INNER WEST COUNCIL

DEVELOPMENT ASSESSMENT REPORT

Application No.	DA200300504.01
Address	68 The Boulevarde, Lewisham
Proposal	To modify condition 3 of Determination No. 200300504, dated 3 June 2004, under Section 4.55 of the Environmental Planning and Assessment Act so as to increase the student numbers from 1200 to 1350 students.
Date of Lodgement	20 September 2016
Applicant	Christian Brothers High School
Owner	Trustees of The Christian Brothers
Number of Submissions	281 submissions from 209 properties, including 168 pro-forma letters
Value of works	Nil
Reason for determination at Planning Panel	The number of submissions received exceeds staff delegation
Main Issues	Traffic and Parking
Recommendation	Consent subject to conditions

Subject Site:	Objectors:
Notified Area:	*(a number of objectors are outside the map)*

1. Executive Summary

This report relates to an application under Section 4.55 of the Environmental Planning and Assessment Act to modify Determination No. 200300504, dated 3 June 2004, to modify condition 3 so as to increase the student numbers from 1200 to 1350 students. The application was notified to surrounding properties and 281 submissions from 209 properties, including 168 pro-forma letters were received.

The site contains The Christian Brothers High School and is located within a primarily low density residential area. The primary issue that has arisen from the application is the potential increase in traffic in the local area and demand for on street car parking that will be generated by the additional 150 students. The school currently provides 18 on site car parking spaces, as required by Determination No. 200300504, dated 3 June 2004, and is limited to 1200 students by condition 3 of that consent. The school currently does not comply with the car parking requirements specified by Part 2.10 of the Marrickville Development Control Plan 2011.

A Traffic and Parking Impact Assessment (Attachment C) and Traffic Management Plan (Attachment D) were submitted with the application which demonstrate that there is sufficient on street car parking to support the increased demand and provides recommendations to minimise any traffic impacts during school pick up and drop off times.

The application was reported to Council's Local Traffic Committee and reviewed by Council's Coordinator Development Engineering who were both generally supportive of the proposal with regards to traffic and parking subject to the imposition of appropriate conditions.

Despite the non-compliances, it is considered the proposal generally complies with the aims, objectives and design parameters contained in the relevant State Environmental Planning Policies (SEPPs), Marrickville Local Environmental Plan 2011 (MLEP 2011) and Marrickville Development Control Plan 2011 (MDCP 2011).

The potential impacts to the surrounding environment have been considered as part of the assessment process. Any potential impacts from the development are considered to be acceptable given the context of the site and the desired future character of the precinct. The application is suitable for approval subject to conditions.

The application has been referred to the Inner West Planning Panel for determination in light of the number of submissions received.

2. Proposal

Determination No. 200300504, dated 3 June 2004, granted deferred commencement consent to an application to demolish the print house, library and the dwellings of 82 and 84 The Boulevarde and to carry out alterations and additions to a school including the construction of a multipurpose facility and additional classrooms. The consent became operative on 15 April 2005.

Condition 3 of Determination No. 200300504 limits the school to a maximum of 1200 students. It is noted that this application did not seek an increase to the number of students, with the school having a maximum of 1200 students at that time. This was the first application to impose a condition limiting the student numbers of the school.

Approval is now sought under Section 4.55 of the Environmental Planning and Assessment Act to modify Determination No. 200300504, dated 3 June 2004, to modify condition 3 so as to increase the student numbers from 1200 to 1350 students. The increase in student numbers results in 15 additional teaching and support staff.

It is noted that, the current enrolment at the school is 1,361 students from Years 5 – 12 and the enrolment of students will be reduced to 1,350 to suit this proposed application. The proposal would result in a total of approximately 155 staff on-site during the day.

Condition 3 is reproduced below:

> *"3. Not more than 1200 students being enrolled at the school without the prior approval of Council.*
> *Reason: To ensure that the intensity of the use of the premises is not increased without a further review of the off-street car parking facilities, traffic, noise, and amenity impacts of the development."*

It is noted that the school currently provides 18 on site car parking spaces, accessible from Denison Road, which were approved by Determination No. 200300504. The application does not propose additional on-site car parking or any building works.

3. Site Description

The site is located on the north-western side of The Boulevarde, Lewisham and has a frontage to three streets being The Boulevarde, Toothill Street and Denison Road. The site has an area of approximately 14,552sqm. The site contains a number of two and three storey education buildings, a large centralised open courtyard / play area and a car park accommodating 18 spaces at the western corner of the site, accessible from Denison Road.

The surrounding locality consists mainly of low density residential housing including dwelling houses and small residential flat buildings and Lewisham Public School on the opposite side of The Boulevarde.

It is noted that the school has 80 metres of drop-off / pick-up zones located either side of the wombat crossing at the Boulevarde Street frontage and a dedicated school bus stop located at the Denison Road frontage.

4. Background

4(a) Site history

Determination No. 17226, dated 18 August 1997, approved an application to create a playground for use in association with the school incorporating a hard paved area surrounded by grass areas and landscaped mounding along the Denison Road frontage and south-western boundary to erect fencing and a gate.

Determination No. 17862, dated 29 September 1998, granted consent to demolish the former dwelling house at 78 The Boulevarde but refused consent to demolish the former dwelling house at 20 Toothill Street.

Determination No. 17863, dated 29 September 1998, refused consent to the demolition of the former dwelling house at 22 Toothill Street.

Determination No. 18456, dated 10 May 1999, approved an application to demolish part of the existing building fronting Toothill Street and to carry out alterations and additions to the school to provide a creative and performing arts centre for use in association with the school.

Determination No. 19901653, dated 20 December 1999, approved an application to carry out alterations and additions and associated works to the Christian Brothers High School including refurbishment works to the Gallagher Building, lift and link to the Administration Building, covered

seating in front of the Gallagher Building, lowering of the tennis court and roofing such area, additions to the Wynne building and demolition of the Doody Building.

Determination No. 200300504, dated 3 June 2004, granted deferred commencement consent to an application to demolish the print house, library and the dwellings of 82 and 84 The Boulevarde and carry out alterations and additions to a school including the construction of a multipurpose facility and additional classrooms. The consent became operative on 15 April 2005.

Determination No. 200900196, dated 13 July 2009, approved an application to carry out refurbishment works to the Treacy Building within Christian Brothers High School to provide a multipurpose hall for the primary school.

Determination No. 201100540, dated 19 December 2011, approved an application to erect a new front fence along part of the Toothill Street boundary.

Determination No. 201200236, dated 5 October 2012, approved an application to erect a new entry to the administration area of Christian Brothers High School off The Boulevarde, demolish and rebuild existing property boundary walls to Denison Road.

4(b) Application history

The following table outlines the relevant history of the subject application.

Date	Event
20 September 2016	The subject application lodged.
2 December 2016	Referral received from RMS.
2 March 2017	Application reviewed by Local Traffic Committee.
4 January 2018	Referral received from Council's Coordinator Development Engineering.

5. Assessment

The following is a summary of the assessment of the application in accordance with Section 4.15 of the Environmental Planning and Assessment Act 1979.

5(a) Environmental Planning Instruments

The application has been assessed against the relevant Environmental Planning Instruments listed below:

- State Environmental Planning Policy (Infrastructure) 2007;
- State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017; and
- Marrickville Local Environmental Plan 2011.

The following provides further discussion of the relevant issues:

State Environmental Planning Policy (Infrastructure) 2007

The application was referred to Roads and Maritime Services (RMS) as traffic-generating development under Clause 104 of State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP) as the application would result in an increase in capacity to the existing educational establishment.

However, the provision of Clause 104 of the Infrastructure SEPP relating to educational establishments now forms part of State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017. Please see the below discussion.

State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017

The application relates to the expansion of an existing educational establishment. On 1 September 2017, State Environmental Planning Policy (Educational Establishments and Child care Facilities) 2017 (Education SEPP) came into force.

As the application does not include any building works and relates to the modification of an existing condition of consent to allow additional students, only Clause 57 of the Education SEPP relating to traffic generation is applicable to the development.

The application will result in the educational establishment being able to accommodate 50 or more additional students and as such constitutes traffic generating development under Clause 57 of the Education SEPP. The application was referred to RMS who reviewed the application and raised no concern with the proposal. RMS noted the application should be reviewed by Council's Local Traffic Committee in order to assess the potential for impacts to local roads.

The application was reviewed by the Local Traffic Committee on 2 March 2017 and was generally supported. The outcomes of the Local Traffic Committee are discussed in greater detail later in this report.

Council has considered the requirements of Clause 57(3) in relation to the development and is satisfied the site is adequately accessible, has the capacity to provide efficient movements to and from the site, has the potential to minimise travel by car due to the close proximity of public transport and additional conditions of consent included in Attachment A and has reasonable traffic and parking implications. This is discussed in greater detail under the heading "Parking (Part 2.10)" below.

The proposal is satisfactory having regard to Clause 57 and the general requirements of the Education SEPP.

Marrickville Local Environment Plan 2011 (MLEP 2011)

The application was assessed against the following relevant clauses of MLEP 2011:

- Clause 2.3 – Zone Objectives and Land Use Table

(vii) Land Use Table and Zone Objectives (Clause 2.3)

The property is zoned SP2 – Infrastructure (Educational Establishment) under the provisions of MLEP 2011. The proposal relates to the existing use of the Christian Brothers High School, being an Educational Establishment. The development is permissible with Council's consent under the zoning provisions applying to the land.

The development is acceptable having regard to the objectives for development in the zone under MDCP 2011.

5(b) Draft Environmental Planning Instruments

There are no relevant Draft Environmental Planning Instruments**.**

5(c) Development Control Plans

The application has been assessed and the following provides a summary of the relevant provisions of MDCP 2011.

Part of MDCP 2011	Compliance
Part 2.10 – Parking	No but acceptable – see below
Part 9 – Strategic Context	Yes

The following section provides discussion of the relevant issues:

(iv) Parking (Part 2.10)

The site is located in Parking Area 3 under Part 2.10 of MDCP 2011. The development would require 1 car parking space for every 2 staff members and pick up and drop off facilities for parents and carers. The proposed 1350 students results in the need for approximately 155 staff. As such, the school would require 78 on-site car parking spaces to comply with this requirement.

Notwithstanding, Determination No. 200300504, dated 3 June 2004, approved the provision of 18 car parking spaces on site for the 140 staff required to support 1200 students. The current provisions of Part 2.10 would require 70 car parking spaces for the existing staff and as such the school currently has an approved shortfall of 52 car parking spaces (based on current parking requirements).

Given the existing shortfall was considered acceptable by Determination No. 200300504, dated 3 June 2004, this application is primarily concerned with the additional car parking spaces required and traffic generation associated with the additional 15 staff required by the proposed 150 additional students.

An additional 8 car parking spaces would be required to accommodate the additional staff proposed. No additional on-site car parking is proposed and as such the application results in a further shortfall of 8 car parking spaces at the site.

A Traffic and Parking Impact Assessment was submitted with the application to address the proposed shortfall and potential traffic impacts. The report concludes that on street parking within 200 metres of the site can accommodate the existing 140 staff with approximately 80 spaces remaining in the morning peak period and 63 spaces remaining in the afternoon peak period. Therefore, the surrounding streets have the capacity to accommodate the additional 8 car parking spaces that would be required with a number of on street spaces remaining available.

Whilst the surrounding on street car parking area has the capacity to accommodate the additional parking demand associated with the proposal, the traffic assessment also makes a number of other recommendations to improve the performance and management of traffic surrounding the school.

Overall, the report concludes/recommends that:

- A Traffic Management Plan (TMP) is needed to encourage greater use of public transport.
- A Workplace Travel Plan be provided to encourage staff to car pool and/or to use other forms of non-private vehicle travel such as heavy and light rail, bus services, bicycle and walk modes.
- The surrounding intersection performances are satisfactory being a LoS “A/B” during the morning and afternoon peak period.

As such, the assessment determines that the likely traffic impacts associated with the increase in staff and student numbers is satisfactory and will not have adverse impacts on intersection performance or traffic generally, subject to the provision of a suitable TMP.

A TMP with the aim of addressing the above recommendations was submitted with this application.

In order to review the findings and recommendations of the Traffic and Parking Assessment and determine the suitability of the TMP, the application was reviewed by Council's Coordinator Development Engineering who provided the following comments:

> *"A Traffic and Parking Impact Assessment by McLaren Traffic Engineering Consultants has been submitted in support of the application. Table 1 of the report provides a breakdown of the mode of travel for students.*

TABLE 1: STUDENT TRANSPORT MODE

Direction		Car Driver	Car Passenger	School Bus	Public Bus	Train	Light Rail	Walk	Cycle	Total
Arriving to School	Total	30	365	573	92	130	29	47	1	1267
	Percentage	2.4%	28.8%	45.2%	7.3%	10.2%	2.3%	3.7%	0.1%	100%
Departing from School	Total	30	245	589	131	177	33	61	1	1267
	Percentage	2.4%	19.3%	46.5%	10.3%	14.0%	2.6%	4.8%	0.1%	100%

> *70% of students arrive by public transport (or cycle/walk) during the morning and 79% of students depart by public transport (or cycle/walk) in the afternoon. Over 50% of students use buses as their preferred mode of transport. The bus zone for school buses is located in Denison Road adjacent to the school. Some 1,242 students have Opal cards, representing some 92%.*
>
> *In contrast the Traffic and Parking Impact Assessment notes that 86% of staff drive to school. 18 "off street" car parking spaces are available on site in accordance with the current consent. It is not proposed to provide additional parking for staff.*
>
> *The school has 80m of drop-off / pick-up zones located either side of the wombat crossing at the Boulevarde Street frontage and from observation it generally operates well however improvements are possible to improve its efficiency and operation.*
>
> *I concur with the conclusions of the report and make the following recommendations:*
>
> 1. *I have no objection to the amendment of condition 3 to increase the number of students from 1200 to 1350; and*
>
> 2. *The following additional condition be imposed:*
>
>   *The person acting on this consent shall prepare a detailed Operational Traffic Management Plan generally in accordance with the Operational Traffic Management Plan submitted by McLaren Traffic Engineering Consultants subject to the inclusion of the following:*
>
>   a. *Include a provision for the 80m of drop off and pick up zone to be monitored by 2 staff in "Hi Vis" vests identifying them as Staff;*
>   b. *Communication with and education of parents and students regarding the operation of the drop off and pick up zone with regard to time limit for parking, no "double parking" etc;*

c. A Green Travel Plan be developed for both Students and Staff which includes setting goals for future travel mode splits; and
d. The yearly review of the Operational Traffic Management Plan must include an assessment of the effectiveness of the Green Travel Plan measured against targets set for future travel mode splits.

The Operational Traffic Plan shall be prepared by the Applicant's Traffic Consultant and submitted for Council's review. All measures within the Operational Traffic Management Plan must be implemented within 6 months of the date of this consent."

Council's Coordinator Development Engineering supports the proposal, subject to the imposition of appropriate conditions to ensure the operation of the pick-up and drop off zone is improved and the overall traffic management of the school is adequate and continues to be monitored.

Given the above, the proposed increase in student numbers to 1350 is acceptable and is unlikely to result in unreasonable or adverse traffic and parking impacts, with the improved traffic management procedures and requirements.

Part 2.10 of MDCP 2011 does not require any car parking spaces for students and rather requires a suitable pick-up and drop off zone. The school currently has a pick-up and drop off zone which extends over 80 metres on The Boulevarde which generally operates well. Notwithstanding, given the increase in numbers proposed, suitable conditions are included in Attachment A to improve the operation of the existing pick-up and drop off zone and to ensure the school makes greater effort to minimise vehicle trips through the production and implementation of an improved TMP.

The additional 8 car parking spaces generated by the proposal are due to the additional 15 staff required to support an additional 150 students at the school. The Traffic and Parking Impact Assessment determines that the additional 8 car parking spaces can be accommodated on surrounding streets while still maintaining a reasonable level of availability of on street parking for residents and other visitors and the shortfall is considered acceptable. It is noted that the existing site is largely covered by buildings and the opportunities to provide additional on-site car parking spaces are limited without undertaking a large scale redevelopment. Additionally, the school is within close proximity to a number of public transport options including bus routes, light rail and Lewisham Railway Station and other options for travel to the school are available to current and new staff.

Furthermore, the Traffic and Parking Impact Assessment determines the impacts to traffic surrounding the school to be suitable given the surrounding intersections performance are adequate during peak morning and afternoon times.

The applicant has provided suitable evidence to demonstrate the proposal will not result in adverse parking and traffic impacts and this information has been reviewed by Council's Coordinator Development Engineering and is acceptable. Notwithstanding, further conditions should be imposed on any consent to improve the operations of the existing pick-up and drop off zone and general traffic management at the school.

As such, a variation to the car parking requirements of Part 2.10 of MDCP 2011 is considered acceptable and worthy of support. The application is recommended for approval subject to the imposition of appropriate conditions.

It is noted that a number of submissions received objected to the proposal on the grounds of increased traffic impacts to the locality and a lack of on street parking to support additional students (and staff). While the proposal will result in a further shortfall of 8 car parking spaces, the application is supported by a Traffic and Parking Impact Assessment that adequately demonstrates that additional students will not result in adverse traffic impacts and that the current on street car parking can reasonably accommodate 8 additional car parking spaces.

The evidence submitted with the proposal, coupled with the further conditions to ensure improved traffic management at the school is considered suitable to address these concerns and the application is supported.

5(d) Other Considerations

(i) Regulating Expansion of Schools

On 20 September 2017, the Department of Planning and Environment (DPE) released a Planning Circular (PS 17-004) providing guidelines for regulating the expansion of schools with a specific focus on the suitability of imposing numerical conditions capping student or staff numbers.

The Circular acknowledges that both government and non-government school are experiencing an increase in student numbers to due increased population within NSW and Sydney, and the planning system should allow some flexibility in the regulating school expansions.

The Department provides four best practice principles for consent authorities to consider when setting caps on schools being:

- Apply outcome based consent conditions;
- Caps should be evidence based;
- Mitigate impacts directly; and
- Flexibility required for school developments.

Council Officers have applied these principals in the assessment of this application and when considering the suitability of the existing student cap of 1200 and imposing a new cap of 1350.

It is noted that the existing cap of 1200 student imposed by condition 3 of Determination No. 200300504, dated 3 June 2004, was not evidence based and rather was imposed based on the information provided by the applicant with that application. That application stated the school had 1200 students and a cap was arbitrarily imposed to manage potential impacts of the school and as such is not in accordance with the current best practice approach. Furthermore, the existing cap was imposed approximately 13 year ago and the population of the Inner West has increased during that time, as such, it is expected that schools within the area would see an increase in student numbers.

When considering an increase to the cap, it is considered desirable to employ the current best practice policy and ensure any proposed cap is evidence based and further conditions of consent are considered to directly address and mitigate potential impacts. There are a number of regulations for schools outside of the planning system which already limit the number of students' allowable, including limiting class sizes which in turn is limited by the number of classrooms available. Therefore, in the context of this application, it has emerged that the main purpose for limiting student numbers is to limit the potential traffic and parking impacts generated by an increase in students.

The application has been supported by a Traffic and Parking Impact Assessment which has been reviewed by Council and is considered to have provided appropriate evidence that the proposed number of 1350 students (and therefore 155 staff) will not be detrimental to traffic and parking within the area surrounding the school. Furthermore, the additional conditions of consent recommended are aimed at ensuring improved traffic management which directly to mitigating the potential impacts and ensuring suitable outcomes are achieved.

As such, it is considered that the recommendation to support an increase to the existing student cap imposed by condition 3 of Determination No. 200300504, dated 3 June 2004, is in line with the

current best practice approach recommended by the DPE. While the number of students at the school will increase, Council has shown flexibility in applying a numerical cap and evidence based data has been provided to demonstrate the proposed cap of 1350 student is suitable. In addition, further conditions of consent are imposed that better relate to the traffic and parking impacts to be mitigated and the outcomes to be achieved.

While it is acknowledged that a high number of community submissions have been received against this application, it is considered that the approach taken by Council in the application of a student cap is reasonable for the reasons discussed above. The additional conditions will ensure the development does not result in adverse traffic and parking impacts and provides an opportunity for the existing traffic and parking situation to be improved via improved traffic management policies and measures.

5(e) The Likely Impacts

The assessment of the Development Application demonstrates that, subject to the recommended conditions, the proposal will have minimal impact in the locality.

5(f) The suitability of the site for the development

The site is zoned SP2 – Infrastructure (Educational Establishment) under MLEP 2011. Provided that any adverse effects on adjoining properties are minimised, this site is considered suitable to accommodate the proposed development, and this has been demonstrated in the assessment of the application.

5(g) Any submissions

The application was advertised, an on-site notice displayed on the property and residents/property owners in the vicinity of the property were notified of the development in accordance with Council's Notification Policy. A total of 281 submissions from 209 properties, including 168 pro-forma letters were received.

The following issues raised in submissions have been discussed in this report:

- Undesirable traffic impacts – See discussion under heading “Parking (2.10)”;
- Undesirable parking impacts and lack of compliance with Part 2.10 of MDCP 2011 – See discussion under heading “Parking (2.10)”; and
- Regulating the expansion of the school in general – See discussion under heading “Regulating Expansion of Schools”.

In addition to the above issues, the submissions raised the following concerns which are discussed under the respective headings below:

Issue: *Lack of parking for local residents*

Comment: Concern has been raised that there is a lack of parking in the area for residents and an increase in student numbers will further decrease the parking available. The Traffic and Parking Assessment submitted with the applicant has undertaken an assessment of the available car parking spaces during peak times and has demonstrated on street car parking is available for residents and visitors.

The submissions also asserted that a number of residents cannot park within the vicinity of their homes because of the on street parking taken up by the school and/or that there are no spare on street car parking spaces available as suggested by the Assessment. However, a number of residential properties in the area do not have on site car parking and as such residents may not always be able to obtain on street car

parking within a few metres of their home. If a site cannot accommodate on site car parking, some competition for street parking should be expected.

Issue: *Lack of enforcement of parking infringements*

Comment: Concern is raised that illegal parking that takes places around the school is not enforced. This issue of illegal parking is an on-going operational issue that can be dealt with by Council's Regulatory Services Section.

Issue: *Adequacy of the Traffic and Parking Assessment submitted*

Comment: A number of concerns are raised with various aspects of the Traffic and Parking Assessment that has been submitted with the application. Submissions received question the validity and accuracy of the findings that there is on street car parking available during the morning and afternoon peak times.

While Table 4 which displays the existing on street availability does show some streets with negative spaces, such as Eltham Street and Summer Hill Street, the lack of spaces in this street is balanced by the availability of spaces in other streets within close proximity and as such it is accepted that car parking is available on-street within the area.

One submission questioned the number of students at the school on the day intersection testing was undertaken, being 10 August 2016, stating the school website showed a number of events that may have resulted in some students not attending school that day. Notwithstanding, 10 August 2016 was an operational day at the school and it is unlikely the number of students that may have been absent on that day was of a magnitude that the performance of the intersections would have been adversely affected rendering the data unreliable. Additionally, further conditions of consent are recommended to improve traffic management relating to the school.

Council's Coordinator Development Engineering reviewed the reports submitted, and conducted a number of site inspections at differing times to observe the traffic and parking implications and supports the findings of the Traffic and Parking Assessment and the proposal subject to the imposition of additional conditions of consent.

Issue: *Residents being fined due to a lack of unrestricted parking in the area.*

Comment: Concern is raised that local residents are being forced to park in restricted parking zones and getting fines due to a lack of parking. The suitability of any current car parking restrictions in the area is a matter Council's Traffic and Roads Section.

Issue: *Lack of Safety for Pedestrians and Motorists*

Comment: Concern is raised about the actions of drivers surrounding the school, that there are a number of incidences of illegal driving and that this creates safety concerns for both drivers and pedestrians. The submissions received outline a number of activities of concern including speeding, not stopping at pedestrian crossings, double parking and blocking footpaths and driveways with vehicles. However, no evidence has been submitted that these behaviours are attributed solely to drivers associated with the school and there is no evidence to suggest that refusing the request for 150 additional students would resolve this issue.

Rather, conditions of consent are included in the recommendation requiring the school to develop and submit an improved and more comprehensive TMP which should address some of the issues raised, particularly double parking at the pickup and drop off zone.

Some of the other issues, such as people blocking footpaths and not stopping at pedestrian crossing should be reported to Council's Parking Officers and/or the Police for appropriate action to be taken.

Issue: *Unsatisfactory management of traffic impacts by the school*

Comment: The recommended conditions of consent will require the school to develop and implement a TMP to manage traffic and parking impacts.

Issue: *Lack of physical space for students*

Comment: Concern is raised that the school does not have enough physical space for the students enrolled and that during special events some classes are taken to local parks. The submissions do not make clear what the events are (such as sport days, cultural days etc.) however it is common practice for schools to occasionally utilise public parks for a part of the day, particularly those in high density areas that do not have capacity to accommodate larger recreation spaces, such as ovals.

Schools are required by the Department of Education to have an appropriate number of classrooms and spaces for students and would have to adhere to these requirements, despite any conditions imposed by Council. As such, from a planning perspective there is no evidence to suggest the school cannot accommodate the number of students proposed due to a lack of physical space.

Issue: *Noise Pollution*

Comment: Concern is raised of noise pollution as a result of the operation of the school. The submissions reference air conditioning units, buses, car engines and horns and suction vents operating throughout the day. Noise omitted from school at any time would be required to comply with the relevant noise criteria of the NSW Environmental Protection Authority.

The submission also raised a particular concern with the alarm system at the school triggering late in the evenings regularly. This is an issue that should be addressed directly with the school.

It is noted that the specific noise sources outlined in the submissions are not a result of the additional students proposed in this application and limiting student numbers would not directly address this issue.

Issue: *Littering by students*

Comment: Concern is raised that students from the school litter around the local area. While Council has not received any recent complaints in relation to littering, in light of the submissions received, it is recommended an additional condition of consent be imposed requiring staff to conduct patrols surrounding the school and collect any litter.

Issue: *Poor consultation / notification of development application*

Comment: Concern is raised that the application was submitted during a school holiday period and that not enough residents were directly notified by letter, limiting the ability for submissions to be lodged. The application was notified for 14 days in accordance with Council's notification policy and statutory requirements. In addition, any submissions received after the notification period was complete were also accepted and taken into consideration. The application was appropriately notified and members of the public were given a suitable opportunity to raise concerns.

Issue: *School already over enrolled (current students numbers are greater than 1350)*

Comment: Concern is raised that the school is currently enrolled over 1350 students which is acknowledged by the application. The application states student numbers will be reduced to 1350 to adhere to this proposal. A recommendation is included that Council's Development Compliance Section be advised of this determination and ensures the school adheres to the student numbers as required by Condition 3.

Issue: *Precursor to a larger development*

Comment: Concern is raised that the increase in numbers will be a precursor to a larger development with building works. There is no evidence to suggest this and is not a matter for consideration for this application. Any future application would be assessed on its merits.

Issue: *Student road racing / driving unsafely*

Comment: Concern is raised that some older students who drive engage in road racing in the local area. This illegal activity should be reported to the police who could then follow up with the school.

Issue: *Students and staff drive aggressively when attempting to find parking*

Comment: Concern is raised that students and staff driving to school / work drive aggressively as they attempt to park in the morning hours. Any breaches of road rules is a matter for the NSW Police.

5(h) The Public Interest

The public interest is best served by the consistent application of the requirements of the relevant Environmental Planning Instruments, and by Council ensuring that any adverse effects on the surrounding area and the environment are appropriately managed.

While a high number of community submissions have been received, the outcomes of this application are considered suitable for the reasons discussed within this report. Additional conditions of consent are proposed to address a number of concerns raised by the community including conditions requiring a Traffic Management Plan to ensure the school takes an active and ongoing role in managing potential traffic and parking impacts; conditions relating to noise; and conditions relating to litter collection.

The proposal relates to increasing student numbers at an existing school and subject to the imposition of appropriate conditions, any impacts associated with this increase can be managed and mitigated. The proposal is not contrary to the public interest.

6 Referrals

6(a) Internal

(i) Council's Coordinator Development Engineering

The application was referred to Council's Coordinator Development Engineering who supports the proposal subject to the imposition of appropriate conditions to ensure any potential parking and traffic impacts associated with the increase in students have a minimal impact on the locality. It is noted that Council's Coordinator Development Engineering conducted numerous site inspections, including monitoring the performance of the existing pick up and drop off zone at The Boulevarde

as part of the assessment of this application and is generally supportive of the proposal subject to the imposition of appropriate conditions.

(ii) Council's Local Traffic Committee

The application was referred to Council's Local Traffic Committee who resolved *"that the applicant demonstrate that the additional parking requirements (8 parking spaces) can be provided on-street without major impact on the surrounding community"* prior to approval.

As discussed in this report, the Traffic and Parking Assessment submitted with the application demonstrates that the 8 additional car parking required by the increase in student (and staff) numbers can be accommodated on street without creating a shortfall of on street parking. Additionally, further conditions of consent are recommended to ensure the school implements a TMP to better manage traffic impacts.

6(b) External

The application was referred to the RMS who raised no concerns with the proposal.

7. Section 94 Contributions

No Section 94 Contributions are applicable to this development.

8. Conclusion

Despite the non-compliances relating to on site car parking, the proposal generally complies with the aims, objectives and design parameters contained in the relevant SEPPs, MLEP 2011 and MDCP 2011.

Subject to the imposition of appropriate conditions, the development will not result in any significant impacts on the amenity of the surrounding locality.

The application is suitable for approval subject to the imposition of appropriate conditions.

9. Recommendation

A. THAT the application under Section 4.55 of the Environmental Planning and Assessment Act to modify Determination No. 200300504, dated 3 June 2004, to modify condition 3 so as to increase the student numbers from 1200 to 1350 students be approved subject to the conditions listed in Attachment A.

B. THAT Council's Development Compliance Section be advised of this Determination and ensure that Christian Brothers High School complies with the maximum student numbers prescribed by Condition 3 of the consent.

C. THAT those persons who lodged submissions be advised of the outcome of the determination.

Attachment A – Recommended conditions of consent

(i) That conditions 1 and 3 in Part B of the consent being amended to read:

1. The development being carried out substantially in accordance with Plan Nos. 2003 DA/01 to 11 Issue B inclusive dated May 2003 and details submitted to Council on 5 August 2003 with the application for development consent and details submitted to Council on 22 September 2003 and as amended by the sketch plans reducing the height of the multi-purpose facility submitted to Council on 16 February 2004, the letter dated 13 April 2004 increasing the setback of the multi-purpose facility an additional 500mm from the western side boundary, the matters referred to in Part A of this Determination, and the details submitted to Council on 20 September 2016 as part of a modification application under Section 4.55 of the Environmental Planning and Assessment Act 1979 and the following conditions.
   Reason: To confirm the details of the application as submitted by the applicant.

3. Not more than 1350 students being enrolled at the school without the prior approval of Council.
   Reason: To ensure that the intensity of the use of the premises is not increased without a further review of the off-street car parking facilities, traffic, noise, and amenity impacts of the development.

(ii) That the following additional conditions be included in the modified determination:

3a. The person acting on this consent shall prepare a detailed Operational Traffic Management Plan generally in accordance with the Operational Traffic Management Plan dated 15 August 2016 by McLaren Traffic Engineering Consultants submitted to Council on 20 September 2016, subject to the inclusion of the following:

   a) Include a provision for the 80 metre of drop off and pick up zone to be monitored by 2 staff in "Hi Vis" vests identifying them as Staff;
   b) Communication with and education of parents and students regarding the operation of the drop off and pick up zone with regard to time limit for parking, no "double parking" etc;
   c) A Green Travel Plan be developed for both Students and Staff which includes setting goals for future travel mode splits; and
   d) The yearly review of the Operational Traffic Management Plan must include an assessment of the effectiveness of the Green Travel Plan measured against targets set for future travel mode splits.

   The Operational Traffic Plan shall be prepared by the applicant's Traffic Consultant and submitted for Council's review. All measures within the Operational Traffic Management Plan must be implemented within 6 months of the date of this modified consent and the operation of the school must adhere at all times to the approved Operational Traffic Management Plan.

3b. The staff of the school being responsible for conducting litter patrols within the streets adjoining/surrounding the school being, at minimum, along Denison Road and The Boulevarde between Eltham Street and Toothill Street and along Eltham Street and Toothill Street between Denison Road and The Boulevarde. Litter patrols must be undertaken twice a week during school operation.

Attachment B – Determination No. 200300504 dated 3 June 2004

DA200300504 dm

3 June 2004 ***DETERMINATION NO 200300504***

Alexander Coutts and Associates
50 Cliff Avenue
NORTHBRIDGE 2063

Dear Sir/Madam

ENVIRONMENTAL PLANNING & ASSESSMENT ACT 1979 ("the Act")
NOTICE OF DETERMINATION OF A DEVELOPMENT APPLICATION

Pursuant to Section 81 of the Act, notice is hereby given of the determination by the Council of **Development Application No 200300504** to demolish the print house, library and the dwellings of 82 and 84 The Boulevarde and carry out alterations and additions to a school including the construction of a multi purpose facility and additional classrooms relating to property situated at:

68 THE BOULEVARDE, LEWISHAM

Building Code of Australia Building Classification: 9b

In determining this application, the Council considered all matters listed under Section 79C of the Act that were relevant to the Development Application.

The Development Application was determined on 3 June 2004 pursuant to Section 80(3) of the Act by the granting of a "Deferred Commencement" Consent.

"DEFERRED COMMENCEMENT" CONSENT

This Consent will not operate and it may not be acted upon until the Council or its delegate is satisfied as to the following matters:

1. A landscaping plan being prepared in consultation with neighbouring premises and submitted to the satisfaction of Council.
   The plans shall include the following:
   - Planting schedule detailing location, container sizes and botanical names of all trees, shrubs, ground covers, etc.
   - In this regard species chosen should be Australian natives were possible.
   - Along the south-west boundary, species should be chosen to provide screening between the proposed development and the adjoining premises. In addition to shrubs, trees should be used to provide screening. Such trees should have a mature height of at least 8 metres and semi-mature and advanced plantings should be included in the proposal.
   - Details of all hard landscaping including location and materials to be used for driveways, fences, retaining walls, footpaths, lighting and garden edging. In this regard, the sandstone from the walls and columns of the print building should be retained and incorporated into the landscaping.

- Details of proposed irrigation systems and water outlets, including drip irrigation in association with rainwater tanks.

2. An amended plan being submitted to the satisfaction of Council including the following changes to ensure equitable access for all persons to the development:

   (i). Access to and throughout all areas within the proposed building being provided in accordance with AS 1428.1- 1998 "Design for access and mobility". Access to all levels shall be provided via a lift designed to comply with AS 1735.12 -1999 "Lifts, escalators and moving walkways Part 12: Facilities for persons with disabilities"

   (ii). An accessible toilet and hand basin complying with AS 1428.1- 1998 "Design for access and mobility", provided in the following locations:

      a) on level three, within the vicinity of the staff room; and

      b) on level two, within the vicinity of the changes rooms.

   (iii). An accessible carparking space shall be located in the immediate vicinity of the accessible entrance from the basement level. The carparking shall be designed to comply with AS 1428.1 'Design for access and mobility – General requirements for access – buildings' and AS 2890.1 1 'Off-street carparking'.

3. Vehicular access and associated vehicle standing areas within the site shall be designed in accordance with Australian Standard AS 2890.1-1993 Off street car parking, and Marrickville Development Control Plan No. 19–'Parking Strategy' so that:-
   (a) The minimum dimensions of any standing area shall be 2.5m wide by 5.4m deep (relative to the line of the proposed access). The minimum head clearance (headroom) at any point shall be 2.1m;
   (b) At the property boundary the access from the road to a standing area being (as near as practicable) perpendicular to the line of the adjacent road; and
   (c) The relative surface levels of the internal access from the road being controlled so that:-
      (i) the surface levels at the property boundary match "alignment levels", to be obtained from Council's Director, Technical Services;
      (ii) The change in grade for any 2m length of accessway not exceeding 1 in 8 (12.5%) unless suitable transitions are provided in accordance with AS2890.1;
      (iii) The maximum grade at any point not exceeding 1 in 5 (20%) or in the case of ramps greater than 20m in length 1 in 6 (16.7%); and
      (iv) The maximum grade at the property boundary not exceeding 1 in 20 (5%) within 3m of the property boundary.
   (d) Any increase in the height of the ceiling / head clearance to the basement parking area is not to result in any increase in the overall height of the development or any significant changes to the Denison Road elevation.

4. A full set of amended plans being submitted to the satisfaction of Council to reflect the proposed reduction in the height of the southern elevation and ridge of the multi-purpose hall and increased side setback from the residential properties to the west, as detailed in the sketch plans and details submitted to Council on 16 February 2004 and 13 April 2004.

5. Details of all finished surface materials of the western elevation of the multi-purpose facility, including colour and texture to be used in construction being submitted to Council's satisfaction. In this regard the finished surface materials used are to be chosen to break up the extent of the subject wall and lessen its visual bulk when viewed from the adjoining property at 95 Denison Road.

Evidence of the above matters must be produced to the Council or its delegate within 12 months otherwise the Consent will not operate.

PART B - CONDITIONS OF CONSENT

Once operative the consent is subject to the following conditions:

1. The development being carried out substantially in accordance with Plan Nos. 2003 DA/01 TO 11 Issue B inclusive dated May 2003 and details submitted to Council on 5 August 2003 with the application for development consent and details submitted to Council on 22 September 2003 and as amended by the sketch plans reducing the height of the multi-purpose facility submitted to Council on 16 February 2004, the letter dated 13 April 2004 increasing the setback of the multi-purpose facility an additional 500mm from the western side boundary, the matters referred to in Part A of this Determination and the following conditions.
   Reason: To confirm the details of the application as submitted by the applicant.

2. The use of the buildings being restricted to the ordinary activities of the school.
   Reason: To ensure the use of the school does not interfere with the amenity of the locality.

3. Not more than 1200 students being enrolled at the school without the prior approval of Council.
   Reason: To ensure that the intensity of the use of the premises is not increased without a further review of the off-street car parking facilities, traffic, noise, and amenity impacts of the development.

4. Eighteen (18) off-street car parking spaces being provided, paved, linemarked and maintained at all times in accordance with the standards contained within Marrickville Development Control Plan No.19 -Parking Strategy.
   Reason: To ensure practical off-street car parking is available for the use of the premises.

5. All parking spaces and turning area thereto being provided in accordance with the design requirements set out within Council's Development Control Plan No.19 - Parking Strategy, and being used exclusively for parking and not for storage or any other purpose.
   Reason: To ensure adequate manoeuvrability to all car parking spaces and that the spaces are used exclusively for parking.

6. No injury being caused to the amenity of the neighbourhood by the emission of noise, smoke, smell, vibration, gases, particulate matter, the exposure to view of any unsightly matter or otherwise.
   Reason: To protect the amenity of the locality.

7. All mature trees not requiring removal to permit the erection of the development being retained.
   Reason: To preserve existing mature trees on the property.

8. It may be necessary for the installation of a suitable electrical sub-station for the distribution of electrical power in this area to be located on the land, the subject of this application, and that an area of land suitable for the Energy Australia to provide such an installation be set aside for this purpose. Before proceeding with your development further, you are directed to contact the General Manager of the Energy Australia, George Street, Sydney, with respect to the possible need for such an installation immediately or in the future.
   Reason: To provide for the existing and potential electrical power distribution for this development and for the area.

9. The developer liaising with the Sydney Water Corporation, the Energy Australia, AGL and Telstra concerning the provision of water and sewerage, electricity, natural gas and telephones respectively to the property.
   Reason: To ensure that the development is adequately serviced.

10. All building work must be carried out in accordance with the provisions of the Building Code of Australia 96.
   Reason: To ensure the work is carried out to an acceptable standard and in accordance with the Building Code of Australia 96.

11. The person acting on this consent shall apply as required for all necessary permits including crane permits, road opening permits, hoarding permits, footpath occupation permits and/or any other approvals under Section 68 (Approvals) of the Local Government Act, 1993 or Section 138 of the Roads Act, 1993.
   Reason: To ensure all necessary approvals have been applied for.

12. A road opening permit shall be obtained for all works carried out in public roads or Council controlled lands. Restorations shall be in accordance with Marrickville Council's Restorations Code. Failure to obtain a road opening permit will incur an additional charge for unauthorised openings in the amount of $1,321.30, as provided for in Council's adopted fees and charges.
   Reason: To ensure that all restoration works are in accordance with Council's code.

BEFORE THE ISSUE OF A CONSTRUCTION CERTIFICATE

13. The separate lots comprising the development being consolidated into one lot and under one title and registered at the Land Titles Office before the issue of a Construction Certificate.
   Reason: To prevent future dealing in separately titled land, the subject of one consolidated site development.

13A. The use of the multi-purpose hall shall not give rise to:
- transmission of unacceptable vibration to any place of different occupancy;
- a sound pressure level at any affected premises that exceeds the background (LA90) noise level in the absence of the noise under consideration by more than 3dB(A). The source noise level shall be assessed as an LA10,15min and adjusted in accordance with Environment Protection Authority guidelines for tonality, frequency weighting, impulsive characteristics, fluctuations and temporal content; and

- a sound pressure level at any affected premises that exceeds the recommended planning levels outlined in the NSW Environment Protection Authority's *Environmental Noise Control Manual* and The Protection of the Environment Operations Act 1997 (NSW).

  Details of how all vents and openings to the proposed multipurpose hall are to be acoustically treated to ensure the development complies with these requirements are to be submitted to the satisfaction of Council before the issue of a Construction Certificate.

  Reason: To prevent loss of amenity to the area.

14. Details of all finished surface materials, including colour and texture to be used in construction being submitted to Council's satisfaction before the issue of the Construction Certificate.

    Reason: To ensure that finished surface details are in keeping with the character of the area.

15. Where Council is appointed as the Principal Certifying Authority to carry out inspections of the works in progress for the purposes of issuing an Occupancy Certificate, a fee of $11,893 is required to be paid to Council for the required inspections and the Occupation Certificate before the issue of a Construction Certificate.

    Reason: To inspect the works in progress to confirm that the works are built in accordance with the development consent and construction certificate.

16. Before the issue of a Construction Certificate evidence of payment of the building and construction industry Long Service Leave Scheme, is required to be given to Council. The required payment of $19,000, can be made at the Council Offices. This fee has been based on an estimated cost of works of $9.5 million.

    Reason: To ensure that the appropriate levy (0.2% of the cost of the building and construction work costing $25,000 or more) is paid in accordance with the Building and Construction Industry Long Service Payments Act 1986.

17. Sediment control devices must be constructed and maintained in proper working order to prevent sediment discharge from the construction site. Sediment control plans and specifications complying with the 'Urban Erosion and Sediment Control' Handbook, published by the NSW Department of Conservation and Land Management (CALM) must be submitted to the Principal Certifying Authority before the issue of a Construction Certificate.

    Reason: To prevent soil erosion and sedimentation of Council's stormwater drainage system.

18. The person acting on this consent shall provide details of the means to secure the site and to protect the public from the construction works. Where the means of securing the site involves the erection of fencing or a hoarding on Council's footpath or road reserve the person shall submit a hoarding application and pay all relevant fees before commencement of works or the issue of the Construction Certificate, whichever occurs first.

    Reason: To secure the site and to maintain public safety.

19. A detailed Traffic Management Plan to cater for construction traffic shall be submitted to and approved by Council before commencement of works or the issue of the Construction Certificate, whichever occurs first. Details shall include proposed truck parking areas, construction zones, crane usage, truck routes etc.

    Reason: To ensure construction traffic does not unduly interfere with vehicular or pedestrian traffic, or the amenity of the area.

5

20. Before the issue of the Construction Certificate the owner or builder shall sign a written undertaking that they shall be responsible for the full cost of repairs to footpath, kerb and gutter, or other Council property damaged as a result of construction of the proposed development. Council may utilise part or all of any Building Security Deposit (B.S.D.) or recover in any court of competent jurisdiction, any costs to Council for such repairs.
Reason: To ensure that all damages arising from the building works are repaired at no cost to Council.

21. The person acting on this consent shall provide security in a manner satisfactory to the Director Technical Services in the amount of $7,070.00 before the issue of the Construction Certificate as surety for the proper completion of the footpath and/or vehicular crossing works required as a result of this development.
Reason: To provide security for the proper completion of the footpath and/or vehicular crossing works.

BEFORE COMMENCING WORKS

22. You must not commence building work until:

(a) a Construction Certificate has been issued by Council or an accredited certifier; and
(b) the person having benefit of the development (the Applicant) has appointed a Principal Certifying Authority (PCA), and where Council is not the PCA, notify Council of the appointment of the PCA; and
(c) you have given written notice to Council of your intention to commence building work in accordance with this Consent at least two (2) days before commencing the work.

Notification required by (b) and (c) above can be made by completing the attached form and returning it to Council's Development and Environmental Services Division.
Reason: To comply with the provisions of the Environmental Planning and Assessment Act.

23. The approved plans **must** be submitted to the Customer Centre of any office of Sydney Water before the commencement of any work, including excavation activity associated with the development, to ensure that the proposed work meets the requirements of Sydney Water in relationship to:
(a) sewers;
(b) watermains;
(c) stormwater channels; and
(d) development requirements where applicable.

Failure to submit these plans before commencing work may result in the demolition of the structure at the builder's expense should it be found that the work does not comply with the requirements of Sydney Water.
Reason: To ensure the location of Sydney Water's main sewer lines have been established before building work commences.

24. Before commencing work sanitary facilities are to be provided at or in the vicinity of the work site at a rate of one (1) toilet for every 20 persons or part of 20 persons employed at the site and each toilet must be a standard flushing toilet and must be connected:

(a) to a public sewer, or
(b) if connection to a public sewer is not practicable, to an *accredited sewage management facility* approved by Council, or

(c) if connection to a public sewer or an *accredited sewage management facility* is not practicable, to some other *sewage management facility* approved by Council.

Such facilities are to be located in a position which will not cause a nuisance to the surrounding neighbourhood.

Reason: To ensure that sufficient and appropriate sanitary facilities are provided on the site.

25. Before commencing work:

(a) the site must be enclosed with suitable fencing or hoarding to prohibit unauthorised access to the site by the public. The fencing must be erected as a barrier between the public place and the site works; and

(b) a sign must be erected in a prominent position stating that unauthorised entry to the work site is prohibited and showing the name of the person in charge of the site and a telephone number at which that person may be contacted outside of working hours.

Enquiries for site fencing and hoardings in a public place including Council approval, can be made through Council's Technical Services Division on ☎ 9335 2222.

Reason: To secure the area of the site works so as to maintain the safety of the public.

25A. Before commencing works, the person acting on this consent is to advise Council in writing of a telephone number for residents to contact in regards to complaints regarding construction and building work on the site. The phone number is to be contactable 24 hours a day, seven days a week. Signs being erected on both The Boulevarde and Denison Road entrances to the site advising of the contact telephone number and are to remain in place until the final occupation certificate has been issued.

Reason: To provide residents with a point of contact for complaints regarding building work on the site.

26. All services in the building that is being demolished are to be disconnected before commencing demolition work.

Reason: To ensure that the demolition work is carried out safely.

27. Alignment levels for the site at all pedestrian and vehicular access locations shall be obtained from Council's Director, Technical Services before the commencement of construction. The alignment levels shall match the existing back of footpath levels at the boundary. Failure to comply with this condition will result in vehicular access being denied.

Reason: In accordance with Council's powers under the Roads Act, 1993, alignment levels at the property boundary will be required to accord with Council's design or existing road and footpath levels.

CONSTRUCTION AND SITE WORKS

28. All demolition, construction and associated work necessary for the carrying out of the development being restricted to between the hours of 7.00 am to 5.30 pm Mondays to Saturdays, excluding Public Holidays. All trucks and vehicles associated with the construction, including those delivering to or removing material from the site, only having access to the site during the hours referred to in this condition. All construction vehicles bringing materials to and from the site being loaded and unloaded wholly within the property.

No waste collection skips, spoil, excavation or demolition material from the site or building materials associated with the construction of the development being deposited on the public road, footpath, public place or Council owned property without Council's approval, having first been obtained. The developer being responsible to ensure that all contractors associated with the development are fully aware of these requirements.

Reason: To minimise the effect of the development during the construction period on the amenity of the surrounding neighbourhood.

29. The area surrounding the building work being reinstated to Council's satisfaction upon completion of the work.

Reason: To ensure that the area surrounding the building work is satisfactorily reinstated.

30. Soil and water management controls must be provided on the site and comply with the following:

(a) Council's warning sign for soil and water management must be displayed at the most prominent point on the site nearest to the construction area, visible to both the street and site workers. The warning signs must be displayed throughout the duration of construction/site works (Warning signs are available from Council); Note: Warning signs only need to be erected where a Soil and Water Management Plan has been submitted to and approved by Council;

(b) the capacity and effectiveness of erosion and sediment control devices being maintained at all times;

(c) a copy of the Soil and Water Management Plan (where required to be prepared) must be kept on-site at all times and made available to Council Officers on request;

(d) stockpiles are not permitted to be stored on Council property (including nature strip) unless prior approval from Council has been granted;

(e) stockpiles of topsoil, sand, aggregate, spoil or other material being stored clear of any drainage line or drainage easement, natural watercourse, kerb or road surface;

(f) drains, gutters, roadways and accessways must be maintained free of sediment;

(g) building operations such as brickcutting, washing tools or paintbrushes, and mixing mortar must not be carried out on the roadway or public footway. Building operations must be carried out in such a way as to prevent the discharge of materials into the stormwater drainage system;

(h) before the removal of sediment controls and within 14 days of completion, all disturbed areas must be stabilised against erosion. Methods for erosion control are detailed in the 'Urban Erosion and Sediment Control' Handbook, published by the NSW Department of Conservation and Land Management (CALM), ℡ 9895 7390; and

(i) stormwater from roof areas must be collected and drained via a downpipe to a stormwater disposal system immediately after completion of the roof area.

Reason: To protect the environment from soil erosion and sedimentation.

31. Where Council is appointed as the Principal Certifying Authority the following inspections of the building or work must be undertaken:

(a) soil and water management controls;
(b) pier holes before they are filled with concrete;
(c) the foundation before the footings are laid;
(d) reinforcing steel when in position and before concrete is placed;
(e) dampcourse, termite barriers and floor timbers before the floor material is fixed;
(f) filling the wall cavity with mortar up to weep-hole level before the laying of any brickwork above slab level;

(g) the framework including roof members when completed and before the fixing of any internal linings;
(h) wet areas (bathrooms, laundries), damp-proofing and flashings before linings are fixed;
(i) continuous cavity construction, flashing, waterproofing to the existing building(s);
(j) connection and hold-down fixing methods of component members;
(k) external stormwater drainage lines before backfilling of trenches and absorption pit where permitted;
(l) upper floor beams and joists before fixing any floor material;
(m) completion of the building or work.

At least 48 hours notice of the required inspection must be given to the Development and Environmental Services Division, ☎ 9335 2222.

Note: The person acting upon this consent must satisfy him/herself that each of the above building elements have been inspected and approved before continuing with construction.
Reason: To ensure the building work is carried out in accordance with the Building Code of Australia during the course of construction.

32. The impact of the development on the compliance of the Gallagher Building, with the Building Code of Australia shall be taken into account and if required, the Gallagher Building upgraded to comply with Building Code of Australia.
Reason: To ensure the integrity of the adjoining building is not compromised.

33. If it is required or intended to excavate below the level of the base of the footings of a building on the adjoining allotments of land, including a public place such as footways and roadways, the person causing the excavation to be made must:

(a) preserve and protect the premises from damage;
(b) if necessary, underpin and support the building in an approved manner. Where underpinning is required, details prepared by a practising structural engineer are to be submitted to the Principal Certifying Authority **before underpinning works commence**; and
(c) give at least seven (7) days notice, including complete details of the work, to the owners of the adjoining land of the intention to excavate below the base of the footings.

Reason: To ensure that adjoining buildings are preserved and supported.

34. If the proposed work is likely to cause obstruction of the public place and/or is likely to endanger users of the public place, a suitable hoarding or fence approved by Council must be erected between the work site and the public place. Enquiries for site fencing and hoardings in a public place including Council approval, can be made through Council's Technical Services Division on % 9335 2223.
Reason: To provide protection to the public place.

35. The placing of any building/demolition materials on Council's footpath or roadway is prohibited and under no circumstances must building operations be carried out on the footpath or roadway without the consent of Council.

The placement of waste storage containers in a public place also requires Council approval and must comply with Council's Local Policy – 'Placement of Waste Storage Containers in a Public Place'. Enquiries can be made through Council's Waste Services Section on ☎ 9335 2222.

Reason: To ensure the public ways are not obstructed and the placement of waste storage containers in a public place are not dangerous to the public.

36. A certificate of survey from a registered land surveyor must be submitted to the Principal Certifying Authority upon excavation of the footings and before the pouring of the concrete to verify that the structure will not encroach on the allotment boundaries.
Reason: To ensure all works are contained within the boundaries of the allotment.

37. All demolition work being carried out in accordance with the following:

(a) compliance with the requirements of Australian Standard AS 2601 'The demolition of structures' with specific reference to health and safety of the public, health and safety of the site personnel, protection of adjoining buildings and protection of the immediate environment;
(b) all works involving the demolition, removal, transport and disposal of asbestos cement is to be carried out in accordance with the 'Worksafe Code of Practice for Removal of Asbestos' and the requirements of the WorkCover Authority of NSW and the Environment Protection Authority;
(c) all building materials arising from the demolition are to be disposed of in an approved manner in accordance with Council's DCP No. 27 'Controls for Site Waste Management and Minimisation' and any applicable requirements of the Environment Protection Authority;
(d) sanitary drainage, stormwater drainage, water, electricity and telecommunications are to be disconnected in accordance with the requirements of the responsible authorities;
(e) the generation of dust and noise on the site must be controlled;
(f) the site must be secured to prohibit unauthorised entry;
(g) suitable provision must be made to clean the wheels and bodies of all vehicles leaving the site to prevent the tracking of debris and soil onto the public way;
(h) all trucks and vehicles associated with the demolition, including those delivering to or removing material from the site, only having access to the site during work hours nominated by Council and all loads must be covered;
(i) all vehicles taking materials from the site must be loaded wholly within the property unless otherwise permitted by Council;
(j) no waste collection skips, spoil, excavation or demolition material from the site being deposited on the public road, footpath, public place or Council owned property without the approval of Council; and
(k) the person acting on this consent is responsible for ensuring that all contractors and sub-contractors associated with the demolition are fully aware of these requirements.

Reason: To ensure that the demolition work is carried out safely and impacts on the surrounding area are minimised.

38. The person causing the demolition must obtain all necessary permits required by Council including hoarding permits and footpath occupation fees and must comply with any applicable requirements of the WorkCover Authority of NSW and the Environment Protection Authority before commencement of any demolition works.
Reason: To ensure the necessary permits are obtained before work is commenced.

39. AAA rated showerheads as defined by the Australian Standard MP 64 1995 - Manual of assessment procedures for water efficient appliances being provided for each new dwelling.
Reason: To reduce greenhouse gas emissions.

40. New or replacement bathroom or kitchen taps being AAA rated as defined by the Australian Standard MP 64 1995 - Manual of assessment procedures for water efficient appliances.
Reason: To conserve water.

41. New or replacement toilet(s) being dual flush as defined by the Australian Standard MP 64 1995 - Manual of assessment procedures for water efficient appliances.
Reason: To conserve water.

42. New or replacement urinals being AAA rated.
Reason: To conserve water.

Note: To be applied to all development requiring new or replacement urinals, **other than:** alterations and additions to a dwelling house (minor or major), new dwelling houses, new RFBs, new multi-unit houses, residential conversion of former industrial buildings.

43. Construction of an On Site Detention system generally in accordance with stormwater drainage plans H-01 to H-07 submitted by Sparks and Partners and in accordance with Marrickville Council Stormwater and On Site Detention Code. It should be noted that dry-weather flows of any seepage water will not be permitted through kerb outlets unless the water is stored on site and discharged using a timed pump between the hours of midnight and 4.00am.
Reason: To ensure the development does not increase the stormwater runoff from the site.

44. All roof and surface stormwater from the site and any catchment external to the site that presently drains to it, shall be collected in a system of pits and pipelines/channels and major storm event surface flow paths and being discharged to a Council controlled stormwater drainage system in accordance with the requirements of Marrickville Council Stormwater and On Site Detention Code. The maximum discharge allowable to Council's street gutter is 25 litres/second.
Reason: To provide for adequate site drainage.

45. All stormwater drainage being designed in accordance with the provisions of the 1987 Australian Rainfall and Runoff (A.R.R.), Australian Standard AS3500.3.2-1998 'Stormwater Drainage-Acceptable Solutions' and Marrickville Council Stormwater and On Site Detention Code. Pipe and channel drainage systems shall be designed to cater for the twenty (20) year Average Recurrence Interval (A.R.I.) storm in the case of low and medium residential developments, the twenty (20) year A.R.I. storm in the case of high density residential development and commercial and/or industrial developments and the fifty (50) year A.R.I. storm in the case of heavy industry. In all cases the major event surface flow paths shall be designed to cater for the one hundred (100) year A.R.I. storm.
Reason: To provide for adequate site drainage.

BEFORE OCCUPATION OF THE BUILDING

46. You must obtain an Occupation Certificate from your Principal Certifying Authority before you occupy or use the building completed in accordance with this Consent. A copy of the Certificate must be provided to Council within seven (7) days of the Certificate being determined.
Reason: To comply with the provisions of the Environmental Planning and Assessment Act.

47. The landscaping of the site being carried out prior to occupation or use of the premises in accordance with the approved plan, and being maintained at all times to Council's satisfaction.
Reason: To ensure adequate landscaping is maintained.

48. Compliance with the requirements of Marrickville Development Control Plan No. 32 - Energy Smart Water Wise is to be demonstrated via completion of Council's Green checklist, which is to be completed by the Principal Certifying Authority (PCA) before the issue of the Occupation Certificate. If completed by a Private PCA, a copy of the completed checklist must be forwarded to Council for its records.
Reason: To appropriately monitor installation of energy and water conservation fixtures and appliances.

49. All works required to be carried out in connection with drainage, crossings, alterations to kerb and guttering, footpaths and roads resulting from the development shall be completed before occupation of the site. Works shall be in accordance with Council's Standard crossing and footpath specifications and AUS-SPEC#2-"Roadworks Specifications".
Reason: To ensure applicant completes all required work.

50. Heavy duty concrete vehicle crossings, in accordance with Council's Standard crossing and footpath specifications and AUS-SPEC#2-"Roadworks Specifications" shall be constructed at the vehicular access locations before occupation of the site and at no cost to Council.
Reason: To allow vehicular access across the footpath and/or improve the existing vehicular access.

51. Before occupation of the site written verification from a suitably qualified professional civil engineer, stating that all stormwater drainage and related work has been and constructed in accordance with the approved plans shall be submitted to and accepted by Council. In addition, full works-as-executed plans, prepared and signed by a registered surveyor, shall be submitted to Council. These plans must include levels for all drainage structures, buildings (including floor levels), finished ground levels and pavement surface levels.
Reason: To ensure drainage works are constructed in accordance with approved plans.

52. All redundant vehicular crossings to the site shall be removed and replaced by kerb and gutter and footpath paving in accordance with Council's Standard crossing and footpath specifications and AUS-SPEC#2-"Roadworks Specifications" before occupation of the site and at no cost to Council. Where appropriate the kerb shall be reinstated with sandstone kerb
Reason: To eliminate redundant crossings and to reinstate the footpath to its normal condition.

53. The existing damaged or otherwise defective vehicular crossings, kerb and gutter, footpath and/or road pavement adjacent to the site shall be restored in accordance with Council's Standard crossing and footpath specifications and AUS-SPEC#2-"Roadworks Specifications", at no cost to Council and before occupation of the site.
Reason: To provide suitable means of public road vehicle and pedestrian access to the development and to ensure that the amenity of the area is in keeping with the standard of the development.

12

54. The existing stone kerb adjacent to the site is an item of heritage significance and is to be preserved at no cost to Council. Any damage to the stone kerb will require the replacement of the damaged individual stone units before occupation of the site and at no cost to Council.
    Reason: To ensure that items of heritage significance are preserved.

55. Any adjustment or augmentation of any public utility services including Gas, Water, Sewer, Electricity, Street lighting and Telecommunications required as a result of the development shall be at no cost to Council and undertaken before occupation of the site.
    Reason: To ensure all costs for the adjustment/augmentation of services arising as a result of the redevelopment are at no cost to Council.

Pursuant to Clause 68A(4) of the Regulations under the Act, Council will notify you in writing if Part A of this Consent has been satisfied and the date from which this Consent operates.

Under Section 82A of the Act you may, within twelve (12) months of the receipt of this notice, request Council to review this determination.

Under Section 97 of the Act you may, within twelve (12) months of receipt of this notice, appeal to the Land and Environment Court if you are dissatisfied with the Council's determination.

All conditions imposed by the Council must be observed. Breach of a condition is a breach of the Act and may also constitute an offence.

Yours faithfully

Peter Barber
Manager Approvals

Enquiries: Peter Wotton on 9335.2260

Ref: **D3** Trim: 24260.04

13

DA200300504 dm

3 June 2004

Alexander Coutts and Associates
50 Cliff Avenue
NORTHBRIDGE 2063

Dear Sir/Madam

68 THE BOULEVARDE, LEWISHAM

Council has considered your application to demolish the print house, library and the dwellings of 82 and 84 The Boulevarde and carry out alterations and additions to a school including the construction of a multi purpose facility and additional classrooms, on the above property and a copy of Council's determination is **attached** for your information.

In dealing with the application, Council resolved inter alia:

- **THAT** the applicant be advised that:

  (i). A complete Building Code of Australia assessment of the application has not been carried out.

  (ii). It is not a condition of the determination that works required to be carried out on Council property, must be undertaken by Council itself. Council's Public Works Business Unit is however, able to provide a competitive quotation for these works. To obtain a quotation, please contact Council's Assistant Development Engineer during normal business hours on 9335 2223.

  If you propose to have the vehicular crossing and or footpath works constructed by your own contractor, you or your contractor **must** complete an application for 'Construction of a Vehicular Crossing & Civil Works' form, lodge a bond for the works, pay the appropriate fees and provide evidence of adequate public liability insurance, **before commencement of works.**

  (iii). The Disability Discrimination Act 1992 (Commonwealth) and the Anti-Discrimination Act 1977 (NSW) impose obligations on persons relating to disability discrimination. Council's determination of the application does not relieve persons who have obligations under these Acts of the necessity to comply with these Acts.

Your urgent attention to this matter is requested.

If you wish to discuss the matter please contact Peter Wotton on 9335-2260 from Council's Development and Environmental Services Division.

Yours faithfully

Peter Barber
Manager Approvals

Encl.

Ref: **D110** Trim: 24260.04

Attachment C – Traffic and Parking Assessment

TRAFFIC AND PARKING IMPACT ASSESSMENT OF CHRISTIAN BROTHERS HIGH SCHOOL LEWISHAM AT 68-84 THE BOULEVARDE, LEWISHAM

McLaren
Traffic Engineering & Road Safety Consultants

Address: Shop 7, 720 Old Princes Highway Sutherland NSW 2232
Postal: P.O Box 66 Sutherland NSW 1499

Telephone: +61 2 8355 2440
Fax: +61 2 9521 7199
Web: www.mclarentraffic.com.au
Email: admin@mclarentraffic.com.au

Division of RAMTRANS Australia ABN: 45067491678

Transport Planning, Traffic Impact Assessments, Road Safety Audits, Expert Witness

16272.01FA - 19th September 2016

Development Type:	**Christian Brothers High School Lewisham**
Site Address:	**68-84 The Boulevarde, Lewisham**
Prepared for:	**Christian Brothers High School**
Document reference:	**16272.01FA**

Status	Issue	Prepared By	Checked By	Date
Draft	A	MM	CM	5th September 2016
Final	A	HC	CM	19th September 2016

TABLE OF CONTENTS

1 INTRODUCTION

McLaren Traffic Engineering (MTE) was commissioned by *Christian Brothers* High School to provide a Traffic and Parking Impact Assessment of the Christian Brothers High School Lewisham at 68-84 The Boulevarde, Lewisham.

1.1 Description and Scale of Development

The Christian Brothers High school currently has approval by Marrickville Council for 1200 students. The school currently operates above this approval and as such is seeking development consent for 1350 students. The school operates between 8:15am to 3:30pm, Monday to Friday, with a sports day occurring every Thursday. Special events (end of year concerts, parent teacher nights etc) are sometimes held outside of these hours.

Currently, the school operates with 140 teachers. Under the 1350 student proposal, the 140 teachers will remain. The teaching staff under the approved 1200 students is most likely 125 teachers, therefore, the increase in 150 students most likely requires an increase of 15 teachers above the current approval.

The site provides on-site parking for 18 car parking spaces. This car park is accessed from Denison Road and is restricted to staff only.

1.2 State Environmental Planning Policy (Infrastructure) 2007

The proposed development does qualify as a development with relevant size and/or capacity under Clause 104 of the SEPP (Infrastructure) 2007 being an 'Educational Establishment' of 50 or more students given that the development involves a technical increase of 150 students above the current limit of 1,200 students. Accordingly, formal referral to the Roads and Maritime Services (RMS) is necessary and Inner West Council (Marrickville Council) officers can determine this proposal accordingly.

1.3 Site Description

The subject site is located within the Marrickville City Council Local Government Area. Marrickville Council has merged with Ashfield and Leichhardt Councils to form the new Inner West Council which will determine the development criteria for the site.

The subject site has three (3) road frontages, being The Boulevarde to the south-east, Toothill Street to the north-east and Denison Road to the north-west. New Canterbury Road, a State classified road, is nearby approximately 100m to the south-east of the site.

The school is surrounded by low density residential dwellings with notably Lewisham Public School located opposite on The Boulevarde. Lewisham Public School is understood to accommodate some 100 students and associated staff. It is understood that the public school grounds also accommodate a Department of Education training and office facility.

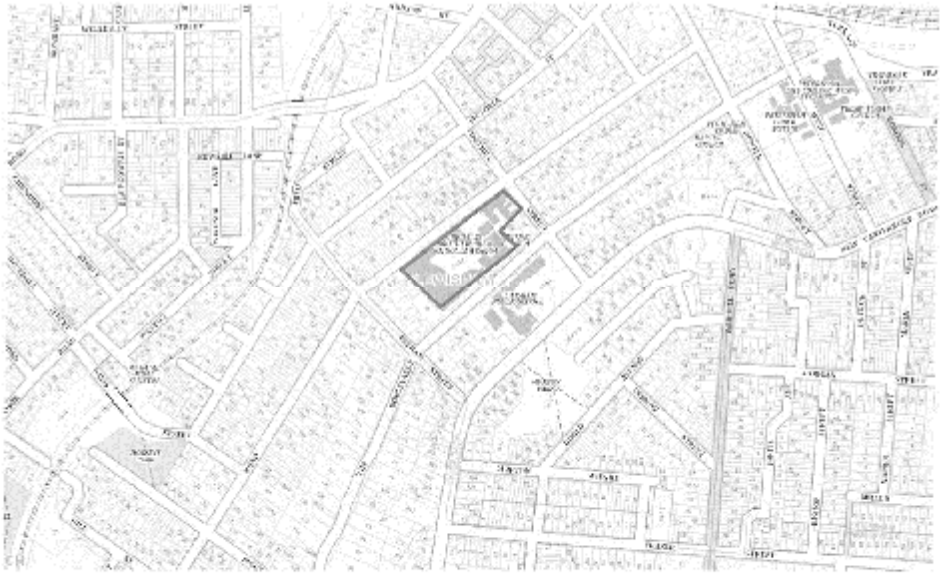
Light rail stops are located nearby, namely Waratah Mills (approximately 700m walking distance) and Lewish West (approximately 500m walking distance). Furthermore, Lewisham Railway Station is located to the north of the site approximately 500m walking distance.

1.4 Site Context

The site location is shown on a map and aerial imagery in **Figure 1** & **Figure 2** respectively.

—— Site Location

FIGURE 1: SITE CONTEXT – STREET MAP



—— Site Location

FIGURE 2: SITE CONTEXT – AERIAL PHOTO

2 EXISTING SITE & SURROUNDING CONDITIONS

2.1 Christian Brothers High School

The Christian Brothers High School (CBHS) caters for Years 5 – 12, with no infants / kindergarten school or child care on-site. The school has three (3) road frontages, being The Boulevarde to the south-east, Toothill Street to the north-east and Denison Road to the north-west. New Canterbury Road, a State classified road, is nearby approximately 100m to the south-east of the site.

The school is surrounded by low density residential dwellings with notably Lewisham Public School located opposite on The Boulevarde. Lewisham Public School is understood to accommodate some 100 students and associated staff. It is understood that the public school grounds also accommodate a Department of Education training and office facility.

CBHS currently has the following characteristics

- Current enrolment of 1,361 students rom Years 5 – 12. Typical absenteeism is about 2 to 3%. It is noted that enrolments will be reduced to 1,350 to suit the proposed application.
- Typically, there are 153 staff on-site during the day including 109 teaching staff, 33 admin, 4 casuals, 2 volunteers and 5 cleaners. It is understood that 86% of staff drive to school.
- School lessons start at 8:35am to 3:15pm
- Current student breakdown by Year as follows:
    - 128 Year 5 students
    - 157 Year 6 students
    - 186 Year 7 students
    - 180 Year 8 students
    - 209 Year 9 students
    - 176 Year 10 students
    - 168 Year 11 students
    - 157 Year 12 students of which some 30 students drive
- Off-street car parking exists with some 18 car spaces, accessed from Dennison Road.
- School bus services are operated by Sydney Buses, providing an extensive network of 15 services for students, staff and visitors. The bus zone from which these school buses operate from is located on Dennison Road along the schools frontage. Some 1,242 students have Opal cards, representing some 92%.

- The school has two drop-off / pick-up zones, located on The Boulevarde frontage only.

An in-class survey was undertaken in Wednesday 27th July 2016 to determine students mode of transport for travelling to and from school. The results of the surveys are shown in **Annexure A** and summarised in **Table 1** below.

TABLE 1: STUDENT TRANSPORT MODE

Direction		Car Driver	Car Passenger	School Bus	Public Bus	Train	Light Rail	Walk	Cycle	Total
Arriving to School	Total	30	365	573	92	130	29	47	1	1267
	Percentage	2.4%	28.8%	45.2%	7.3%	10.2%	2.3%	3.7%	0.1%	100%
Departing from School	Total	30	245	589	131	177	33	61	1	1267
	Percentage	2.4%	19.3%	46.5%	10.3%	14.0%	2.6%	4.8%	0.1%	100%

Based on the student travel modes, 31.2% of students arrive by car, 52.5% arrive by bus, 12.5% arrive by rail and 3.8% walk or cycle to school. In the afternoon, 21.7% of students depart by car, 56.8% depart by bus, 16.6% depart by rail and 4.9% walk or cycle home.

2.2 Road Hierarchy

The Boulevarde has the following characteristics within close proximity to the site:

- Unclassified LOCAL road
- Approximately 10m in width facilitating two-way passing and kerbside parking
- Signposted 50km/h
- Unrestricted kerbside parking permitted along both side of the street with two sections for parent drop off / pick up zones between 8:30am – 9:30am & 2:30pm – 3:30pm school days only

Toothill Street has the following characteristics within close proximity to the site:

- Unclassified REGIONAL road No. 7078
- Approximately 11m in width facilitating two-way passing and kerbside parking
- Signposted 50km/h
- Unrestricted kerbside parking permitted along both side of the street.

Denison Road has the following characteristics within close proximity to the site:

- Unclassified LOCAL road

- Approximately 10m in width facilitating two-way passing and kerbside parking
- Signposted 50km/h
- Unrestricted kerbside parking permitted along both sides of the street with several bus zones along the site frontage with parking

2.3 Existing Traffic Management

- Traffic signals at New Canterbury Road / Toothill Street
- Pedestrian crossing at the intersection of Toothill Street / Denison Road
- STOP sign controlled intersection of Toothill Street / Denison Road
- Pedestrian crossing along Toothill Street connecting to Christian Brothers High School
- Stop sign controlled intersection of The Boulevarde / Toothill Street
- 15km/h traffic calming speed humps surrounding Christian Brothers High School along The Boulevarde / Denison Road
- Stop sign controlled intersection of The Boulevarde / Eltham Street
- School zone surrounding the site along all road frontages, The Boulevarde / Toothill Street and Denison Road

2.4 Existing Traffic Environment

Traffic counts were completed on Wednesday 27th July 2016 at the intersections of:

- New Canterbury Road / Toothill Street
- Toothill Street / The Boulevarde
- Toothill Street / Denison Road
- Eltham Street / Denison Road
- Eltham Street / The Boulevarde

The intersection surveys were undertaken from 7:00-9:30am and 2:00-4:30pm, coinciding with the peak hours of the school. The survey sheets are reproduced in **Annexure B**.

2.4.1 Intersection Performances

Existing intersection performances have been assessed using SIDRA INTERSECTION 7. The analysis is summarised in **Table 2** below. The SIDRA output summaries are provided in **Annexure C**.

TABLE 2: INTERSECTION PERFORMANCES (SIDRA INTERSECTION 7)

Intersection	Peak Hour	Degree of Saturation[1]	Average Delay[2] (sec/vehicle)	Level of Service[3]	Control Type	Worst Movement
EXISTING PERFORMANCE						
Toothill / Denison	AM	0.36	5.1 (15.2)	A (B)	Stop	Left Turn from Denison Rd (W)
	PM	0.28	4.1 (14.2)	A (A)		Left Turn from Denison Rd (E)
Toothill / The Boulevarde	AM	0.46	6.0 (15.0)	A (B)	Stop	Left Turn from The Boulevarde (W)
	PM	0.25	4.1 (12.9)	A (A)		Left Turn from The Boulevarde (W)
New Canterbury / Toothill	AM	0.64	21.0	B	Signals	N.A
	PM	0.67	21.7	B		N.A
Eltham / Denison	AM	0.27	6.5 (9.5)	A (A)	Stop	Right Turn from Eltham (N)
	PM	0.122	6.2 (8.3)	A (A)		Right Turn from Eltham (S)
Eltham / The Boulevarde	AM	0.13	6.6 9.0	A (A)	Stop	Left Turn from The Boulevarde (E)
	PM	0.08	6.5 8.5	A (A)		Left Turn from The Boulevarde (E)

NOTES:
(1) Degree of Saturation is the ratio of demand to capacity for the most disadvantaged movement.
(2) Average delay is the delay experienced on average by all vehicles. The value in brackets represents the delay to the most disadvantaged movement.
(3) Level of Service is a qualitative measure of performance describing operational conditions. There are six levels of service, designated from A to F, with A representing the best operational condition and level of service F the worst. The LoS of the intersection is shown in bold, and the LoS of the most disadvantaged movement is shown in brackets.

As shown above, the surrounding intersections are operating satisfactorily at Level of Service (LoS) A and B during the morning and afternoon peak periods. This represents minimal delays and additional capacity.

2.4.2 Pickup and Drop off Rates

Pickup and drop off surveys were undertaken along the schools existing short term parking along The Boulevarde. **Table 3** summarises the total vehicle movements and the peak hour

movements along this section of kerbside parking. The parking surveys undertaken on Wednesday 27th July 2016 are provided in **Annexure D**.

TABLE 3: EXISTING PICK-UP & DROP-OFF ACTIVITY

Period	Cars	Kids	Rate (students per car)
Morning Total	145	187	1.29
Morning Peak Hour	123	157	1.28
Afternoon Total	55	70	1.27
Afternoon Peak Hour	54	69	1.28

Both the morning and afternoon demonstrate similar car occupancies of approximately 1.28 students per vehicle.

2.5 Existing Parking Environment

The kerbside parking surveys take into consideration the current operation of the school with 1,356 students and 140 staff.

The existing local parking supply is summarised in **Table 4**.

TABLE 4: EXISTING WEEKDAY KERBSIDE PARKING SUPPLY & SPARE CAPACITY (WITHIN 200M OF THE SITE)

Parking Area	Total Capacity		Morning Peak Parking		Afternoon Peak Parking	
	AM	PM	Occupied	Spare	Occupied	Spare
Denison Rd	89	67	58	31	64	3
Toothill St	28	28	29	-1	27	1
Victoria St	72	72	70	2	52	20
Summer Hill St	8	8	9	-1	10	-2
Eltham St	48	48	54	-6	58	-10
Boulevarde	75	75	57	18	60	15
N Canterbury Rd	34	34	5	29	5	29
Fred St	46	46	38	8	39	7
Off Street	18	18	13	5	10	8
Total	**418**	**396**	**333**	**85**	**325**	**71**
On-Street Only	**400**	**378**	**320**	**80**	**315**	**63**

Within the survey area, there are some **85** car parking spaces available in the morning peak and **71** car parking spaces in the afternoon peak within 200m walking distances from the school.

TABLE 5: ON-STREET PARKING OCCUPANCY BY STREET NAME

Parking Area	Total Capacity	7-10AM Spare Capacity	2-5PM Spare Capacity
Denison Rd	89/67	31 (35%)	25 (28%)
Toothill St	28	-1 (-4%)	1 (4%)
Victoria St	72	2 (3%)	20 (28%)
Summer Hill St	8	-1 (-13%)	-2 (-25%)
Eltham St	48	-6 (-13%)	-10 (-21%)
Boulevarde	75	18 (24%)	15 (20%)
N Canterbury Rd	34	29 (85%)	29 (85%)
Fred St	46	8 (17%)	7 (15%)
Off Street	18	5 (28%)	8 (44%)
Total	418/396	85 (20%)*	93 (22%)*
On-Street Only	400/378	80 (20%)	63 (17%)

*The total spare capacity is the overall minimum spare capacity of the entire survey area at any given time.

As shown above, there is an abundance of on-street parking available within close proximity to the site in both the 7-10AM and 2-5PM peak periods on a weekday. Although, a Traffic Management Plan (TMP) is needed to encourage greater use of buses but those with Opal cards given that 92% of students have Opal cards yet current usage is 52 – 57%, some 40% lower than expected. Additionally, students and staff should be encouraged to utilise nearby heavy rail and light rail modes.

Additionally, it is evident that some kerbside locations are experiencing parking conditions above capacity, either by illegal parking or drivers accepting smaller / reduced space lengths in order to park their vehicle.

The bus accumulation is summarised in **Table 6.**

TABLE 6: SCHOOL BUS ACCUMULATION

	AM	PM
Maximum Bus Accumulation	2	6

2.6 Public Transport

Light rail stops are located nearby, namely Waratah Mills (approximately 700m walking distance) and Lewish West (approximately 500m walking distance). Lewisham Train Station is within 500 metres of the site and has access to bus routes 413 & N50 provided by State Transit. Bus route 413 provides access to the CBD and Campsie Station which services provided every 30 minutes while N50 is a night bus which provides services between the CBD and Liverpool. Bus routes 428, 444, 445 and L28 are provided from New Canterbury Road which is within 250m of the site. The bus routes provide access to and from the CBD, Canterbury Station, Balmain Wharf and Campsie Station.

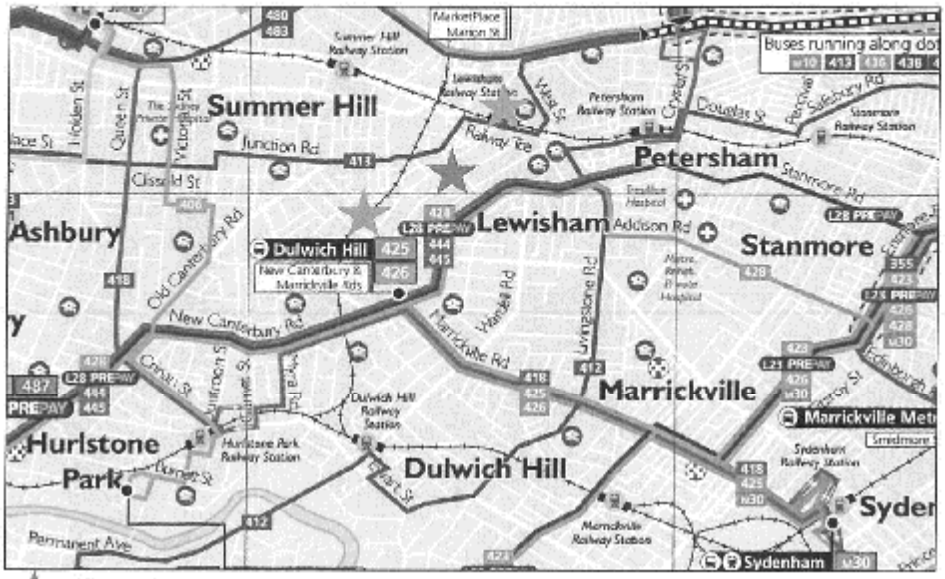


FIGURE 3: LOCATION OF TRAIN STATIONS & PUBLIC BUS ROUTE DETAILS

In addition to the public transport provided along New Canterbury Road and Lewisham Train Station, school buses are provided to the students which provide access to Kingsgrove, Campsie, Earlwood, Burwood, Abbotsford, Leichhardt and Balmain. The school provides ten (10) school special buses in the AM period and nine (9) in the PM period as detailed in **Table 7** and **Figure 4**.

TABLE 7: DEDICATED SCHOOL BUS SERVICES

Bus Number	Time Period	From	To
606	AM	Earlwood	CBHS
607	AM	Kingsgrove Depot	CBHS
608	PM	CBHS	Undercliff
609	AM	Campsie	CBHS
610	PM	CBHS	Kingsgrove Station
611	AM	Belfield	CBHS
612	PM	CBHS	Belfield
613	AM	Croydon Park	CBHS
	PM	CBHS	Croydon Park
614	AM	Fivedock Shops	CBHS
	PM	CBHS	Fivedock Shops
615	AM	Concord Shops	CBHS
	PM	CBHS	Concord Shops
616	AM	Abbotsford	CBHS
	PM	CBHS	Chiswick
617	AM	Campsie	CBHS
618	AM	Campsie	CBHS
619	PM	CBHS	Campsie
620	PM	CBHS	Kingsgrove Depot

Note: Christian Brothers High School (CBHS)

FIGURE 4: SCHOOL BUS ROUTE

2.7 Future Road and Infrastructure Upgrades

From Inner West Council Development Application tracker and website, it appears that there is no future planned road or public transport changes that will affect traffic conditions within the immediate vicinity of the subject site.

3 PARKING IMPACT ASSESSMENT

3.1 Council Parking Requirement

Reference is made to *Inner West Council* which refers development within the previous LGA of Marrickville Council to the *Marrickville DCP 2011: Part 2 – Parking*. Under this DCP the subject site is identified as falling within Parking Area 3. Marrickville DCP outlines the following parking rates for Parking Area 3:

Parking Area 3

Schools - 1 space per 2 staff for staff

Drop-off & pick-up facility for parents & carers

Fractional calculated provision numbers must be rounded up or down to the nearest whole figure.

As previously identified, the increase sought for approval is 150 students and 15 teachers. Table 8 below summarises Council's DCP parking requirement.

TABLE 8: DCP PARKING REQUIREMENTS

Land Use	Type	Scale	Rate	Spaces Required
School	Staff	15	1 per 2	7.5 (8)
	Parents	150	n.a	n.a
Total				8

Based on Council's DCP, the increase of approximately 15 teachers requires the provision of 8 staff parking spaces. Furthermore, Council's DCP requires drop-off and pick-up facilities for parents and carers for the additional student population. As Council's DCP does not provide a rate, this component of Council's DCP requirement is merit based and can be determined through surveys.

The site currently provides parking for up to 18 staff car spaces. Under the increase there are no new car parking spaces proposed on-site.

Whilst there is evidently a shortfall of on-site parking, the surveys undertaken of the traffic and parking conditions around the school can be used to justify this shortfall, together with the following other matters:

a) The existing consent for the school permits a relaxation of requirements by some 71% (i.e. 1 – 18/63).

b) Provision of a workplace travel plan that encourages staff to car pool or to use other forms of non-private vehicle travel such as heavy and light rail, bus services, bicycle and walk modes. It should be noted that the previous relaxation of 71% staff parking would equate to 2 parking spaces.

c) An option to stack parking up to a further 2 staff cars in the school's off-street car park can be further developed and operated under a Plan of Management.

3.2 Bicycle & Motorcycle parking Requirements

Marrickville Council DCP requires the following bicycle parking to be provided for educational establishments:

Bicycle Parking
1 staff space per 20 staff, plus
1 student space per 10 students

Clothes Lockers
1 per 3 staff spaces
1 per 3 student spaces

Showers
1 plus
Extra on merit assessment for staff & students

The Council's bicycle parking and associated facilities is summarised in Table 9 below.

TABLE 9: COUNCIL DCP BICYCLE REQUIREMENT

Component	Scale	Bicycle Parking	Clothes Lockers	Showers
Staff	15	1	0	1
Students	150	15	5	
Total	-	16	**5**	**1**

Based on Council's DCP requirement, the proposal requires 16 bicycle parking spaces, 5 clothes lockers and 1 shower.

Council's DCP requires the provision of motorcycle parking at a rate of 5% of the car parking required. Based on the 15 additional staff members requiring 8 car spaces, 0.4 motorcycle spaces would be required. As Council's DCP requires rounding up or down to the nearest whole number, zero (0) motorcycle spaces are required.

The school currently provides 10 bicycle spaces for staff and students, 7 staff showers and 2 student showers. The school provides students lockers totally 550 lockers.

Whilst the increase in student and staff population requires additional bicycle spaces, there is currently low usage of students cycling to/from the school (with the in-class surveys showing one (1) student). Staff members cycling to work is also low. There is space to provide additional bicycle spaces if the demand increases.

3.3 Servicing & Loading

The school currently operates waste collection occurs on The Boulevarde. Under this application, the current waste collection method is not proposed to be modified.

Courier deliveries are undertaken kerb-side and will not be modified under this proposal.

3.4 Disabled Parking

Council's DCP does not provide any disabled parking provision rates for the subject land use. However, the BCA classifies schools as a class 9B building, and therefore requires 1 space for every 100 car parking spaces or part thereof. Given that, the site provides 18 parking spaces, this equates to a requirement of one (1) disabled spaces. Therefore, the site requires one (1) disabled space which has been provided as per AS2890.6:2009 design requirements

3.5 Car Park Design & Compliance

The on-site car park is not proposed to be modified and as such, remains consistent with previous approvals and is not subject to a compliance review, unless a stack parking arrangement is preferred by Council to accommodate 2 extra staff spaces within the existing 18 space off-street car park.

4 TRAFFIC ASSESSMENT

The impact of the expected traffic generation levels associated with the subject proposal is discussed in the following sub-sections.

4.1 Traffic Generation

As previously identified, the increase sought for approval is 150 students and 15 teachers. It has been acknowledged that the site is currently operating above approved levels, such that the sought approval of an additional 150 students and 15 teachers is currently already occurring.

Nevertheless, the traffic generation associated with the increase of 150 students and 15 teachers can be established utilising the in-class surveys undertaken (refer to **Section 2.1**). Based on the in-class surveys, the traffic generation associated with 150 students and 15 teachers is summarised in **Table 10** below.

TABLE 10: STUDENT FORECAST TRANSPORT MODE

Direction		Car Driver	Car Passenger	School Bus	Public Bus	Train	Light Rail	Walk	Cycle	Total
Arriving to School	Percentage	2.4%	28.8%	45.2%	7.3%	10.3%	2.3%	3.7%	0.1%	100
	Total	4	43	68	11	15	3	6	0	150
Departing from School	Percentage	2.4%	19.3%	46.5%	10.3%	14.0%	2.6%	4.8%	0.1%	100
	Total	4	29	70	16	21	4	7	0	150

Of the 150 students, during the morning period, 47 would arrive by car, 97 by public transport and 6 walking to school. In the afternoon, 33 would depart by car, 111 by public transport and 7 would walk home.

In terms of traffic generation, the addition 47 and 33 students arriving or departing in a car respectively would result in the additional car movements as follows:

In the morning

- 4 students drive to school = 4 inbound movements
- 13 staff members drive to school = 13 inbound movements
- 44 student arrive as car passenger, average of 1.28 students per car = 34 inbound vehicles and 34 outbound vehicles, a total of 68 trips
- Total of 51 inbound movements and 34 outbound movements, total of 85 trips

In the afternoon

- 4 student depart school = 4 outbound movements
- 13 staff members drive home = 13 outbound movements
- 33 students depart as car passenger, average of 1.28 students per car = 26 inbound vehicles and 26 outbound vehicles, a total of 52 trips

- Total of 26 inbound movements and 43 outbound movements, total of 69 trips

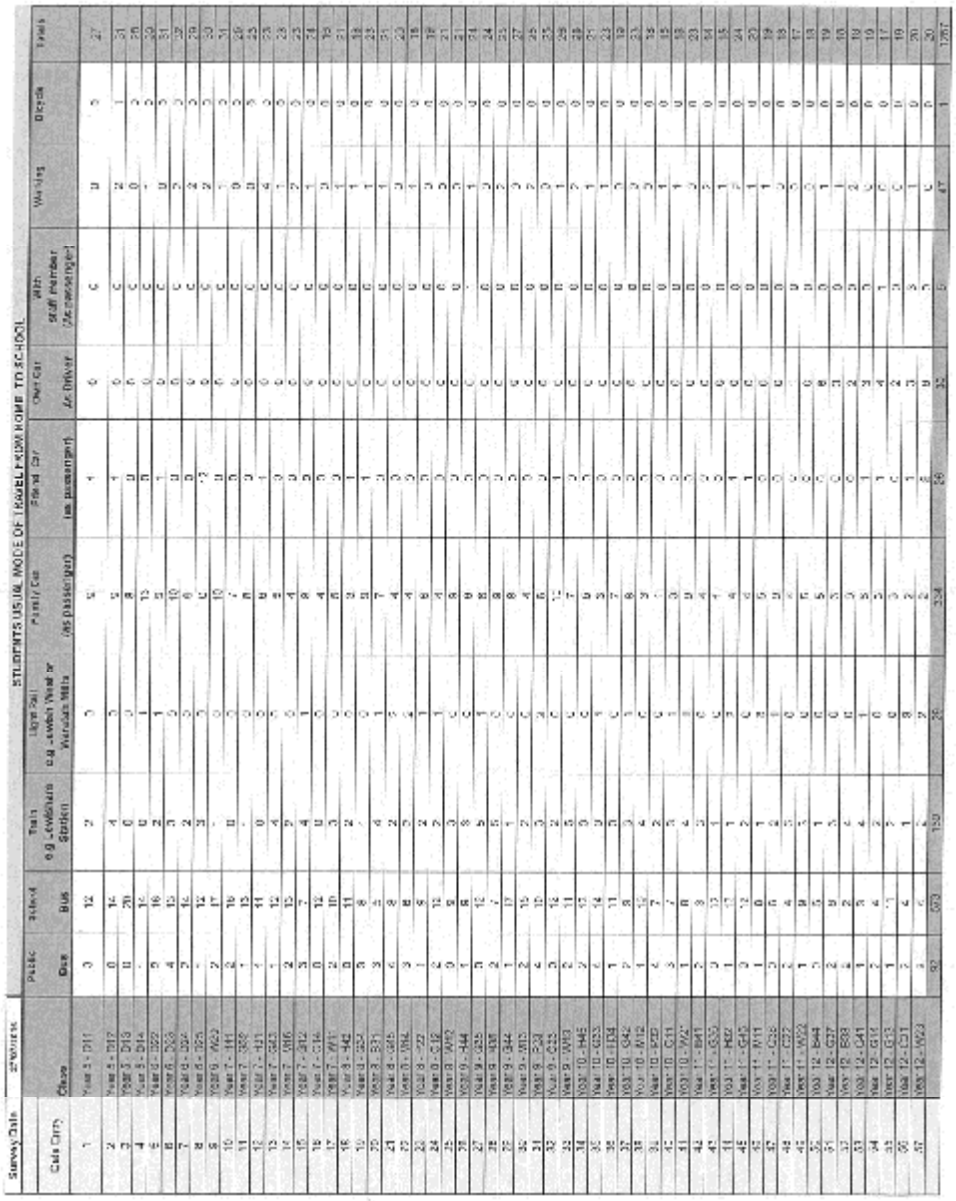
The intersection performances identified in **Table 2** include the increase in student and staff population and the associated traffic movements described above. The surrounding intersection performances are LoS "A/B" during the morning and afternoon peak periods.

5 CONCLUSION

In view of the foregoing, the subject proposal to increase the student and staff population is fully supportable in terms of its traffic and parking impacts. The following outcomes of this traffic impact assessment are relevant to note:

- A Traffic Management Plan (TMP) is needed to encourage greater use of buses but those with Opal cards given that 92% of students have Opal cards yet current usage is 52 – 57%, some 40% lower than expected. Additionally, students and staff should be encouraged to utilise nearby heavy rail and light rail modes.
- The existing consent for the school permits a relaxation of requirements by some 71% (i.e. 1 – 18/63). Provision of a workplace travel plan that encourages staff to car pool or to use other forms of non-private vehicle travel such as heavy and light rail, bus services, bicycle and walk modes. It should be noted that the previous relaxation of 71% staff parking would equate to 2 parking spaces.
- The intersection performances identified in **Table 2** include the increase in student and staff population and the associated traffic movements described above. The surrounding intersection performances are LoS "A/B" during the morning and afternoon peak periods

ANNEXURE A: IN-CLASS SURVEYS



Survey Date		STUDENTS USUAL MODE OF TRAVEL FROM HOME TO SCHOOL											
		Public	School	Train	Special	Family Car	Friend Car	Own Car	With	Walking	Bicycle	Totals
Cala Corp	Class	Bus	Bus	e.g. Lewisham Station	e.g. Lewisham Weekender Wells	(As passenger)	(As passenger)	As Driver	Staff member (As passenger)			
1	Year 5 - D11	3	12	2	3	5	4	6	0	0	0	27
2	Year 5 - D12	0	14	4	5	5	1	6	0	2	1	31
3	Year 5 - D13	0	20	0	0	8	0	0	0	0	0	28
4	Year 5 - D14	1	12	0	1	13	0	0	0	1	0	28
5	Year 6 - D22	0	16	2	1	5	1	0	0	0	0	25
6	Year 6 - D23	4	13	2	1	10	0	0	0	0	0	30
7	Year 6 - D24	2	16	2	0	6	0	0	0	2	0	28
8	Year 6 - D25	2	12	3	2	6	0	0	0	2	0	29
9	Year 9 - W23	2	17	0	0	10	0	0	0	0	0	30
10	Year 7 - W11	2	19	0	0	7	0	0	0	1	0	31
11	Year 7 - W12	1	15	0	0	8	0	0	0	0	0	24
12	Year 7 - H21	0	11	0	0	9	0	0	0	0	0	20
13	Year 7 - G23	1	15	0	0	9	1	0	0	0	0	26
14	Year 7 - W16	0	15	0	0	8	0	0	0	0	0	23
15	Year 7 - W12	2	5	0	0	4	0	0	0	1	0	12
16	Year 7 - G14	3	7	4	1	8	0	0	0	1	0	24
17	Year 7 - W11	0	12	0	0	4	0	0	0	2	0	18
18	Year 9 - H42	2	10	3	0	6	0	0	0	0	0	21
19	Year 9 - G24	0	11	2	0	3	1	0	0	1	0	18
20	Year 8 - B31	3	8	1	0	9	0	0	0	1	0	22
21	Year 8 - G45	2	8	4	1	7	1	0	0	1	0	24
22	Year 8 - W14	3	8	2	2	4	0	0	0	1	0	20
23	Year 8 - H22	1	8	5	1	4	0	0	0	1	0	20
24	Year 8 - G16	2	12	2	1	8	0	0	0	0	0	25
25	Year 8 - W13	0	8	3	1	4	0	0	0	1	0	17
26	Year 9 - H44	1	8	3	0	8	0	0	0	0	0	20
27	Year 9 - G25	0	12	5	0	9	0	0	0	0	0	26
28	Year 9 - H35	2	7	5	1	8	0	0	0	0	0	23
29	Year 9 - B44	1	17	0	0	8	0	0	0	0	0	26
30	Year 9 - W13	2	15	2	0	4	0	0	0	0	0	23
31	Year 9 - B34	4	15	3	2	6	0	0	0	0	0	30
32	Year 9 - G33	5	12	2	0	12	1	0	0	1	0	33
33	Year 9 - W23	2	11	5	0	7	0	0	0	0	0	25
34	Year 10 - H45	3	15	5	0	9	0	0	0	1	0	33
35	Year 10 - B33	2	14	5	1	3	0	0	0	1	0	26
36	Year 10 - B34	1	11	5	1	7	0	0	0	0	0	25
37	Year 10 - B42	2	8	3	1	8	0	0	0	0	0	23
38	Year 10 - W12	1	10	4	0	9	0	0	0	2	0	26
39	Year 10 - B22	2	7	2	0	7	0	0	0	3	0	21
40	Year 10 - G11	3	7	5	1	3	0	0	0	1	0	20
41	Year 10 - W21	1	8	4	0	3	0	0	0	1	0	18
42	Year 11 - B41	2	9	3	0	9	0	0	0	3	0	26
43	Year 11 - G33	3	13	4	0	4	0	0	0	2	0	26
44	Year 11 - H22	1	11	1	0	4	0	0	0	1	0	18
45	Year 11 - G15	3	12	2	0	6	1	0	0	1	0	24
46	Year 11 - W11	1	6	2	0	5	0	0	0	1	0	20
47	Year 11 - G22	2	4	3	0	5	0	0	0	3	0	19
48	Year 11 - W22	1	8	3	0	6	0	0	0	0	0	18
49	Year 12 - B44	2	5	1	0	5	0	0	0	3	0	19
50	Year 12 - B37	2	9	5	0	5	0	0	0	1	0	19
51	Year 12 - B38	4	2	2	0	5	0	0	0	2	0	15
52	Year 12 - G41	1	6	4	1	3	0	2	0	2	0	19
53	Year 12 - G11	2	4	3	0	5	0	3	0	2	0	19
54	Year 12 - G13	1	11	5	0	3	1	4	0	2	0	27
55	Year 12 - D31	2	4	1	0	8	0	2	1	0	0	19
56	Year 12 - W23	3	6	4	0	2	0	9	2	3	0	29
		92	573	159	26	334	26	35	5	47	1	1267

Survey Date	27/07/2016	STUDENTS USUAL MODE OF TRAVEL FROM SCHOOL TO HOME										
Data Entry	Class	Public Bus	School Bus	Train e.g Lewisham Station	Light Rail e.g Lewish West or Waratah Mills	Family Car (as passenger)	Friend Car (as passenger)	Own Car As Driver	With staff member (As passenger)	Walking	Bicycle	Totals
1	Year 6 - D11	4	13	3	0	5	0	0	0	2	0	27
2	Year 6 - D12	0	18	5	0	7	1	0	0	1	1	31
3	Year 5 - D13	3	16	2	0	7	1	0	0	0	0	28
4	Year 5 - D14	1	20	1	1	5	0	0	0	2	0	30
5	Year 6 - D22	3	16	3	1	5	2	0	0	0	0	31
6	Year 6 - D23	6	16	3	0	4	0	0	0	2	0	32
7	Year 6 - D24	1	16	4	0	5	0	0	0	5	0	29
8	Year 6 - D25	2	13	4	0	7	1	0	0	3	0	30
9	Year 6 - W20	6	16	3	0	4	2	0	0	1	0	31
10	Year 7 - H41	2	16	1	0	7	2	0	0	1	0	31
11	Year 7 - C27	1	15	2	0	5	0	0	0	0	0	28
12	Year 7 - H31	2	14	0	0	3	0	0	0	0	0	23
13	Year 7 - C43	1	17	4	0	0	1	0	0	2	0	23
14	Year 7 - M15	2	13	2	0	3	0	0	0	1	0	23
15	Year 7 - C12	3	7	4	1	7	0	0	0	3	0	23
16	Year 7 - C14	0	12	1	0	5	0	0	0	2	0	24
17	Year 7 - W11	0	10	7	0	3	0	0	0	0	0	18
18	Year 8 - H42	0	11	2	0	3	1	0	0	1	0	21
19	Year 8 - C34	6	8	3	0	5	0	0	0	2	0	18
20	Year 8 - B31	4	4	5	1	6	0	0	0	1	0	23
21	Year 8 - G15	2	11	5	2	0	0	0	0	0	0	21
22	Year 8 - M14	3	10	2	7	0	0	0	0	1	0	20
23	Year 8 - P32	1	9	3	1	5	0	0	0	0	0	18
24	Year 8 - C12	6	8	2	1	4	0	0	0	0	0	19
25	Year 8 - W12	0	10	7	0	9	0	0	0	0	0	21
26	Year 9 - H44	1	12	4	0	7	0	0	1	1	0	21
27	Year 9 - C35	0	12	5	1	6	0	0	0	0	0	24
28	Year 9 - H33	9	11	4	1	4	0	0	0	2	0	24
29	Year 9 - G44	1	13	4	1	6	0	0	0	0	0	25
30	Year 9 - M13	2	10	7	0	4	0	0	0	2	0	27
31	Year 9 - P33	8	11	3	2	1	0	0	0	0	0	26
32	Year 9 - C23	3	13	3	1	3	2	0	0	1	0	25
33	Year 9 - W13	8	16	6	0	1	0	0	0	2	0	26
34	Year 10 - H45	10	8	1	0	1	2	0	0	1	0	28
35	Year 10 - G33	9	10	3	2	5	0	0	0	1	0	21
36	Year 10 - H34	8	1	2	0	6	0	0	0	0	0	23
37	Year 10 - G42	0	5	4	1	6	1	0	0	1	0	18
38	Year 10 - M12	1	11	5	0	1	0	0	0	0	0	23
39	Year 10 - P32	5	6	5	0	0	0	0	0	1	0	18
40	Year 10 - C11	2	8	4	1	2	0	0	0	1	0	16
41	Year 10 - W21	6	6	3	1	0	1	0	0	1	0	16
42	Year 11 - H41	1	2	4	0	4	0	0	0	2	0	23
43	Year 11 - G36	1	12	1	0	0	0	0	0	1	0	14
44	Year 11 - H32	1	13	2		4	1	0	0	2	0	15
45	Year 11 - G46	0	14	2	0	2	0	0	0	2	0	24
46	Year 11 - M11	1	10	1	0	9	0	0	0	1	0	20
47	Year 11 - G31	5	7	3	1	3	0	0	0	0	0	18
48	Year 11 - C22	2	4	8	0	2	0	1	0	0	0	10
49	Year 11 - W22	0	10	4	0	2	0	0	0	1	0	17
50	Year 12 - B44	0	8		1	4	0	0	0	1	0	18
51	Year 12 - G37	1	7	2	0	8	1	3	0	1	0	19
52	Year 12 - B33	2	2	4	0	6	0	3	0	2	0	18
53	Year 12 - G41	1	4	4	1	3	2	3	0	0	0	15
54	Year 12 - C14	1	6	5	0	0	1	4	0	0	0	19
55	Year 12 - G13	1	11	2	0	2	0	3	0	0	0	17
56	Year 12 - C21	2	4	1	3	2	1	3	2	1	0	12
57	Year 12 - W23	2	4	2	2	8	2	0	0	0	0	20
		131	558	177	33	219	22	30	4	51	1	1257

ANNEXURE B: INTERSECTION SURVEYS

(SHEET 1 OF 5)

BVY TRAFFIC SURVEY

QUALITY ENDORSED COMPANY BY AS/NZS ISO 9001:2008
OH&S SYSTEM CERTIFIED TO AS/NZS ISO 4801:2001

TURNING MOVEMENT SURVEY
New Canterbury Rd and Toothill St, Lewisham
Wednesday, 10 August 2016

Weather:	Overcast
Suburban:	Lewisham
Customer:	McLaren

Survey Start	
AM:	7:00
PM:	16:00

Peakhour	
AM:	7:15 AM-8: 5 AM
PM:	3:30 PM-4:30 PM

Time		North Approach New Canterbury			South Approach New Canterbury			West Approach Toothill St			Hourly Total	
Period Start	Period End	U	R	SB	U	NB	L	U	R	L	Hour	Peak
7:00	7:15	0	20	51	0	223	27	0	53	72	1767	
7:15	7:30	0	22	68	0	207	58	0	74	62	1803	Peak
7:30	7:45	0	48	62	0	213	48	0	58	57	1772	
7:45	8:00	0	38	62	0	177	40	0	40	51	1748	
8:00	8:15	0	42	62	0	184	34	0	52	58	1756	
8:15	8:30	0	20	54	0	158	41	0	50	65	1631	
8:30	8:45	0	35	55	0	156	40	0	58	62	1656	
8:45	9:00	0	42	50	0	102	55	0	38	59		
9:00	9:15	0	33	39	0	120	32	0	41	47		
9:15	9:30	0	26	42	0	173	39	0	37	46		
14:00	14:15	0	30	115	0	82	27	0	32	26	1203	
14:15	14:30	0	34	119	0	71	30	0	33	32	1172	
14:30	14:45	0	45	125	0	76	33	0	40	22	1160	
14:45	15:00	0	42	114	0	92	39	0	42	33	1181	
15:00	15:15	0	63	137	0	100	63	0	39	44	1752	
15:15	15:30	0	61	151	0	91	44	0	56	60	1834	
15:30	15:45	0	84	147	0	98	42	0	47	4	1840	Peak
15:45	16:00	0	87	148	0	88	40	0	51	43		
16:00	16:15	0	72	188	0	93	44	0	41	50		
16:15	16:30	0	70	167	0	101	52	0	53	58		

Peak Time		North Approach New Canterbury			South Approach New Canterbury			West Approach Toothill St			Peak
Period Start	Period End	U	R	SB	U	NB	L	U	R	L	Total
7:15	8:15	0	148	344	0	780	205	0	188	228	1803
15:30	16:30	0	287	641	0	356	181	0	192	150	1840

Graphic

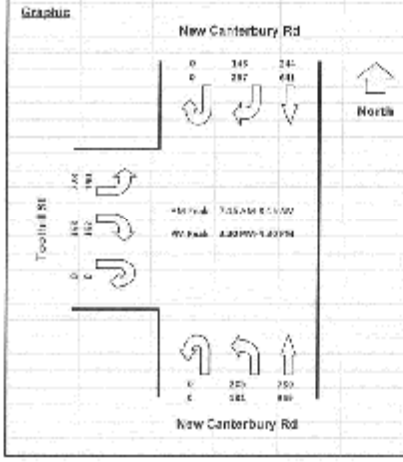
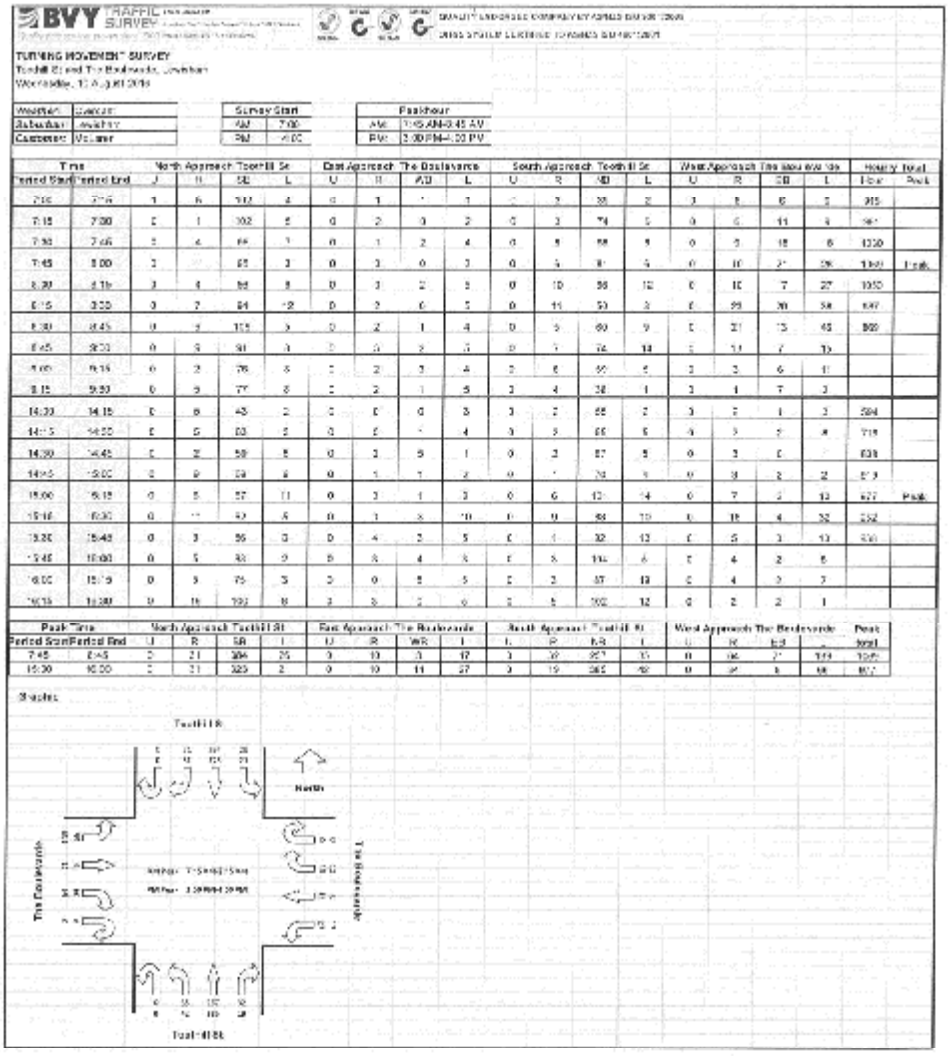


TABLE 2: INTERSECTION PERFORMANCES (SIDRA INTERSECTION 7)

(SHEET 2 OF 5)



BVY TRAFFIC SURVEY

TURNING MOVEMENT SURVEY

Weather:	Overcast
Suburb:	Ashfield
Customer:	Various

Survey Start	
AM	7:00
PM	4:00

Peakhour	
AM:	7:45 AM–8:45 AM
PM:	3:00 PM–4:00 PM

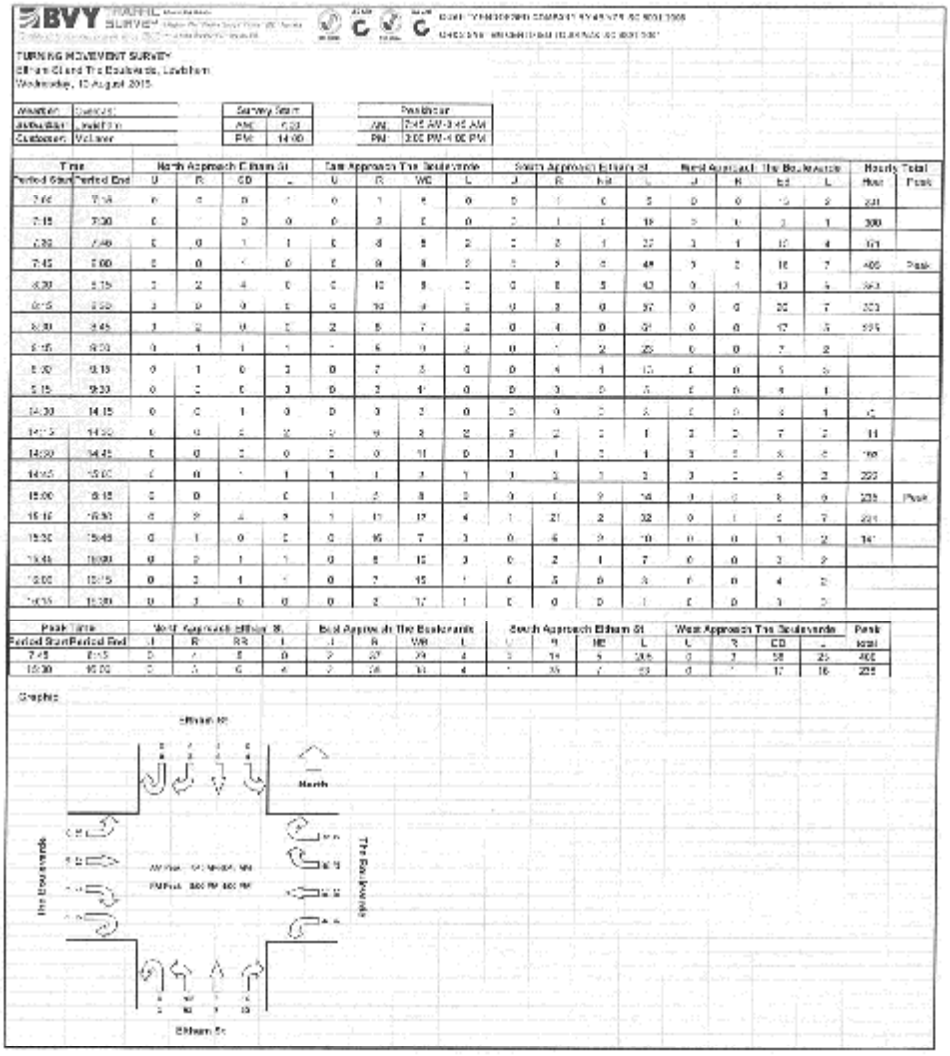
Time		North Approach: Toothill St				East Approach: The Boulevarde				South Approach: Toothill St				West Approach: The Boulevarde				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
7:15	7:30	1	6	102	4	0	1	1	1	0	3	88	2	3	5	6	3	315	
7:15	7:30	0	1	102	5	0	2	3	2	0	3	74	5	0	6	11	3	361	
7:30	7:45	3	4	89	1	0	1	2	4	0	5	88	9	0	5	15	6	1030	
7:45	8:00	3	[illegible]	85	3	0	3	0	3	0	3	87	5	0	10	21	28	1301	Peak
8:30	8:15	3	4	84	8	0	3	2	5	0	10	86	12	0	12	7	27	1050	
8:15	8:30	3	7	84	12	0	3	0	5	0	11	93	3	0	23	30	58	847	
8:30	8:45	0	3	115	5	0	2	1	4	0	9	80	9	0	21	15	45	809	
8:45	9:00	0	3	91	3	0	0	2	3	0	7	72	14	0	11	7	13		
9:00	9:15	0	2	76	5	0	2	2	4	0	6	66	5	0	3	6	11		
9:15	9:30	0	3	77	5	0	2	1	5	0	4	58	1	0	1	7	3		
14:30	14:15	0	6	43	2	0	0	0	3	0	2	65	2	0	2	1	3	594	
14:15	14:30	0	0	63	2	0	0	1	4	0	3	66	6	0	3	2	4	719	
14:30	14:45	0	2	59	5	0	3	5	1	0	3	67	5	0	3	0	[illegible]	638	
14:45	15:00	0	0	59	6	0	1	1	2	0	1	74	1	0	0	2	2	679	
15:00	15:15	0	5	57	11	0	3	1	3	0	6	12[illegible]	14	0	7	3	13	627	Peak
15:15	15:30	0	[illegible]	93	6	0	1	3	10	0	0	84	10	0	15	4	32	552	
15:30	15:45	0	3	86	0	0	4	2	5	0	1	92	12	0	5	3	13	530	
15:45	16:00	0	5	93	9	0	0	4	5	0	5	1[illegible]	6	0	4	2	6		
16:00	16:15	0	3	75	3	0	0	5	5	0	2	87	10	0	4	3	7		
16:15	16:30	0	10	103	8	3	3	2	0	0	5	102	12	0	2	2	1		

Peak Time		North Approach: Toothill St				East Approach: The Boulevarde				South Approach: Toothill St				West Approach: The Boulevarde				Peak Hour
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Total
7:45	8:45	3	21	364	25	0	10	3	17	0	19	357	35	0	16	21	109	1045
15:30	16:30	3	21	325	2	0	10	11	27	0	19	365	40	0	9	8	58	1017

Sketch

TABLE 2: INTERSECTION PERFORMANCES (SIDRA INTERSECTION 7)

(SHEET 3 OF 5)



BVY TRAFFIC SURVEYS

TURNING MOVEMENT SURVEY
Eltham St and The Boulevarde, Lewisham
Wednesday, 10 August 2016

Weather:	Overcast	Survey Start:		Peak Hour:	
Ambulance:	Lewisham	AM:	7:00	AM:	7:45 AM - 8:45 AM
Customer:	Volcanic	PM:	14:00	PM:	3:00 PM - 4:00 PM

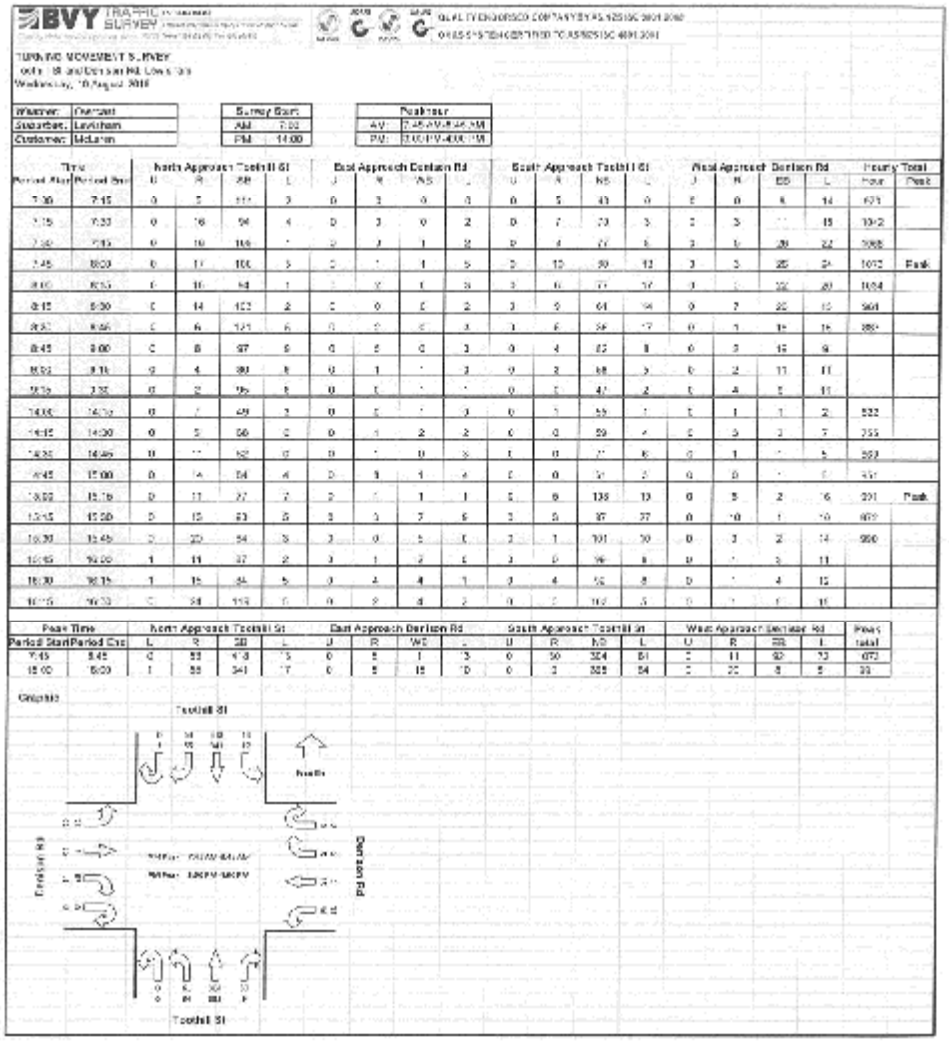
Time		North Approach Eltham St				East Approach The Boulevarde				South Approach Eltham St				West Approach The Boulevarde				Hourly	Total
Period Start	Period End	U	R	CD	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Flow	Peak
7:00	7:15	0	0	0	1	0	1	6	0	0	1	0	5	0	0	0	0	221	
7:15	7:30	0	1	0	0	0	3	5	0	0	1	1	19	0	0	3	1	300	
7:30	7:45	0	0	1	1	0	4	8	0	0	0	1	32	1	1	10	4	401	
7:45	8:00	0	0	1	0	0	9	8	0	0	0	0	49	1	0	16	7	466	Peak
8:00	8:15	1	2	4	0	0	10	8	0	0	0	0	43	0	1	13	5	363	
8:15	8:30	1	0	0	0	0	10	4	0	0	0	0	37	0	0	20	7	323	
8:30	8:45	1	0	0	0	0	5	7	0	0	1	0	31	0	0	17	5	295	
8:45	9:00	0	1	1	1	1	6	0	0	0	1	0	25	0	0	7	0		
8:00	9:15	0	1	0	0	0	7	5	0	0	0	1	15	0	0	5	0		
9:15	9:30	0	0	0	0	0	0	11	0	0	0	0	0	0	0	4	1		
14:30	14:45	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
14:45	15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15:00	15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15:15	15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15:30	15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15:45	16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16:00	16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16:15	16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Peak Time		North Approach Eltham St				East Approach The Boulevarde				South Approach Eltham St				West Approach The Boulevarde				Peak
Period Start	Period End	U	R	RR	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	total
7:45	8:45	0	1	6	0	0	27	29	4	0	3	1	136	2	2	58	23	466
15:30	16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Graphic

TABLE 2: INTERSECTION PERFORMANCES (SIDRA INTERSECTION 7)

(SHEET 4 OF 5)



BVY TRAFFIC SURVEY

TURNING MOVEMENT SURVEY

Weather:	Overcast
Suburb:	Lewisham
Customer:	McLaren

Survey Start	
AM	7:00
PM	14:00

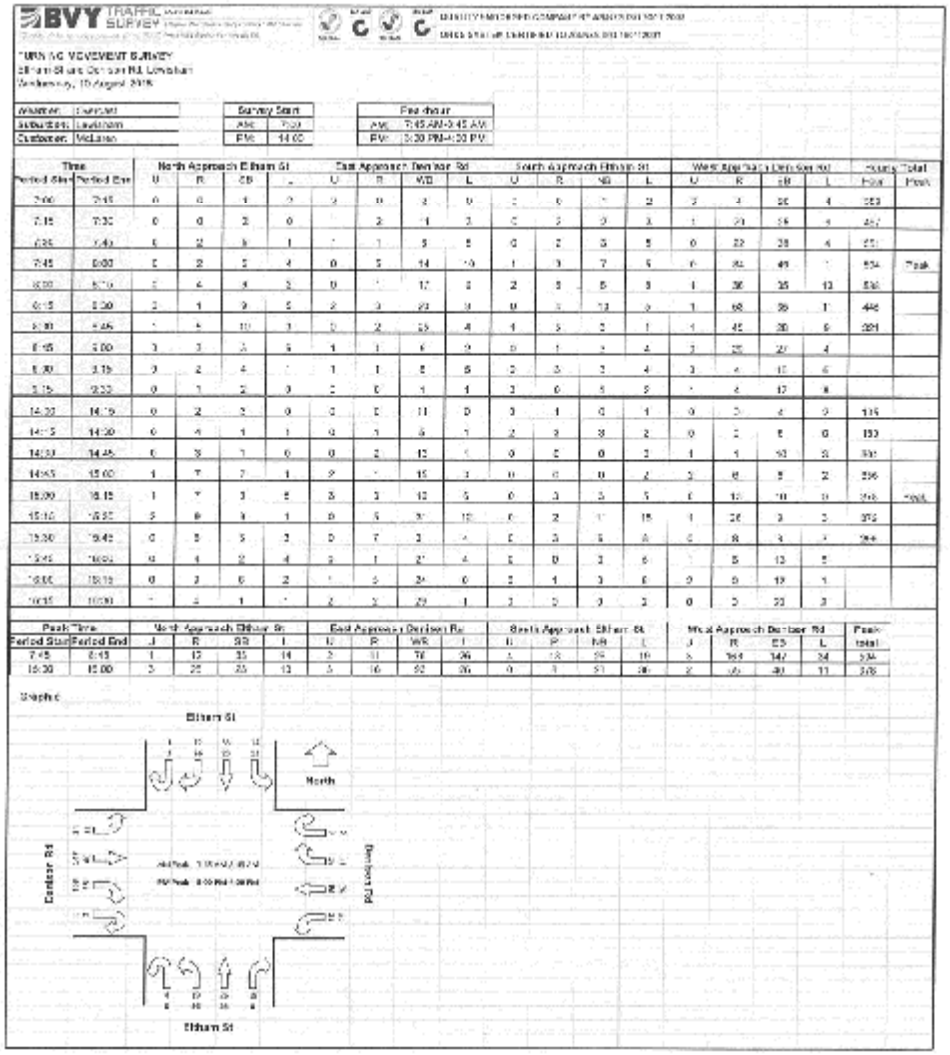
Peak Hour	
AM:	7:45 AM - 8:45 AM
PM:	3:00 PM - 4:00 PM

Time		North Approach Toothill St				East Approach Denison Rd				South Approach Toothill St				West Approach Denison Rd				Hourly Total	
Period Start	Period End	U	R	RB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
7:30	7:45	0	2	111	3	0	3	0	0	0	5	43	0	5	0	6	14	471	
7:45	8:00	0	16	94	4	0	3	0	2	0	7	73	3	2	3	[illegible]	15	1012	
[illegible]	[illegible]	0	10	116	[illegible]	0	2	1	2	0	4	77	5	3	5	20	22	1068	
8:00	8:15	0	11	100	5	0	[illegible]	1	5	0	10	90	12	3	3	25	24	1072	Peak
8:15	8:30	0	10	93	1	[illegible]	[illegible]	[illegible]	[illegible]	0	6	77	10	3	[illegible]	22	20	1004	
8:30	8:45	0	14	103	2	0	0	0	2	0	9	61	14	0	2	22	10	960	
8:45	9:00	0	8	101	6	0	0	0	3	1	6	58	17	0	1	14	14	884	
9:00	9:15	0	8	97	6	0	5	0	3	0	4	62	8	0	3	15	9		
9:15	9:30	0	4	80	5	0	1	[illegible]	[illegible]	0	2	58	5	0	2	11	11		
9:30	9:45	0	2	75	5	0	1	[illegible]	[illegible]	0	1	47	2	1	4	5	11		
14:00	14:15	0	1	69	3	0	1	[illegible]	3	0	1	55	1	1	1	1	2	532	
14:15	14:30	0	3	66	0	0	1	2	2	0	0	59	4	0	3	3	7	555	
14:30	14:45	0	[illegible]	62	0	0	[illegible]	0	3	1	0	47	6	0	1	[illegible]	5	553	
14:45	15:00	0	1	64	4	0	3	1	4	0	0	51	2	0	0	[illegible]	0	497	
15:00	15:15	0	11	97	2	2	[illegible]	1	1	0	6	138	13	0	3	2	16	991	Peak
15:15	15:30	0	15	83	0	3	3	7	6	3	3	97	27	0	10	1	10	909	
15:30	15:45	0	20	94	3	3	0	5	[illegible]	2	1	101	10	0	3	2	14	950	
15:45	16:00	1	11	87	2	3	1	2	6	3	0	96	8	0	[illegible]	3	11		
16:30	16:15	1	15	84	5	0	4	4	1	3	4	95	8	0	[illegible]	4	15		
16:15	16:30	0	18	119	0	0	9	8	2	0	2	112	5	0	1	1	15		

Peak Time		North Approach Toothill St				East Approach Denison Rd				South Approach Toothill St				West Approach Denison Rd				Peak total
Period Start	Period End	L	R	RB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
7:45	8:45	0	53	418	15	0	5	1	13	0	30	324	51	2	11	82	73	972
15:00	16:00	1	58	341	17	0	5	15	10	0	3	385	54	2	22	6	5	33

TABLE 2: INTERSECTION PERFORMANCES (SIDRA INTERSECTION 7)

(SHEET 5 OF 5)



BVY TRAFFIC SURVEY

TURNING MOVEMENT SURVEY
Eltham St and Denison Rd, Lewisham
Wednesday, 15 August 2018

Weather:	Overcast
Suburb/Site:	Lewisham
Customer:	McLaren

Survey Start	
AM:	7:00
PM:	14:00

Peak Hour	
AM:	7:45 AM - 8:45 AM
PM:	15:30 PM - 16:30 PM

Time		North Approach Eltham St				East Approach Denison Rd				South Approach Eltham St				West Approach Denison Rd				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
7:00	7:15	0	0	1	0	0	0	2	0	0	0	1	2	0	2	26	4	253	
7:15	7:30	0	0	2	0	1	2	4	2	0	2	0	3	1	21	28	4	297	
7:30	7:45	0	2	3	1	1	1	5	5	0	2	3	5	0	22	28	4	331	
7:45	8:00	0	2	2	4	0	3	14	10	1	3	7	5	0	32	49	7	534	Peak
8:00	8:15	0	4	4	2	0	1	12	3	2	3	5	3	1	36	35	13	536	
8:15	8:30	2	1	9	5	2	3	23	9	0	3	13	6	1	58	39	1	446	
8:30	8:45	1	4	10	3	0	2	15	4	1	3	2	1	1	45	30	6	391	
8:45	9:00	3	3	3	5	1	1	6	2	0	1	1	4	3	25	27	4		
9:00	9:15	2	2	4	1	1	1	5	5	2	3	2	4	3	4	17	6		
9:15	9:30	0	1	2	3	2	0	1	1	3	0	5	5	1	4	12	8		
14:00	14:15	0	2	3	0	0	0	11	0	3	1	0	1	0	3	4	0	315	
14:15	14:30	0	4	1	1	0	1	6	1	2	3	3	2	0	2	5	0	353	
14:30	14:45	0	3	1	0	0	2	12	1	0	2	0	3	1	1	10	3	330	
14:45	15:00	1	7	2	1	2	1	15	3	0	0	0	2	2	6	5	2	396	
15:00	15:15	1	7	3	5	3	3	12	5	0	3	3	5	0	10	10	0	446	Peak
15:15	15:30	3	9	3	1	0	5	20	10	0	2	1	10	1	26	3	2	376	
15:30	15:45	0	3	5	3	0	7	3	4	0	3	5	4	0	8	3	1	364	
15:45	16:00	0	4	2	4	3	1	27	4	0	0	3	6	1	5	13	5		
16:00	16:15	0	3	6	2	1	0	24	0	0	1	3	0	0	0	19	1		
16:15	16:30	1	0	1	1	2	2	20	1	2	0	0	0	0	0	23	3		

Peak Time		North Approach Eltham St				East Approach Denison Rd				South Approach Eltham St				West Approach Denison Rd				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
7:45	8:45	1	12	35	14	3	11	76	26	1	12	24	19	1	164	142	24	534
15:30	16:30	5	22	25	13	5	16	92	26	0	7	51	28	2	49	80	11	376

Graphic

ANNEXURE C: EXISTING SIDRA PERFORMANCES

(Sheet 1 of 10)

MOVEMENT SUMMARY

Site: Toothill / Denison EX AM

Toothill Street / Denison Road
Existing Conditions
AM
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Toothill St S											
1	L2	64	0.0	0.226	7.7	LOS A	1.8	12.7	0.56	0.10	55.7
2	T1	320	0.0	0.226	2.1	LOS A	1.8	12.7	0.56	0.10	56.5
3	R2	32	0.0	0.226	7.8	LOS A	1.8	12.7	0.56	0.10	54.9
Approach		416	0.0	0.226	3.4	NA	1.8	12.7	0.56	0.10	56.2
East: Denison RD E											
4	L2	14	0.0	0.039	12.9	LOS A	0.1	0.9	0.55	0.91	49.2
5	T1	1	0.0	0.039	12.6	LOS A	0.1	0.9	0.55	0.91	49.0
6	R2	5	0.0	0.039	12.4	LOS A	0.1	0.9	0.55	0.91	48.7
Approach		20	0.0	0.039	12.8	LOS A	0.1	0.9	0.55	0.91	49.1
North: Toothill St N											
8	T1	440	3.0	0.272	1.9	LOS A	2.2	15.1	0.55	0.08	57.2
9	R2	55	0.0	0.272	7.4	LOS A	2.2	15.1	0.55	0.08	55.7
Approach		495	0.0	0.272	2.5	NA	2.2	15.1	0.55	0.08	56.9
West: Denison Rd W											
10	L2	78	0.0	0.357	15.2	LOS B	1.6	11.3	0.60	1.03	47.9
11	T1	97	0.0	0.357	14.9	LOS B	1.6	11.3	0.60	1.03	47.7
12	R2	12	0.0	0.357	14.6	LOS B	1.6	11.3	0.60	1.03	47.6
Approach		184	0.0	0.357	15.0	LOS B	1.6	11.3	0.60	1.03	47.7
All Vehicles		1116	0.0	0.357	5.1	NA	2.2	15.1	0.56	0.29	54.8

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

Processed: Wednesday, 17 August 2016 11:26:23 AM
SIDRA INTERSECTION 6.0.24.4877
Project: \\mlsserver\mls storage\Jobs\2016\16272\MTE SIDRA\16272.sip6
8000298, 60163746, MCLAREN TRAFFIC ENGINEERING, PLUS / 1PC

SIDRA INTERSECT

ANNEXURE C: EXISTING SIDRA PERFORMANCES

(Sheet 2 of 10)

MOVEMENT SUMMARY

Site: Toothill / Denison EX PM

Tooth l Street / Denison Road
Existing Conditions
AM
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Tothil S: S											
1	L2	87	0.0	0.257	7.4	LOS A	2.1	14.6	0.53	0.05	55.5
2	T1	416	0.0	0.257	1.8	LOS A	2.1	14.6	0.53	0.05	57.0
3	R2	9	0.0	0.257	7.3	LOS A	2.1	14.6	0.53	0.05	55.0
Approach		493	0.0	0.257	2.7	NA	2.1	14.6	0.53	0.05	56.8
East: Denison RD E											
4	L2	11	0.0	0.070	14.2	LOS A	0.2	1.6	0.59	0.97	48.5
5	T1	16	0.0	0.070	13.8	LOS A	0.2	1.6	0.59	0.97	48.3
6	R2	5	0.0	0.070	13.7	LOS A	0.2	1.6	0.59	0.97	48.1
Approach		32	0.0	0.070	14.0	LOS A	0.2	1.6	0.59	0.97	48.3
North: Tothil S: N											
7	L2	16	0.0	0.247	8.1	LOS A	2.0	14.2	0.60	0.11	55.2
8	T1	359	0.0	0.247	2.5	LOS A	2.0	14.2	0.60	0.11	56.6
9	R2	56	0.0	0.247	8.0	LOS A	2.0	14.2	0.60	0.11	54.6
Approach		435	0.0	0.247	3.6	NA	2.0	14.2	0.60	0.11	56.3
West: Denison Rd W											
10	L2	54	0.0	0.148	12.8	LOS A	0.5	3.6	0.66	0.96	49.3
11	T1	9	0.0	0.148	12.4	LOS A	0.5	3.6	0.66	0.96	49.1
12	R2	21	0.0	0.148	12.2	LOS A	0.5	3.6	0.66	0.96	48.9
Approach		83	0.0	0.148	12.5	LOS A	0.5	3.6	0.66	0.96	49.2
All Vehicles		1042	0.0	0.257	4.1	NA	2.1	14.6	0.56	0.18	55.6

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

ANNEXURE C: EXISTING SIDRA PERFORMANCES

(Sheet 3 of 10)

MOVEMENT SUMMARY

Site: Toothill / The Boulevarde EX PM

Toothill Street / The Boulevarde
Existing Conditions
PM
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Tothill St S											
1	L2	37	0.0	0.188	7.5	LOS A	1.4	9.9	0.53	0.10	55.3
2	T1	271	0.0	0.188	2.0	LOS A	1.4	9.9	0.53	0.10	56.8
3	R2	34	0.0	0.188	7.4	LOS A	1.4	9.9	0.53	0.10	54.7
Approach		341	0.0	0.188	3.1	NA	1.4	9.9	0.53	0.10	56.4
East: The Boulevarde E											
4	L2	16	0.0	0.063	13.3	LOS A	0.2	1.5	0.55	0.93	49.0
5	T1	3	0.0	0.063	13.0	LOS A	0.2	1.5	0.55	0.93	48.6
6	R2	13	0.0	0.063	12.7	LOS A	0.2	1.5	0.55	0.93	48.5
Approach		32	0.0	0.063	13.1	LOS A	0.2	1.5	0.55	0.93	48.8
North: Tothill St N											
7	L2	27	0.0	0.247	6.9	LOS A	1.8	12.9	0.47	0.07	55.9
8	T1	404	0.0	0.247	1.4	LOS A	1.8	12.9	0.47	0.07	57.4
9	R2	53	0.0	0.247	6.6	LOS A	1.8	12.9	0.47	0.07	56.3
Approach		484	0.0	0.247	2.1	NA	1.8	12.9	0.47	0.07	57.1
West: The Boulevarde W											
10	L2	146	0.0	0.480	15.0	LOS B	2.8	19.6	0.67	1.05	47.9
11	T1	75	0.0	0.480	14.7	LOS B	2.8	19.6	0.67	1.05	47.7
12	R2	67	0.0	0.480	14.4	LOS A	2.8	19.6	0.67	1.05	47.6
Approach		288	0.0	0.480	14.8	LOS B	2.8	19.6	0.67	1.05	47.8
All Vehicles		1125	0.0	0.480	6.0	NA	2.8	19.6	0.52	0.36	54.0

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

ANNEXURE C: EXISTING SIDRA PERFORMANCES

(Sheet 4 of 10)

MOVEMENT SUMMARY

Site: Toothill / The Boulevarde EX AM

Toothill Street / The Boulevarde
Existing Conditions
AM
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Toothill St S											
1	L2	44	0.0	0.247	7.1	LOS A	1.9	13.4	0.50	0.05	55.7
2	T1	406	0.0	0.247	7.0	LOS A	1.9	13.4	0.50	0.03	57.2
3	R2	20	0.0	0.247	7.0	LOS A	1.9	13.4	0.50	0.03	55.2
Approach		468	0.0	0.247	2.3	NA	1.9	13.4	0.50	0.03	57.0
East: The Boulevarde E											
4	L2	28	0.0	0.088	12.4	LOS A	0.3	2.1	0.51	0.93	49.5
5	T1	12	0.0	0.088	12.1	LOS A	0.3	2.1	0.51	0.93	49.3
6	R2	11	0.0	0.088	11.8	LOS A	0.3	2.1	0.51	0.93	49.1
Approach		51	0.0	0.088	12.2	LOS A	0.3	2.1	0.51	0.93	49.4
North: Toothill St N											
8	T1	340	0.0	0.203	2.1	LOS A	1.6	11.2	0.55	0.08	57.2
9	R2	33	0.0	0.203	7.6	LOS A	1.6	11.2	0.55	0.08	55.2
Approach		373	0.0	0.203	2.6	NA	1.6	11.2	0.55	0.08	57.0
West: The Boulevard W											
10	L2	69	0.0	0.202	12.9	LOS A	0.7	5.1	0.56	0.95	49.3
11	T1	8	0.0	0.202	12.5	LOS A	0.7	5.1	0.56	0.95	49.0
12	R2	36	0.0	0.202	12.3	LOS A	0.7	5.1	0.56	0.95	48.8
Approach		114	0.0	0.202	12.7	LOS A	0.7	5.1	0.56	0.95	49.1
All Vehicles		1006	0.0	0.247	4.1	NA	1.9	13.4	0.53	0.20	55.6

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

ANNEXURE C: EXISTING SIDRA PERFORMANCES

(Sheet 5 of 10)

MOVEMENT SUMMARY

Site: Toothill / New Canterbury Rd EX AM

Toothill Street / New Canterbury Rd
Existing Conditions
AM
Signals - Fixed Time Cycle Time = 110 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: New Canterbury Rd E											
5	T1	257	0.0	0.220	10.7	LOS A	5.2	43.6	0.49	0.42	5[illegible] 0
6	R2	156	0.0	0.635	32.5	LOS C	5.9	48.2	0.82	0.83	38.4
Approach		413	0.0	0.635	18.9	LOS B	5.9	48.2	0.61	0.58	45.4
North: Toothill St											
7	L2	240	3.0	0.631	39.6	LOS C	9.7	68.1	0.86	0.79	35.8
9	R2	208	3.0	0.631	39.5	LOS C	9.7	68.1	0.86	0.80	35.7
Approach		448	3.0	0.631	39.5	LOS C	9.7	68.1	0.86	0.80	35.7
West: New Canterbury Rd W											
10	L2	215	0.0	0.448	18.3	LOS B	14.9	103.7	0.59	0.63	47.0
11	T1	821	0.0	0.448	12.7	LOS A	15.1	105.9	0.59	0.56	49.0
Approach		1037	0.0	0.448	13.9	LOS A	15.1	105.9	0.59	0.58	48.6
All Vehicles		1898	0.9	0.635	21.0	LOS B	15.1	105.9	0.66	0.63	44.2

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P2	East Full Crossing	53	35.3	LOS D	0.1	0.1	0.80	0.80
P3	North Full Crossing	53	11.8	LOS B	0.1	0.1	0.46	0.46
P4	West Full Crossing	53	35.3	LOS D	0.1	0.1	0.80	0.80
All Pedestrians		159	27.5	LOS C			0.69	0.69

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay).
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

ANNEXURE C: EXISTING SIDRA PERFORMANCES

(Sheet 6 of 10)

MOVEMENT SUMMARY

Site: Toothill / New Cantebury Rd EX PM

Toothil Stree: / New Cantebury Rd
Existing Conc tions
PM
Signals - Fixed Time Cycle Time = 110 seconds (User Given Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: New Cantebury Rd E											
5	T1	675	0.0	0.595	14.8	LOS B	22.3	156.3	0.68	0.61	48.2
6	R2	281	0.0	0.673	29.2	LOS D	11.8	82.5	0.82	0.83	39.8
Approach		956	0.0	0.673	19.1	LOS B	22.3	156.3	0.72	0.68	46.4
North: Toothill St											
7	L2	200	0.0	0.665	39.4	LOS C	14.1	98.6	0.94	0.76	38.2
9	R2	202	0.0	0.665	40.5	LOS C	14.1	98.6	0.93	0.82	35.3
Approach		402	0.0	0.665	39.5	LOS C	14.1	98.6	0.87	0.81	35.7
West: New Cantebury Rd W											
10	L2	161	3.0	0.174	16.4	LOS B	4.6	32.3	0.46	0.70	46.2
11	T1	399	0.0	0.348	12.2	LOS A	10.5	73.2	0.65	0.48	50.3
Approach		578	0.0	0.348	13.5	LOS A	10.5	73.2	0.53	0.55	48.7
All Vehicles		1937	0.0	0.673	21.7	LOS B	22.3	156.3	0.69	0.67	43.8

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Mode is used. Control Delay includes Geometric Delay.
Gap Acceptance Capacity: SIDRA Standard (Akcelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P2	East Full Crossing	53	34.5	LOS D	0.1	0.1	0.79	0.79
P3	North Full Crossing	53	12.3	LOS B	0.1	0.1	0.47	0.47
P4	West Full Crossing	53	34.5	LOS D	0.1	0.1	0.79	0.79
All Pedestrians		159	27.1	LOS C			0.69	0.68

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay).
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

ANNEXURE C: EXISTING SIDRA PERFORMANCES

(Sheet 7 of 10)

MOVEMENT SUMMARY

Site: Eltham / Denison Rd EX AM

Eltham St / Denison Rd
Existing
AM
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Eltham St											
1	L2	20	0.0	0.057	5.8	LOS A	0.3	2.0	0.27	0.56	52.3
2	T1	27	0.0	0.057	5.3	LOS A	0.3	2.0	0.27	0.56	53.0
3	R2	19	0.0	0.057	8.1	LOS A	0.3	2.0	0.27	0.56	52.6
Approach		66	0.0	0.057	6.2	LOS A	0.3	2.0	0.27	0.56	52.7
East: Denison Rd											
4	L2	27	0.0	0.114	6.5	LOS A	0.6	4.0	0.43	0.59	52.2
5	T1	80	0.0	0.114	6.0	LOS A	0.6	4.0	0.43	0.59	53.0
6	R2	12	0.0	0.114	8.8	LOS A	0.6	4.0	0.43	0.59	52.6
Approach		119	0.0	0.114	6.4	LOS A	0.6	4.0	0.43	0.59	52.7
North: Eltham St											
7	L2	15	0.0	0.066	7.1	LOS A	0.3	2.3	0.46	0.62	51.7
8	T1	35	0.0	0.066	6.7	LOS A	0.3	2.3	0.46	0.62	52.5
9	R2	13	0.0	0.066	9.5	LOS A	0.3	2.3	0.46	0.62	52.1
Approach		62	0.0	0.066	7.3	LOS A	0.3	2.3	0.46	0.62	52.2
West: Denison Rd											
10	L2	36	0.0	0.272	5.9	LOS A	1.7	11.6	0.22	0.58	52.1
11	T1	155	0.0	0.272	5.1	LOS A	1.7	11.6	0.22	0.58	52.9
12	R2	177	0.0	0.272	7.9	LOS A	1.7	11.6	0.22	0.58	52.6
Approach		367	0.0	0.272	6.5	LOS A	1.7	11.6	0.22	0.58	52.6
All Vehicles		615	0.0	0.272	6.5	LOS A	1.7	11.6	0.29	0.58	52.8

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

ANNEXURE C: EXISTING SIDRA PERFORMANCES

(Sheet 8 of 10)

MOVEMENT SUMMARY

Site: Eltham / Denison Rd EX PM

Eltham St / Denison Rd
Existing
PM
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Eltham St											
1	L2	38	0.0	0.063	6.2	LOS A	0.3	2.2	0.31	0.56	52.4
2	T1	24	0.0	0.063	5.5	LOS A	0.3	2.2	0.31	0.56	53.2
3	R2	8	0.0	0.063	8.3	LOS A	0.3	2.2	0.31	0.56	52.6
Approach		71	0.0	0.063	6.1	LOS A	0.3	2.2	0.31	0.56	52.7
East: Denisan Rd											
4	L2	27	0.0	0.122	5.8	LOS A	0.6	4.3	0.28	0.54	52.6
5	T1	86	0.0	0.122	5.4	LOS A	0.6	4.3	0.28	0.54	53.3
6	R2	17	0.0	0.122	8.2	LOS A	0.6	4.3	0.28	0.54	53.0
Approach		142	0.0	0.122	5.8	LOS A	0.6	4.3	0.28	0.54	53.1
North: Eltham St											
7	L2	14	0.0	0.056	5.8	LOS A	0.3	1.9	0.26	0.57	52.1
8	T1	24	0.0	0.056	5.3	LOS A	0.3	1.9	0.26	0.57	52.8
9	R2	27	0.0	0.056	8.1	LOS A	0.3	1.9	0.26	0.57	52.5
Approach		65	0.0	0.056	6.5	LOS A	0.3	1.9	0.26	0.57	52.5
West: Denison Rd											
10	L2	12	0.0	0.087	5.5	LOS A	0.4	3.1	0.18	0.58	52.2
11	T1	42	0.0	0.087	5.0	LOS A	0.4	3.1	0.18	0.58	52.9
12	R2	58	0.0	0.087	7.8	LOS A	0.4	3.1	0.18	0.58	52.6
Approach		112	0.0	0.087	6.5	LOS A	0.4	3.1	0.18	0.58	52.6
All Vehicles		389	0.0	0.122	6.2	LOS A	0.6	4.3	0.26	0.56	52.8

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

ANNEXURE C: EXISTING SIDRA PERFORMANCES

(Sheet 9 of 10)

MOVEMENT SUMMARY

Site: Eltham / The Boulevarde EX AM

Eltham Street / The Boulevarde
Existing
AM
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	ODMov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Eltham											
1	L2	219	0.0	0.130	5.6	LOS A	0.7	4.7	0.04	0.54	53.6
2	T1	5	0.0	0.130	0.0	LOS A	0.7	4.7	0.04	0.54	55.0
3	R2	17	0.0	0.130	5.5	LOS A	0.7	4.7	0.04	0.54	53.1
Approach		241	0.0	0.130	5.4	NA	0.7	4.7	0.04	0.54	53.6
East: The Boulevarde											
4	L2	4	0.0	0.080	9.0	LOS A	0.3	2.0	0.11	0.99	51.5
5	T1	31	0.0	0.080	8.6	LOS A	0.3	2.0	0.11	0.99	51.3
6	R2	39	0.0	0.080	8.4	LOS A	0.3	2.0	0.11	0.99	51.0
Approach		74	0.0	0.080	8.5	LOS A	0.3	2.0	0.11	0.99	51.1
North: Eltham											
7	L2	1	0.0	0.006	6.2	LOS A	0.0	0.2	0.32	0.26	54.8
8	T1	5	0.0	0.006	0.8	LOS A	0.0	0.2	0.32	0.26	56.2
9	R2	4	0.0	0.006	6.1	LOS A	0.0	0.2	0.32	0.26	54.3
Approach		11	0.0	0.006	3.4	NA	0.0	0.2	0.32	0.26	55.3
West: The Boulevarde											
10	L2	26	0.0	0.091	8.8	LOS A	0.3	2.4	0.04	1.04	51.6
11	T1	72	0.0	0.091	8.2	LOS A	0.3	2.4	0.04	1.04	51.3
12	R2	3	0.0	0.091	8.0	LOS A	0.3	2.4	0.04	1.04	51.1
Approach		101	0.0	0.091	8.3	LOS A	0.3	2.4	0.04	1.04	51.4
All Vehicles		426	0.0	0.130	6.6	NA	0.7	4.7	0.06	0.73	52.7

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

Processed: Wednesday, 17 August 2016 11:34:13 AM
SIDRA INTERSECTION 6.0.24.4877
Project: \\mtaserver\mta storage\Jobs\2016\16272\MTE SIDRA\13 07 20.sip6
8000256, 6016376, MCLAREN TRAFFIC ENGINEERING, PLUS / 1PC

SIDRA INTERSECTION

ANNEXURE C: EXISTING SIDRA PERFORMANCES

(Sheet 10 of 10)

MOVEMENT SUMMARY

Site: Eltham / The Boulevarde EX PM

Eltham Street / The Boulevarde
Existing
PM
Stop (Two-Way)

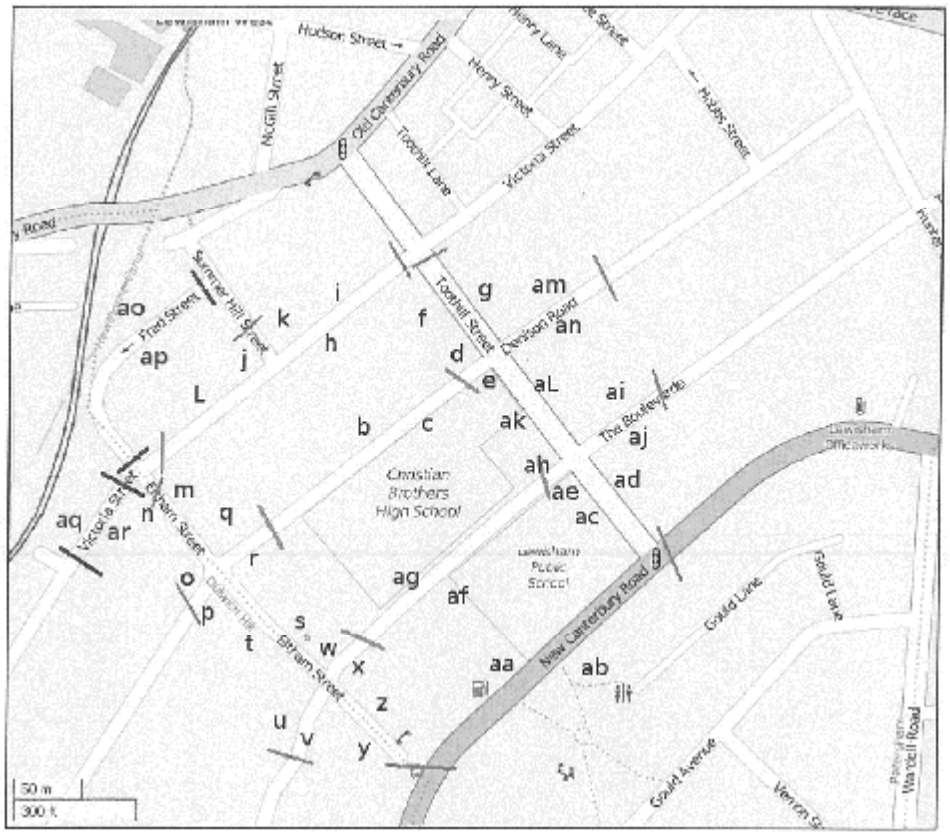
Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Eltham											
1	L2	68	0.0	0.060	5.6	LOS A	0.3	2.0	0.05	0.52	53.6
2	T1	7	0.0	0.060	0.0	LOS A	0.3	2.0	0.05	0.52	55.1
3	R2	37	0.0	0.060	5.5	LOS A	0.3	2.0	0.05	0.52	53.2
Approach		111	0.0	0.060	5.2	NA	0.3	2.0	0.05	0.52	53.7
East: The Boulevarde											
4	L2	4	0.0	0.084	8.5	LOS A	0.3	2.1	0.13	0.97	51.8
5	T1	40	0.0	0.084	8.2	LOS A	0.3	2.1	0.13	0.97	51.6
6	R2	40	0.0	0.084	8.0	LOS A	0.3	2.1	0.13	0.97	51.3
Approach		84	0.0	0.084	8.1	LOS A	0.3	2.1	0.13	0.97	51.6
North: Eltham											
7	L2	4	0.0	0.007	5.7	LOS A	0.0	0.3	0.16	0.28	55.2
8	T1	6	0.0	0.007	0.2	LOS A	0.0	0.3	0.16	0.28	56.8
9	R2	3	0.0	0.007	5.6	LOS A	0.0	0.3	0.16	0.28	54.8
Approach		14	0.0	0.007	3.2	NA	0.0	0.3	0.16	0.28	55.7
West: The Boulevarde											
10	L2	17	0.0	0.029	8.2	LOS A	0.1	0.8	0.04	1.02	51.9
11	T1	18	0.0	0.029	7.9	LOS A	0.1	0.8	0.04	1.02	51.5
12	R2	1	0.0	0.029	7.7	LOS A	0.1	0.8	0.04	1.02	51.3
Approach		36	0.0	0.029	8.1	LOS A	0.1	0.8	0.04	1.02	51.6
All Vehicles		244	0.0	0.084	6.5	NA	0.3	2.1	0.08	0.74	52.7

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

ANNEXURE D: PARKING SURVEYS

(SHEET 1 OF 4)



ANNEXURE D: PARKING SURVEYS

(SHEET 2 OF 4)

Curtis Traffic Surveys

	Start	Finish	Interval Size
	7:30	9:30	0:10

Job: 16272.01FA (16_272)
Client: Christian Brothers
Date: 27/07/16
Locality: Lewisham
Weather: Fine
Surveyor: MC

Time	Street	From	To	Side of Street	Capacity	Restriction
a	nd street				18	
b	Denison Rd	west 100m	east 100m	north	25	1dis+24*2rl
c	Denison Rd	west 100m	east 100m	south	32	4hz1+4hz2+5hz3+9u
d	Denison Rd	east 100m	Toothill St	north	3	2rl
e	Denison Rd	east 100m	Toothill St	south	4	hz1
f	Toothill St	Denison Rd	Victoria St	west	7	u
g	Toothill St	Denison Rd	Victoria St	east	9	2rl
h	Victoria St	Toothill St	Eltham St	south	28	u
i	Victoria St	Toothill St	Summer Hill St	north	13	2*2rl+1ds
j	Summer Hill St	Victoria St	200m	west	4	u
k	Summer Hill St	200m	Victoria St	east	4	u
l	Victoria St	Summer Hill St	Eltham St	north	13	u
m	Eltham St	Victoria St	Denison Rd	east	9	u
n	Eltham St	Victoria St	Denison Rd	west	1	u
o	Denison Rd	Eltham St	200m	north	2	u
p	Denison Rd	200m	Eltham St	south	2	u
q	Denison Rd	Eltham St	west 100m	north	5	2rl
r	Denison Rd	west 100m	Eltham St	south	4	u
s	Eltham St	Denison Rd	Boulevarde	east	9	2rl
t	Eltham St	Denison Rd	Boulevarde	west	12	u
u	Boulevarde	Eltham St	200m	north	9	u angle
v	Boulevarde	200m	Eltham St	south	7	u angle
w	Boulevarde	Eltham St	100m west	north	4	u
x	Boulevarde	100m west	Eltham St	south	3	u
y	Eltham St	Boulevarde	closure	west	10	u
z	Eltham St	Boulevarde	closure	east	7	u
aa	N Canterbury Rd	Eltham St	Tooth l St	north	14	ns1
ab	N Canterbury Rd	Eltham St	Toothill St	south	30	pmC
ac	Toothill St	N Canterbury Rd	Boulevarde	west	0	ns
ad	Toothill St	N Canterbury Rd	Boulevarde	east		ns2
ae	Boulevarde	Toothill St	100m east	south	1	u
af	Boulevarde	100m east	100m west	south	24	8u + 5up
ag	Boulevarde	100m west	100m east	north	22	2u + 10up1
ah	Boulevarde	100m east	Toothill St	north	1	u
ai	Boulevarde	Toothill St	200m	north	4	2rl
aj	Boulevarde	200m	Toothill St	south	3	2rl
ak	Toothill St	Boulevarde	Denison Rd	west	6	u
aL	Toothill St	Boulevarde	Denison Rd	east	6	u
am	Denison Rd	Toothill St	200m	north	7	u
an	Denison Rd	200m	Toothill St	south	5	2rl
ao	Fred St	Victoria St	Summer Hill St	north	24	u
ap	Fred St	Victoria St	Summer Hill St	south	22	u
aq	Victoria St	Eltham St	Short St	east	13	u
ar	Victoria St	Eltham St	Short St	west	8	2u+1ds

ANNEXURE D: PARKING SURVEYS

(SHEET 3 OF 4)

Curtis Traffic Surveys

Job: 160705mel (16_272)
Client: McLaren Traffic Engineering
Day, date: 27/07/16
Location: Lewisham
Weather: Fine
Surveyor: MC

Zone	Street	From	To	Side of Street	Capacity	Restriction	Parking round commencing... 7:00	7:30	8:00	8:30	9:00	9:30
a	off street				18		2	6	9	10	3	11
b	Denison Rd	west 100m	east 100m	north	23	dis 12#2rl	20	19	20	21	22	23
c	Denison Rd	west 100m	east 100m	south	32	4bzl 14bz2 5bz3 2u	11	11	13	13	13	12
d	Denison Rd	east 100m	Toothill St	north	3	2rl	0	0	1		1	1
e	Denison Rd	east 100m	Toothill St	south	4	bzl	4	4	4	3	2	0
f	Toothill St	Denison Rd	Victoria St	west	7	u	2	2	3	7	7	7
g	Toothill St	Denison Rd	Victoria St	east	9	2rl	7	5	6	7	7	6
h	Victoria St	Toothill St	Eltham St	south	28	u	29	26	28	30	30	30
i	Victoria St	Toothill St	Summer Hill St	north	13	12#2rl+ dis	8	9	9	8	8	8
j	Summer Hill St	Victoria St	200m	west	4	u	5	5	5	4	4	4
k	Summer Hill St	200m	Victoria St	east	4	u	5	5	5	5	5	5
l	Victoria St	Summer Hill St	Eltham St	north	13	u	15	12	13	14	15	14
m	Eltham St	Victoria St	Denison Rd	east	9	u	8	7	7	8	8	8
n	Eltham St	Victoria St	Denison Rd	west	1	u	6	7	8	9	9	9
o	Denison Rd	Eltham St	200m	north	2	u	1	1	1	1		1
p	Denison Rd	200m	Eltham St	south	2	u	3	3	3	3	3	3
q	Denison Rd	Eltham St	west 100m	north	5	2rl	6	5	4	3	3	3
r	Denison Rd	west 100m	Eltham St	south	4	u	4	4	4	2	2	2
s	Eltham St	Denison Rd	Boulevarde	east	9	2rl	5	4	5	6	7	6
t	Eltham St	Denison Rd	Boulevarde	west	12	u	10	11	11	12	12	12
u	Boulevarde	Eltham St	200m	north	9	u angle	9	11	10	9	8	8
v	Boulevarde	200m	Eltham St	south	2	u angle	4	3	3	3	3	3
w	Boulevarde	Eltham St	100m west	north	4	u	3	4	4	4	3	3
x	Boulevarde	100m west	Eltham St	south	3	u	4	4	4	4	3	3
y	Eltham St	Boulevarde	closure	west	10	u	9	11	11	10	10	10
z	Eltham St	Boulevarde	closure	east	7	u	9	9	9	9	8	8
aa	N Canterbury R	Eltham St	Toothill St	north	14	ns1	0	0	0	0	0	0
ab	N Canterbury R	Eltham St	Toothill St	south	20	pmC	6	5	3	5	5	5
ac	Toothill St	N Canterbury R	Boulevarde	west		ns	0	0	0	0	0	0
ad	Toothill St	N Canterbury R	Boulevarde	east		np2	0	0	0	0	0	0
ae	Boulevarde	Toothill St	100m east	south	1	u	1	1	2	2	2	1
af	Boulevarde	100m east	100m west	south	24	18u 6np1	13	12	11	12	16	16
ag	Boulevarde	100m west	100m east	north	22	12u 10np1	10	10	10	10	12	12
ah	Boulevarde	100m east	Toothill St	north	1	u	1	1	2	2	2	2
ai	Boulevarde	Toothill St	200m	north	4	2rl	6	6	5	5	5	5
aj	Boulevarde	200m	Toothill St	south	5	2rl	1	1	2	3	3	4
ak	Toothill St	Boulevarde	Denison Rd	west	6	u	5	6	5	5	8	8
al	Toothill St	Boulevarde	Denison Rd	east	6	u	6	7	7	7	7	7
am	Denison Rd	Toothill St	200m	north	7	u	7	7	8	8	8	8
an	Denison Rd	200m	Toothill St	south	5	2rl	4	4	3	3	5	3
ao	Friel St	Victoria St	Summer Hill St	north	24	u	16	16	17	18	19	19
ap	Friel St	Victoria St	Summer Hill St	south	22	u	15	16	16	18	19	19
aq	Victoria St	Eltham St	Short St	east	10	u	7	8	8	9	9	9
ar	Victoria St	Eltham St	Short St	west	8	7u 1dis	6	6	6	7	8	8

ANNEXURE D: PARKING SURVEYS

(SHEET 4 OF 4)

Curtis Traffic Surveys

Job: 160705ms (15_272)
Client: McLaren Traffic Engineering
Day, date: 27/07/16
Location: Lewisham
Weather: fine
Surveyor: MC

Zone	Street	From	To	Side of Street	Capacity	Restriction	Parking count commencing... 14:00	14:30	15:00	15:30	16:00	16:30
x	off street				10		11	10	10	10	9	8
b	Denison Rd	west 100m	east 100m	north	25	1dis+24*2rl	22	21	21	21	19	20
c	Denison Rd	west 100m	east 100m	south	32	4bus+14bus2+8	12	12	10	10	8	9
d	Denison Rd	east 100m	Toothill St	north	3	2rl	1	0	0	0	0	0
e	Denison Rd	west 100m	Toothill St	south	4	bzl	0	0	0	0	0	0
f	Toothil St	Denison Rd	Victoria St	west	7	u	5	5	5	3	3	2
g	Toothil St	Denison Rd	Victoria St	east	9	2rl	5	5	6	5	4	4
h	Victoria St	Toothill St	Eltham St	south	28	u	5	5	6	6	6	2
i	Victoria St	Toothill St	Summer Hill S	north	13	12*2rl+1dis	9	10	11	10	10	9
j	Summer Hill St	Victoria St	200m	west	4	u	5	5	5	5	5	5
k	Summer Hill St	200m	Victoria St	east	4	u	5	5	5	4	3	4
l	Victoria St	Summer Hill St	Eltham St	north	13	u	16	16	17	17	17	15
m	Eltham St	Victoria St	Denison Rd	east	9	u	8	8	9	8	8	8
n	Eltham St	Victoria St	Denison Rd	west	1	u	9	8	12	9	9	9
o	Denison Rd	Eltham St	200m	north	2	u	2	2	2		0	1
p	Denison Rd	200m	Eltham St	south	2	u	3	3	3	3	3	3
q	Denison Rd	Eltham St	west 100m	north	5	2rl	3	3	3	2	0	2
r	Denison Rd	west 100m	Eltham St	south	4	u	2	2	3	3	3	3
s	Eltham St	Denison Rd	Boulevarde	east	9	2rl	8	8	8	8	5	6
t	Eltham St	Denison Rd	Boulevarde	west	12	u	11	10	10	9	7	7
u	Boulevarde	Eltham St	200m	north	9	u angle	7	7	7	7	7	7
v	Boulevarde	200m	Eltham St	south	2	u angle	4	4	5	5	4	4
w	Boulevarde	Eltham St	100m west	north	4	u	3	3	4	4	4	4
x	Boulevarde	100m west	Eltham St	south	3	u	3	3	4	4	3	3
y	Eltham St	Boulevarde	closure	west	0	u	9	9	1	0	8	8
z	Eltham St	Boulevarde	closure	east	7	u	7	7	8	8	6	6
aa	N Canterbury Rd	Eltham St	Toothill St	north	14	na1	8	8	5	0	0	0
ab	N Canterbury Rd	Eltham St	Toothill St	south	20	pmC	0	0	0	0	0	0
ac	Toothill St	N Canterbury Rd	Boulevarde	west		rs	0	0	0	0	0	0
ad	Toothill St	N Canterbury Rd	Boulevarde	east		np2	3	3	3	3	3	3
ae	Boulevarde	Toothil St	100m east	south	1	u	0	0	1	1		1
af	Boulevarde	100m east	100m west	south	24	18u + 6np1	21	20	14	18	12	12
ag	Boulevarde	100m west	100m east	north	22	12u + 10np1	5	12	13	13	12	9
ah	Boulevarde	100m east	Toothil St	north	1	u	2	2	2	1	2	2
ai	Boulevarde	Toothil St	200m	north	4	2rl	4	4	4	5	5	5
aj	Boulevarde	200m	Toothil St	south	5	2rl	5	5	6	6	6	6
ak	Toothil St	Boulevarde	Denison Rd	west	6	u	8	8	8	5	5	5
al	Toothil St	Boulevarde	Denison Rd	east	6	u	7	7	7	6	6	5
am	Denison Rd	Toothill St	200m	north	7	u	7	7	7	7	7	7
an	Denison Rd	200m	Toothill St	south	5	2r	5	5	5	4	4	4
ao	Fred St	Victoria St	Summer Hill S	north	24	u	20	21	22	20	16	15
ap	Fred St	Victoria St	Summer Hill S	south	22	u	19	18	17	17	14	13
aq	Victoria St	Eltham St	Short St	east	10	u	7	9	9	6	5	4
ar	Victoria St	Eltham St	Short St	west	8	7u+1dis	7	9	9	8	3	3

ANNEXURE E: PROPOSED TRAFFIC MANAGEMENT PLAN

(see separate document)

Attachment D – Traffic Management Plan

OPERATION TRAFFIC MANAGEMENT PLAN

Christian Brothers' High School, Lewisham

Prepared by

McLaren Traffic Engineering

Revision Schedule and Stakeholders

Revision Schedule

Date	Version No.	Changes	By:
15/08/2016	V1.0	Original TMP	CBHS & MTE

Stakeholders

Document Owner
Christian Brothers' High School

Document Reviewers
Director – McLaren Traffic Engineering (MTE)

Document Approval			
Name	**Version No.**	**Date**	**Approved?**
Christian Brothers' High School	V1.0	15/08/2016	Yes
Craig McLaren		15/08/2016	Yes

Document Distribution
Teaching Staff
Administrative Staff
Parents & Carers of enrolled School Students

1 OPERATIONAL TRAFFIC MANAGEMENT PLAN

1.1 Introduction

This Operational Traffic Management Plan (TMP) has been prepared to address traffic & parking conditions within the CBHS car parking areas, as well as the road network surrounding CBHS, Lewisham.

The aim of the TMP is to manage and identify objectives of the CBHS in relation to traffic management within the school site during operating hours and ensuring that the school will operate in a safe and efficient manner for parents and students / children associated with the school in an attempt to minimise risks / conflict between pedestrians and vehicles both on-site and along the site's frontage roads.

The operating hours of the School are from 8:35am to 3:15pm, Monday to Friday. Occasionally, there will be on-site events that occur outside of the typical class time such as parent teacher meetings and student performances. This TMP has been prepared specifically for the subject site and is to be adhered to by all persons associated with or accessing the site. The operations outlined in this document are to be implemented at all times during these hours with no exceptions.

This TMP will be included in the Parent Enrolment Pack of future students, staff and other related members of the school, as well as updated information to existing parents.

1.2 General Objectives

This Plan of Management provides guidelines and management practices for the day to day operation of the school with respect to the traffic, parking and pedestrian impacts of the school both internally and externally.

The Plan aims to ensure that the school:

a) Actively Promote the better utilisation of public transport by students;
b) Operates in a manner consistent with good management;
c) Operates with regard to the surrounding residential neighbourhood;
d) Takes a proactive role in being a responsible neighbour / land owner within the Lewisham residential area;
e) Operates in a manner so as not to disturb the surrounding residential area, and
f) Operates in a manner whereby all users are accommodated in a safe and reduced risk environment

2 TYPICAL OPERATION

2.1 *Parking- General*

i. Staff will have access to the car parking spaces, as marked, at all times during the hours of operation.
ii. There is a total of 18 car parking spaces for staff use only.
iii. Staff / parents / visitors are requested to park vehicles only as permitted by signage
iv. Staff / parents / visitors must not Double Park in surrounding streets on any occasion. The drop off and pick up of students will be monitored to ensure compliance.
v. Staff will direct parents/ visitors to obey the TMP. In the event that parents / visitors and / or staff engage in unsafe parking behaviour at any time, this will be brought to the attention of Council and / or Police.
vi. A member of staff will perform random checks during any time of the day to ensure compliance.

2.2 *Parking- Parent Drop-off / Pick-up for School*

Parents / carers shall be aware that all drop off / pick ups are to occur from The Boulevarde.

The following procedure will be enforced during the morning drop-off and afternoon pick-up times:

- Mornings:
  - Students can be dropped off in the drop off zones in The Boulevarde
  - Students are to enter/exit from the kerbside doors ONLY
  - Parents are encouraged to be considerate of our neighbours – no blocking of driveways or using their drives to turn around or excessive noise.
- Afternoon:
  - Students can be picked up in the pickup zones in The Boulevarde
  - Students are to enter/exit the vehicle from the kerbside doors ONLY.
  - Parents are encouraged to be considerate of our neighbours – no blocking of driveways or using their drives to turn around or excessive noise.

The school will allocate staff to supervise and manage the pick up / drop off zone. Staff are to encourage parents to move efficiently through the pick-up/drop-off zone and not to park for extended periods. Parents who are considering visiting the school for an extended period are requested to park outside of the pick up / drop-off zone.

2.3 *Pedestrian Movement*

The school has a number of pedestrian access points along Denison Road and The Boulevarde. The main pedestrian access point to the school's office is on The Boulevarde.

Pedestrians are to use the allocated pedestrian gates to enter the school.

Pedestrians should always use the pedestrian crossings on The Boulevarde, on Denison Road and Toothill Street.

2.4 *General Safety Tips*

- All parents/carers/staff shall comply with the 40km/h school zone operating from 8:00-9:00am and 2:30-4:00pm on school days
- Students should always get in and out of the car through the rear kerb side door.
- Students to be dropped off on the school side of The Boulevarde.
- Students not to be hailed from across the road.
- Students to be reminded by parents of the 'STOP! LOOK! LISTEN! THINK!' routine every time an accompanied crossing is made of the road:
    - STOP! One step back from the kerb
    - LOOK! For traffic to your right, left and right again
    - LISTEN! For the sounds of approaching traffic
    - THINK! Whether it is safe to cross
    - Always look and listen for traffic as you cross the road

2.5 *School Activities*

The following table indicates the types and frequencies of school activities which generate traffic.

TYPE	FREQUENCY	COMMENT
Daily drop off of children before school by cars	Generally Monday to Friday 38 weeks a year	Not on public holidays or school holidays. Approximately 26% of enrolments use this.
Daily pick up of children after school by cars	Generally Monday to Friday 38 weeks a year	Not on public holidays or school holidays. Approximately 17% of enrolments use this.
Daily drop off of children before school by buses	Generally Monday to Friday 38 weeks a year	Not on public holidays or school holidays. Approximately 45% of enrolments use this.
Daily drop off of children before school by buses	Generally Monday to Friday 38 weeks a year	Not on public holidays or school holidays. Approximately 45% of enrolments use this.
Bus to take classes on day excursions	Each grade (5 grades) generally has 1 excursion a term (4 terms). So around 32 days a year may have excursion bus pick up and drop off.	Not all excursions involve bus transport, some excursions involve transport by train.
Bus to take classes on overnight excursions	There are 3 main overnight excursions for Years 5, 6 & 11	Coaches are used. Approximate times: departure 6am and return 3pm. Buses are directed to park in The Boulevarde on these occasions so as to keep the noise down for the neighbours in Denison Road.
Opening School Mass	Once a year event held during a School Day	Involves approximately 250 extra people
Year 12 Graduation Assembly and Mass	Once a year event held during a School Day (assembly) and evening (mass)	Involves approximately 250 extra people
Creative Arts & Exhibition Evening	Once a year event for a few hours in the evening	Generally we expect about 150 people at any one time for this event
Annual School Open Day	Two sessions are held on the same School day. First session around 9am and second session around 7pm in the evening.	Around 300 people visit during the day session and approximately 400 in the evening.
Mother's Day Mass	Once a year	Involves about 300 people.
Father's Day Mass	Once a year	Involves about 400 people.
Information Nights	Approximately 5 different information Nights are held throughout the Year.	Generally a year group at a time. Involves about 100 people
Parents and Friends Meet & Greet	Held once a year on a Friday night	Approximately 200 people attend
Parent and Friends Forums	Held Each Term	Held on a week night and approximately 30 people attend.
Parent Teacher Interviews	Three times a Year	One all day / evening event. Involves no more than all parents at a time throughout the day. Two times all day / evening sessions and no more than 50 parents at a time.
School Musical	Once a year over two nights	Musical held over two evenings involves approximately 400 people each night.

2.6 *Buses For Sport And Excursion Transport*

At the induction of new students annually the School will provide each student and their parents with details of public transport options seeking to reduce vehicle use.

The school will continue the use of public transport for sports travel and excursions and actively discourage other modes of transport.

The school directs buses to use identifiable curbside areas along Denison Road where they should park.

2.7 *Measures to Ensure the Amenity of Local Residents is Protected*

The school actively reviews its traffic management and regularly communicates to the school community about appropriate traffic behaviour.

Review and communication takes place in staff meetings, both teaching and administration. The School Leadership Team acts on feedback from these reviews including modification of procedures and consequential updating of staff training as required.

The weekly "Highlights" communication to parents and friends regularly includes communication and advice regarding following of traffic management procedures in order to maintain the amenity of local residents.

The school currently contains its major "outside normal school times" activity (that is, the Open Day, Information Nights, Parent Teacher Interviews etc.) to a minimum.

The school encourage and responds to individual resident concerns about issues including traffic management and takes these into account in refining the processes. The school's Complaints Management Plan includes the documentation of concerns and the school's timely response to address the issues that are raised.

2.8 *Schools activities outside normal school times*

TYPE	FREQUENCY	Car park provisions
School Open Day	Once a year in the evening on a School night	On street car parking is available in surrounding areas.
Creative Art & Exhibition Evening	Once a year in the evening on a School night	On street car parking is available in surrounding areas.
Information Nights	Approximately 5 different Information Nights are held throughout the Year.	On street car parking is available in surrounding areas.
Parent and Friends Forums	Held Each Term	On street car parking is available in surrounding areas.
Parent Teacher Interviews	Three Times a Year	On street car parking is available in surrounding areas.
School Musical	Once a year over two nights	On street car parking is available in surrounding areas.
Parents and Friends Meet & Greet	Held once a year on a Friday Night	On street car parking is available in surrounding areas.
Year 12 Graduation Assembly and Mass	Once a year event held during a School Day (assembly) and evening (Mass)	On street car parking is available in surrounding areas.

3 GREEN TRAVEL PLAN

3.1 Staff

The School actively encourages staff to car pool or to use the other forms of non-private vehicle travel such as heavy and light rail, bus services, bicycle and walk modes through a work place travel plan.

School resources are available in time and facilities to staff to make such arrangements and to every extent possible within operational requirements flexible arrangements will be made individually to assist staff in implementing carpooling.

The school will develop a Green Travel Plan (GTP) (also identified as Travel Access Guide (TAG)) for staff, promoting all the alternate transport modes that exist around the school.

The GTP shall be made freely available to all staff as a way of promoting and encouraging sustainable transport modes in order to reduce private car dependency. TAG's provide information on how to travel to and from the school by walking, cycling or public transport. The TAG is to also provide associated maps, walking times, bicycle and bus routes as well as updated rail time tables.

3.2 Parents & Children

The school is to actively promote car pooling of students to reduce private car dependency. The school can promote this travel mode through an online system or similar registry to better enable families to coordinate carpooling.

Throughout the year, the school will promote community initiatives such as a Walking School Bus, *Ride 2 School* day and *Walk to School/Work* day. These initiatives are not to be viewed as once of events, rather should be used to encourage transport modal shift within the school to sustainable transport modes.

4 EXPECTED BEHAVIOUR

4.1 Behaviour on Surrounding Streets

Parents are to adhere to motor traffic regulations including speed limits and parking controls.

Parents are advised that pedestrians have right-of-way on footpaths across driveways. Pedestrians should be allowed to safely traverse the pedestrian footpaths. Staff / parents / visitors are recommended to ensure eye contact is made with pedestrians prior to proceeding.

It is best practice if parents load and unload children from the kerbside of the vehicle (adjacent to the footpath) and not the traffic lane side of the parked vehicle.

Please note regular reminders of the Traffic Management Plan initiatives will be placed in the weekly "Highlights" newsletter distributed to all families.

4.2 Periodic Review of School Activity Traffic Management Plan

The school reviews its school activity traffic management plan annually and as the need arises. The school will also commission a Traffic and Safety Audit report on a regular basis that addresses the effectiveness and performance of traffic and pedestrian safety measures including this traffic management plan.

4.3 Related Documents

Development Consent DA200300504 dated 3 June 2004 as modified.

NOTES