport characteristics

Walking and cycling catchment shows opportunities to take non-traffic route to school

Canterbury Road is highly congested and has poor pavement quality, presenting a significant barrier
Street network surrounding school is fairly permeable

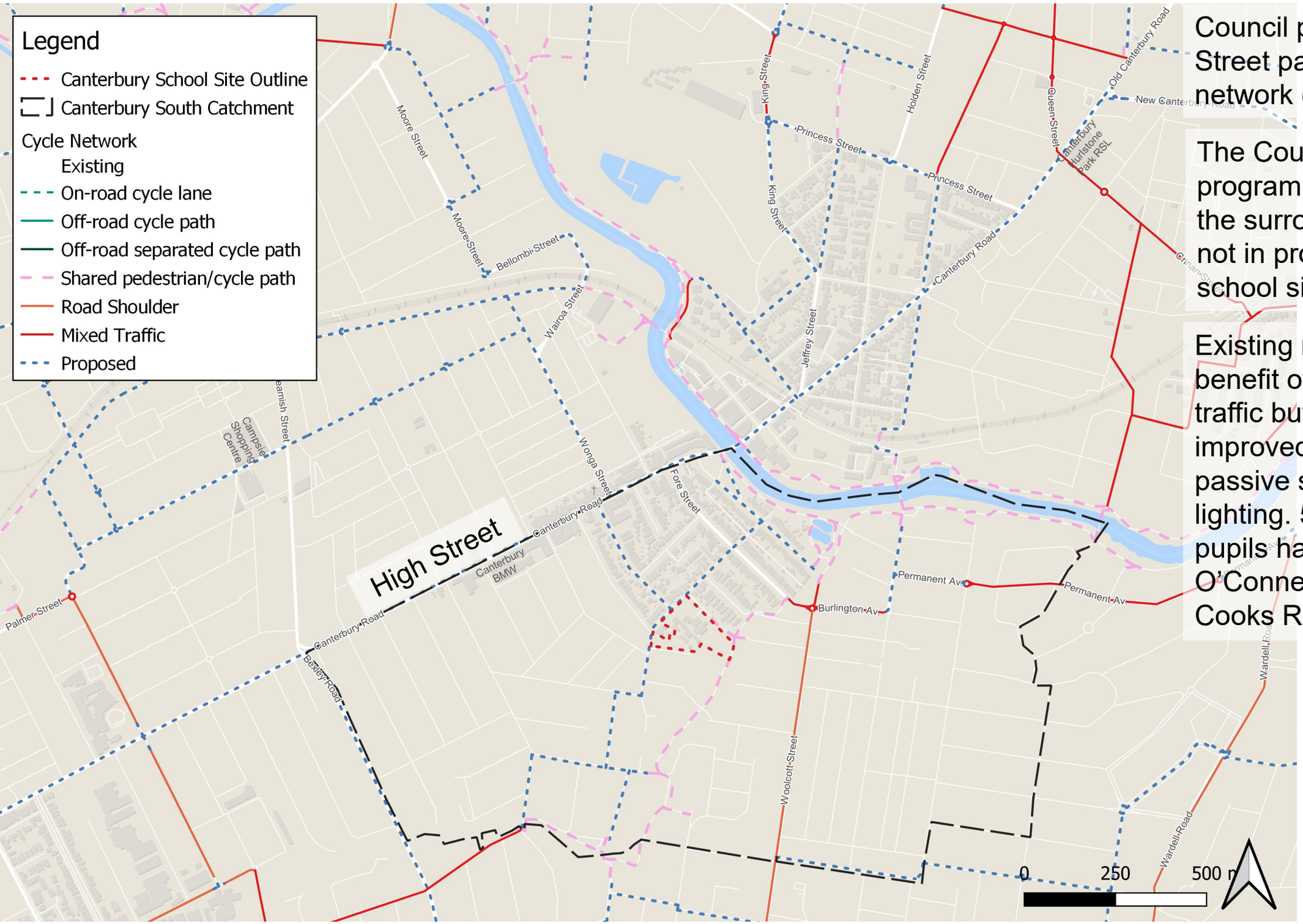


School has connectivity to regional Cooks River Cycleway, including separated crossing of river



Existing routes have the benefit of not being mixed traffic but could be improved by additional passive surveillance and lighting. Shared paths would improve comfort and safety for students on currently mixed traffic routes and should be provided where feasible.

Existing and proposed cycle network

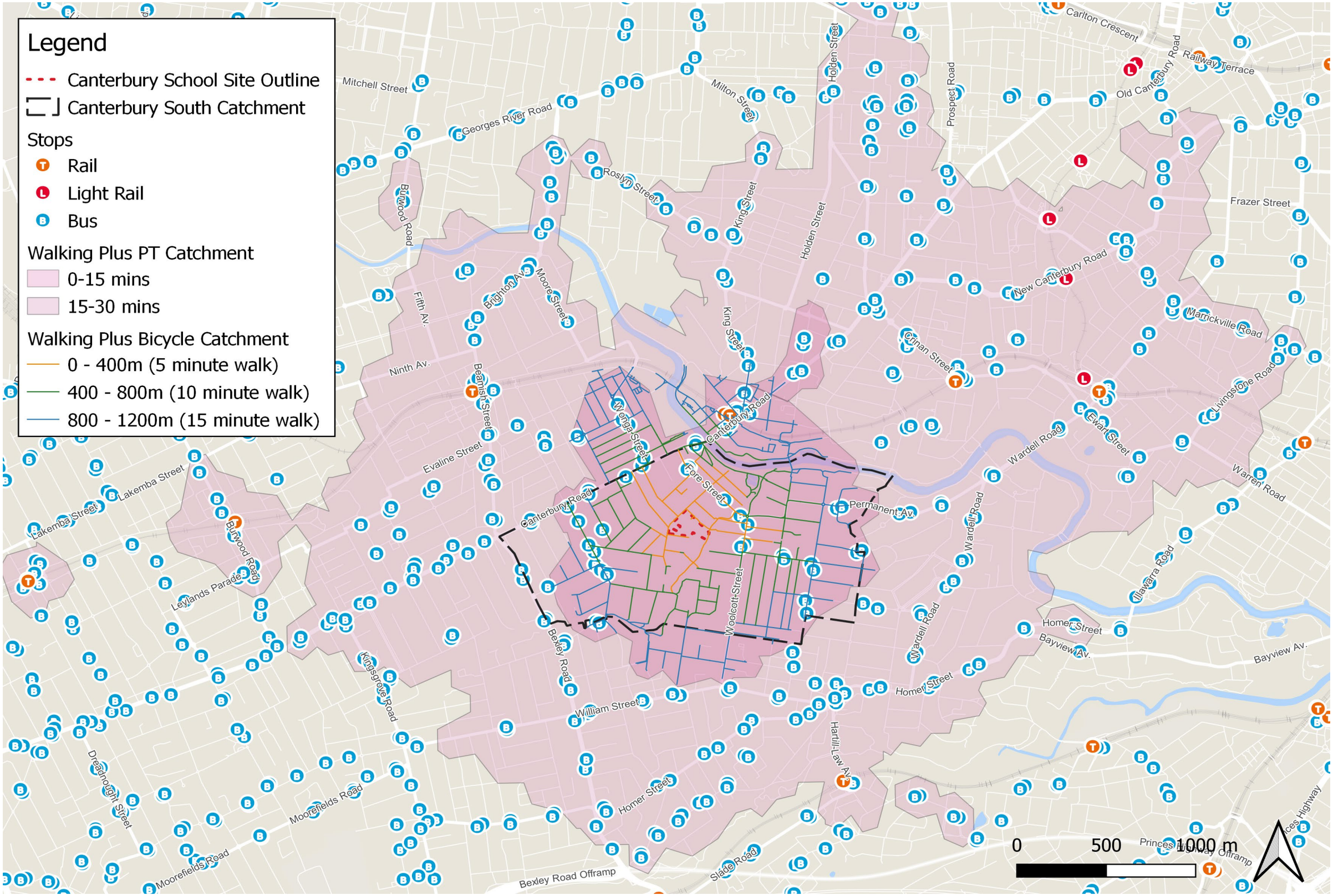


Council plans to make High Street part of the cycle network (mixed traffic).

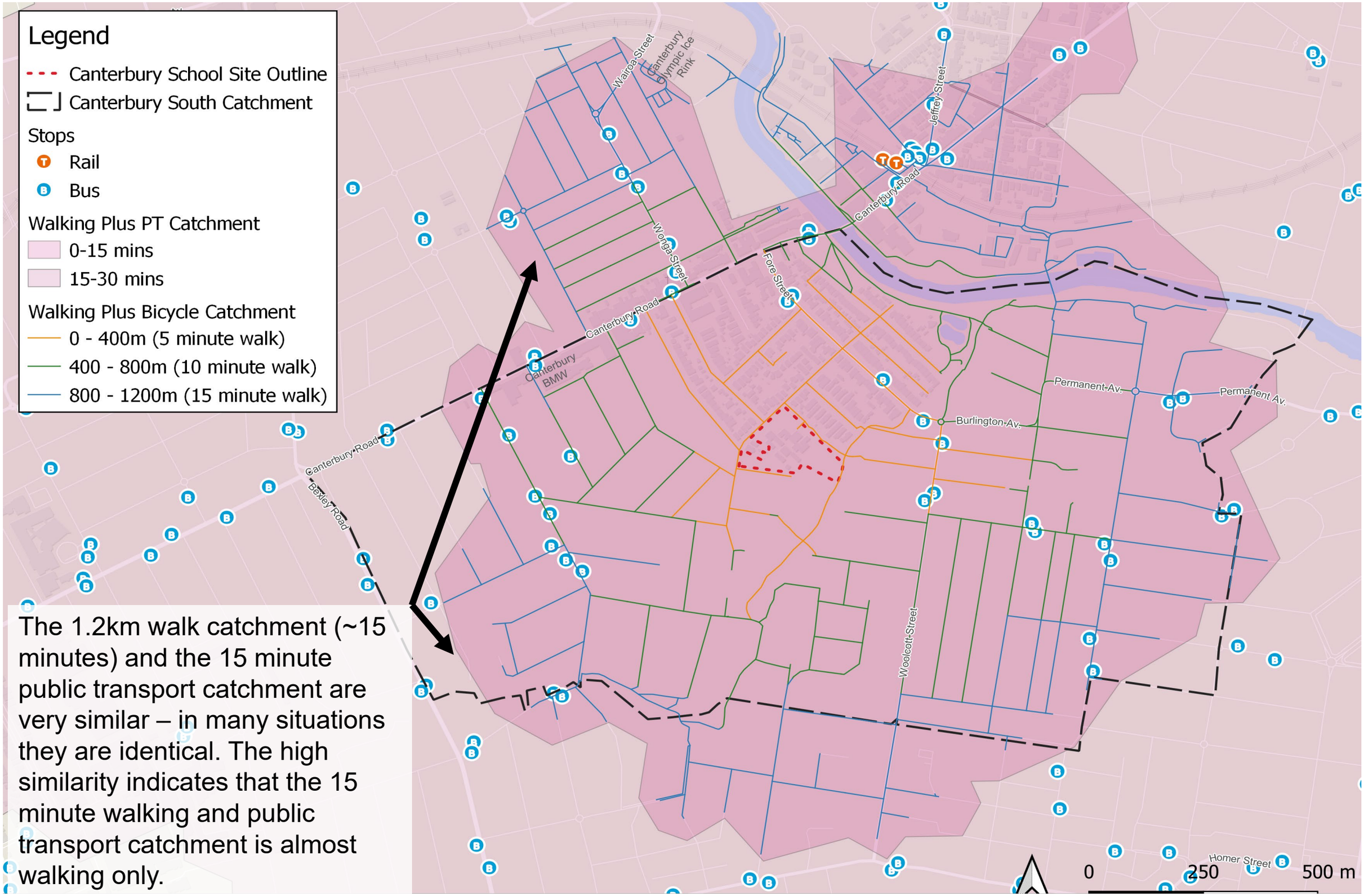
The Council capital works program indicates work in the surrounding areas but not in proximity to the school site.

Existing routes have the benefit of not being mixed traffic but could be improved by additional passive surveillance and lighting. 59% of current pupils have access to Pats O'Conner Reserve and Cooks River Cycle Route.

The 30 minute walking and public transport catchment provides broad access



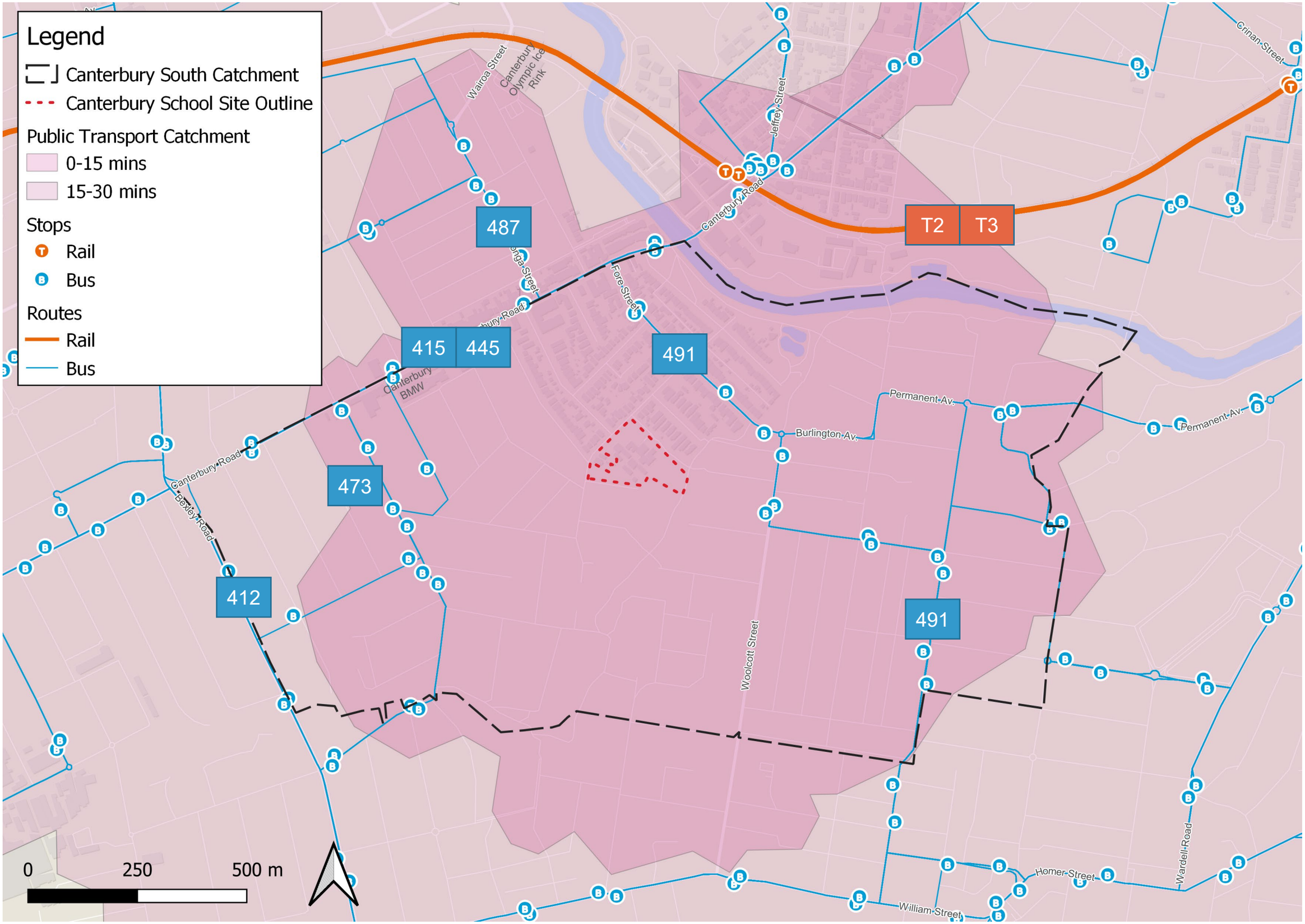
The 15 minute walking and public transport catchment



The 1.2km walk catchment (~15 minutes) and the 15 minute public transport catchment are very similar – in many situations they are identical. The high similarity indicates that the 15 minute walking and public transport catchment is almost walking only.

Local public transport routes

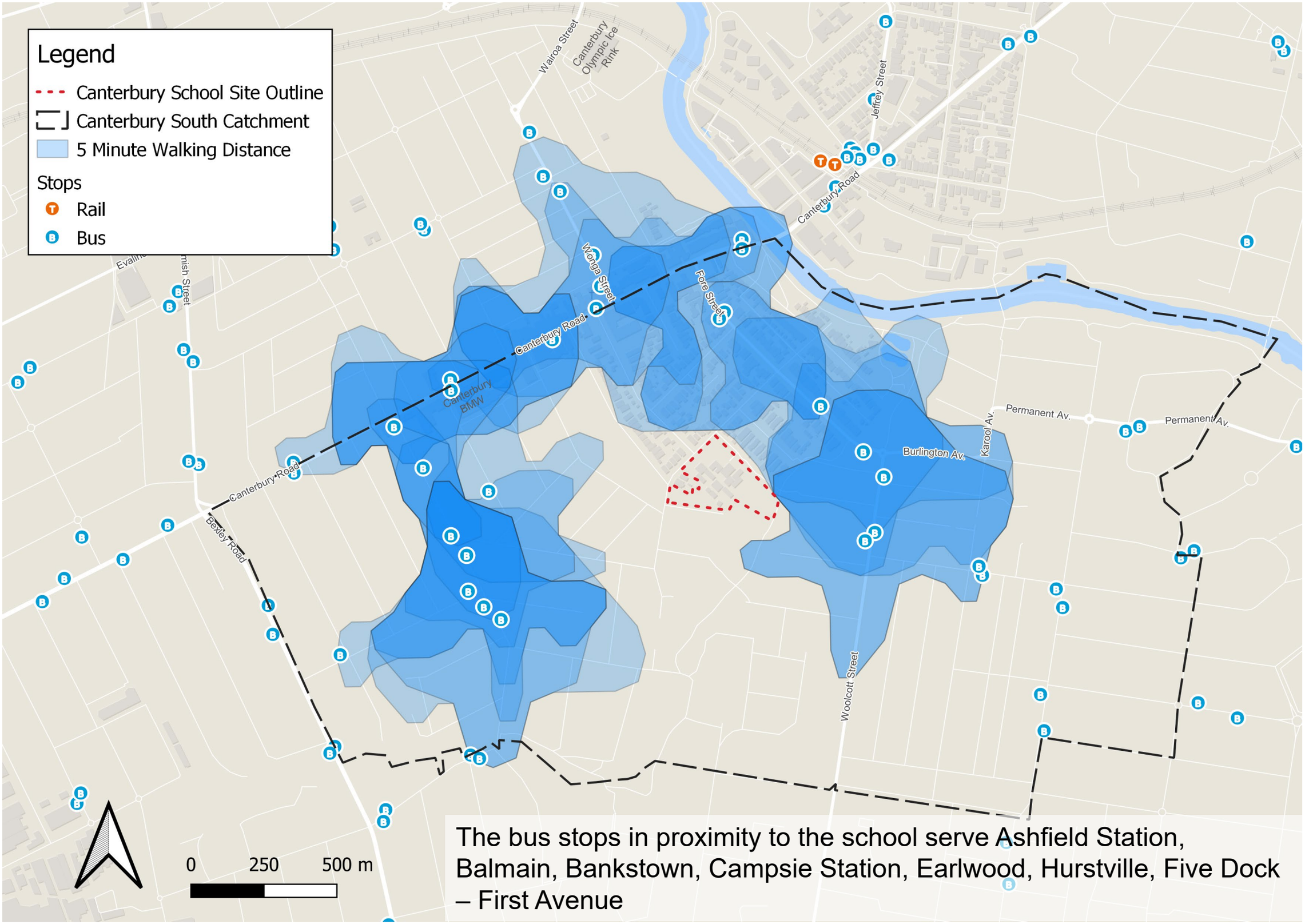
SCT Consulting



There are a large range of bus stops that could be used by staff

Stop Name	Route	Route Name	Direction	AM/PM Peak	
Fore St at Ivy St	491	Hurstville to Ashfield Station/Five Dock - First Ave	Ashfield Station, Five Dock - First Ave	4	2
Fore St opp Ivy St	491	Hurstville to Ashfield Station/Five Dock - First Ave	Hurstville, Earlwood-Clarke Street	3	3
Canterbury Rd opp Canton St	445	Campsie to Balmain via Leichhardt Marketplace	Balmain	4	4
Wonga St at Clunes Lane	487	Bankstown Century to Canterbury Central	Bankstown	1	2
Canterbury Rd at Howard St	445	Campsie to Balmain via Leichhardt Marketplace	Campsie Station	3	4
Canterbury Rd at Allen St	445	Campsie to Balmain via Leichhardt Marketplace	Campsie Station	3	4
Canterbury Rd at Park St	473	Rockdale to Campsie	Balmain	4	4
Northcote St at Canterbury Rd	473	Rockdale to Campsie	Campsie Station	2	3
Northcote St after Canterbury Rd	473	Rockdale to Campsie	Rockdale Station	2	2
Northcote St opp Clisdell Ave	473	Rockdale to Campsie	Campsie Station	2	3
Northcote St opp Wearne St	473	Rockdale to Campsie	Rockdale Station	3	2
Woolcott St at Elsie St	491	Hurstville to Ashfield Station/Five Dock - First Ave	Hurstville, Earlwood-Clarke Street	4	2
Earlwood Children's Centre, Fore St	491	Hurstville to Ashfield Station/Five Dock - First Ave	Ashfield Station, Five Dock - First Ave	2	2

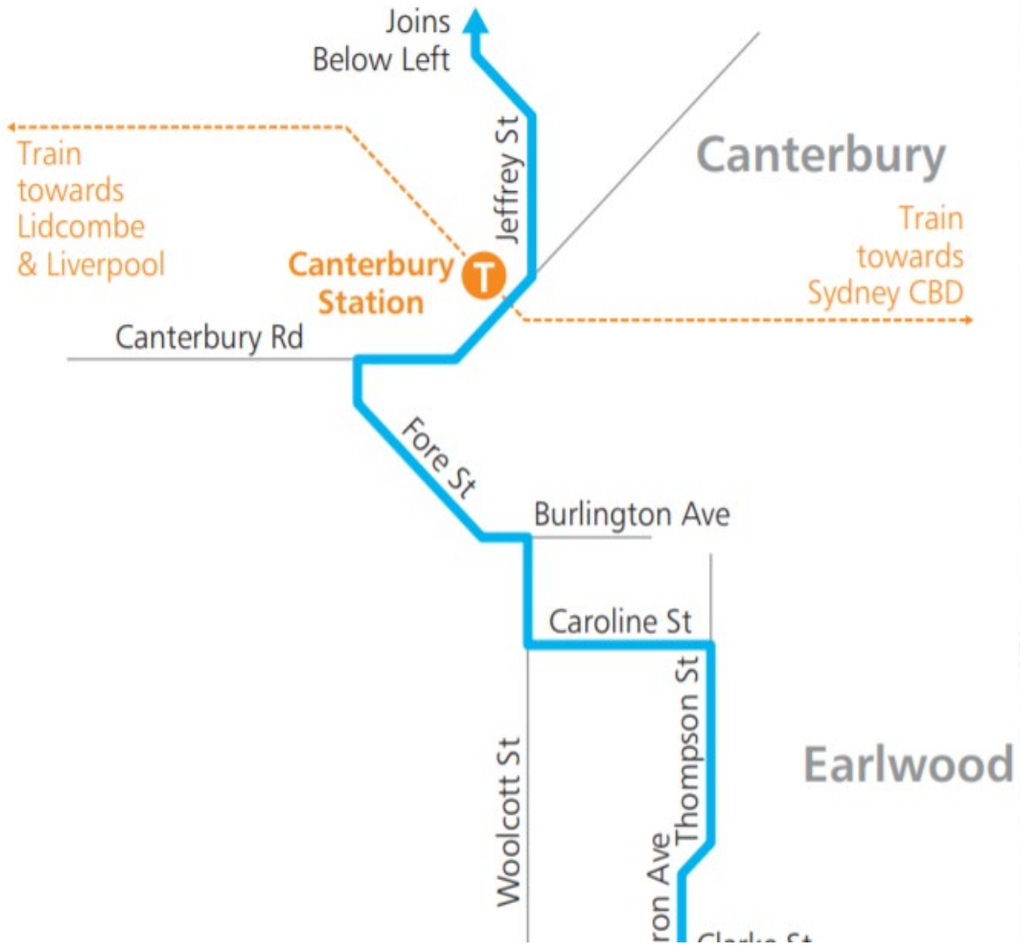
The school is not within a five minute walk from any bus stop, making buses unattractive for students

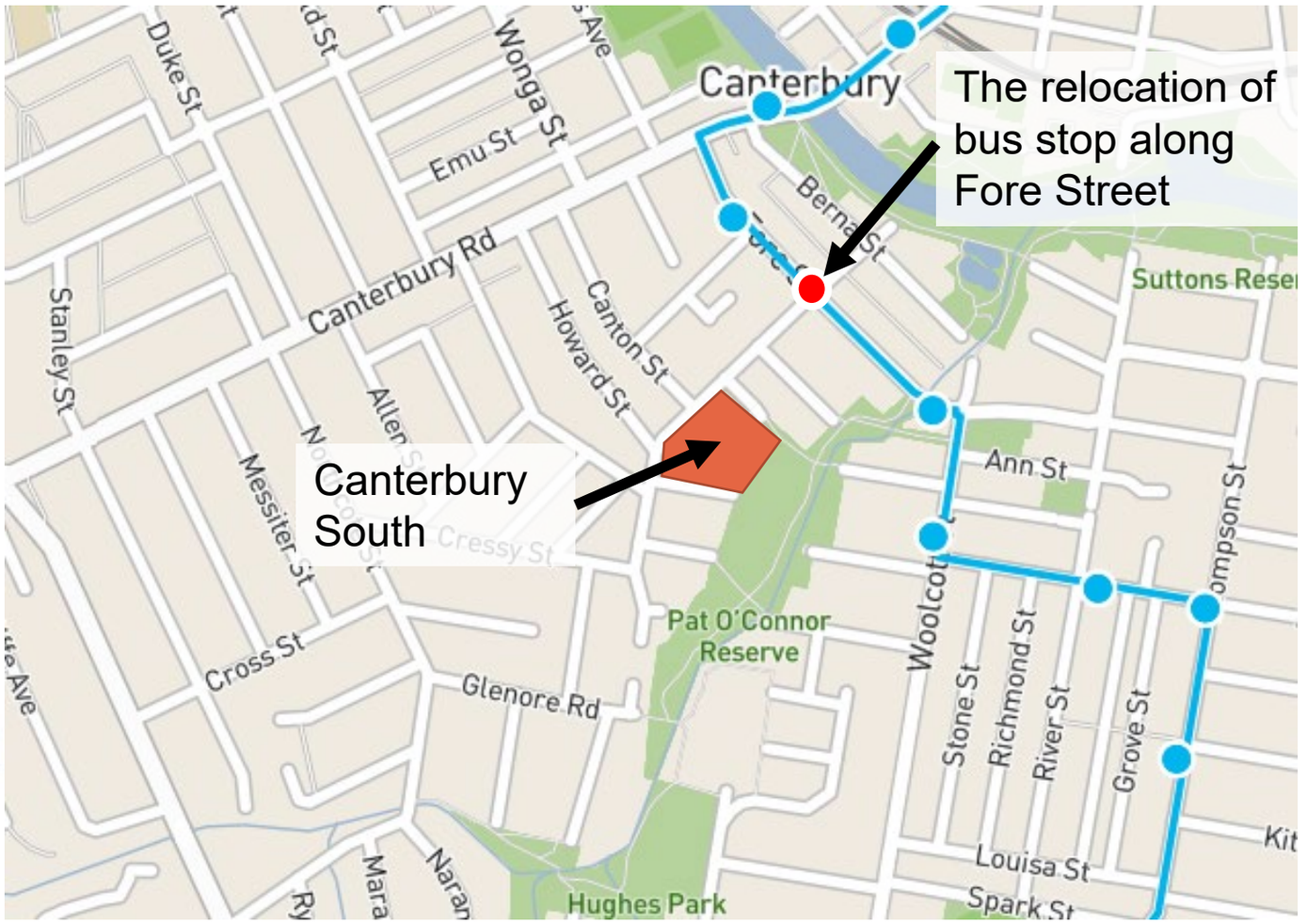


The bus stops in proximity to the school serve Ashfield Station, Balmain, Bankstown, Campsie Station, Earlwood, Hurstville, Five Dock – First Avenue

Only route 491 provides a benefit to students, stopping along Fore and Woolcott Streets

491 Hurstville to Five Dock

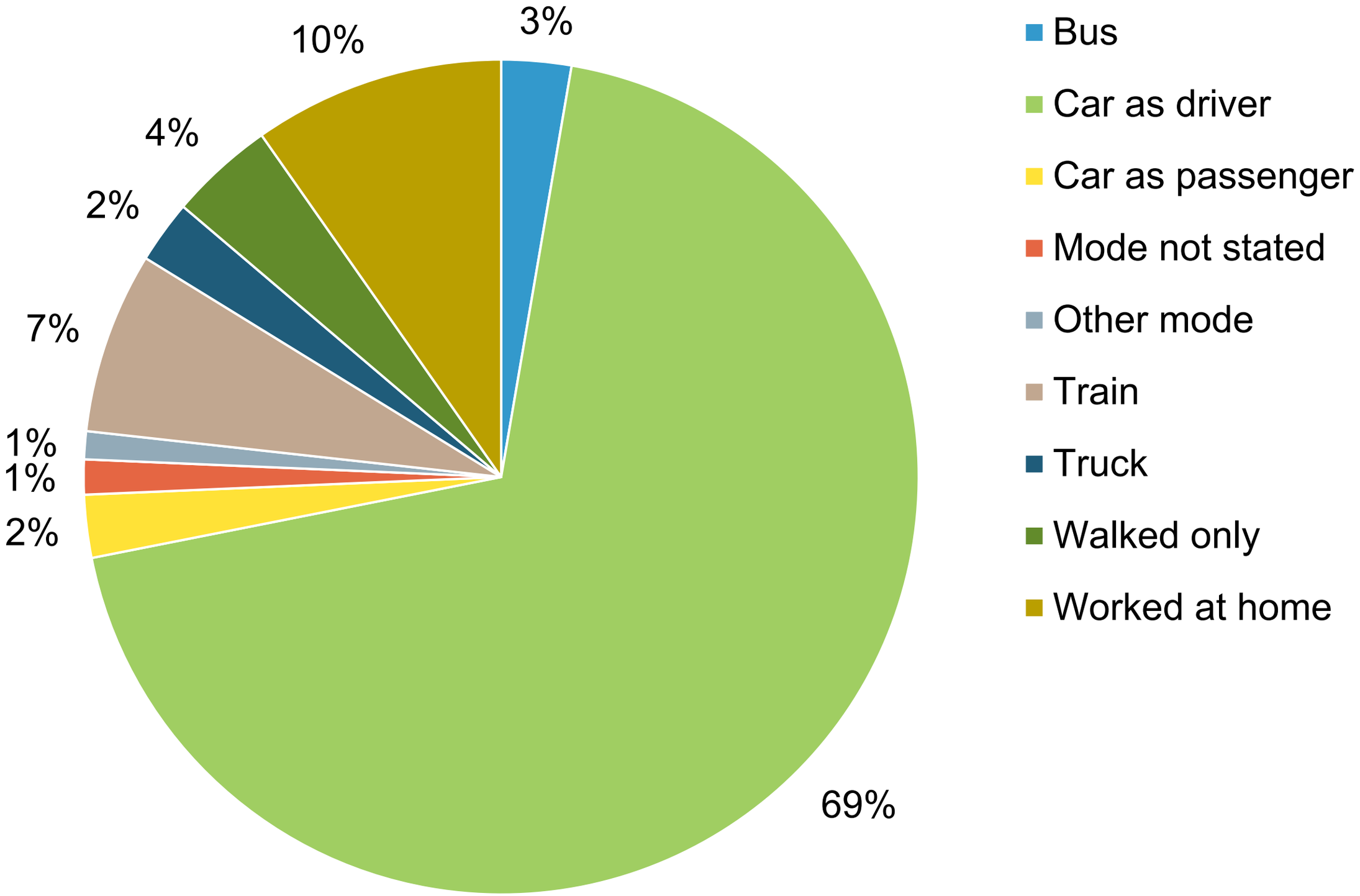




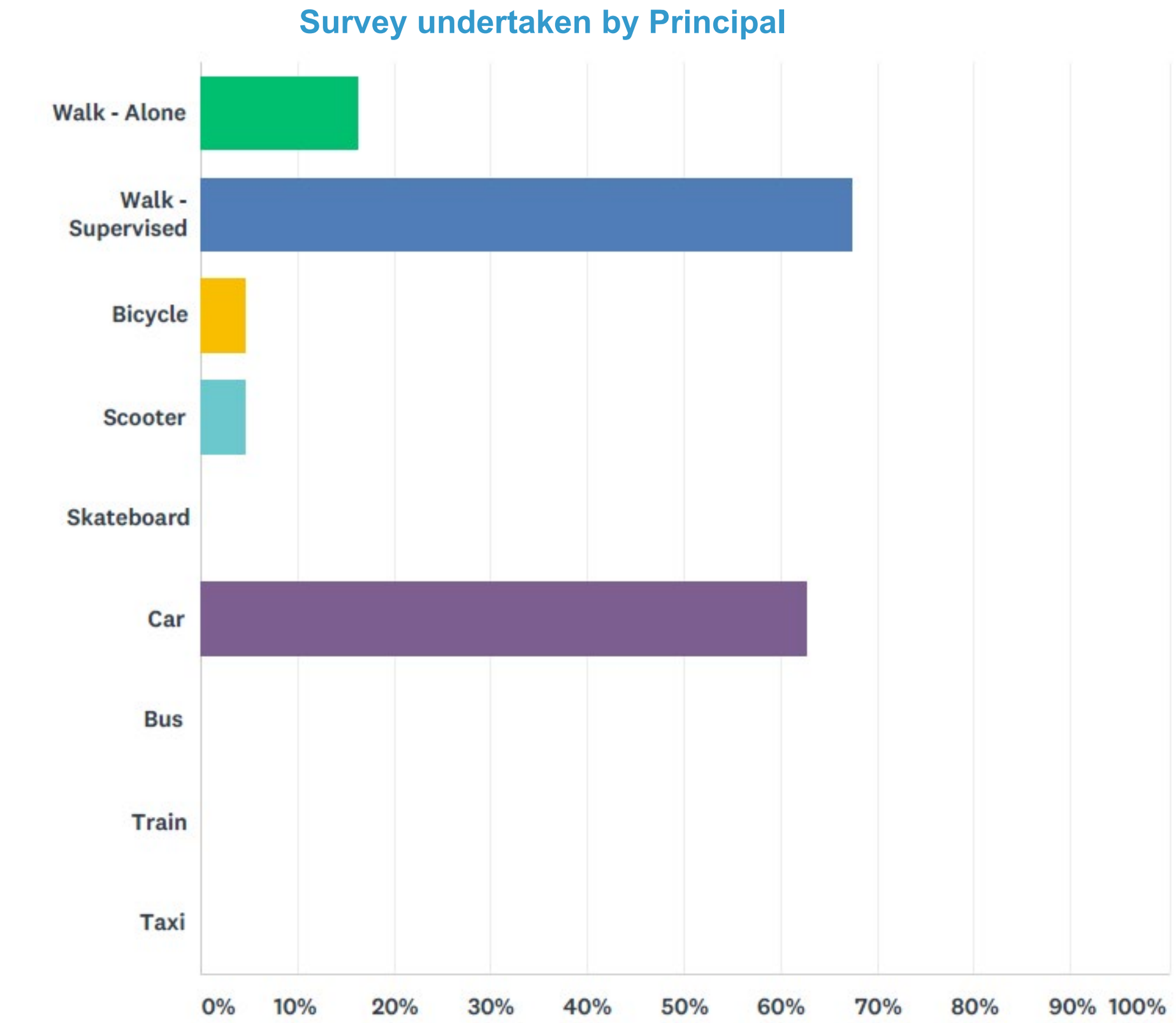
Covers 43% of the catchment area, Covers 100 of 285 students (35%) supplied in student locations data

Relocating stop on Fore Street would reduce walking distance to 152m, and improve safe crossing opportunities at Fore Street due to zebra crossing.

Mode share for workers in the area (such as teachers) shows high car dependency



While many students walk or cycle, car is seen as still an important mode or an important backup*



*Survey does not add up to 100%. The data show that students change mode based on various reasons (e.g. parent working days, weather, etc.)

SCT Consulting

Proposal

Transport approach

Congestion around schools is a known issue, affecting safety and reliability for all road users. By promoting alternatives to private car transport, we can increase the safety, health and well being of staff an students.

Building more road infrastructure and reducing delays to vehicles could have the perverse effect of encouraging more driving, creating more congestion elsewhere in the network.

SINSW's vision for transport operations in schools is to **increase the sustainability of our schools** by **minimising one-car one-student kiss-and-drop**

Kiss ‘n drop space estimation

- According to similar case studies, a school of 1,000 student population will provide a range of 25-35 spaces for kiss ‘n drop activities.
- However, this is where 2-minute time limits are in place. Community feedback stated a 10-minute time limit would be more realistic, but this leads to a much higher parking requirement.
- Without behaviour change, the expanded school would require up to 89 kiss ‘n drop bays. There are currently 29 spaces on Napier and France Streets adjacent to the school and a further 11 spaces on the other side of Napier.

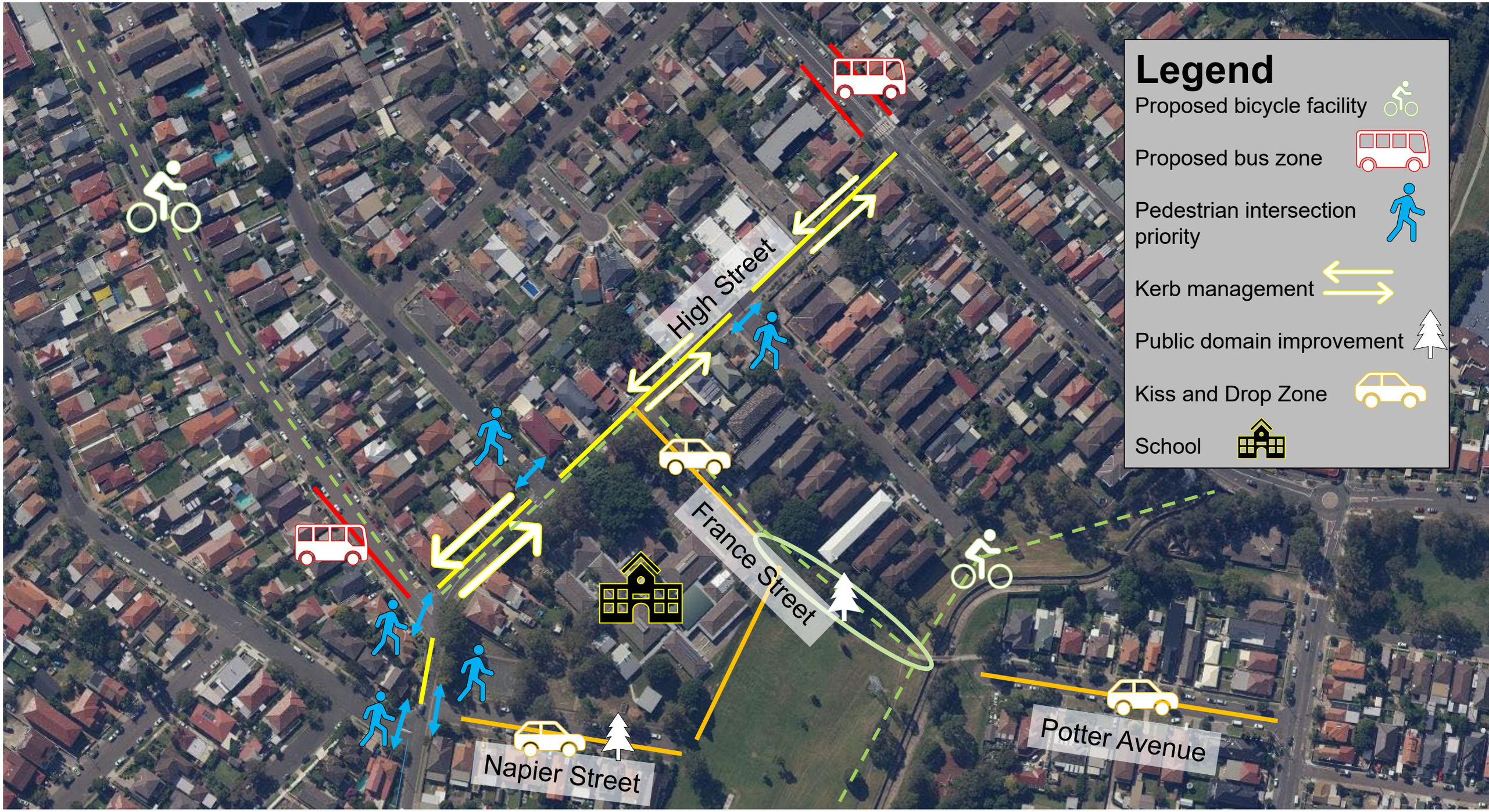
Component	Assumption	
Students	690	
Car Mode Share	60%	
Students by car	414 students	
Vehicle occupancy	1.7 students/car	
Number of cars trips	243 trips	
Percentage of students not in OOSH	80%	
Discounted car trips	194 trips	
Dwelling time per car (sec)	300	600
Total dwell time for all cars (sec)	58,200	116,400
Total drop off window (min)	30	30
Total spaces required	44	89

Total travel demand summary

Total trips	Base case	Mode shift case
School Capacity	690	690
Kiss ‘n drop mode share	60%	45%
Kiss ‘n drop length	89 spaces, 567m* – 10min limit 44 spaces 280m* – 5min limit	33 spaces, 214m* – 5min limit
Bus mode share	0%	5%
Bus riders	0	50
Buses	0	2
Number of bus bays	0	1
Pedestrian mode share	30%	35%
Number of pedestrians	300	350
Cyclists & Scooters mode share	10%	15%
Number of bicycle/scooter spaces	100	150

The base case represents current travel behaviour based on school and travel surveys. The stretch case represents a sustainable mode shift based on interventions.
*Length based on parallel parking

Infrastructure opportunities map



SCT Consulting

Infrastructure options

Options for kiss ‘n drop traffic operations

Overview

New narrow, private road that connects France and Napier Streets.

Road would be **fully gated and closed** outside of kiss ‘n drop times to ensure safety of students.

Drivers would enter via Napier Street, circulate to drop the child at the school gate then exit at France Street.

Napier Street and France Street would retain their two-way traffic configuration.

No net change in kiss ‘n drop numbers.

Next step is to work with Council to identify appropriate layout of spaces e.g. changing the configuration of parking on France Street to angled and no stop zones.

Option 1 – New road

Options for kiss ‘n drop traffic operations

Overview

Redesign of France Street to include 60 degree angled parking, Kiss n’ Drop time limits of ~5 mins **and to address safety issues**.

Engineering works on Napier Street to facilitate easier turn around.

Drivers would drop and use cul-de-sacs to turn around.

Option 2 – localised transport access improvements

Options for kiss ‘n drop traffic operations

Overview

The addition of Potter Avenue as Kiss n’ Drop zone with pupils using the footpaths across the reserve to reach the school.

Potter Avenue may need the addition of a turning circle to facilitate safe vehicle movements.

Provides additional kiss ‘n drop spaces.

Option 3 – localised transport access improvements plus Potter Avenue

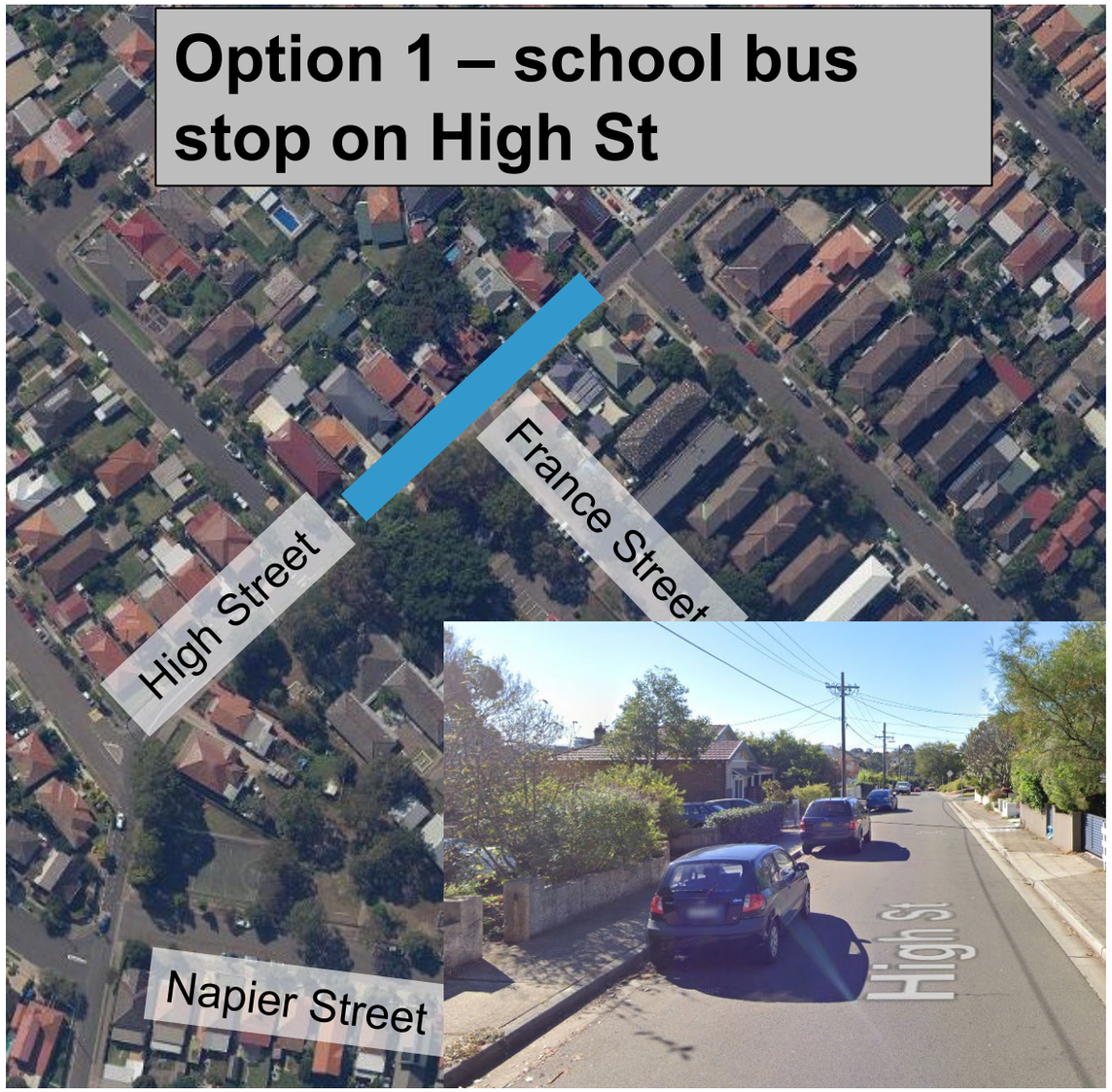
Comparing kiss n' drop options

Options	Opportunities	Constraints*
New road	• The one-way format could reduce delays to cars when they turn onto High Street. • Reduces the need for U-turn maneuvers preventing safety risks to pedestrians.	• The school would be surrounded by roads on all frontages. The new road would be fenced, which would reduce access to reserve. • Doesn't provide enough kiss 'n drop spaces as road would need to be fenced. Would need to be paired with 5 minute drop off behaviour change.
Existing Streets	• School retains existing access to playing fields and reserve. • Slower speed of cars in kiss 'n drop areas reduces the risk of severe crashes.	• Would need to be paired with 5 minute drop off behaviour change initiatives and investment in walking and cycling to work. • Puts more pressure on existing streets.
Potter Avenue additional kiss 'n drop	• Distributes traffic across three streets limiting impact on intersections along High Street. • Slower speed of cars in kiss 'n drop areas reduces the risk of severe crashes.	• Introduces new traffic on Potter Avenue. • More effort to mange kiss 'n drop due to additional location.

*All options require kiss 'n drop management

Options for bus stop facilities

Option 1 – school bus stop on High St



- Road only wide enough for one lane in each direction.
- Insufficient reserve means that either bus obstructs traffic or would require removal of parking on High Street if route passes.
- Bus zone likely most appropriate signposting.
- Would need upgrade of footpath on High Street.

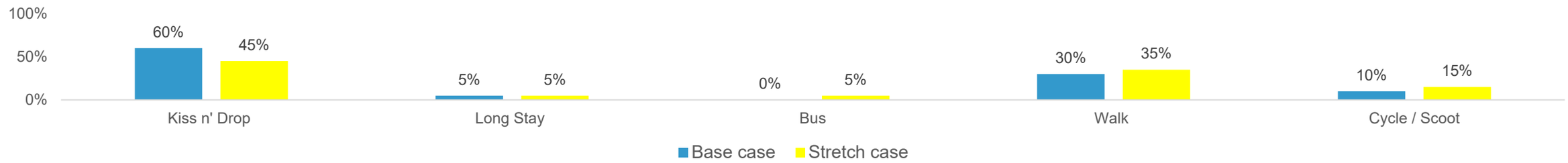
Option 2 – potential bus zone for excursions only on Canton St

- Proposal of no school bus due to range of the 491 – bus stop relocation along Fore St only.
- Loss of parking on Canton Street.
- Likely no need for parking loss on High Street as bus would be used infrequently.
- Could have time-limited bus zone or just time limited parking due to infrequent use.

Comparing bus stop options

Options	Opportunities	Constraints
High Street	• Closer the school in proximity to a zebra crossing. • Partially / fully located on school site reducing any loss of parking spaces and mitigating congestion impacts. • Exclusively used for excursions limiting congestion impacts.	• High Street is congested and narrow. • Located across two sides of the street limiting resident parking during operation. • Restricts sight lines from the intersection with Canton Street posing a safety risk.
Canton Street	• Safe route to school via zebra crossing on High Street • Unlikely to generate congestion issues. • Exclusively used for excursions limiting congestion impacts.	• Further away for the school requiring pupils to cross High Street. • Limits resident parking during operation.

Infrastructure comparison for options



Mode	Base case (current)	Stretch case (C) CAPEX (O) OPEX
Kiss ‘n drop	• Kiss ‘n drop spaces to support 89 spaces (10 minute average drop time) or / 44 spaces (5min limit) (C) • OP1 - Situated on proposed road and local streets (C) • 4x staff member to manage kiss ‘n drop (O)	• Kiss ‘n drop spaces to support 66 spaces (10 minute average drop time) or / 33 spaces (5min limit) (C) • OP2 - France Street and Napier Street (C) • OP3 - France Street and Napier Street plus Potter Avenue (C) • 2x staff member to manage kiss ‘n drop
Walking – all (C)	• Footpath upgrades along Pat O'Connor Reserve including new street lightening • Crossing facilities on Cooks Avenue, Canton Street, Howard Street	Base case PLUS: • Canton Street is missing a footpath along the western side • France Street is missing a footpath along the eastern side • High Street has footpath gaps along both sides • Potter Avenue has footpath gaps along both sides • Fuller Avenue gaps has footpath gaps along both sides • Improved street lightening from French Street to Potter Avenue, I • installation of way finders from Canterbury Train Station and nearby bus stops to quiet pedestrian routes, • footpath surface improvements along Napier street, • installation of CCTV near to Cup and Saucer Creek.
Bus – all (C)	• Excursion bus bay on Canton Street • Bus stop moved on Fore Street closer to High Street	• Excursion bus bay on Canton Street • Bus stop moved on Fore Street closer to High Street
Cycle & scoot – all (C)	• 100 bike and scooter storage	• Shared pedestrian/bicycle path or off-road separated cycle path along Howard Street connecting the school with Canterbury Road. • 150 bike and scooter storage • 10 staff bike spaces • End of trip facilities
Travel coordination	• Part time travel coordinator role for school (O) • Out of School Hours Care to spread out students arrival and departure times (O)	• Full time travel coordinator role for school (O) • Out of School Hours Care to spread out students arrival and departure times (O)

Proposals to be progressed in discussion with TfNSW and Council as potential funding sources

APPENDIX B

Green Travel Plan

SCT Consulting

Canterbury South Public School Green Travel Plan

Potential Initiatives and Programs

Prepared by: Anneli Clasie

Reviewed by: Jonathan Busch

9 October 2020 Version 1.3

Table of Contents

SCT Consulting

01

Introduction

Background

- School Infrastructure NSW (SINSW) in conjunction with Canterbury Bankstown Council is investigating opportunities for an expansion of up to 690 students at the Canterbury South Public School.
- In March 2020, SCT Consulting was engaged to undertake a rapid transport assessment of the site and identify opportunities to deliver this school.
- This presentation outlines proposed Green Travel Plan (GTP) initiatives for the school, to support the Development Application for the proposed expansion.
- The **vision is to minimise car-based kiss and drop** and that walking, cycling and public transport should be the most attractive travel mode to get to school.
- This presentation is a **long list of initiatives** which will be narrowed down for the final plan.

What is a Green Travel Plan?

- A tool designed to address an organisation's travel needs and impacts and to provide measures and initiatives that encourages and supports sustainable travel alternatives for staff, students and their parents or guardians.
- This is a **living document**, meaning it will change over time. This plan will requires ownership by stakeholders to be effectively implemented.
- Green Travel Plans for schools and their success is not widely documented for Australia. Some background study and reference have therefore been based on Travel Plans undertaken for schools in the UK for this presentation.

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02

The GTP process

The GTP process

- Establish relevant stakeholders to consult
- Set targets for the GTP and any limitations to be considered
- Allocate a Transport Coordinator role and Green Travel Committee

- Review existing transport options available to the school
- Staff and student survey to determine current travel patterns

- **We are here**
- Establish programs and initiatives based on data collection and background review
- Determine targeted audience, timeline and responsibility for each initiative

- Allocate responsible stakeholder / project teams to run individual initiative
- Establish program for the initiative
- Implement / run the initiative

- Ongoing monitoring of the program frequently during the first year
- Adjust / expand as necessary
- Once fully implemented, undertake annual reviews

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03

Successfully implemented school Travel Plans

Successfully implemented school Travel Plans (1/3)

The 'Making school travel plans work' research study undertaken in 2010* summarises several Travel Plans case studies, prepared at 23 different schools in England.

Findings included that after implementation of a Travel Plan:

- the average reduction in car use was 23%, with some schools cutting car use by >50%;
- parents perceived that travelling conditions had become safer and some schools recorded reduction in accidents (with one school recording a 25% reduction in child casualties);
- a walking bus reduced car usage from 76% to 63% in two years at one school;
- cycling usage increased from 2% to 6% at one school;
- seven of the case study schools had increased walking by around half or more;
- a car sharing scheme implemented at one school encouraged 28% of those arriving by car to now share the journey; and
- general improvements in children's attendance and punctuality, health and fitness and readiness to learn was noticed.

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** Source: Making school travel plans work - Experience from English Case Studies (Carey Newson, Sally Cairns & Adrian Davis , 2010), carried out for the Department of Transport*

Successfully implemented school Travel Plans (2/3)

Other findings of the 'Making school travel plans work' research study (England, 2010)*, relating to the success of a Travel Plan included that:

- launch events and promotion play an important role in encouraging participation in the programs;
- school assemblies were used by more than two thirds of the case study schools, to raise awareness of travel issues (by visiting speakers such as Police, Council or the P&C, or the children presenting themselves) and to announce initiatives or programs;
- lots of schools found ways to reward and celebrate the efforts of those taking part in travel initiatives, with prizes, certificates and trophies, or special days and promotional events (usually presented in assemblies);
- more than half the primary schools were running schemes to reward children for walking to school with stickers, badges, certificates and prizes; and
- the type of assistance schools commonly said they would find helpful were funding for specific aspects of the programs (for example to pay for prizes or for time spent by the co-ordinator).

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* *Source: Making school travel plans work - Experience from English Case Studies (Carey Newson, Sally Cairns & Adrian Davis , 2010), carried out for the Department of Transport*

Successfully implemented school Travel Plans (3/3)

Schools across NSW are pursuing Green Travel Plans as a means of improving safety of students and reducing congestion around schools.

For example, Flemington Primary School has a Green Travel Plan recorded the success of a Ride to School Day in 2012, where 88% of students travelled by non-car modes to school. Their plan can be viewed at: http://www.flemingtonps.vic.edu.au/app/webroot/uploaded_files/media/green_travel_plan_2012.pdf

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04

Programs and initiatives for staff

Programs and initiatives for staff

1. Use of carpooling and carsharing
2. Availability of information on available transport modes
3. Ride and Walk to Work Days (described under student initiatives)

1. Use of carpooling and carsharing

Overview:

- An online carpooling forum for staff travelling on the same route to be set up
- Priority designated parking within the staff car park could be considered
- Provide information to staff regarding the availability of car share opportunities

Investment:

- Volunteer staff coordinator (~1 hr / week)
- Installation of car pooling signage (by Council)

Stakeholders:

- Staff
- Carsharing company
- Council, to approve and install signage

Evidence:

- A car sharing scheme implemented at one school in the UK encouraged 28% of those arriving by car to now share the journey*

Photographer: David Emrich, unsplash.com

** Source: Making school travel plans work - Experience from English Case Studies (Carey Newson, Sally Cairns & Adrian Davis , 2010), carried out for the Department of Transport*

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2. Availability of information on available transport modes

Overview:

- Add Transport for NSW trip planning information to individual workstations and the school website
- Include the Transport for NSW Trip Planner app on the staff intranet
- Provide information about sustainable transport to new staff as part of their orientation, including where Opal cards can be purchased

Investment:

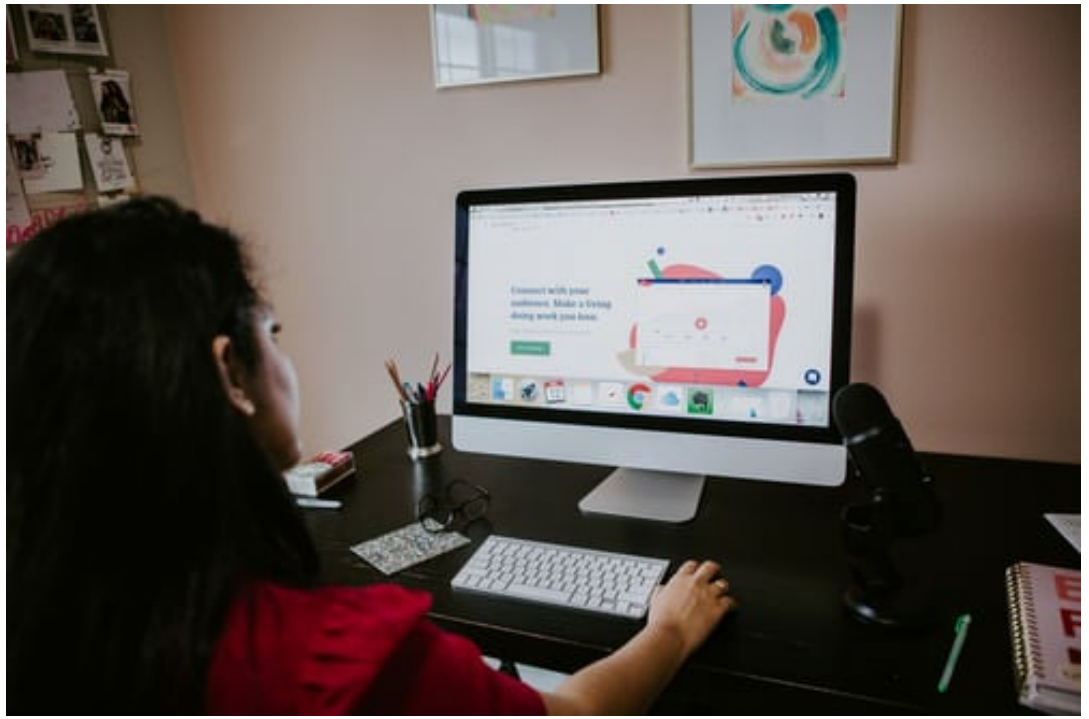
- Volunteer staff coordinator (~2 hrs)

Stakeholders:

- Staff

Evidence:

- No specific evidence able to be located, potentially not collected.



Photographer: ConvertKit, unsplash.com

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05

Programs and initiatives for students

Programs and initiatives for students

1. The School Streets initiative
2. A Walking School Bus (guided pedestrian groups)
3. National Ride or Walk to School Day (can also be done for staff)
4. Bike check up – sponsored or subsidised bicycle maintenance
5. Cycle education lesson plans
6. Encouraging car sharing
7. Road Safety Education day
8. Provision of a Travel access guide
9. New starter kit for all new students
10. Increased surveillance of drivers' behaviour

1. The School Streets initiative

Overview:

- Temporary traffic restrictions on roads surrounding the school during drop-off and pick-up times
- Turns selected streets into a cycling and pedestrian zone, and reduces motorised traffic and congestion
- Restrictions could include No Stopping restrictions, and could be enforced by bollards or cameras
- More information at http://schoolstreets.org.uk/how/

Investment:

- Installation of new traffic facilities (by Council)
- A traffic controller ('lollypop man/woman') (~2 hrs / day)

Stakeholders:

- Council, to approve scheme, install signage and enforce restrictions
- Surrounding residents
- The school community

Evidence:

- Earlier schemes have resulted in traffic decreasing on streets around school, as well as nearby streets*

Photographer: Yumming Wang, unsplash.com

* *Source: http://schoolstreets.org.uk/how/, August 2020*

2. A Walking School Bus (guided pedestrian groups)

Overview:

- A number of set walking routes to the school, which could first be risk assessed by Council for safety
- Group walks along set route, picks up or drops off children along the way at designated 'bus stops'
- Walking groups to be led by parent volunteers
- Can be carried out daily or certain days only

Investment:

- Parent volunteers (~2-5 hrs / week)
- High visibility vests

Stakeholders:

- School community
- Council, for input on safety of routes

Evidence:

- A walking bus reduced car usage from 76% to 63% in two years at one school in the UK*

Photograph from https://www.edenprojectcommunities.com/stuff-to-do/organise-a-walking-bus website

** Source: Making school travel plans work - Experience from English Case Studies (Carey Newson, Sally Cairns & Adrian Davis , 2010), carried out for the Department of Transport*

3. National Ride or Walk to School Day

Overview:

- Coordinated through Bicycle Network as a day where students and staff are encouraged to ride, walk, scoot or skate to work (March every year)
- Can involve educational class presentations and awards or bicycle maintenance workshops
- Register: https://www.bicyclenetwork.com.au/rides-and-events/ride2school

Investment:

- Staff coordinator (~4 hours preparation)
- Cost of prizes
- Grant application of up to $5,000 from Bicycle Network (refer link above)

Stakeholders:

- The Bicycle Network
- The school community

Evidence:

- The implementation of cycling initiatives increased cycling from 2% to 6% at one school in the UK*

Photographer: Ben Wicks, unsplash.com

** Source: Making school travel plans work - Experience from English Case Studies (Carey Newson, Sally Cairns & Adrian Davis , 2010), carried out for the Department of Transport*

4. Bike check up – sponsored or subsidised bicycle maintenance

Overview:

- Bicycle Network provides resources for bicycle maintenance education sessions at school
- Bike shops could be approached to see if they would offer workshops
- Could also be run by a parent or a staff member who is a keen rider
- Workshops could include the ABC (Air, Brakes, Chain, Tight) Safety Checklist and helmet safety checks*

Investment:

- Staff coordinator (~2 hours preparation)
- Potential cost of workshop facilitator

Stakeholders:

- Staff
- Bike shop

Evidence:

- The implementation of cycling initiatives increased cycling from 2% to 6% at one school in the UK**

Photographer: www.unsplash.com

** Source: Safe Cycle Yrs 5 and 6 (http://paf.org.au/wp-content/uploads/2015/02/Safe-Cycle-Yr-5-6-Downloadable-Lessons.pdf) and https://www.bicyclenetwork.com.au/rides-and-events/ride2school/*

*** Source: Making school travel plans work - Experience from English Case Studies (Carey Newson, Sally Cairns & Adrian Davis , 2010), carried out for the Department of Transport*

5. Cycling education lesson plans

Overview:

- Bicycle Network provides resources for teachers to create their own bike education lesson plan
- Lessons could include safety in riding, bike control, hazards, bike games, route planning and riding set route together, end of course riding celebrations
- Can be run for a number of lessons throughout term
- https://www.bicyclenetwork.com.au/rides-and-events/ride2school/programs/bike-education/
- http://paf.org.au/wp-content/uploads/2015/02/Safe-Cycle-Yr-5-6-Downloadable-Lessons.pdf

Investment:

- Staff (up to ~2 hrs / week for a term)
- Cost of prizes for games

Stakeholders:

- Staff
- Bicycle Network

Evidence:

- The implementation of cycling initiatives increased cycling from 2% to 6% at one school in the UK*

Photographer: Amber Faust, unsplash.com

** Source: Making school travel plans work - Experience from English Case Studies (Carey Newson, Sally Cairns & Adrian Davis , 2010), carried out for the Department of Transport*

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6. Encouraging car sharing

Overview:

- Parents living in clusters can be contacted by the school and invited to exchange phone numbers with others living nearby, to arrange car sharing
- A web-based car sharing scheme for the school could be set up by parents or the P&C
- Could also prompt families to make their own informal sharing arrangements, even if not participating in 'formal scheme'

Investment:

- Parent or P&C volunteer (~4 hrs to set up)

Stakeholders:

- The school community

Evidence:

- The implementation of car sharing initiatives increased the number of pupils car sharing from 8% to 14% in two years at eight schools in the UK*

Photographer: Jantine Doornbos, unsplash.com

** Source: Making school travel plans work - Experience from English Case Studies (Carey Newson, Sally Cairns & Adrian Davis , 2010), carried out for the Department of Transport*

7. Road Safety Education day (e.g. CARES)

Overview:

- Invite an external facilitator (such as Council, Police, the NRMA) to hold a road safety education day to increase children's awareness and knowledge around road safety
- Could cover helmet fitting, safety in and around vehicles, how to cross a road and what happens in a crash
- Could be extended to invite parents to attend the education day at the school

Investment:

- Staff volunteer (~4 hrs to set up)
- Programs can be offered for free to schools

Stakeholders:

- Staff
- Council, Police (as an external facilitator)

Evidence:

- Previous road safety programs have shown:
  - 61% of students have used a safe strategy they learned;
  - 50% have shared a safety strategy with family or friends;
  - 56% increase in ability to recognise unsafe road behaviours.*

Photographer: Logan Weaver, unsplash.com

* Source: https://www.mynrma.com.au/community/what-we-do/education-centre/science-and-road-safety-day/, August 2020

8. Provision of a Travel Access Guide

Overview:

- Prepare a Travel Access Guide (map with descriptive text) that provides information for students and parents with the most sustainable and safe modes to access school
- Include description for each mode such as public transport routes and stops, key walking access routes, possible park and walk locations, bike routes, pedestrian crossing points and school entry points
- The map may also encourage meeting points for students to walk, ride or scoot to school together

Investment:

- Parent or P&C volunteer (~1 to 2 days to prepare)
- Cost of printed map / flyer material

Stakeholders:

- Nil

Evidence:

- No specific evidence found

Photographer: Ross Sneddon, unsplash.com

9. New Starter Kit for all new students

Overview:

- Provide all new students with a resource kit for sustainable and safe travel such as maps of the area, voucher for purchasing cycling equipment, sunblock, safety equipment (such as a high visibility vest)
- Include educational material (such as a travel access guide) to inform students and their parents of sustainable travel choices and any programs currently running at the school
- Include a statement of school's vision for sustainable transport in information provided

Investment:

- Staff or P&C volunteer (~8 hrs to set up)
- Cost of starter kit

Stakeholders:

- Staff or the P&C

Evidence:

- No specific evidence able to be located, potentially not collected.

Photographer: Krzysztof Kowalik, unsplash.com

10. Increased surveillance of drivers' behaviour

Overview:

- Sporadic surveillance of drivers' behaviour when vehicle is parked (by Council ranger) or moving (by Police), to reduce unsafe behaviour during drop off and pick up
- Could involve both parking enforcement and speed limit enforcing and random breath testing
- Could be carried out at sporadic times, to make drivers around the school more aware in general

Investment:

- P&C or parent coordinator (~2 hrs)
- Cost of time for Police/Ranger (by Council or Police)

Stakeholders:

- Council
- Police
- The school community

Evidence:

- No specific evidence able to be located, potentially not collected.

Photographer: Andrei Mike, unsplash.com

Reference list

Documents

- Making school travel plans work - Experience from English Case Studies (Carey Newson, Sally Cairns & Adrian Davis , 2010), carried out for the Department of Transport
- The Push to Get More Girls on Bikes, 'Outside Online' article (https://www.outsideonline.com/2415765/exercise-good-dog-secret)
- Safe Cycle Years 5 and 6 - Cycling education unit linked to The Australian Curriculum (Initiative of the ACT Government) (http://paf.org.au/wp-content/uploads/2015/02/Safe-Cycle-Yr-5-6-Downloadable-Lessons.pdf)

Webpages

- https://www.10000steps.org.au/, August 2020
- https://walking.heartfoundation.org.au/benefits-of-walking/, August 2020
- http://schoolstreets.org.uk/how/, August 2020
- https://www.bicyclenetwork.com.au/rides-and-events/ride2school/, August 2020
- https://www.mynrma.com.au/community/what-we-do/education-centre/science-and-road-safety-day/, August 2020

Photographs

- Photographs taken from the www.unsplash.com website
- Photo of Walking Bus taken from https://www.edenprojectcommunities.com/stuff-to-do/organise-a-walking-bus website

Thank you

Jonathan Busch
Associate Director

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