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Your reference:

1 April 2019

NSW Department of Education
C/- JDH Architects
44 Little Oxford Street
Darlinghurst NSW 2010

Attention: **Kasia Podrygajlo**

Sent via email: kasia@jdharchitects.com.au

Dear Kasia

RE: BANKSTOWN NORTH PUBLIC SCHOOL –REQUEST FOR SEARS TRAFFIC STATEMENT

Bitzios Consulting has been engaged by NSW Department of Education to prepare a traffic statement to accompany a Request for Secretary's Environmental Assessment Requirements (SEARs) for Bankstown North Public School (BNS). The school is located at 322 Hume Highway, Bankstown.

The school had a total of 367 full-time equivalent (FTE) enrolments in 2017 (2018/19 data is yet to be made available), with 22 FTE staff and is seeking to undertake an upgrade to the existing school's facilities to be completed by 2022, as follows:

- Total enrolments cap of 725 students
- Construction of 30 teaching spaces, including 16 existing teaching spaces to be upgraded or replaced.
- Construction of new core facilities
- Refurbishment and extension of existing hall
- Car parking upgrades.

It is noted that demand is managed to some extent through catchment boundaries, which are reviewed to direct students to schools with capacity. The number of students enrolled at BNPS was 367 in 2017 however the number of Government students living in this catchment was much higher at 596 and projected by NSW Education to increase to 725 by 2026.

Based on the development plans, no reduction in the existing car parking provision is proposed as result of the school upgrades.

A site visit was undertaken on Tuesday 25th September 2018 to observe both the AM and PM peak school operations, as well as inspect the surrounding road network and public and active transport facilities. The key findings are presented below:

- The students arriving in private vehicles are dropped-off within the kiss and drop zone at Beresford Avenue, the typical drop-off time is 30 seconds per vehicle
- Approximately 25 students arrive at the school using public transport (i.e. bus)

- During the pick-up operations, students wait at a designated 'pick-up zone waiting area' inside the school and are called / supervised by staff to go to their respective parent / carer's vehicle
 - Parents and carers drive into the designated pick-up zone marked by witches' hats on Beresford Avenue
 - Each parent / carer is given a laminated sign with a number and the names of the children they are picking up. This sign is attached to the front passenger side sun visor
 - Children line up inside the school ground, in a designated area
 - A teacher on duty call out the number of the vehicle in the designated kiss and drop zone using a microphone and another teacher will walk the children to their respective car.
- Car parking provision is limited to BNPS staff, NSW Education Sport Unit and NSW Health Oral Health Service only. The school provides 58 parking spaces, including a person-with-disabilities (PWD) bay. The parking area is accessed via a two-way driveway crossover from Beresford Avenue
- Many parents / carers were observed to park their cars on the southern side of Hume Highway (i.e. Jacob Street and Remi Street) and use the Hume Highway / Beresford Avenue crossing to reach the school
- The on-street parking provision surrounding the subject site consists of time-restricted parking, unrestricted parking and 'no parking' areas.

Dedicated school bus services are not available for students of Bankstown North Public School. However, travel passes are available for all K-2 (i.e. Kindergarten to Year 2) children if required. Once a student progresses to Year 3, the passes are only available if the student lives more than 1.6km from the school. Students living more than 1.6km from the school are eligible for an Opal Concession Card, which reduces the bus fares up to 60%.

The pathway network surrounding the school provides effective connections to the nearby residential areas, as well as the public transport stops. Raised pedestrian facilities and signalised pedestrian crossing facilities located near the site further support the school's pedestrian amenity. However, it is noted that a number of footpaths surrounding the school were identified to be of insufficient width to support high volumes of pedestrians.

The site has limited access to on-road cycleways and cycle-friendly roads. It is likely that any potential increase in cycling and walking for students and staff will require improvements on the active transport infrastructure surrounding the School

Based in the current (2017) 367 student enrolments, traffic and parking impacts expected with the proposed 725 student enrolment cap in 2022 will be approximately two (2) times more than presently experienced (i.e. increase of 97%).

As a part of our response to the SEARs, we plan to obtain the RMS VISSIM base model for the Stacey Street Widening and Hume Highway Grade Separation project (for the proposed year of opening and 10-year design horizon) to test all feasible options for the school upgrade. The outcomes from this task will be used to inform on the future access arrangement and the operations of the drop-off / pick-up zone. Whilst it is noted the modelling is based on the existing road network, we will aim to work with RMS to ensure that any short-term proposal aligns with any known road network upgrade plans.

In the absence of mode share data, an approximate mode-share profile was developed based on the existing data and site observations. The majority of students travel to and from school by private car (i.e. 76% of students). The SEARs response will include the preparation of a Workplace Travel Plan (WTP) for employees and also a Green Travel Plan (GTP) for students.

Given the site's constraints, it is critical that a WTP and a GTP are developed to set an objective of reducing reliance on private vehicle usage and developing strategies to increase the mode share of alternate transport.

Yours faithfully

A handwritten signature in blue ink, appearing to read "A. Bitzios", is positioned below the "Yours faithfully" text.

Adrian Bitzios

Principal Traffic Engineer

BITZIOS CONSULTING

Attachments:

A: P3845.009R Bankstown North Public School TIA

Attachment A

P3845.009R Bankstown North Public School TIA



BANKSTOWN NORTH PUBLIC SCHOOL TRAFFIC IMPACT ASSESSMENT

FOR

**NSW DEPARTMENT OF
EDUCATION**

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consulting

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1. INTRODUCTION

1.1 BACKGROUND

Bitzios Consulting has been engaged by New South Wales (NSW) Department of Education to undertake a traffic impact assessment (TIA) for Bankstown North Public School. The school is located at 322 Hume Highway, Bankstown, as shown in Figure 1.1.



Source: Nearmap

Figure 1.1: Site Location

It is understood that the school is seeking to undertake an upgrade to the existing facilities and increase the enrolment numbers. The upgrade is to include 30 permanent teaching spaces, the refurbishment of six (6) permanent teaching spaces, refurbishment and extension of the existing hall and new core facilities, such as administration building, library, canteen and covered outdoor learning area (COLA) by 2022.

1.2 SCHOOL POPULATION

The school had a total of 367 full-time equivalent (FTE) enrolments in 2017, with 22 FTE staff. The existing school catchment is shown in Figure 1.2. Data has not been available for the 2018 year.

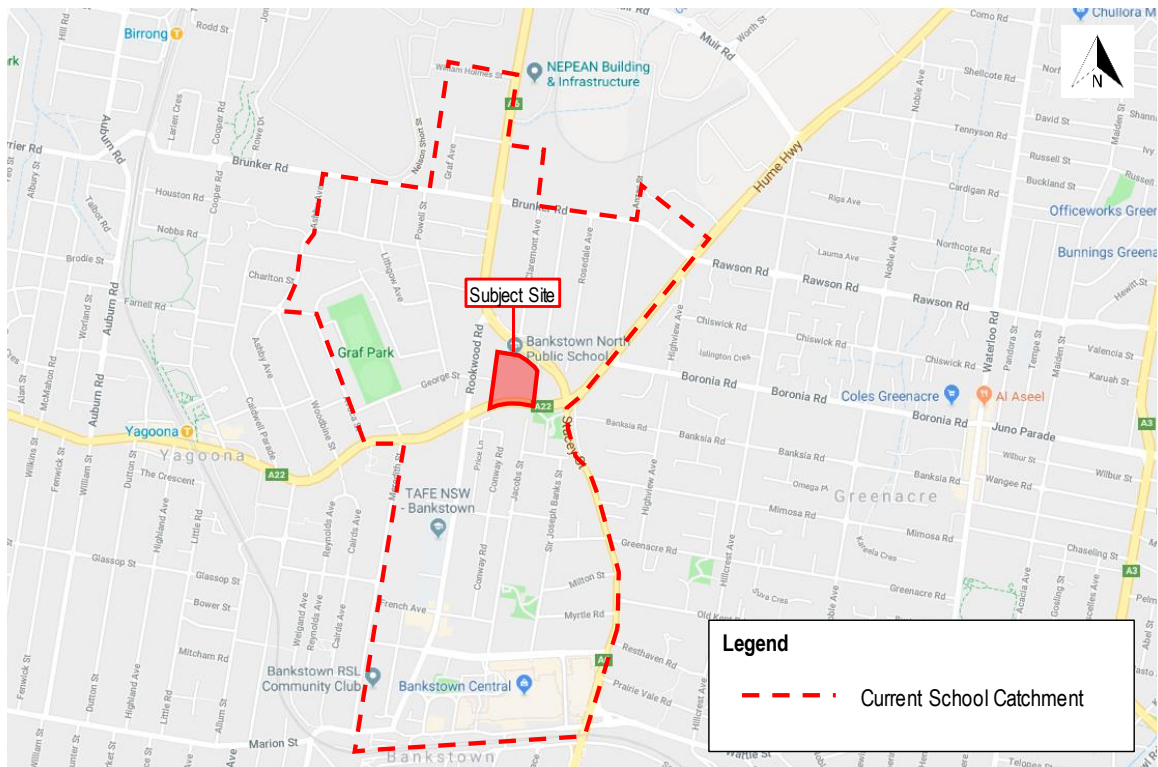


Figure 1.2: Bankstown North Public School Catchment

Based on the current school catchment, the expected arrival and departure movements during the drop-off / pick-up peak is provided on Figure 1.3. Traffic survey data (presented in Appendix A) was used to determine the expected traffic directionality, approximately 60% of the students are expected to arrive and departure to/from the west and 40% arrive and departure to/from the east on Hume Highway



Figure 1.3: Arrival and Departure Movements

The school is forecasting a total of 725 FTE enrolments in 2022.

2. EXISTING FACILITIES AND OPERATIONS

2.1 OVERVIEW

A site visit was undertaken on Tuesday 25th September 2018 to observe both the AM and PM peak school operations, as well as inspect the surrounding road network and public and active transport facilities.

The school's only vehicular access is located on Beresford Avenue, with staff accessing the carpark via an automated gate off Beresford Avenue.

The school has four (4) access points for pedestrians, two (2) located at Beresford Avenue, adjacent to the vehicular access point, another located on Davis Lane on the western boundary and the remaining immediately west of the Hume Highway / Beresford Avenue intersection.

Beresford Avenue includes a drop-off / pick-up zone which is the sole drop-off / pick-up point for students accessing the school by private vehicle as shown in Figure 2.1.



Figure 2.1: Drop-off / Pick-up Operations

On-street car parking is not available on Beresford Avenue during school pick-up / drop-off times (i.e. 8AM to 9:30AM and 2:30PM to 4PM).

2.2 AM STUDENT DROP-OFF OPERATIONS

The following occurrences were observed during the site visit undertaken during the weekday AM peak period:

- students were observed arriving from 8:25AM however a large portion arrived between 8:30AM and 9:00AM;
- the students arriving in private vehicles are dropped-off within the drop-off / pick-up zone at Beresford Avenue, the typical drop-off time is 30 seconds per vehicle;
- the drop-off / pick-up zone queue observations did not indicate the queue extended back onto Hume Highway;
- many parents / carers were observed to park their cars on the southern side of Hume Highway (i.e. Jacob Street and Remi Street) and use the Hume Highway / Beresford Avenue crossing to reach the school;
- a small proportion of parents / carers were observed to be double-parked at Beresford Avenue with only one (1) vehicle observed to not respect the two-minute parking limit; and

- approximately 25 students arrive at the school using public transport (i.e. bus).

2.3 PM STUDENT PICK-UP OPERATIONS

The following occurrences were observed during the site visit undertaken during the weekday PM peak period:

- the majority of parents / carers were observed arriving from 3:00PM to 3:20PM to pick-up the students;
- during the pick-up operations, students wait at a designated 'pick-up zone waiting area' inside the school and are called / supervised by staff to go to their respective parent / carer's vehicle;
 - parents / carers drive into the designated pick-up zone marked by witches' hats on Beresford Avenue;
 - each parent/caregiver is given a laminated sign with a number and the names of the children they are picking up. This sign is attached to the front passenger side sun visor;
 - children line up inside the school ground, in a designated area; and
 - a teacher in duty call out the number of the vehicle in the designated drop-off / pick-up zone using a microphone and another teacher will walk the children to their respective car.
- typical pick-up time is 30 seconds per vehicle;
- many parents / carers were observed to park their cars on the southern side of Hume Highway (i.e. Jacob Street and Remi Street) and use the Hume Highway / Beresford Avenue crossing to reach the school;
- a significant number of vehicles exceeding the two-minute parking limit on Beresford Avenue were observed, with some parents / carers parking their vehicles on the cul-de-sac footpath waiting to pick-up students. This situation was observed to be mostly due to parents / carers arriving prior to the School finishing time; and
- no buses were observed during the pick-up operation. However, it is noted in the school's Information Book that students catching buses for after school activities should wait at the 'pick-up zone waiting area'.

The students 'pick-up zone waiting area' is shown in Figure 2.2.



Figure 2.2: PM 'pick-up zone waiting area'

2.4 CAR PARKING

2.4.1 Off-street Car Parking

The Bankstown North Public School off-street car parking provision is limited to BNPS staff, NSW Education Sport Unit and NSW Health Oral Health Service use only. The school provides 58 parking spaces, including a persons-with-disabilities (PWD) bay. The parking area is accessed via a two-way driveway crossover from Beresford Avenue.

The off-street parking bays were significantly utilised during the site visit, with approximately 90% of the parking provision utilised at any one time.

2.4.2 On-street Car Parking

The on-street parking provision surrounding the subject site consists of time restricted parking, unrestricted parking and no parking areas. Figure 2.3 summarise the on-street parking availability surrounding the subject site.

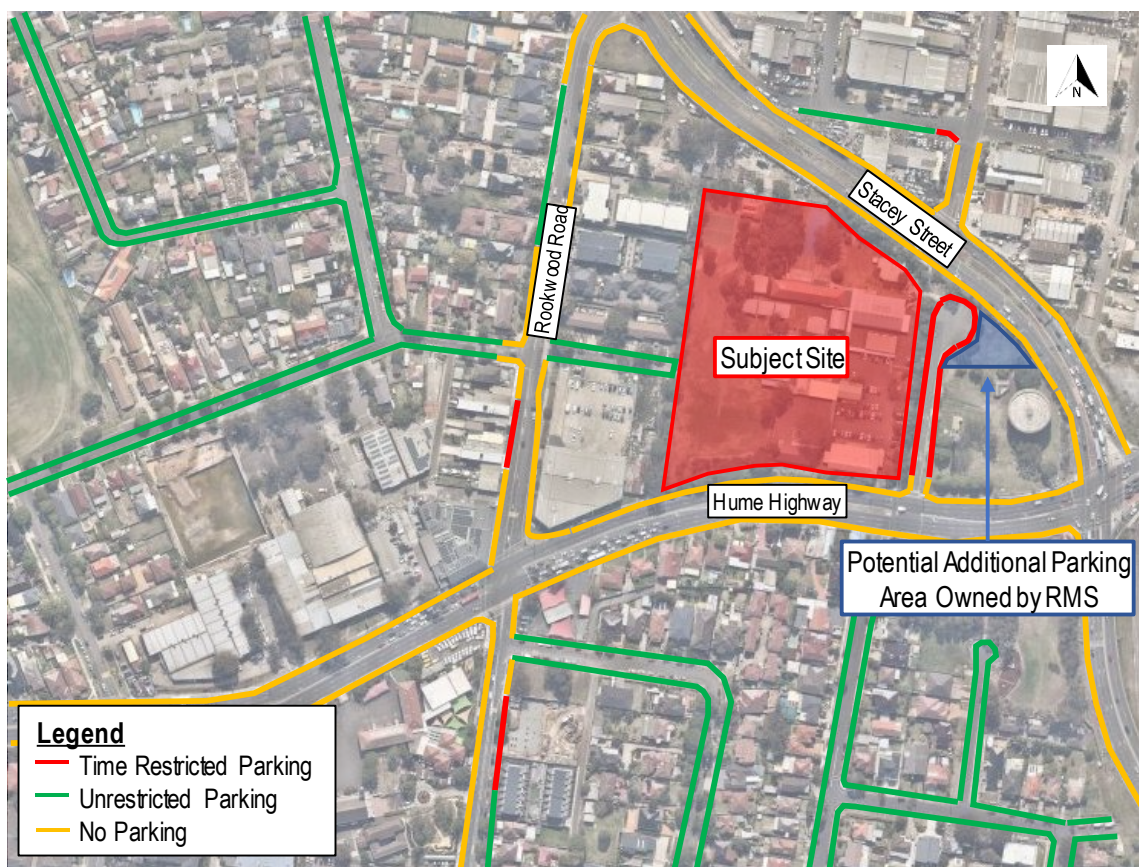


Figure 2.3: On-street parking provision

Subject to further discussions with RMS, the highlighted land on the corner of Hume Highway and Stacy Street could potentially be converted and utilized as car parking.

Also, better utilization of Beresford Ave to increase on-street parking will be investigated.

2.5 PUBLIC TRANSPORT

Dedicated school bus services are not available for students of Bankstown North Public School. However, travel passes are available for all K-2 (i.e. Kindergarten to Year 2) children if required. Once a student progresses to Year 3, the passes are only available if the student lives more than 1.6km from the school. Students living more than 1.6km from the school are eligible for an Opal Concession Card, which reduces the bus fares up to 60%.

Public bus stops surrounding the school are located on Hume Highway, Chapel Road and Rookwood Road. Table 2.1 summarises the bus routes that service these bus stops.

Table 2.1: Bus Service Details

Route Number	Route Name	Frequency (peak)
907	Bankstown to Parramatta	30 minutes
908	Bankstown to South Granville & Merrylands	30 minutes
913	Bankstown to Strathfield	30 minutes
925	East Hills to Lidcombe	30 minutes
M90	Liverpool to Burwood	10 minutes
M91	Hurstville to Parramatta	10 minutes
M92	Sutherland to Parramatta	10 minutes

The location of the public transport facilities within 400m distance to the site is illustrated in Figure 2.4.

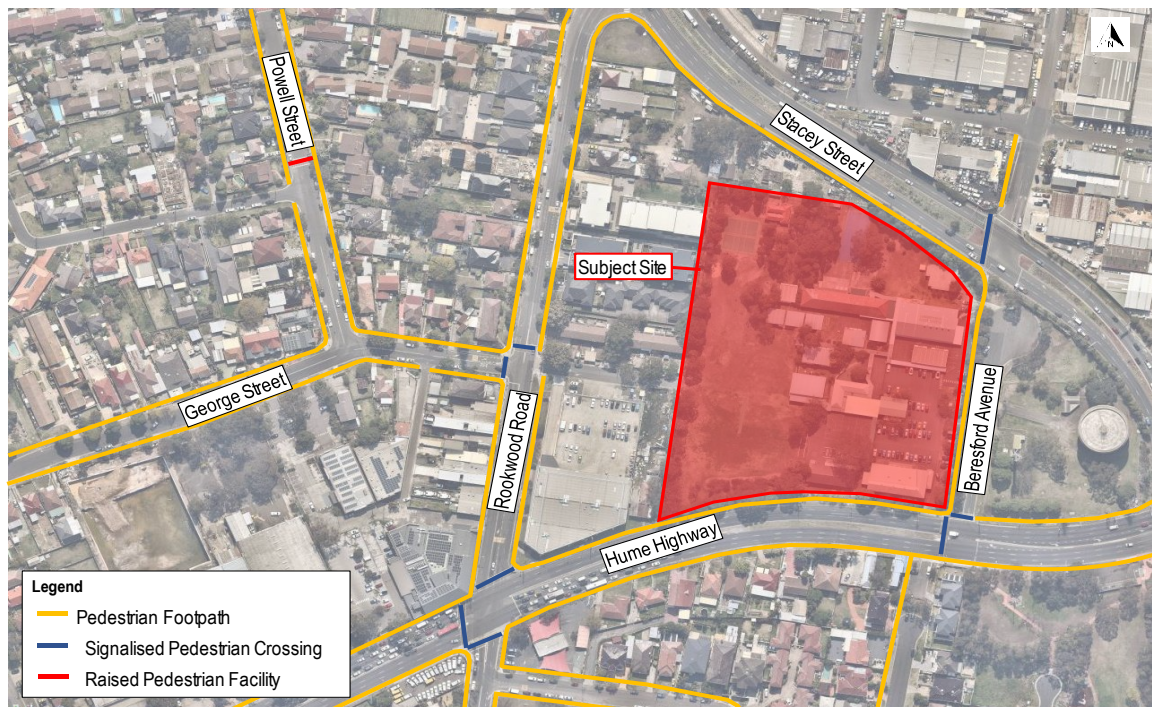


Source: Nearmap

Figure 2.4: Surrounding Public Transport Facilities

2.6 ACTIVE TRANSPORT

The pathway network surrounding the school provides effective connections to the nearby residential areas, as well as the public transport stops. Raised pedestrian facilities and signalised pedestrian crossing facilities located near the site further support the school's pedestrian amenity. Figure 2.5 shows pedestrian connections within proximity to the site.

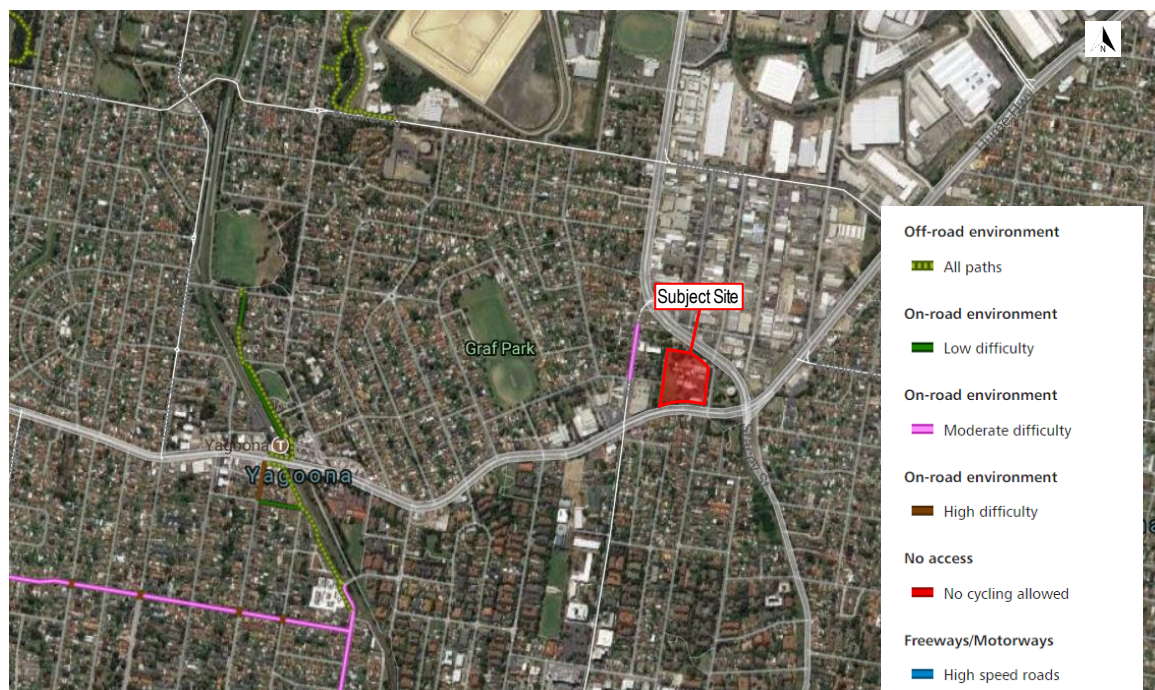


Source: Nearthmap

Figure 2.5: Pedestrian Connectivity

However, it is noted that a number of footpaths surrounding the school were identified to be of insufficient width to support high volumes of pedestrians.

The site has limited access to on-road cycleways and cycle-friendly roads. Figure 2.6 illustrates the cycle network that surrounds the subject site.



Source: NSW Cycleway Finder

Figure 2.6: Surrounding Cycling Network

2.7 BACKGROUND TRAFFIC VOLUMES

Background traffic volumes were obtained from traffic surveys undertaken by Matrix Traffic and Transport on Tuesday 25th September 2018, from 8:30AM to 9:30AM and 2:30PM to 3:30PM at the following intersections:

- Hume Highway / Stacey Street signalised intersection;
- Hume Highway / Beresford Avenue signalised intersection; and
- Hume Highway / Rookwood Road / Chapel Road signalised intersection.

The traffic volumes were obtained during the last week for the school term. It is reasonable to expect the surveyed volumes reflect a slight decrease in attendance and subsequent traffic generation during this week in comparison with 'mid-term' weeks.

The results of these traffic surveys are provided in Figure 2.7.

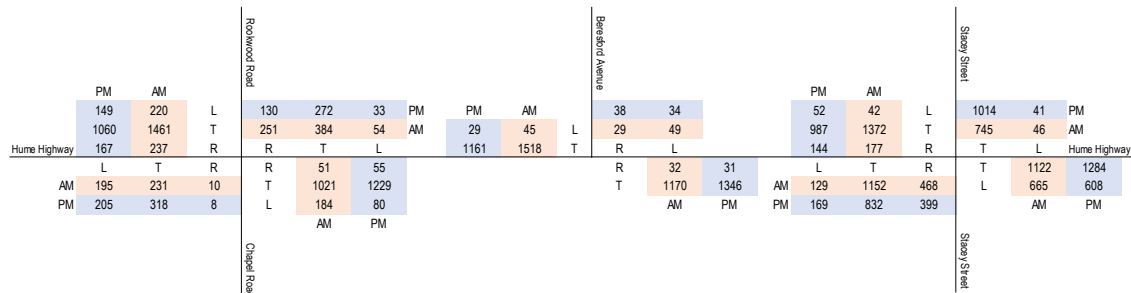


Figure 2.7: 2018 Peak-Hour Background Traffic Volumes

Figure 2.7 shows that 77 vehicles used the drop-off area during the AM peak period and 72 vehicles used the pick-up area during the PM peak period.

Detailed traffic surveys are provided in **Appendix A**.

2.8 PEDESTRIAN VOLUMES

Pedestrian volumes were obtained from pedestrian surveys undertaken by Traffic Data & Control (TDC) on Thursday 13th December 2018, from 8:30AM to 9:30AM and 2:30PM to 3:30PM at the Hume Highway / Beresford Avenue signalised intersection.

The pedestrian volumes were obtained during the last week for the school term. It is reasonable to expect the surveyed volumes reflect a slight decrease in attendance and subsequent pedestrian generation during this week in comparison with 'mid-term' weeks.

The results of the pedestrian surveys are provided in Table 2.2.

Table 2.2: 2018 Peak-Hour Pedestrian Volumes

Peak Hour	Beresford Avenue (North)	Footpath (South)	Hume Highway (West)	Total
8:30AM – 9:30AM	2	62	180	244
2:30PM – 3:30PM	2	59	193	254

Detailed pedestrian surveys are provided in **Appendix A**.

3. **PROPOSED DEVELOPMENT**

The applicant is proposing an upgrade to the existing school's facilities, as follows:

- total enrolments cap of 725 students;
- construction of 30 teaching spaces, inclusive of four (4) disability unit teaching spaces;
- construction of new core facilities such as staff and administration facilities, library and special programs, canteen and COLA;
- refurbishment of six (6) existing teaching spaces (Building B and Building I);
- refurbishment and extension of existing hall (Building N); and
- car parking upgrades.

Demand for the school is managed to some extent through catchment boundaries, which are reviewed to direct students to schools with capacity. The number of students enrolled at BNPS was 367 in 2017 however the number of Government students living in this catchment was much higher at 596 and projected by NSW Education to increase to 725 by 2026.

4. TRAFFIC AND PARKING IMPACTS

Based on the current (2017) 367 student enrolments, traffic and parking impacts expected with the proposed 725 student enrolment cap in 2022 will be approximately two (2) times more than presently experienced (i.e. increase of 97%).

4.1 TRAFFIC

Based on the forecast increase in enrolments, and the existing traffic volumes, 152 and 142 vehicles are forecast to access the drop-off / pick-up area during the 2022 AM and PM school peaks respectively.

During the site visit, staff noted that in the AM and PM drop-off operations vehicles usually queue back from Beresford Avenue northern end to the Hume Highway / Beresford Avenue intersection. Also, a significant proportion of parents / carers park on the southern side of Hume Highway (i.e. Jacob Street and Remi Street) and use the Hume Highway / Beresford Avenue signalised intersection to access the school.

Typical traffic and parking impacts, both for private vehicles and pedestrians, are expected to worsen with the increase of student's enrolment. Based on the current 367 student enrolments and forecast enrolments of 725 students in 2022, traffic and parking impacts are expected to be approximately 97% more than presently experienced.

Directionality of vehicles approaching the school was based on traffic surveys and on the proposed school catchment. Vehicles travelling eastbound on Hume Highway and turning into Beresford Avenue are expected to be impacted by the increase in queue lengths. The increase in enrolments is also expected to impact the parking provision on the southern side of Hume Highway (i.e. Jacob Street and Remi Street) and on the pedestrian movements at the Hume Highway / Beresford Avenue signalised intersection.

It is also acknowledged that with the increase in enrolments, more opportunities for before and after school care services may eventuate, allowing for more dispersed travel behaviours.

4.2 PARKING

Based on the development plans, no reduction in the existing car parking provision is proposed as result of the development upgrades. It is also noted the NSW Education Sport Unit and NSW Health Oral Health (Dental Unit) vacate the school property in 2019 and will no longer require car parking spaces at the school.

In the absence of travel mode survey data for staff, the Bureau of Transport Statistics NSW 2011 Journey-to-Work data was sourced for the travel zone in which the subject site is located. That data indicated that of the 7,333 people employed in travel Bankstown - North SA2, 73% travel to and from their place of employment via private vehicle use (as driver).

Bankstown Development Control Plan (2015) establishes the parking requirements as one (1) car space per employee or classroom, whichever is the greater.

4.3 MODE SHARE

In the absence of mode share data, an approximate mode-share profile was developed based on the existing data and site observations. The approximate mode share for the school is presented in Figure 4.1.

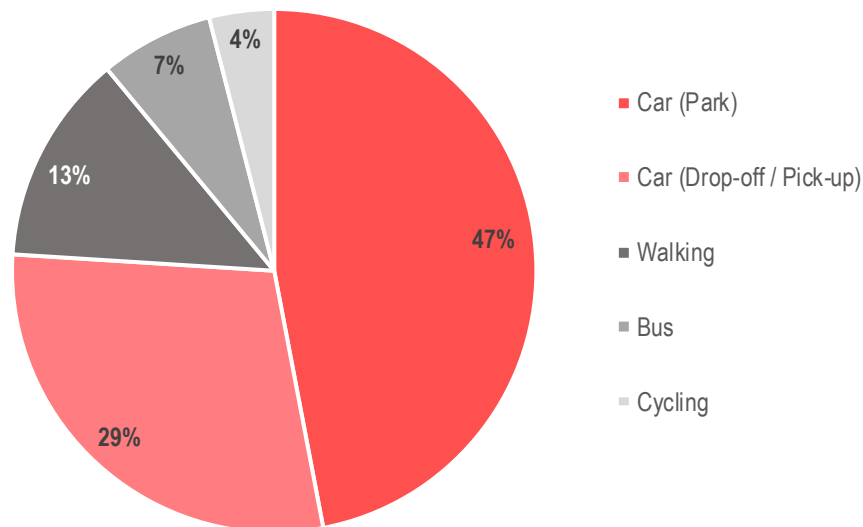


Figure 4.1: Approximate School Mode Share

The majority of students travel to and from school by private car (i.e. 76% of students). A mode share with an increase in the uptake of alternate transport modes could be achieved provided strategies such as walking buses, carpooling and bicycle awareness programs are implemented. These strategies will be further analysed with the completion of a Workplace Travel Plan (WTP) and Green Travel Plan (GTP).

5. CONCLUSION

The key findings of the traffic impact assessment for the proposed expansion of Bankstown North Public School are as follows:

- the applicant is forecasting the school's enrolment capacity will increase from 367 to 725 in 2022;
- site visits were undertaken on Tuesday 25th September 2018 to observe both the AM and PM peak school operations, as well as inspect the surrounding road network and public and active transport facilities;
- the school has one (1) vehicular access point located on Beresford Avenue;
- at present, 77 vehicles use the drop-off area during the AM peak period and 72 vehicles used the pick-up area during the PM peak period;
- the pathway network surrounding the school provides effective connection to the nearby residential areas and public transport stops through the provision of footpaths, raised pedestrian crossings and signalised pedestrian crossings;
- a significant number of parents / carers were observed to park their cars on the southern side of Hume Highway (i.e. Jacob Street and Remi Street) and use the Hume Highway / Beresford Avenue crossing to reach the school
- the site has limited access to on-road cycleways and cycle-friendly roads;
- a total of 152 and 142 vehicles are forecast to access the drop-off / pick-up area during the 2022 AM and PM school peaks respectively;
- based on the current 367 student enrolments and forecast capacity of 725 students in 2022, traffic and parking impacts expected at the enrolment cap will be approximately 97% more than presently experienced;
- the existing car parking provision is expected to be affected by the departure of the NSW Education Sport Unit and NSW Health Oral Health (Dental Unit), improved utilization of Beresford Avenue and increased student enrolments; and
- existing queuing from the pick-up / drop-off zone on Beresford Avenue creates traffic flow and safety hazards that are expected to be further exacerbated by the increased enrolments.

APPENDIX A

TRAFFIC AND PEDESTRIAN SURVEYS

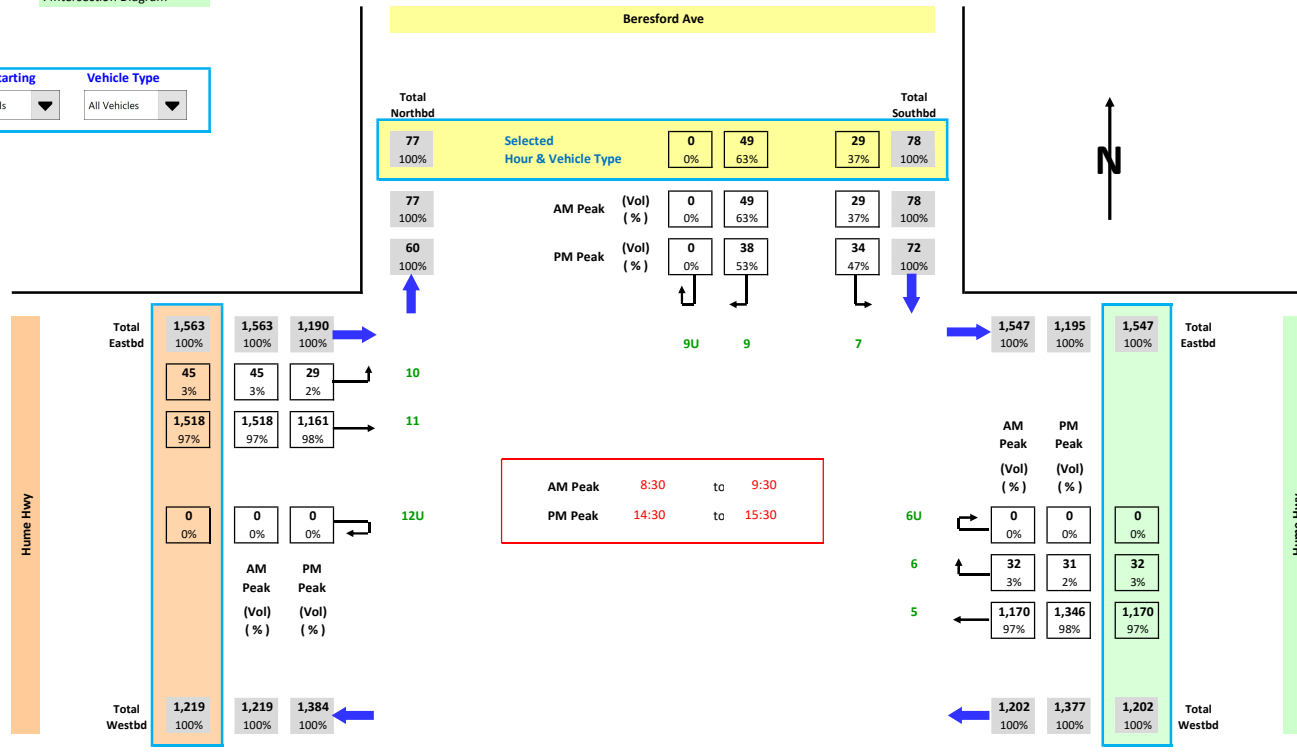
Job No. : N4513
Client : Bitzios
Suburb : North Bankstown
Location : 1. Hume Hwy / Beresford Ave

Day/Date : Tues, 25th September 2018
Weather : Fine
Description : Classified Intersection Count
: Intersection Diagram



Hour Starting
AM Totals ▼

Vehicle Type
All Vehicles ▼

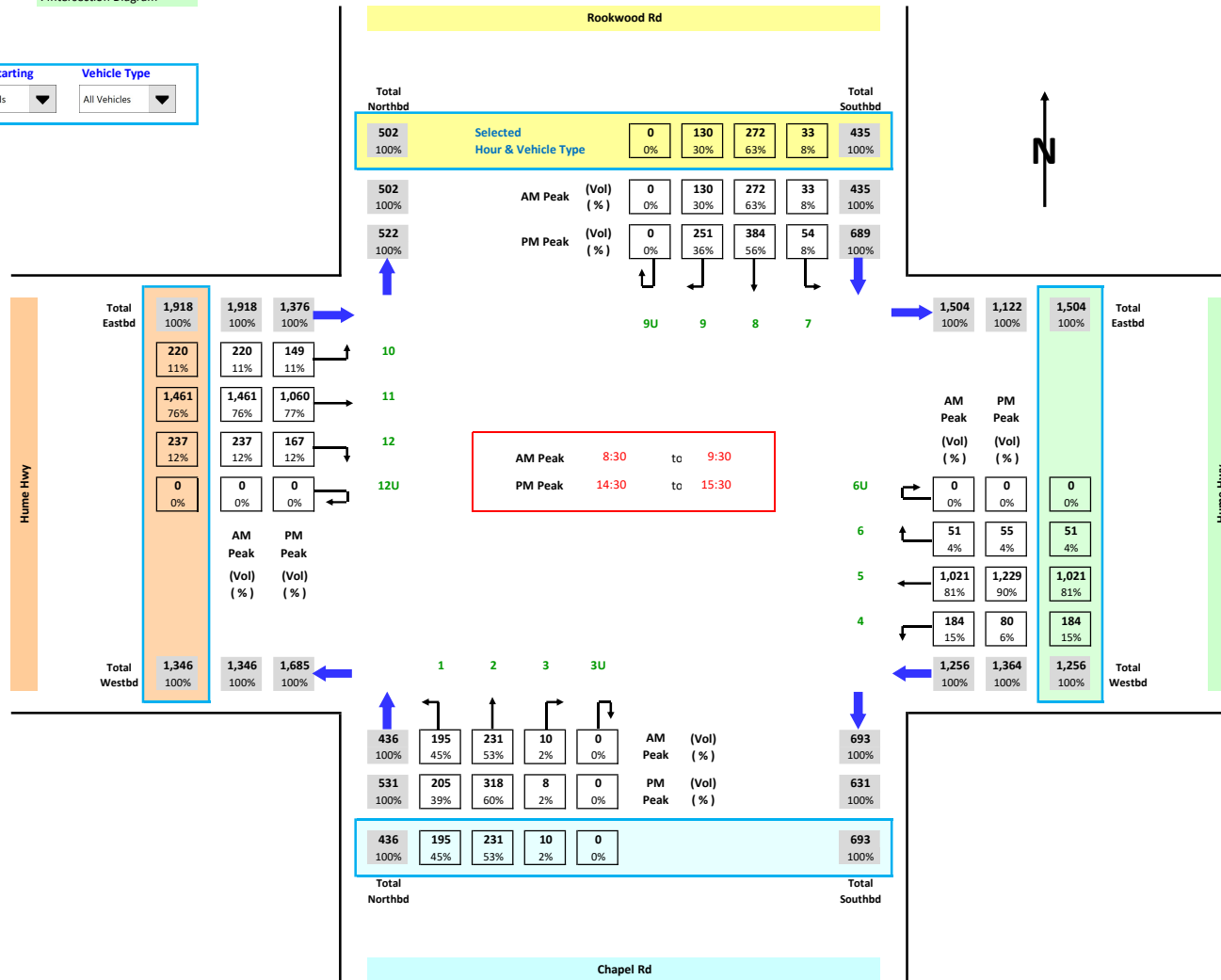


Job No. : N4513
Client : Bitzios
Suburb : North Bankstown
Location : 3. Hume Hwy / Rookwood Rd

Day/Date : Tues, 25th September 2018
Weather : Fine
Description : Classified Intersection Count
: Intersection Diagram



Hour Starting: AM Totals
Vehicle Type: All Vehicles



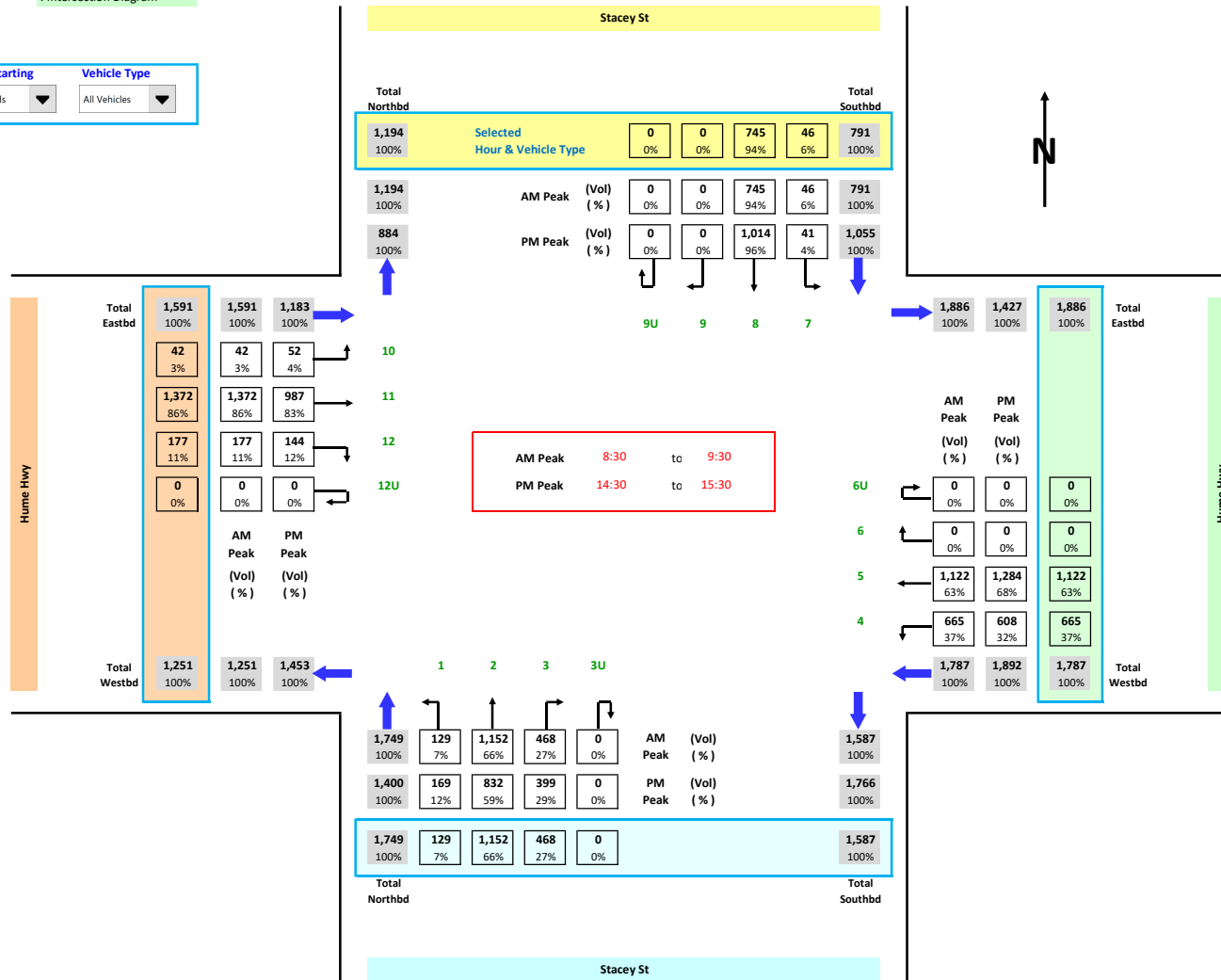
Job No. : N4513
Client : Bitzios
Suburb : North Bankstown
Location : 2. Hume Hwy / Stacey St

Day/Date : Tues, 25th September 2018
Weather : Fine
Description : Classified Intersection Count
: Intersection Diagram



Hour Starting
AM Totals ▼

Vehicle Type
All Vehicles ▼



Location Beresford Ave & Hume H'way, Greenacre
Survey Date Thursday, 13 December 2018
Survet Period 6:00am to 12:00am (18hrs)
Type Pedestrians



Start Time	Beresford Ave	Footpath	Hume H'way	15 Minute Total
	North (SB)	South	West (EB)	
	Pedestrians	Pedestrians	Pedestrians	
6:00 AM	2	1	4	7
6:15 AM	0	0	0	0
6:30 AM	0	0	0	0
6:45 AM	1	0	1	2
7:00 AM	0	3	0	3
7:15 AM	0	3	1	4
7:30 AM	0	2	0	2
7:45 AM	0	2	0	2
8:00 AM	0	3	0	3
8:15 AM	0	5	15	20
8:30 AM	0	11	37	48
8:45 AM	1	34	92	127
9:00 AM	0	14	36	50
9:15 AM	1	3	15	19
9:30 AM	0	2	7	9
9:45 AM	0	4	5	9
10:00 AM	0	3	3	6
10:15 AM	0	1	6	7
10:30 AM	0	2	4	6
10:45 AM	0	0	0	0
11:00 AM	0	0	0	0
11:15 AM	0	10	30	40
11:30 AM	0	9	21	30
11:45 AM	1	2	7	10
12:00 PM	0	4	4	8
12:15 PM	0	3	3	6
12:30 PM	0	1	3	4
12:45 PM	0	1	4	5
1:00 PM	0	0	0	0
1:15 PM	0	0	0	0
1:30 PM	0	0	1	1
1:45 PM	0	0	0	0
2:00 PM	0	2	5	7
2:15 PM	0	0	1	1
2:30 PM	1	5	8	14
2:45 PM	0	10	30	40
3:00 PM	1	42	151	194

3:15 PM	0	2	4	6
3:30 PM	0	1	0	1
3:45 PM	0	0	2	2
4:00 PM	0	2	0	2
4:15 PM	0	0	0	0
4:30 PM	1	1	6	8
4:45 PM	0	0	2	2
5:00 PM	2	1	3	6
5:15 PM	0	0	0	0
5:30 PM	0	0	2	2
5:45 PM	0	0	0	0
6:00 PM	0	0	1	1
6:15 PM	0	1	0	1
6:30 PM	1	0	1	2
6:45 PM	0	0	2	2
7:00 PM	0	1	1	2
7:15 PM	0	0	0	0
7:30 PM	0	1	1	2
7:45 PM	0	0	0	0
8:00 PM	0	0	0	0
8:15 PM	0	0	0	0
8:30 PM	0	0	0	0
8:45 PM	0	1	0	1
9:00 PM	0	0	0	0
9:15 PM	0	1	0	1
9:30 PM	0	0	0	0
9:45 PM	1	3	1	5
10:00 PM	0	0	0	0
10:15 PM	0	1	0	1
10:30 PM	0	0	0	0
10:45 PM	0	1	1	2
11:00 PM	0	1	1	2
11:15 PM	0	1	0	1
11:30 PM	0	1	0	1
11:45 PM	0	0	0	0
12:00 AM	0	0	0	0
18 Hr Total	13	202	522	737

