

Project Name:	Graythwaite Concept Plan and Stage One Project Application Traffic Impact Assessment Review
Project Number:	30011284
Report for:	NSW Department of Planning and Infrastructure

PREPARATION, REVIEW AND AUTHORISATION

Revision #	Date	Prepared by	Reviewed by	Approved for Issue by
1	06/07/12	M De Marco	T Fransos	M Stephens
2	17/07/12	M De Marco	T Fransos	M Stephens

ISSUE REGISTER

Distribution List	Date Issued	Number of Copies
NSW Department of Planning and Infrastructure:	17/07/2011	Electronic (PDF)
SMEC staff:		
Associates:		
Office Library (SMEC office location):		
SMEC Project File:		

SMEC COMPANY DETAILS

SMEC Australia Pty Ltd
Level 6, 76 Berry Street, North Sydney NSW 2060

Tel: +61 2 9900 7037

Fax: +61 2 9925 5566

Email: Nicole.Vukic@smec.com

www.smec.com

The information within this document is and shall remain the property of **NSW Department of Planning**

Review of Transport Impact Assessment Graythwaite Concept Plan and Stage 1 Project Application

Prepared for NSW Department of Planning and Infrastructure

July 2012



TABLE OF CONTENTS

1	INTRODUCTION.....	1
1.1	Background	1
1.2	Project Objectives	2
1.3	Approach to the Traffic Impact Assessment Review	3
1.4	Report Structure	3
2	DESCRIPTION OF THE PROPOSED CONCEPT PLAN AND STAGE 1 PROJECT APPLICATION	4
2.1	The Proposed Concept Plan and Stage 1 Project Application	4
2.2	Site Location	5
2.3	Scope of Proposal	6
2.4	Vehicular Access Arrangements.....	7
3	REVIEW OF DOCUMENTATION.....	9
3.1	Introduction	9
3.2	<i>Transport & Accessibility Impact Assessment</i>	9
3.3	<i>Preferred Project Report</i>	12
3.4	<i>North Sydney Comments on Preferred Project Report</i>	12
3.5	<i>McLaren Traffic Report</i>	13
3.6	<i>GTA Response to Submissions</i>	14
4	SUBMISSION BY LOCAL AND STATE GOVERNMENT AGENCIES	15
4.1	RMS and North Sydney Council's Submission	15
4.2	Council's Concerns	15
4.3	Other Submissions from the General Public	16
4.4	Potential RMS Concerns	16
5	FINDINGS AND DRAFT CONDITIONS	17
5.1	Findings.....	17
5.2	Draft Consent Conditions	18
5.3	Conclusion	19

1 INTRODUCTION

1.1 Background

SMEC Australia Pty Ltd (SMEC) has been commissioned by NSW Department of Planning and Infrastructure (DoPI) to review the traffic and transport component of the proposed Graythwaite Concept Plan and Stage 1 Project Application.

The Director General of the DPI has determined that the proposal is a major project pursuant to Part 3A of the *Environmental Planning and Assessment (EP&A) Act 1979* and DoPI is assessing a Concept Plan with a Stage 1 Project Application under a Part 3A assessment regime.

The Director General's Environmental Assessment (EA) requirements (DGRs) for the Concept Plan were issued on 27 October 2010 and include the following traffic and transport related requirements:

- Provide a Transport and Accessibility Impact Assessment prepared with reference to the Metropolitan Transport Plan – Connecting the City of Cities, the NSW State Plan 2010, the NSW Planning Guidelines for Walking and Cycling, the Integrated Land Use and Transport policy package, the NSW Bike Plan and the RTA's Guide to Traffic Generating Development (where relevant), considering the following:
 - As part of the Transport and Accessibility Impact Assessment demonstrate a minimal approach to on-site car parking having regard to the site's accessibility to public transport (note: The Department supports reduced parking provisions, if adequate public transport is available to access the site);
 - Details of the proposed access, parking provisions and service vehicle movements associated with the development;
 - Provide an estimate of the total trips anticipated by the proposed development and identify measures to manage travel demand, increase use of public and non-car transport modes, and assist in achieving the objectives and targets set out in the NSW State Plan 2010; and
 - Identify daily and peak traffic movements likely to be generated by the proposed development, including the impact on nearby intersections and the need for associated upgrading of the network (if required).
- The EA should examine opportunities to improve access for pedestrians between the site and the North Sydney Rail Station to the east, and nearby bus services. The study should address bicycle connections from the site to the surrounding bicycle network and bicycle parking in the proposed development (if relevant). Additionally, the EA should demonstrate compliance with the Disabled access and the Disability Discrimination Act 1992.
- Where the above items are not relevant, a clear justification for why they are not relevant must be provided, including clearly demonstrating that the project would not result in any new services, staff or students.

The DGRs for Stage 1 Project Application were issued on 27 October 2010 and include the following traffic and transport related requirements:

- Provision of a Transport and Accessibility Impact Assessment prepared with reference to the Metropolitan Transport Plan – Connecting the City of Cities, the NSW State Plan, the NSW Planning Guidelines for Walking and Cycling, the Integrated Land Use and Transport policy package and the RTA's Guide to Traffic Generating Development;
- Demonstration of how users of the development will be able to make travel choices that support the achievement of relevant State Plan targets, if the proposal will generate any additional staff or students;
- Detail of the existing pedestrian and cycle movements within the vicinity of the site and determine the adequacy of the proposal to meet the likely future demand for increased

public transport and pedestrian and cycle access, if the proposal will generate any additional staff or students;

- Identification of potential traffic impacts during the construction stage of the project, and measures to mitigate these impacts;
- Description of the measures to be implemented to promote sustainable means of transport including public transport usage and pedestrian and bicycle linkages in addition to addressing the potential for implementing a location specific sustainable travel plan, if the proposal will generate any additional staff or students;
- Identification of daily and peak traffic movements likely to be generated by the proposed development, including the impact on nearby intersections and the need / associated funding for upgrading or road improvement works (if required);
- Details of the proposed access, impacts on the existing parking provisions of the school;
- Identification of minimum levels of on-site car parking for the proposed development having regard to the public transport accessibility of the site, opportunities for car sharing, local planning controls and RTA guidelines (note: The Department supports reduced parking provisions, if adequate public transport is available to access the site), if the proposal will generate any additional staff or students; and
- Where the above items are not relevant, a clear justification for why they are not relevant must be provided, including clearly demonstrating that the project would not result in any new services, staff or students.

The Sydney Church of England Grammar School (proponent) engaged a number of specialists consulting firms to prepare the following transport related reports to accompany the Concept Plan and Stage 1 Project Application. The relevant documents influencing the traffic and transport component include:

- *Pick Up Zone Options, Shore School - North Sydney*, Cardno, September 2011;
- *Construction Traffic Management Plan (inclusive of Construction Management Plan)*, WSP, September 2011;
- *Revised Environmental Assessment Report*, Robinson Urban Planning Pty Ltd, October 2011;
- *Graythwaite – Part 3A Concept Application & Stage 1 Project Application, Traffic and Accessibility Impact Assessment*, Halcrow, 4 October 2011;
- *Preferred Project Report*, Robinson Urban Planning Pty Ltd, March 2012;
- *Preferred Project Report - Transport Aspects*, Halcrow, 7 March 2012;
- *Preferred Project Report – Transport Response to Submissions*, GTA Consultants, 12 June 2012.

As required under the Part 3A assessment regime, North Sydney Council (Council) and the NSW Roads and Maritime Services (RMS) were consulted during the exhibition of the Revised EA, and Council was again consulted regarding the proponent's Preferred Project Report (PPR).

In addition, during the public exhibition of the revised EA for the proposal a number of residents have submitted letters in support of and opposition to the proposed Concept Plan and Project Application. A Preferred Project Plan has been submitted along with responses to these submissions.

1.2 Project Objectives

The key objectives of the Traffic Impact Assessment (TIA) review are to:

- Provide DoPI with a critical review of the revised EA, including the Preferred Project Report and Government submissions, with regards to traffic, additional student pick-up facility, car parking provisions, bus operation and access arrangement of the proposal;
- Verify that the application adequately addresses the requirements of the Government agencies and the likely traffic impacts of the proposal; and
- Prepare traffic related conditions of approval, to accommodate or minimise the traffic impacts of proposal, should be the proposal be approved and developed.

1.3 Approach to the Traffic Impact Assessment Review

The approach and tasks carried out as part of the TIA review are as follows:

- Conduct of a critical review of the revised EA, Preferred Project Plan and traffic related State Government submissions;
- Review of all comments/submissions by the Government agencies (RMS and Council) with regards to the likely traffic impacts, car parking arrangement and access arrangement outlined in the revised EA, Preferred Project Plan and the associated TIA reports;
- Preparation and submission of a draft report and recommended traffic related consent conditions, should the application be considered for approval and development;
- Meeting with the DoPI to discuss the preliminary findings from the review and clarify the draft recommended traffic related consent conditions; and
- Inclusion of DoPI's comments and finalisation of the draft report and draft recommended traffic related consent conditions for submission as a final report.

1.4 Report Structure

The remainder of the report is structured as follows:

- **Section 2** provides a detailed description of the Concept Plan and Stage 1 Project application;
- **Section 3** provides a review of the traffic related documentation supporting the project application;
- **Section 4** summarises the concerns raised in the RMS, Council and local residents traffic related submissions; and
- **Section 5** presents findings/recommendations of the revised TIA, and draft traffic related conditions of consent, should the application be approved and developed.

2 DESCRIPTION OF THE PROPOSED CONCEPT PLAN AND STAGE 1 PROJECT APPLICATION

2.1 The Proposed Concept Plan and Stage 1 Project Application

The proposal, as described in the Revised EA and revised by the PPR, seeks the approval of a Concept Plan and concurrent Stage 1 Project Application for the extension of the Shore School campus onto the Graythwaite site pursuant to Part 3A of the Environmental Planning and Assessment Act.

The revised Concept Plan comprises:

- Use of the Graythwaite site as an educational establishment, being the extension of the adjoining Shore school campus;
- Conservation, refurbishment and adaptive reuse of Graythwaite House and the Coach House;
- Demolition of the Ward Building;
- Construction of three new buildings (East Building, North Building and West Building) on the site with a combined gross floor area (GFA) of 6,076 sqm;
- Refurbishment and adaptive reuse of the Tom O'Neil Centre in Stage 1 and its demolition and construction of a new replacement building in Stage 3;
- Pedestrian and vehicular access arrangements including a new student pick up and 48 car parking spaces;
- Capacity or potential to accommodate up to 450 additional students and 45 additional staff;
- Landscaping; and
- Completion of the Concept Plan across three stages.

The Stage 1 Project Application comprises:

- Use of the Graythwaite site and buildings as an educational establishment, being an extension to the adjoining Shore school campus;
- Conservation of the Graythwaite House, the Coach House, Tom O'Neill Centre and associated garden area;
- Minor demolition works;
- Drainage and stormwater improvements, site levelling and landscaping (significantly on the middle and lower terraces) including tree retention, removal and transplanting;
- Use of the Graythwaite middle and lower terrace as a play and educational space;
- Transport, traffic, parking and access improvements to the Graythwaite site and existing Shore school campus and Shore sites;
- Miscellaneous works including site fencing and lighting (to Graythwaite House and the driveway);
- No increase in student or staff population; and
- Landscaping works on western side boundary adjoining properties that interface with the proposed West Building (West Building part of Stage 3).

It is noted that Shore School is only seeking approval for the proposed works under Part 3A if the EP&A Act as represented by the revised Concept Application and Stage 1 Project Application. Stages 2 and 3 of the Concept Plan will each be the subject of further Development Applications.

2.2 Site Location

The Graythwaite site is located in North Sydney adjacent to the Sydney Church of England Grammar School (Shore). Prior to the purchase of the Graythwaite by the Shore School, the site was most recently used as a nursing home operated by Hope Healthcare owned by NSW Department of Health.

A layout of the site locations is shown in **Figure 2.1**.

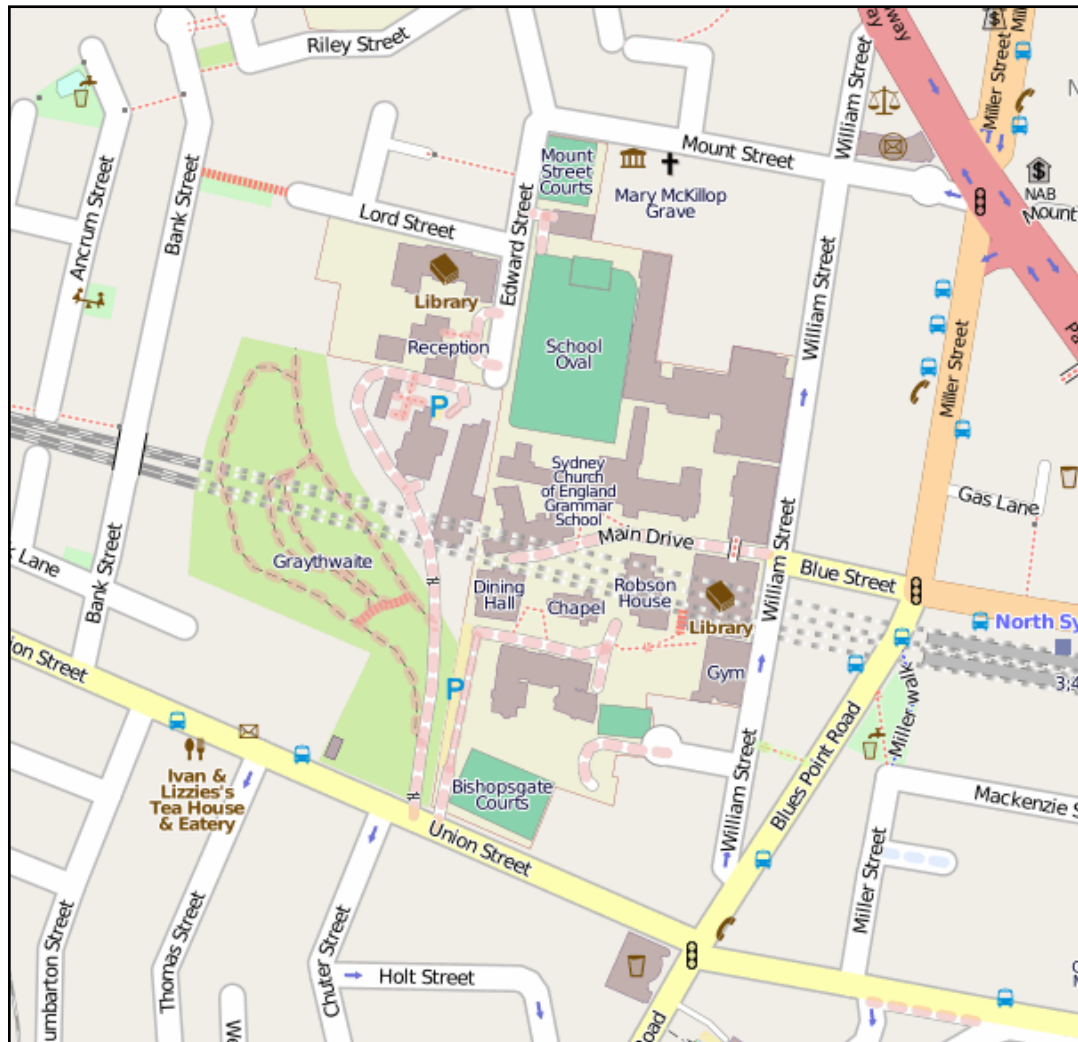


Figure 2.1 - Site Location

Vehicle access is provided by the main entry at Union Street. A secondary vehicle access is available from Edward Street.

The Shore School site, borders the Graythwaite site to the north and east. The Shore School has road frontages along Williams Street, Mount Street, Edwards Street, Lord Street and Union Street. Both sites are located east of North Sydney. The site is close to North Sydney train station.

Project application lot and DP numbers are outlined below:

- Lot 2 DP 539853 (Graythwaite)
- Lot 1 DP 120268 (Shore)

The pick-up facility project application lot and DP numbers are outlined below:

- Lot 1 DP 539853
- Lot D DP 975970
- Lot 3 DP 75717
- Lot 1 DP 570826
- Lot 1 DP 60719
- Lot 1 DP 57339
- Lot C DP 975970
- Lot 3 DP 570829
- Lot 2 DP 18725
- Lot 3 DP 18725

2.3 Scope of Proposal

Following a review of submissions from NSW Government agencies and the general public, the proponent has made significant changes to the concept plan. The transport and car parking implications of these changes can be summarised as follows:

- Reduction in the size of the proposed new buildings. This reduction will cater for an additional Shore School population of 450 additional students and 45 additional staff;
- Proposal to increase the capacity of the 'pick up' facilities at the school. The preferred option for the pickup facility is Option 2 which involves
 - Construction of internal road link between Union Street and Hunter Crescent;
 - Utilisation of existing Union Street car park access
 - Accommodate a minimum of 4 vehicle pick up spaces
 - Vehicles to enter via Union Street and exit via Hunter Crescent;
- Proposal to improve the existing and future school bus operation.
- The Preferred Project is to be staged over 10 to 15 years as follows:
 - Stage 1: Conservation and restoration of Graythwaite House and associated buildings (no additional students or staff);
 - Stage 2: New buildings accommodating an additional 100 students and 10 staff;
 - Stage 3: New buildings accommodating an additional 350 students and 35 staff;
- No change to the service vehicle access arrangements.

The Shore School campus has ample pedestrian and cyclist connections. Details of the pedestrian and cyclist links are shown in **Figure 2.3**.



Figure 2.3 - Pedestrian Access

3 REVIEW OF DOCUMENTATION

3.1 Introduction

The following documents were assessed as part of this review of the traffic and transport component of the proposed Graythwaite Concept Plan and Stage 1 Project Application:

1. *Pick Up Zone Options, Shore School - North Sydney*, Cardno, September 2011;
2. *Construction Traffic Management Plan (inclusive of Construction Management Plan)*, WSP, September 2011;
3. *Revised Environmental Assessment Report*, Robinson Urban Planning Pty Ltd, October 2011;
4. *Graythwaite – Part 3A Concept Application & Stage 1 Project Application, Traffic & Accessibility Impact Assessment*, Halcrow, 4 October 2011;
5. *North Sydney Council: Submission of the Revised EA*, December 2011;
6. *Preferred Project Report – Extension of Shore School onto Graythwaite site at 20 Edward Street, North Sydney*, Robinson Urban Planning Pty Ltd, March 2012;
7. *Preferred Project Report - Transport Aspects*, Halcrow, 7 March 2012;
8. *Comments on Preferred Project Report*, on behalf of SAD@Graythwaite Community Group, April 2012;
9. *Comments on Preferred Project Report*, prepared by two local residents of the Edward Precinct Committee, April 2012;
10. North Sydney Council: Submissions on PPR, 30 April 2012;
11. *Part 3A Review of Existing Traffic and Parking Conditions*, McLaren Traffic Engineering, 3 May 2012; and
12. *Preferred Project Report – Transport Response to Submissions* by GTA Consultants, 12 June 2012.

The following subsections provide a summary of the findings from the review of items 4, 6, 10, 11 and 12 of the aforementioned documents. The remaining items are supporting documents that were reviewed for gaining additional information.

3.2 Transport and Accessibility Impact Assessment

Table 3.1 Review Findings, Transport and Accessibility Impact Assessment, Halcrow

Section / Reference	SMEC Review Comment
General Comment	<p>The DGRs for both the Concept Plan and Stage 1 Project Application require that the proponent submit a TIA based on the Guide to Traffic Generating Developments (RTA, October, 2002). The TIA has addressed most of the requirements. However, the following key issues need further review:</p> <ul style="list-style-type: none">▪ The development needs to specify the worst case scenario - It is not clear from the documents reviewed that this is the case;▪ Identification of daily and peak traffic movements likely to be generated by the proposed development, including the impact on nearby intersections and the need / associated funding for upgrading or road improvement works;▪ The development does not demonstrate a minimal approach to

Section / Reference	SMEC Review Comment
	<p>on-site car parking having regard to the site's accessibility to public transport;</p> <ul style="list-style-type: none"> ▪ Show existing pedestrian and cycle movements within the vicinity of the site; ▪ There are no measures to improve access for pedestrians between the site and the North Sydney Rail Station to the east, and nearby bus services. ▪ The TIA does not detail bicycle connections from the site to the surrounding bicycle network and bicycle parking in the proposed development ; ▪ Assessment of road safety impact; ▪ Impact of construction traffic during site establishment; ▪ Approval from NSW Department of Transport and local bus operators; and ▪ Details and funding for recommended works and traffic management plans.
<p>Section 2: Existing Traffic and Transport Conditions</p>	<p>Existing situation, including site location, road network, site access, traffic volumes, road safety, public transport and active transport appear to be adequately described and results are plausible.</p> <p>The traffic volumes in Table 2.1 correlate to summation of volumes displayed in Figures 3 and 4.</p> <p>It is stated that pedestrian counts were undertaken at various locations as depicted in Figure 2, however these volumes are not shown in the report.</p> <p>A SIDRA analysis was undertaken in Section 2.3.3. However, insufficient detail is provided to allow confirmation of the accuracy of inputs used for the analysis, including the intersection layouts, volumes and operational parameters that have been used.</p> <p>As a result, the accuracy of the results cannot be verified. The inclusion of the 'Movement Summary' output from SIDRA in the report is recommended. This output outlines the Level of Service (LoS), Degree of Saturation (DS) and Average Delays, which are all measurable and comparable results.</p>
<p>Section 4: Overview of Proposed Development</p>	<p>The Concept Application traffic assessment considered the worst case scenario (i.e. 450 additional student and 45 additional staff) as required by the Director-General. It appears, however, that only Stage 2 has been used for this assessment in contradiction the above.</p> <p>The traffic generation rates in Table 4.2 correlate to summation of volumes displayed in Figure 3.</p> <p>It is acknowledged that the on-site bus facility has been investigated. However, insufficient details are provided for its rejection..</p> <p>Modifications to the existing on street bus facilities in William Street will require additional investigation to determine if the facility can cater for the proposed additional bus services.</p> <p>The on-site school bus facilities should be assessed as part of Stage 2 or Stage 3 developments, as there is no increase in student or staff</p>

Section / Reference	SMEC Review Comment
	<p>numbers in Stage 1. It is unclear whether the proponent is required to analyse the on-site bus facility for Stage 1 as it generates no additional student or staff.</p>
<p>Section 5: Transport Assessment of Proposed Graythwaite Master Plan</p>	<p>It is agreed that the number of additional car parks based on the Development Control Plan (DCP) maximum rates is 7 car spaces. It is also agreed that the increase in traffic generated from the additional 7 car spaces would not affect the traffic operation along Union Road.</p> <p>In Section 5.2 on page 57 there is an incorrect reference to Appendix F rather than Appendix G.</p> <p>The source of the traffic generation rates needs to be confirmed. The RTA Guide to Traffic Generating Developments does not provide trip generation rates for schools.</p> <p>Although Table 5.1 is provided, it appears that the trip generation rates specified are not used in the analysis detailed in the report.</p> <p>From experience, the staff trips are generally factored into the student trip generation rates, which differ from the values in table 5.1 which include separate student and staff trip generation rates. It is acknowledged however, that this issue may be inherently resolved once the source of the trip generation rates is confirmed.</p> <p>Notwithstanding the above comments, the magnitude of the trip generation rates for prep and senior schools in Table 5.1 appears plausible. Halcrow's method of using the existing trip generation data obtained from the Travel Survey results for the Edward Street facility is supported. This technique provides a site specific set of trip generation rates applicable for the Shore School.</p> <p>The trip generations only include the prep school students and not the senior school students. It is recommended that further analysis be undertaken to include the senior school students. If the worst case scenario is to be assessed, then the senior school students must be included in the analysis.</p> <p>The 50/50 split between the Edward Street and Union Street facility also does not represent the worst case scenario. A more realistic and conservative case would be to assume that one of the facilities generates more trips (e.g. 60/40 split). However, while we are of the opinion that Union Street would operate satisfactorily under the 60/40 traffic split arrangement, the proponent should confirm this with additional analysis.</p> <p>A SIDRA modelling analysis of the Edward Street facility with the additional traffic has not been incorporated. If the revised volumes (prep and senior student) show an increase in the number of trips utilising the Edward Street facility, then a revised SIDRA analysis should be undertaken.</p> <p>Insufficient detail is provided to confirm accuracy of inputs used for the SIDRA analysis and the accuracy of the SIDRA results cannot be verified. We recommended inclusion of the 'Movement Summary' output from SIDRA in the report. This output summarises the LoS, DS and Average Delays which are all measurable and comparable results.</p> <p>It is not clear that a turn warrant assessment been undertaken to determine if Union Street requires mitigation works to</p>

Section / Reference	SMEC Review Comment
	<p>accommodate the additional traffic.</p> <p>Utilisation of adjacent interchanges to distribute traffic accessing the site was not considered in this assessment. In particular, the impacts on the signalised intersections of Blues Point Road / Blue Street and Blues Point Road / Union Street should be analysed in more detail. The report has not identified possible mitigation works that may be required at these locations due to the additional traffic utilising the Union Street pick up facility.</p> <p>The parking assessment is correct, stating that 7 parking spaces are required for the additional staff. However it does not take into account the fact that there are already 151 formal car spaces, which easily exceeds the maximum 1 in 6 parking ratio (parking spaces / staff). Based on the worst case, 435 staff (390 current and additional 45), would require 73 car spaces. Therefore, the current parking provision of 151 spaces is more than adequate to cater for the additional students and staff. As such, no additional car parking spaces should be provided.</p>
Response 10 to the DGR	<p>Although Stage 1 does not increase staff volumes, it is been stated that the worst case scenario will be assessed for the parking pick up. This is inconsistent with the analysis as only Stage 2 scenario has been assessed.</p>

3.3 Preferred Project Report

Table 3.2 Review Findings, Preferred Project Report, Robinson Urban Planning

Section / Reference	SMEC Review Comment
Section 2: Additional Information	<p>The assessment of the pickup facility in the PM peak only is justified as the traffic flows are more concentrated in the PM peak.</p> <p>Stage 2 trip generation numbers are inconsistent with the Halcrow Traffic Report. Halcrow have undertaken the detailed trip generation assessment and these values should be accurately reflected in the PPR.</p> <p>The SIDRA results are inconsistent with the results in the Halcrow report. The correct values should be presented in the PPR. Further analysis should be undertaken to include the senior school students.</p> <p>The average loading time of 1:05 minutes appears acceptable as it is based on the Travel Survey undertaken for the current Edward Street facility.</p> <p>The queuing theory analysis is accepted. However, it does not include the impact of the increase in traffic generation caused by additional senior school students.</p> <p>It is also noted that the queuing theory utilises a 10% contingency rather than 20% as stated. The impact of the 20% contingency is required to be analysed by the proponent.</p>

3.4 North Sydney Comments on Preferred Project Report

Table 3.3 Review Findings, North Sydney Council Comments on Preferred Project Report

Section / Reference	SMEC Review Comment
Section 6: Preferred Project Report, March 2012	<p>The trip generation rates are not the rates used for analysis in the Halcrow Traffic Report. The Halcrow Traffic Report uses existing trip generation rates (based on the Travel Survey) and does not use the trip generation rates quoted in Table 5.1 of the corresponding report.</p> <p>The parking numbers based on the DCP indicate that the Graythwaite site exceeds the maximum parking allowance, which would support the removal of the 41 additional car parking spaces under the new East Building.</p> <p>The Halcrow Traffic Report has only assessed the pickup in the PM peak as the volumes are concentrated in the PM peak. This approach is supported.</p> <p>We concur with Council that LoS for Union Street / Site Access output by SIDRA raise issues. At the very least, the 'Movement Summary' output from SIDRA should be included in the report. Review of SIDRA input files submitted would help to establish assurance in the quality of the analysis.</p> <p>'Kiss and ride' zones are on-street facilities that impact more critically on passing traffic, which explains Council's requirement for longer lengths. On the other hand, as the pickup facility is located within school grounds and the internal queuing will be confined to the Graythwaite site, it removes the pickup storage requirement from the street. Consequently, the length of the pickup facility appears adequate. Nevertheless, longer provision would be supported as it adds an additional margin of safety.</p> <p>SMEC supports Council's reservations regarding additional bus zones on Williams Street, which require stakeholder approvals. Additionally, the assessment did not analyse the capacity of the Mount Street facility to accommodate the additional services.</p>

3.5 McLaren Traffic Report

Table 3.5 Review Findings, McLaren Traffic Report

Section / Reference	SMEC Review Comment
	<p>The proposed trip generation of 132 one way trips does not agree with other documents. The proposed one way trips for the prep school utilises existing trip rates for the prep school (i.e. 16 trips per 15 minute). The senior school has not been assessed and therefore should not be quoted in the report (i.e. 48 prep and 84 senior, as quoted in Table 5.1 of the Halcrow Traffic Report).</p> <p>The Halcrow Traffic Report states that drop off facilities will share traffic with a split of 50/50 not the 56% as specified in this document.</p> <p>SMEC agrees that the intersection analysis needs to consider the 350 additional senior school students. This is the worst case scenario and should be analysed accordingly.</p> <p>The use of Halcrow's Travel Survey should not be questioned as it is a reliable source of information based on the current traffic and</p>

Section / Reference	SMEC Review Comment
	parking conditions within the Shore School.

3.6 *GTA Response to Submissions*

Table 3.5 Review Findings, GTA Response on Submissions

Section / Reference	SMEC Review Comment
	<p>There are no details to suggest that the proposed pickup facility at Union Street cannot be used as a drop off as well. Regardless of the Edward Street facility operating under capacity, it would appear to be beneficial to the Shore School to also use the Union Street facility as a pickup facility in the AM peak. This scenario would effectively spread the traffic load accessing the school in the AM as well.</p> <p>That 4 car spaces in the existing car park will make way for the new Union Street connections appears to be insufficient justification for provision of 41 additional car spaces under the new East building. In any case, the DCP parking rates indicated that the Shore Campus currently exceeds the recommended parking provisions, which further supports the removal of the proposed 41 car spaces under the new East building.</p> <p>SMEC agrees that the McLaren Traffic report overstates the additional traffic (74 trips). However the response states that ‘approximately 48 movements’ will be generated. This is also incorrect. The Halcrow Traffic Report does not follow the traffic generation rates specified in Table 5.1. The additional trips are based on existing traffic generation data. This leads to an additional 16 trips in a 15 minute peak. Consistency with the traffic generation numbers put forward in the report is needed.</p> <p>The use of SIDRA is supported; however internal queuing needs to be considered as this may impact on vehicle entering the Union Street facility.</p> <p>The queuing theory does use a contingency of 10% instead of the 20% specified. The reasoning for not using a 20% contingency is not acceptable. It is recommended that the proponent undertake the queuing theory assessment using the 20% contingency as stated.</p> <p>It is not clear whether the queuing theory analysis with 6 pickup spaces was also undertaken. If so, the details of this analysis need to be provided.</p> <p>The 99% queue is an unusual measure to report upon. In SIDRA, the 95% back of queue is used as the default parameter to assess intersection performance.</p>

4 SUBMISSION BY LOCAL AND STATE GOVERNMENT AGENCIES

4.1 RMS and Council's Submission

During the public exhibition and the State and Local Government consultations of Concept Plan and Project Application revised EA, RMS and North Sydney Council made submissions raising concerns about the traffic impact of the proposal.

The RMS submissions stated that they have reviewed the revised environmental submission and raise no objections to the revision.

Council's submission outlined in its letter dated 30 April 2012 raised concerns about the likely traffic impact on the local road network, bus operations and adequacy of the car parking provision for the proposal.

A summary of Council's and the local residents' traffic and transport related concerns are summarised in the following subsections:

4.2 Council's Concerns

At its Ordinary Meeting of 23 April 2012, Council resolved to submit a letter recommending refusal of the Part 3A application.

Council staff drafted an engineering report stating the application be postponed until specific conditions are met.

The traffic related concerns on the likely traffic and car parking impacts of the proposal are as follows:

- **Removal of the proposed 41 car spaces under the new East Building**

Council has concerns regarding the quantity of additional on-site parking provisions. The current parking provisions exceed the North Sydney DCP 2002 allocations. Council expects the proponent to adhere to the DCP rates as the Graythwaite development should take into account the impact of the whole of North Sydney, not just the local area. If the proposed 41 car spaces are provided, then Council is concerned that the roads within the North Sydney CDB would increasingly reach failure.

- **Formal drop-off and pickup facility**

Council has concerns regarding the ability of Union Street to handle the additional right turning movements into the Shore school. Council have expressed that the traffic analysis results provided appear low and seeks further information to verify the results put forward.

- **On-site bus facility**

The proposal to create an additional 'bus zone' in William Street is not supported by Council. Council is concerned that no approval has been sought from the North Sydney Traffic Committee regarding modifications to the existing William Street configuration; however this should be addressed under future Development Applications.

Council has reservations regarding the existing public bus stop in Blue Street at the North Sydney Railway Station. There is insufficient detailed analysis and relevant approvals from the appropriate authorities to determine if the existing facility can accommodate the additional bus services generated by the Graythwaite development.

Council also highlights that they are unhappy with the existing school bus operations; in particular the bus operation in Mount Street, which already cause considerable congestion. Council suggests that this facility is already at capacity and any additional loading to the site will cause significant congestion issues and safety issues.

Based on the abovementioned concerns, Council is requesting that an on-site bus zone, to accommodate 11 buses on a staggered basis is provided to be determined by the Shore School.

- **Review Traffic and Transport Issues**

Council requests that the traffic and transport issues be assessed once the modifications have been incorporated above.

4.3 Other Submissions from the General Public

During the public exhibition Concept Plan and Project Application EA, the general public made a number of submissions on the expected environmental impacts, including traffic impacts of the proposal. The submissions included letter of support, objections and petitions from local residents. Over 183 public submissions were received, of which 44% raised issues with traffic and parking aspects of the proposal.

The main traffic related objections are about the capacity of the local road network to accommodate the likely traffic impact of particularly the proposed major events. The comments on the likely traffic impacts include the following:

- The traffic will seriously affect traffic flow on the local streets;
- The provision of more car spaces rather than less was generally supported;
- On-site parking to include student parking to stop student parking in surrounding streets;
- Potential long queues along Union Street (westbound) caused by vehicles turning right into the Graythwaite site or school drive way. Overall effect of Union Street caused by additional traffic;
- The proposed pickup zone be accessed via Union Street with an exit Hunter Crescent;
- Preference of the proposed pickup facility to operate as a drop off area too;
- The heavy congestion experienced at Mount Street due to the school and Mary MacKillop buses using Mount Street; and
- Pedestrian flow issues at Williams Street / Mount Street, particularly due to the Coca Cola development.

4.4 Potential RMS Concerns

As part of SMEC's review of the Graythwaite Concept Plan and Stage 1 Project Application, it is recommended that the RMS be consulted regarding assessment of the likely traffic impact of the proposal on the following sites:

- The intersection of Blues Point Road / Blue Street;
- The intersection of Blues Point Road / Union Street;
- Traffic assessment of the expected traffic conditions on the surrounding road network from the traffic information close to the development site.

5 FINDINGS AND DRAFT CONDITIONS

5.1 Findings

Following is a summary of the key findings from this TIA review.

Revised Traffic Generation Potential

The Project Application does not account for the worst case scenario. With a range of traffic generation potential from the different event categories, the TIA accompanying the Project Application should have estimated the traffic generation for the worst case scenario, i.e. 100 additional prep students, 350 additional senior students and 45 additional staff.

For the purpose of providing a more robust traffic assessment, it is recommended that the additional senior school student be incorporated into the analysis, so that more relevant traffic analyses can be conducted. This traffic generation potential is higher than the traffic generation potential estimated in the TIA for the proposal.

From the information provided, SMEC cannot validate the accuracy of the SIDRA results. It is recommended to include the 'Movement Summary' output from SIDRA in the report, which outlines the LoS, DS and Average Delays which are all measurable and comparable results.

Traffic Distribution

The TIA however only considers traffic at the Union Street facility and does not consider traffic distribution on Edward Street facility. The inclusion of the senior school students would significantly impact on the total trips generated by the additional students and staff; as such a more detailed analysis is required.

The assessment of the pickup facility in the PM peak only is justified because the traffic flows are more concentrated in the PM peak.

From the information provided to date, it is assumed that the traffic split between the Edward Street and Union Street facility is 50/50. This assumption does not represent a conservative case and potentially a 60/40 split should be tested.

Parking Demand

The TIA does not provide adequate justification for the inclusion of 41 proposed car spaces under the new east building. Shore School currently has 151 formal car spaces, which exceeds the DCP 2002 maximum allowance of 1 in 6 parking spaces (parking spaces / staff). Based on the worst case, 390 current staff (including part time) and the additional 45 staff, this would equate to 435 staff, with a requirement for 74 car spaces. Consequently, it is recommended that no new additional car parking spaces should be provided.

Pick-up Facility

There are no details to suggest that the proposed pickup facility at Union Street cannot be used as a drop off facility as well. Regardless of the Edward Street facility operating under capacity, it would appear to be beneficial to the Shore School to also use the Union Street facility as a pickup facility in the AM peak. This scenario could effectively spread the traffic load accessing the school in the AM as well.

Bus Facility

It is acknowledged that the on-site bus facility has been investigated. However inadequate details for the rejection of the on-site bus facility were provided.

The proposal to create an additional 'bus zone' in William Street is not supported. Similarly the use of the existing public bus stop in Mount Street and Blue Street at the North Sydney Railway Station requires detailed analysis and relevant approvals from the appropriate authorities to determine if the existing facility can accommodate the additional bus services generated by Graythwaite development.

Queuing

The queuing theory does use a contingency of 10% instead of the 20% specified. The reasoning for not using a 20% contingency should not be considered acceptable. It is recommended that the proponent undertake the queuing theory assessment using the 20% contingency.

5.2 Draft Consent Conditions

Should the Concept Plan and Stage 1 Project Application be considered further for approval, the following traffic related consent conditions are recommended for Stage 1 Project Application and for future Development Applications:

Stage 1 Draft Consent Conditions:

1. The scenario being assessed is clearly defined. The Project Application should estimate the trip generation for the worst case scenario, i.e. 100 additional prep students, 350 additional senior students and 45 additional staff;
2. There appears to be inconsistencies with all submissions regarding trip generation rates. Trip generation rates need to reflect worst case scenario as required by the DGRs. This is clearly the Stage 3 trip generation;
3. Additional output from SIDRA should be provided;
4. The raw traffic analysis file is provided to validate the results in the Halcrow Traffic report;
5. The impact of the Union Street facility on the surrounding signalised intersections at Blue Point Road/Blue Street and Blues Point Road/Union Street should be analysed. There is a wider area impact of providing the new Union Street facility which must be investigated;
6. A detailed analysis of an on-site bus facility within the Shore School is needed;
7. No additional parking provisions should be required on the site;
8. A turn warrant assessment accompanying the traffic report is required to determine if Union Street required mitigation works to accommodate the additional traffic;
9. The proponent is requested to provide an indication of why the pickup facility cannot be used as a drop off facility in the AM peak; and
10. After these issues have been addressed, the Stage 1 project application should be submitted to RMS for review and approval.

Future Development Application Consent Conditions:

1. Agreement with local public transport operators and North Sydney Traffic Committee regarding modifications to the bus facilities along Williams Street;
2. A Workplace Travel Plan needs to incorporate future developments of the Shore School;
3. A Traffic Management Plan is to be submitted to RMS and DoPI for Stage 1 development;
4. A Construction Traffic Management plan for the construction associated with Stage 1 development is to be prepared and approved by DoPI and RMS prior to construction;

5. Road Safety Audits will have to be carried out and approved by RMS for the access points off Union Street and egress off Hunter Crescent;
6. Green Travel Plan is to be developed highlighting available public and alternate transport options for accessing the site; and
7. All access points and associated intersection treatments are to be reassessed, designed and constructed to DoPI and RMS requirements.

5.3 Conclusion

The Preferred Project Plan for the Graythwaite development would result in moderate traffic impacts on the local road network. The Council has expressed concern about the adequacy of the local road network to accommodate the traffic impact from such level of development. It is recommended that the application be supported by additional traffic information.

The Project Application should estimate the trip generation for the worst case scenario, i.e. 100 additional prep students, 350 additional senior students and 45 additional staff. For the purpose of providing a more robust traffic assessment, it is recommended that the additional senior school student be incorporated into the traffic analysis. This traffic generation potential is higher than the traffic generation potential estimated in the TIA for the proposal.

The current parking provisions within the Shore School are adequate and Council's push for the removal of the 41 car spaces under the new east building is supported.

A more detailed investigation into an on-site bus facility is required. There is insufficient evidence and analysis undertaken to assess the proposed mitigation measures to the bus operations to Blue Street and Mount Street, as well as the additional 'bus zone' arrangement on Williams Street. As such, SMEC supports Council's argument that a formal on-site bus facility be incorporated to accommodate extra buses on a staggered basis is provided to be determined by the Shore School.

Based on the current Preferred Project Plan and the assessment accompanying the application, SMEC considers that additional information be provided for appropriate assessment and determination of the application. It is recommended that additional information is provided by the proponent for validation of the Preferred Project Plan. However, if DoPI wishes to consider the application further, then the Draft Conditions of Consent provided in this report are recommended.