LORETO KIRRIBILLI SCHOOL CONCEPT AND STAGE 1 REDEVELOPMENT TRAFFIC AND PARKING PEER REVIEW REPORT

FOR

DEPARTMENT OF PLANNING AND ENVIRONMENT

BITZIOS consulting

Gold Coast
Suite 26, 58 Riverwalk Avenue
Robina QLD 4226
P: (07) 5562 5377
W: www.bitziosconsulting.com.au

Brisbane
Level 2, 428 Upper Edward Street
Spring Hill QLD 4000
P: (07) 3831 4442
E: admin@bitziosconsulting.com.au

Sydney
Studio 203, 3 Gladstone Street
Newtown NSW 2042
P: (02) 9557 6202

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CONTENTS

Tables

Figures

Appendices

1. INTRODUCTION

1.1 PROJECT BACKGROUND AND DESCRIPTION

Bitzios Consulting was engaged by the Department of Planning and Environment ("DP&E") to undertake an Independent Peer Review of the Traffic and Parking Impact Assessment of the Staged Development of Loreto Kirribilli at 85 Carabella Street, Kirribilli. The purpose of this independent review is to determine if the Environmental Impact Statement documents related to traffic and transport adequately assesses the local traffic impacts, whether the SIDRA modelling assessment is appropriate and to specify any additional information required from the applicant or make recommendations where issues have not been adequately addressed.

The main purpose of this report is to summarise the EIS review of traffic components as it relates to the above development for consideration by DP&E. Further to this, consideration to the reasonableness of Council's comments is part of this assessment.

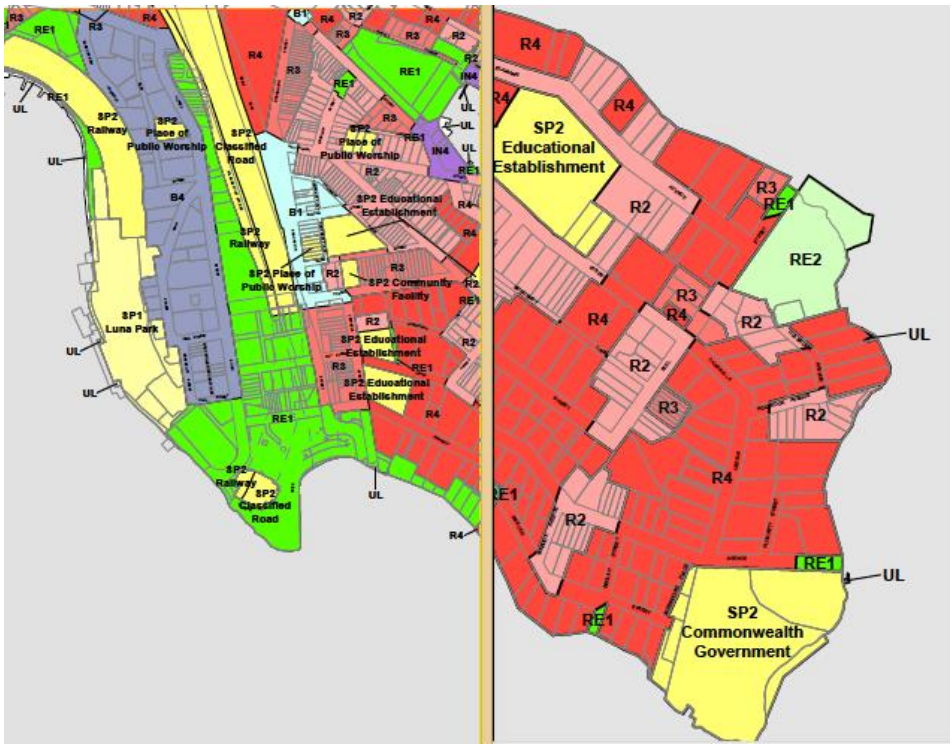
The proposed development is located at the existing Loreto Kirribilli School, 85 Carabella Street, Kirribilli. The application seeks approval for:

- a three-stage plan of alterations and additions to the school and upgrades to facilities to accommodate an additional 30 students, bringing the total to 1,130 students (the applicant revised this during our review period to amend the increase down from 100 to 30 additional students); and
- Stage 1 works, which include a new 7-storey learning hub, extensions to the existing gymnasium and improved accessible connections between buildings and other works.

The main issue raised by North Sydney Council relates to impacts on the existing drop-off and pick-up zone on Carabella Street and a potential relocation of this within the site. Council also raised concerns regarding the appropriateness of use of SIDRA modelling for this assessment.

1.2 SURROUNDING LAND USES

The zoning of land uses, as described in the North Sydney Local Environmental Plan in the area surrounding the development site are provided in Figure 1.1.



Source: North Sydney Council LEP 2013

Figure 1.1 Land Use Zoning surrounding development site

In relation specifically to traffic and transport, the following land uses surround the development site:

- Mainly residential premises in the immediate vicinity;
- Kirribilli Town Centre to the west;
- St Aloysius' College to the south west;
- Our Lady Star of the Sea Church to the north;
- Kirribilli House and Admiralty House to the south east; and
- Milsons Point commercial precinct to the far west.

1.3 COMPLIANCE WITH APPLICABLE LEGISLATION / ENVIRONMENTAL PLANNING INSTRUMENTS

This assessment has been undertaken in consultation with the following Legislation and Environmental Planning Instruments:

- North Sydney Local Environmental Plan 2013;
- North Sydney Development Control Plan 2013;
- State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017; and
- Roads and Maritime Guide to Traffic Generating Developments 2002.

1.4 DEPARTMENT OF PLANNING AND ENVIRONMENT SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS (SEARS)

A letter from JBA to the Secretary, Department of Planning and Environment dated 25/8/2016 requested the Secretary's Environmental Assessment Requirements. In relation to Traffic and Parking, Section 5.4 of this letter notes that "There will be no changes to existing traffic and parking arrangements in the immediate future. However, it is acknowledged that development in the eastern precinct may alter traffic and parking arrangements. A traffic and parking study will accompany the EIS to address these matters"

In response to this request, a SEARs under Section 78A(8A) of the *Environmental Planning and Assessment Act Schedule 2 of the Environmental Planning and Assessment Regulation 2000* was issued on 22/9/2016. The following items relate to traffic and parking:

- 1. Statutory Context
  - State Environmental Planning Policy (Infrastructure) 2007;
  - North Sydney Local Environmental Plan 2013
- 2. Policies and Guidelines
  - NSW Long Term Transport Master Plan;
  - Sydney's Bus Future;
  - Sydney Cycling Future;
  - Sydney's Walking Future; and
  - Healthy Urban Development Checklist, NSW Health
- 6. Transport and Accessibility
  - Prepare a transport and accessibility impact assessment including but not limited to the conditions as provided in a copy of the SEARs in Appendix A
- Plans and Documents
  - Preliminary Construction Management Plan, inclusive of a Preliminary CTMP detailing vehicle routes, number of trucks, hours of operation, access arrangements, parking arrangements and traffic control measures at all stages of construction (Stage 1).
- Consultation in particular with North Sydney Council and Transport for NSW with amendments as requested by these agencies.

A copy of the Secretary's Environmental Assessment Requirements (SEARs) is provided in Appendix A.

2. REVIEW OF APPLICATION

2.1 REVIEW OF ETHOS URBAN ENVIRONMENTAL IMPACT STATEMENT (*EIS* REPORT)

This section provides a technical review of the traffic and transport components of the *Loreto Kirribilli State Significant Development Environmental Impact Statement 85 Carabella Street, Kirribilli Concept Proposal and Stage 1 Development Application ("EIS Report").* The *EIS Report* includes the following in Section 7.3 - Parking, Traffic and Servicing:

- Section 7.3.1 - Parking; which includes existing parking environment, parking controls and parking impact assessment;
- Section 7.3.2 - Traffic, which includes existing traffic environment. traffic generation, traffic assessment and Residential Amenity; and
- Section 7.3.3 - Servicing, which includes waste management procedures.

In most cases the *EIS Report* is consistent with the Traffic and Parking Assessment by McLaren Traffic Engineering *("Traffic Report")*. The sections that are consistent are referred to in more detail in Section 2.2. The following refers to inconsistencies between the *EIS Report* and the information presented.

The *EIS Report* notes in Section 7.3.3 that only vehicles of up to 5.2 metres can be accommodated by the loading area in the new Learning Hub. However, Table 12 shows that all vehicles loading at the site will be greater than 5.2 metres in length. Further to this, the hours of loading and unloading as noted in the *EIS Report* are to be 7:00am to 6:00pm Monday to Saturday; details on the Servicing Movements as specified in Table 12 of *EIS Report*, "once per term" is not specific enough for an assessment.

2.2 REVIEW OF TRAFFIC REPORT AGAINST SEARS

Prior to a detailed review of the *Traffic and Parking Impact Assessment of the Staged Development of Loreto Kirribilli at 85 Carabella Street, Kirribilli* - McLaren Traffic Engineering & Road Safety Consultants – (*"Traffic Report")* dated 25 July 2017, a high level review based on the SEARs was undertaken. This assessment is shown in Table 2.1.

Table 2.1 Review of Traffic Report against SEARS

SEARs requirement	Addressed in Traffic Report Section	Any additional information required for Traffic Report
Page 3, Part 6, Bullet Point 1 the existing and proposed pedestrian and bicycle movements and facilities within the vicinity of the site and to public transport facilities as well as measures to maintain road and personal safety in line with CPTED principles.	*Traffic Report* Section 4.3 limited information on Bicycle & Motorcycle Parking Requirements.	Existing and proposed pedestrian movements not adequately addressed in *Traffic Report,* specifically relating to pedestrian movements from school to Bradfield Park for school bus operations. Existing and proposed bicycle movements not adequately addressed in *Traffic Report* and subsequent letters dated 4 May 2018 and 11 May 2018 and 4 June 2018 from author of the *Traffic Report.* Detailed assessment of pedestrian and cyclists access routes to school is needed.

SEARs requirement	Addressed in Traffic Report Section	Any additional information required for Traffic Report
Page 3, Part 6, Bullet Point 2 an estimate of the total daily and peak hour trips generated by the proposal, including vehicle, public transport, pedestrian and bicycle trips	*Traffic Report* Section 4.1.3 notes that 90% vehicle driver for staff, which would equate to 162 morning peak trips to the site. *Traffic Report* Section 5 notes proposed trip generation by all modes	Proposed trip generation adequately described in *Traffic Report*
Page 3, Part 6, Bullet Points 3, 4 and 7 - the adequacy of public transport to meet the likely future demand of the proposed development; and impact of the proposed development on existing and future public transport infrastructure within the vicinity of the site; and the proposed active transport access arrangements and connections to public transport services;	*Traffic Report* Section 2.5 provides details on existing public transport services to and from the site.	The adequacy of public transport to meet the likely future demand of the proposed development is not adequately addressed in the *Traffic Report.* The impact of the proposed development on existing and future public transport infrastructure within the vicinity of the site is not adequately addressed in the *Traffic Report.* Subsequent letters dated 4 May 2018 and 11 May 2018 and 4 June 2018 from author of the *Traffic Report* also do not adequately address the situation.
Page 3, Part 6, Bullet Point 5 measures to promote travel choices that support sustainable travel, such as a location-specific sustainable travel plan, provision of end-of-trip facilities, green travel plans and wayfinding strategies	*Workplace Travel Plan for the Loreto Kirribilli School at 85 Carabella Street* prepared by Loreto Kirribilli and assessed and approved by McLaren Traffic Engineering.	Workplace Travel Plan adequately described in the development application.
Page 3, Part 6, Bullet Point 6 the daily and peak (AM, PM and events) transport trip movements impact on nearby intersections, with consideration of the cumulative impacts from other approved developments in the vicinity, and the need/associated funding for upgrading or road improvement works (if required).	*Traffic Report* Section 5.4 addresses the peak hour trip generation and its impacts.	*Traffic Report* adequately describes the trip movements and their impacts on nearby intersections.

SEARs requirement	Addressed in Traffic Report Section	Any additional information required for Traffic Report
Page 3, Part 6, Bullet Point 8 the proposed access arrangements, including car and bus pickup/drop-off facilities, and measures to mitigate any associated traffic impacts and impacts on public transport, pedestrian and bicycle networks;	*Traffic Report* Section 4.2 provides limited information on parent drop-off and pick up; however, a more detailed assessment is provided in subsequent letters dated 4 May 2018, 11 May 2018, and 4 June 2018, which does address drop-off and pick up.	While the *Traffic Report* and subsequent letters dated 4 May 2018, 11 May 2018, and 4 June 2018 adequately address the pick-up and drop off areas, more information is required in regard to any bus operations for school excursions, pedestrian access to major public transport hubs (such as Milsons Point Station, Kirribilli Ferry Wharf and Bradfield Park bus stop).
Page 3, Part 6, Bullet Point 9 proposed car and bicycle parking provision, including consideration of the availability of public transport and the requirements of the relevant parking codes and Australian Standards.	*Traffic Report* Section 4.1 provide information on proposed car parking and considers the availability of public transport in the area. *Traffic Report* Sections 4.5 and 4.6 address the parking against Australian Standards, noting that the onsite car park is not to be modified.	While the *Traffic Report* adequately addresses proposed car parking and public transport accessibility, more information is required in regard to bicycle parking, more information is required in regard to compliance with Australian Standards AS2890.1 *Off Street Car Parking* and AS2890.6 *Off Street Car Parking for people with disabilities*
Page 3, Part 6, Bullet Point 10 service vehicle access, delivery and loading arrangements and estimated service vehicle movements (including vehicle type and the likely arrival and departure times)	*Traffic Report* Section 4.4 provides information on the type of service vehicles and loading zone accessing the development and delivering goods. Existing deliveries to the site are undertaken kerbside on Carabella Street in the existing Loading Zone or at the rear of the site from Elamang Avenue, no change to these loading procedures are proposed as part of this development application. The new learning hub building will include a loading area with access via the existing driveway to Carabella Street. The report explicitly states that loading area is dimensionally restricted to use by vehicles of up to 5.2m length (B99) due to restricted dimensions of the turning area.	The *Traffic Report* has adequately addressed delivery and loading arrangement. Further clarification about loading zones and service vehicle delivery turning path has been provided in the Traffic Report Annexure I and letters dated 4 June 2018 and 11 May 2018.

2.3 DETAILED REVIEW OF TRAFFIC AND PARKING ASSESSMENT BY MCLAREN TRAFFIC ENGINEERS (*"TRAFFIC REPORT"*)

The following gap analysis was undertaken identifying outstanding matters that are not addressed in the *Traffic and Parking Impact Assessment of the Staged Development of Loreto Kirribilli at 85 Carabella Street, Kirribilli* - McLaren Traffic Engineering & Road Safety Consultants – (*"Traffic Report")* dated 25 July 2017 and Ethos Urban Report dated September 2017.

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

It is noted that the *Traffic Report* assesses the proposed development under the State Environmental Planning Policy (Infrastructure) 2007. (Section 1.2). This policy has been superseded by the State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 and may require a reassessment under the new policy.

2.3.2 Existing Pick Up and Drop Off Facility Analysis

The *Traffic Report* does not provide a detailed description and analysis of the existing school drop off and pick up area on Carabella Street between the junctions of Fitzroy Street and Parkes Street. This would require analysis and data relating to school pick up and drop off for the busiest period of the year. (Sections 1.3 and 4.2)

The *Traffic Report* does not provide an assessment of bus parking / pick up / drop off area, noting that there are 21 dedicated school buses at the site, noted as "Loreto" in the origin or destination in Table 5 on Page 10 of the *Traffic Report.* This table does not confirm the PM period and if the bus stops are located away from the development site in another location, there is no reference in the *Traffic Report* as to how existing school students (junior and senior) access this location. (Section 2.5 and Table 5).

Subsequent information was provided in the letters dated 4 May 2018, 11 May 2018 and 4 June 2018 from traffic consultant to the applicant to adequately address this in the response to DP&E requests for information (see Section 3.4 below).

2.3.3 Road Classifications

The *Traffic Report* does not adequately use the Roads and Maritime and Austroads Standards to confirm the criteria for classifying Carabella Street as a local road given the traffic volumes. (Section 2.1)

Subsequent information was provided to adequately address this in the response to DP&E requests for information (see Section 3.4 below).

2.3.4 Peak Hour Site Visits and Traffic Survey Data

There are no notes or comments in the *Traffic Report* relating to observations from AM peak (8am - 9am) / School Peak (3pm -4pm) / PM peak (4pm - 6pm) site visits for validation of SIDRA modelling presented. This is required to ensure surveys accurately reflect the information to be inserted into the SIDRA models. This is also to demonstrate that the existing surrounding road network traffic conditions are suitable for use of the school (Section 2.3.3 - *Traffic Report*). There are no time periods included for traffic volumes and which peak is referred to in Table 13 (Section 5.4).

Subsequent information was provided to partially address this in the response to DP&E requests for information (see Section 3.4 below). However, the traffic consultant has not explained the method used for calibrating the delay time and back of queue length in the SIDRA models.

2.3.5 Existing Pedestrian Crossing Assessment

The *Traffic Report* does not provide an assessment of the pedestrian crossing at intersection of Carrabella Street and Fitzroy Street using Roads and Maritime Services warrants. There is no reference to how any additional students would be accommodated.

2.3.6 Availability of on-street, all day parking

The *Traffic Report* does not include an assessment of availability of all day parking in the area for residents, staff and visitors. We note that there are 2P restrictions observed on local streets from a desktop search using Google Maps. (Section 2.4). This impacts the latter section of the report where parking impacts are assessed and may require a re-assessment of Parking Impacts (Section 4.1.3).

2.3.7 Road Safety

The *Traffic Report* in the Road Hierarchy Section 2.1.1 and Section 2.1.2 does not provide any information on the 40km/h School Zone. Further to this, the *Traffic Report* does not assess the adequacy of the 40km/h school zone and road safety assessment as 85th percentile speed is greater than 40 km/h during all periods. To enable this analysis, the speed surveys in the *Traffic Report* should be broken down into AM 8am-9am, School 3pm-4pm and PM Peak 5pm-6pm.

2.3.8 Student Breakdown

The *Traffic Report* does not provide a breakdown by school grade by mode of survey considering the different requirements for Student Opal cards for all students. (Section 3.1)

2.3.9 Use of Educational Facilities and Standards Guide

The *Traffic Report* does not provide a background to the use of the *Educational Facilities and Standards Guide* (EFSG) and its application to a non-Government school (Section 4.1.2)

2.3.10 Analysis of Existing Loading Zone

The *Traffic Report* analysis of the existing loading zone and information on how vehicles that are greater than 5.2 metres are to travel on to and off the site in a forward direction (Section 4.4) and the proposed loading bay as part of the Stage 1 Works (as referred to in *EIS Report* Page 69 Section 7.3). More details on the Servicing Movements (as specified in Table 12 of Ethos Urban EIS), "once per term" is not specific enough for an assessment, as noted in 2.1. The *Traffic Report* does not include an assessment under AS2890.2 for the loading dock.

Subsequent information was provided to adequately address this in the response to DP&E requests for information (see Section 3.4 below).

2.3.11 Car Parking, including Persons with a Disability Parking (PWD) parking

The *Traffic Report* does not assess whether the existing car park meets AS2890.1 (Section 4.6) notwithstanding that the on-site car park is not being modified, as a Development Application is proposed to change the site.

The *Traffic Report* does not include any information on the compliance and provision of a Persons with a Disability parking space as per *North Sydney Council DCP* and AS2890.6-2009 - Off-street parking for people with disabilities (Section 4.5). The *Concept Proposal and Stage 1 Development Application Access Review* by Morris-Goding Accessibility Consulting dated 25 July 2017, section 4.8 Car Parking notes the following: "The scope of the development does not include changes to car parking arrangements. At present, there is not an allocated accessible car space, though the school does have an informal arrangement in place. It is recommended that the informal arrangement be upgraded to provide an accessible car parking space in the existing car park in accordance with AS2890.6", further noting that the requirement for 1 space in every 100 carparking spaces or part thereof could be met through the upgrading of one space.

3. COMMUNITY CONSULTATION

3.1 ISSUES RAISED IN SUBMISSIONS RELATING TO TRAFFIC AND PARKING

3.1.1 North Sydney Council

The comments raised by North Sydney Council in their letter dated 27 November 2017 are provided in Table 3.1.

Table 3.1: Submissions Received by DPE relating to Traffic and Parking from North Sydney Council

Comment	Relevance	Reasonable
Point 2 Traffic / Pick up and Drop off - paragraph 1 - comments relating to existing school and morning drop off and evening collection of students.	Traffic generated from the existing development is not relevant as this is an existing situation. Comments raised relating to existing parking shortfalls are not backed by statistical evidence and therefore not relevant.	Not applicable
Point 2 Traffic / Pick up and Drop off - paragraph 2 - comments relating to increasing student and staff population with no consideration to increased on-site parking. Point 5 Traffic, Parking and Transport - Traffic Generation -with comments relating to existing parking being at more than three times the North Sydney Council DCP.	Additional on-site parking is not required as per North Sydney DCP. Therefore the comments raised in Point 2 were superseded by the comments requesting reduced parking to meet the North Sydney DCP maximum parking requirements.	From a traffic engineering perspective, a reduction in parking on site would not be considered reasonable in the context of the development given the existing constraints on and near to the development. It is also reasonable to expect parking to accommodate the number of staff and senior students driving to / from the school, during regular operations
Point 2 Traffic / Pick up and Drop off - paragraph 2 - comments relating to increasing student and staff population with no consideration an internalized pick up / drop off point. Point 5 Traffic, Parking and Transport - Traffic Generation -with comments relating to existing pick up / drop off and relocating queuing to be on-site.	Comments relating to no increases in on-site parking or an internalised pick up / drop off point are relevant.	From a traffic engineering perspective, it is reasonable for this respondent to request information regarding drop off / pick up on a public road.
Point 5 Traffic, Parking and Transport - Traffic Generation - comments relate to adequacy of SIDRA intersection modelling and existing traffic during pick up and drop off times being at saturation.	SIDRA intersection modelling is widely accepted and therefore any adequacy of its use is not relevant. Traffic generated from the existing development is not relevant as this is an existing situation.	Not applicable

Comment	Relevance	Reasonable
Traffic Recommendations - page 8, paragraph 2 comments relating to development of a Green Travel Plan, a review of existing drop off and pick up facility and a condition for a Demolition and Construction Traffic Management Plan be submitted to North Sydney Traffic Committee	Comments relating to development of a Green Travel Plan and a Demolition and Construction Traffic Management Plan are relevant. A Green Travel Plan and Construction Traffic Management Plan has been provided as part of the development application. Traffic generated from the existing development is not relevant as this is an existing situation.	Not applicable

3.1.2 NSW Roads and Maritime Services

The comments raised by Roads and Maritime Services in their letter dated 26 March 2018 are provided in Table 3.2.

Table 3.2: Submissions Received by DPE relating to Traffic and Parking from Roads and Maritime Services

Comment	Relevance	Reasonable
Reiterates that upon the determination of the application, a Construction Traffic Management Plan detailing construction vehicle routes, number of trucks, hours of operation, access arrangements and traffic control should be submitted to Council for approval prior to the issue of a construction certificate.	A Construction Traffic Management Plan and a Construction Management Plan have been provided as part of the development application.	Not applicable

3.1.3 Transport for NSW

The comments raised by Transport for NSW in their letter dated 12 March 2018 are provided in Table 3.3.

Table 3.3 Submissions Received by DPE relating to Traffic and Parking from Transport for NSW

Comment	Relevance	Reasonable
Letter dated 12/3/18 notes that suggested conditions as raised in the TfNSW submission dated 20/11/17 have not been included. These were a Construction Traffic Management Plan (Stage 1 works, Green Travel Plan and Road Safety Evaluation)	A Construction Traffic Management Plan and Green Travel Plan have been provided as part of the development application. A Road Safety Evaluation is relevant given the constraints under the existing situation.	From a traffic engineering perspective, it is reasonable for this respondent to request a Road Safety Evaluation as the current situation was not adequately assessed or described in the information provided as part of the development application. The inclusion of an updated workplace travel plan to consider the additional information requested by Transport for NSW would be also reasonable to include as a Condition of Approval.

3.1.4 Other Submissions

Submissions which specifically relate to Traffic and Parking are shown in Table 3.4.

Table 3.4 Submissions Received by DPE relating to Traffic and Parking

Respondent	Comments	Relevance	Reasonable
Tranplan on behalf of residents at 111 Carabella Street, Kirribilli	In summary, 19 pages of comments were received, 2 paragraphs on page 19 and images on pages 20, 21 and 22 refer to traffic and parking.	Comments raised refer to 90% of staff driving to work and demand for 162 parking spaces, with only 100 parking spaces available; with reference to significant increase to traffic congestion for drop off / pick up, exacerbating the existing traffic and parking problem.	From a traffic engineering perspective, it is reasonable for this respondent to request information regarding location of 162 vehicles travelling to site and query drop off / pick up as current situation was not adequately assessed or described in the information provided as part of the development application.
Separate email submission from Owners in 111 Carabella St	Traffic congestion at limits especially during school events. Construction traffic. Pedestrian safety.	Comments raised relating to existing traffic congestion are subjective and not backed by statistical evidence. School Event traffic management and pedestrian safety comments raised are relevant. Construction traffic has been considered in a CTMP with the development application and therefore addressed and not relevant.	From a traffic engineering perspective, it is reasonable for this respondent to request information regarding school events and pedestrian safety as the current situation was not adequately assessed or described in the information provided as part of the development application.
Resident at 17 Elamang Avenue, Kirribilli	Support for Milson Precinct Committee submission (See above) #2 Access and Traffic	Comments raise relating to narrow streets are irrelevant to the development as this is an existing condition. Increase to student numbers irrelevant to current development with previous approvals allowing up to 1,100 students. Reduction in on-site parking and no on-site student pick-up area is relevant.	From a traffic engineering perspective, it is reasonable to expect parking to accommodate the number of staff surveyed to be travelling to / from the school. Further to this, impacts from pick up / drop off should be considered as part of any increase in students / master plan for the site. The current situation in relation to parking and drop off / pick up was not adequately assessed or described in the information provided as part of the development application.
Residents at SP77406 & SP78922	No comments relating to traffic, parking or drop off/pick up.	Not applicable	Not applicable

Respondent	Comments	Relevance	Reasonable
Owners of 67 Carabella Street, Kirribilli (SP6699) and representations from the Member for the North Shore on behalf of these owners.	Comments relate to traffic during morning and afternoon school peak periods impacting access to their property and use of large buses for students travelling to / from excursions.	Traffic generated from the existing development is not relevant as this is an existing situation, however, any blocking access to / from the development may create a safety issue for emergency vehicles. Use of large buses to site is relevant as this is required to be managed outside of regular travel movements to / from the school.	From a traffic engineering perspective, it is reasonable to expect to have access to and from your property, especially for emergency vehicles. Management of large bus movements for excursions is reasonable as it was not adequately assessed or described in the information provided as part of the development application.
Residents at 33 Willoughby Street, Kirribilli	Comments relate to traffic flow, one-lane roads, bus routes and construction traffic.	Traffic generated from the existing development and narrow streets are not relevant as this is an existing situation. Construction traffic has been considered in a CTMP with the development application and therefore addressed and not relevant.	Not applicable.
Milson Precinct	Comments relate to traffic, limited on-site parking and construction traffic	Traffic generated from the existing development is not relevant as this is an existing situation. Comments raised refer to demand for on-site parking spaces for staff and senior students driving to the school, with only 100 parking spaces available, which is relevant. Construction traffic has been considered in a CTMP with the development application and therefore addressed and not relevant.	From a traffic engineering perspective, it is reasonable to expect parking to accommodate the number of staff and senior students driving to / from the school.
Resident in North Sydney (no address specified)	Comments relate to traffic generation, pedestrian safety and pick up / drop off areas on public roads.	Traffic generated from the existing development is not relevant as this is an existing situation. Pedestrian safety comments raised are relevant.	From a traffic engineering perspective, it is reasonable for this respondent to request information regarding pedestrian safety and drop off / pick up as the current situation was not adequately assessed or described in the information provided as part of the development application.

Respondent	Comments	Relevance	Reasonable
Resident of Kirribilli (no address specified)	Comments relate to traffic generation and wear and tear on roads and footpaths from additional students.	Traffic generated from the existing development and use of the public road network is not relevant as this is an existing situation.	Not applicable.
Resident of Kirribilli (no address specified)	Comments relate to existing traffic during morning and afternoon school peak periods impacting access to their property	Traffic generated from the existing development is not relevant as this is an existing situation, however, any blocking access to / from the development may create a safety issue for emergency vehicles.	From a traffic engineering perspective, it is reasonable to expect to have access to and from your property, especially for emergency vehicles. This is reasonable as it was not adequately assessed or described in the information provided as part of the development application.
Resident of Kirribilli (no address specified)	Comments relate to narrow roads, limited parking, traffic generation from the existing development and school events, on-site parking, drop off and pick-up and road safety.	Traffic generated and from the existing development and narrow streets are not relevant as this is an existing situation. School Event traffic management, pedestrian and road safety, on-site parking and drop-off and pick-up comments raised are relevant.	From a traffic engineering perspective, it is reasonable for this respondent to request information regarding pedestrian and road safety and drop off / pick up. From a traffic engineering perspective, it is also reasonable to expect parking to accommodate the number of staff and senior students driving to / from the school, during regular operations and during school events. The current situation was not adequately assessed or described in the information provided as part of the development application, therefore, the above comments appear to be reasonable.
Resident of Kirribilli (no address specified)	Comments relate to traffic during morning and afternoon school peak periods impacting access to their property.	Traffic generated from the existing development is not relevant as this is an existing situation, however, any blocking access to / from the development may create a safety issue for emergency vehicles.	From a traffic engineering perspective, it is reasonable to expect to have access to and from your property, especially for emergency vehicles This is reasonable as it was not adequately assessed or described in the information provided as part of the development application.

3.2 REVIEW OF RESPONSE TO SUBMISSIONS REPORT (RTS REPORT)

This section of the report reviews any relevant traffic and parking issues and responses within the Ethos Urban report titled *Loretto Kirribilli State Significant Development Application - Response to Submissions 85 Carabella Street, Kirribilli - Concept Proposal and Stage 1 Development Application - Submitted to Department of Planning and Environment On behalf of Loreto Kirribilli February 2018 | 16205 ("RTS Report").*

The *RTS Report* notes that the EIS report and supplementary material was publicly exhibited for a period of 30 days between 19 October 2017 and 17 November 2017. Of the 24 submissions received, three agency submissions related to traffic and parking, these were from Transport for NSW, Roads and Maritime Services and North Sydney Council. This assessment only considers issues raised in relation to traffic, parking, pick-up and drop off.

Section of report	Relevant provision / condition/s	Acceptable/Alternative Requirement
Page 17 point 3 relating to density and local traffic in the immediate locality. Page 17 point 4 relating to more enrolments with no consideration to increasing on -site parking or on-site drop-off and pick-up area.	The *Traffic Report* has determined that the proposed development will not have any adverse impact on traffic and parking in the area. Constraints of the site limit ability to have an on-site pick-up and drop-off area, with management by staff as a mitigation measure. The *Traffic Report* has noted that parking on the site exceeds the North Sydney Council Development Control Plan requirements. The *Traffic Report* and other supporting documents provide information on constraints on the site in regards to additional parking and an on-site drop-off and pick-up area.	Consideration should be given to setting reduction targets for staff travelling to the school by single occupant private vehicle. Further to this, over the 50-year life of the master plan, due consideration should be given to providing additional on-site parking and an on-site pick-up and drop-off area, should the constraints be overcome.
Page 18 point 1 relating to 50-year time span for development. Page 30 Points 1 and Page 31 Points 1 and 2 relating to Traffic Generation and Parking Supply and Traffic Recommendations	The *Traffic Report* includes a Workplace Travel plan and outlines the impacts of the proposed increase of students which has a negligible impact on the existing situation in regards to traffic and parking.	As noted in the proponent's response, over the 50-year life of the master plan, these issues can be addressed as part of subsequent detailed Development Applications.

3.3 REVIEW OF RESPONSES FROM RESIDENTS TO RTS REPORT

One response from a resident was received in relation to the Response to Submissions Report. This is from a resident at 111 Carabella Street. This respondent advised that truck movements, as noted in the Construction Management Plan may impact local residents' amenity. This should be considered in the context that having any heavy vehicle movements during the morning or afternoon school pick up periods may create additional conflicts and is an easily enforceable and suitable outcome to meet the requirements of the deliveries to the site during the development.

Construction traffic has been considered in the CTMP. An updated CTMP should be required and approved prior to construction certificate being issued.

3.4 MATERIAL CHANGES TO PROPOSED DEVELOPMENT

3.4.1 Letter response to Department of Planning and Environment (DP&E) traffic consultant

Letters between the Applicant's traffic consultant and the Applicant, dated 4 May 2018, 11 May 2018 and 4 June 2018 provide responses to the DPE requests for information.

Drop off and pick up area on Carabella Street

- It is understood that the proposed permit "card" system would be enforced by the school by turning away vehicles without a card even though, as Carabella Street is a public road, the school has no legal authority to restrict students from being picked up at this location. The parent would be followed up with educational materials to discourage repeat offences;
- The traffic wardens have no details of their training or certification. Additionally, they would not have authority to restrict drivers from performing manoeuvres such as U-turns or double parking;
- The school crossing attendant may be overwhelmed with the duty of managing and directing traffic alongside their role in managing the safety of the crossing;
- There are not specific numbers provided that would result in the removal of all queuing. As the permit system will be unenforceable, it is unlikely that the expected reduction in queueing will occur.

The letter dated 4 May 2018 has comprehensively explained on-site drop-off/pick-up facilities and negative impacts and constraints associated with proposed development. Further explanation by the traffic engineer has been provided in the letter dated 4 June 2018 regarding management of Drop-off/Pick-up zone and assessment of the impacts of implementing an Honour System in this area.

Increase in student count

The letter dated 11 May states that the proposal is for an increase of some 30 high school students, resulting in approximately 12 vehicles. It then states "the drop-off / pick-up facility provided along Carabella Street is restricted to primary school students only. Therefore, there will be no additional vehicle trips at the existing pick-up / drop-off facility by the proposed increase in senior students". This statement is reasonable, given similar methods of enforcement are used at other schools even though the school would have no legal authority to restrict the pick-up / drop-off area to junior students only, as Carabella Street is a public road, with only control being able to be made over the pick-up area near the school.

Assessment of parking in the area

While the Council DCP requirements may be met for Stage 1, the actual data suggests that the demand for parking at the development is greater than the number of parking spaces available on-site. Given the scale of the development, additional off-street parking should be considered for future stages in order to reduce the impact of the site parking demand on the surrounding streets.

Assessment of bus parking / pick up / drop off area

While the buses do not access the site, the traffic and transport assessment should cover walking routes that students take to and from key public transport locations such as Milsons Point train station, bus stops and Kirribilli ferry wharf.

Assessment of proposed loading zone for Stage 1

The proposed loading area as part of Stage 1 is considered appropriate for the development, given the slope of the site and that vehicles larger than 5.2m would continue to use the on-street loading zone. Sufficient clarification about loading zones and service vehicle delivery turning path has been provided in the Traffic Report Annexure I and letters dated 4 June 2018 and 11 May 2018.

Provision of Persons with a Disability Parking

The Accessibility Report submitted as part of the DA recommends that one of the parking spaces in the car park be designated as a disability parking space that meets AS2890.6-2009. The letter from the traffic consultant does not consider this information at present.

Ensuring existing car park meets AS2890.1

The DA states that no change to the car park has been made, so the existing car park does not need to be assessed to AS2890.1. This may be considered reasonable as long as the Persons with a Disability Parking space is addressed and further consideration is given in latter stages of the development.

Road Classifications

The letter dated 11 May 2018 states “Collector roads generally provide access from local roads to arterial roads. Willoughby Street is not an arterial road. The two-way traffic flows along Carabella Street based upon the tube surveys do not exceed 200 vehicles per hour, traffic flows along Carabella Street are closer to a local road than a collector road.”

SIDRA Model Calibration/Validation

The letter dated 11 May 2018 states” A site visit was undertaken on 1 May 2018 in the afternoon to examine the existing operations of the school during pick-up times. In the experience of McLaren Traffic Engineering, the pick-up operations of a school have a larger impact on the local traffic network than drop-off operations and for the purposes of this advice, a morning site visit was not necessary.”

3.4.2 Letter to Department of Environment and Planning regarding student numbers

A letter between the Applicant's consultant planner and the Department of Planning and Environment dated 15 May 2018 notes that the proposed development is to reduce the development application from an increase of 100 additional students to 1,200 students, to an increase of 30 additional students to 1,130. This letter notes that "As outlined in the supplementary traffic advice, the proposed increase in students and staff will not result in and adverse traffic or parking impacts."

4. TRAFFIC ENGINEERING ADVICE

4.1.1 First Principles Parking Assessment and Provision

If there are currently 90% of staff driving to the school, consideration should be given to reducing this each year to reduce demand for on-street parking in residential areas. The existing site off-street parking does not provide an adequate number of parking spaces for this number of vehicles. Measures should be implemented to encourage a reduction in private car use.

Some initiatives that could be implemented to achieve a reduction in private car use include:

- Staged implementation of additional local parking restrictions throughout Kirribilli by North Sydney Council, which may include a mix of metered and time limited parking;
- Charging for staff parking permits to park on site or at an alternative location; and
- Updating the Workplace Travel Plan that would include travel information for modes other than private vehicle on the school website and school intranet.

It is acknowledged that restrictions on parents picking up their children, particularly those in senior years of the school, is a step towards improving the existing situation. However, a more suitable approach to reduce traffic congestion in the area may be to develop achievable goals for say 5 to 10 years to significantly reduce the number of staff travelling by single-occupancy private vehicles from 90% to say 50% through the above options.

4.1.2 Existing and Future Pick up / Drop off Requirements

Existing pick-up / drop-off conditions may not be considered acceptable. According to the site visit undertaken by the traffic consultant on 1 May 2018, queuing on Carabella Road caused two-way traffic to be blocked. Given the existing condition is already producing an undesirable result, any increase in students attending the school may increase the traffic queue lengths and have a greater impact on the surrounding road network. A development plan of this time frame (50 years) should be able to develop a solution to reduce the impact the school has on the road network.

It is recommended that trial monitoring be undertaken for an operational management plan for the pick-up and drop-off zone.

The estimate of 90% of the staff driving to school results in a large number utilising on-street parking of the surrounding streets. While parking survey counts were undertaken which indicate that the on-street parking has a low occupancy rate, several residents have provided submissions suggesting that the data is not representative of the typical existing conditions. It is not considered appropriate for a large scale, 50-year development to continue to utilise large amounts of on-street parking surrounding the site.

It is recommended that an updated Workplace Travel Plan be implemented to encourage staff to travel to the school via public transport and active transport methods, to reduce the impact that the site has on the surrounding on-street parking.

4.1.3 Road Safety Evaluation

Following on from a submission received from Transport for NSW, as provided in Section 3.1.3, a Road Safety Evaluation should be undertaken as part of this assessment. This Road Safety Evaluation should be undertaken in the following stages:

Stage 1 – Issue identification / problem definition and site visit

- undertake a site visit by a registered Road Safety Auditor to inspect conditions during AM/PM school peak periods;
- assessment of the existing traffic conditions, journey to school patterns and behaviours, entry points and parking;
- assessment of current school bus operations and student access to the public bus service on Carabella Street;
- assessment of current on-street parking demand of the School;

- assessment of current off-street parking provision on-site (e.g. staff and student parking areas); and
- preparation of a report, providing a definition of the existing issues and identification of potential opportunities.

Stage 2 – Traffic Improvement Options

Following on from Stage 1, options to address the safety issues previously identified should be considered, including but not limited to:

- Pedestrian infrastructure requirements on street to improve safe routes to schools;
- On-street parking management, including no stopping, no parking (drop-off and pick-up) areas;
- School bus zones locations and capacity;
- Student parking;
- Review and provide advice on the location of any pedestrian refuges and footpaths; and
- Investigate traffic speed conditions of the local streets in, and near the school zone, and make recommendations regarding:
  - The need for traffic calming devices, locations and type;
  - The need for further reduced speed limit or extension of the school zone;
  - Additional signage and pavement marking (e.g. Chevrons); and
  - Changes to traffic flow (e.g. one-way)

Stage 3 – Stakeholder Engagement and Reporting

Following the preparation of a detailed report, (suitable for North Sydney Council, Transport for NSW, Roads and Maritime Services the school and residents) detailing outcomes and recommendations of the Road Safety Evaluation, a meeting should be held with key stakeholders for the safety review and recommendation traffic management actions.

4.1.4 Pedestrian Access Review

As part of the goal to reduce the number of vehicles used to pick up / drop off students to school, the development should investigate completing a walking plan of the routes used by students to reach public transport. This should cover routes to Milsons Point Railway Station, key bus interchanges and Kirribilli Ferry Wharf. As part of this review, an assessment should be made of the existing routes, covering safety, ease of access, and availability of public transport in the area. This may be included as a Condition of Approval.

4.1.5 Persons with a Disability Park (PWD) provision

The Accessibility Report, submitted as part of the DA, Section 4.8 recommends that "the informal arrangement be upgraded to provide an accessible car parking space in the existing car park in accordance with AS2890.6". The current traffic and transport design indicates no changes to the car park. Given that the development is a 50-year plan, it is considered important to ensure that accessibility requirements are met.

4.1.6 Loading and Servicing Requirements

The proposed loading area as part of Stage 1 is considered appropriate for the development, given the slope of the site and that vehicles larger than 5.2m would continue to use the on-street loading zone.

5. REVIEW OF PROPOSED MEASURES

5.1 MITIGATION MEASURES

5.1.1 Preliminary Construction Traffic Management Plan Letter and Construction Management Plan

This section reviews the letter from McLaren Traffic Engineering dated 25 July 2017 with the subject *Preliminary Construction Traffic Management Plan for the Proposed Staged Development of the Private School at 85 Carabella Street, Kirribilli ("CTMP Letter")* and *Preliminary Construction Management Plan - Loreto Kirribilli - 15 December 2017 - Loreto Kirribilli Master Plan* by APG ("CMP Report").

A summary of conditions and alternatives from the CTMP Letter is provided in Table 5.1.

Table 5.1: CTMP Letter Provisions, Conditions and Acceptable/Alternative Requirements

Section of letter	Relevant provision / condition/s	Acceptable/Alternative Requirement
Section 1.4 Construction Hours of Work	Building construction restricted to 7:00am - 6:00pm Monday to Friday and within hours of 8:00am - 1:00pm inclusive on Saturday with no work on Sundays and Public Holidays.	Acceptable. Agrees with NSW Environment Protection Authority guidelines.
Section 1.5 Construction Site Access Section 1.8 Construction Traffic	Appropriate traffic control will be employed at the driveway to facilitate safe entry and exit of vehicles to the site.	Not acceptable from a traffic engineering perspective in its current form. Requires additional information in regard to timing of trucks entering and exiting the site, specifically during AM and PM peak hour pick up and drop off times, also preferably more movements during school holiday periods, outside of school terms. Further to this in Section 1.8 a note that "Construction traffic should be minimised during start and finish times, however, when a conflict between construction and school drop-off/pick-up times is unavoidable appropriate traffic and pedestrian control will be implemented in proximity to the relevant work zones and/or driveways." Is not acceptable from a traffic engineering perspective as no construction traffic should be arriving during the AM and PM pick up and drop off periods. An updated CTMP should be required and approved prior to construction certificate being issued.
Section 1.6 Work Zones	It is expected that loading / unloading of deliveries / materials will be undertaken on-street and will require 5 work zones at different times of the staged development for construction work along Carabella Street and Elamang Avenue	Not acceptable from a traffic engineering perspective in its current form. Where possible, consideration should be given, notwithstanding the site's constraints, to unloading and loading within the site. Further to this, no loading or unloading should be undertaken during AM and PM peak hour pick up and drop off times. Further to this, relocation of car share vehicles to other parking spaces may further exacerbate existing parking issues for local residents.

Section of letter	Relevant provision / condition/s	Acceptable/Alternative Requirement
Section 1.7 Construction Staff & Parking Requirements	Construction staff numbers will vary day to day depending on the phase of construction. It is expected that a peak of 100 construction staff will be on-site at any one time during construction works and finishes.	Response of "It is considered that the constrained parking surrounding the site will act to self-enforce the use of public transport", is not acceptable from a traffic engineering perspective, considering that most trades people have tools and equipment that is required to be brought to the site each day and their start times do no generally favour public transport, being from around 6am-7am and concluding at the school pick up period of around 3pm-4pm.
Section 1.8 Construction Traffic Section 1.12 Traffic Management Plan Checklist	Construction traffic generated by the development is noted as being moderately high in this section. Construction Traffic is noted as being relatively low and is not expected to measurably increase expected delays or impacts on surrounding road network performance.	It is assumed based on the CTMP letter and CMP Report that the construction traffic generated is moderately high and as such a revised response should be provided which is in accordance with RMS *Procedures for Use in the Preparation of a Traffic Management Plan, version 2.0, December 2001.* An updated CTMP should be required and approved prior to construction certificate being issued.

A summary of conditions and alternatives from the CMP Report is provided in Table 5.2.

Table 5.2: CMP Report Provisions, Conditions and Acceptable/Alternative Requirements

Section of letter	Relevant provision / condition/s	Acceptable/Alternative Requirement
Section 1.4 Construction Hours of Work	Building construction restricted to 7:00am - 6:00pm Monday to Friday and within hours of 8:00am - 1:00pm inclusive on Saturday with no work on Sundays and Public Holidays.	Acceptable. Agrees with NSW Environment Protection Authority guidelines.

5.2 Off-site Parking Facilities

A summary of available off-street parking facilities within 20 minutes' walk of Loreto Kirribilli are shown in Table 5.3.

Table 5.3: Off-site parking facilities near Kirribilli

Car Park	Walking time to School	No. of spaces
Royal Sydney Yacht Squadron (RSYS)	6 minutes	Permit holders only
Luna Park	15 minutes	389 (visitors only)
Kirribilli Club	18 minutes	65 (visitors only)
TOTAL		**454 plus RSYS**

Source: www.parkopedia.com.au

5.3 MANAGEMENT MEASURES

5.3.1 Workplace Travel Plan

The Workplace Travel Plan must provide realistic and clear targets to be met in order to reduce the volume of vehicles accessing the site. For example, an aim of reducing staff travel to the site at a rate of 10% per year provides a quantifiable goal that can be assessed objectively on a regular basis.

Measures included in the Workplace Travel Plan should aim to increase the number of staff using active and public transport services. Measures such as charging for parking on-site, may encourage more staff to use more sustainable options, while increasing parking availability for residents, as a Permit Parking Scheme is already in operation in the area.

The Workplace Travel Plan should also include travel information for modes other than private vehicle, and be available to view on the school website and school intranet.

5.3.2 Construction Management Plan

The Construction Management Plan (CMP) was assessed as an addition to the Construction Traffic Management Plan. Table 5.4 lists issues and requirements with the document.

Table 5.4: CMP Provisions, Conditions and Acceptable/Alternative Requirements

Section of letter	Relevant provision / condition/s	Acceptable/Alternative Requirement
Construction Methodology Plan – Hours of Operation	Typical hours of construction: 7:00 am - 6:00 pm Monday to Friday 8:00 am - 1:00 pm inclusive on Saturday No work on Sundays and Public Holidays.	Acceptable. Agrees with NSW Environment Protection Authority guidelines.
Construction Methodology Plan	Use of Truck and Dog inconsistency. The Construction Traffic Management Plan does not mention using Truck and Dogs, and there are no swept paths provided.	Swept path analysis for Truck and Dogs must be undertaken for the specified haulage routes to demonstrate that this type of vehicle can be accommodated.

The CMP and CTMP should be provided to the DPE, North Sydney Council, and NSW Police for review whenever a new revision is issued.

5.3.3 Swept Paths

Swept paths have not been undertaken for truck and dog vehicles. This analysis should be completed prior to the issue of a construction certificate. Swept paths for articulated vehicles identify several areas where the vehicle enters the opposite lane. Traffic Control Plans have not been provided for these areas to date. There are several locations in swept paths where an articulated vehicle enters the opposite lane or comes into contact with parked vehicles. This has not been indicated on the map. Adjustments to the swept path must be undertaken, or Traffic Control Plans must be created for these areas before construction commences. These areas include:

- Near 71 Broughton Street, Kirribilli;
- Near 31 Broughton Street, Kirribilli;
- The intersection of Broughton Street and Bligh Street, Kirribilli;
- Opposite 27A/27B Elamang Avenue, Kirribilli; and
- The intersection of Hipwood Street and High Street.

The articulated vehicle swept path also appears to drive over the kerb at the intersection of Elamang Avenue and Willoughby Street.

The above changes may be included as Conditions of Approval.

5.3.4 Traffic Warden

The general duties of the traffic wardens are defined in Annexure B of the letter response from the Applicant's traffic consultant dated 4 May 2018:

Perform traffic control along both Carabella Street and Elamang Avenue

No details of this traffic control are provided. No Traffic Control Plans have been submitted as part of the traffic and transport planning component of the DA. Suitable Traffic Control Plans, developed by Traffic Engineers with appropriate RMS certification should be submitted for approval alongside the DA.

Ensure that parents are prevented from double parking and undertaking unsafe U-turns; Ensure that the parking regulations are adhered to; Ensure the safe operation of Carabella Street and Elamang Avenue for both drivers and students

There are no details as to who is providing the authority for traffic wardens to undertake the above actions. As the pick-up and drop-off areas are located on public roads, the traffic wardens do not have the jurisdiction to undertake traffic management and direction of this nature. This may be a suitable arrangement should it be clarified as to if this arrangement applies to the whole of Carabella Road or simply to the drop off / pick up area near to the school.

Traffic Control Plans would allow for a more consistent managing of traffic flow through these streets.

Monitor the flow of traffic to remain continuous

Queuing has already been observed to be an existing condition of the site during pick-up and drop-off periods. While the traffic wardens may be able to assist in the pickup/drop off area immediately adjacent to the school, it is recommended that consultation with NSW police and North Sydney Council be undertaken to investigate the option of increasing Police and Council officer presence in the area to assist in traffic management and enforcement of rules and regulations during school pick-up / drop-off peak periods.

5.3.5 Road Safety Program

The NSW Centre for Road Safety, part of Transport for NSW, publishes material suitable for use by schools to educate students on road safety. The *Keeping Our Kids Safe Around Schools* document available on their website provides advice on road safety in schools, which include relevant items such as:

- Keeping your children safe when dropping off and picking up at school;
- Walking together safely to and from school;
- Keeping children safe in and out of the car;
- Wearing helmets and riding safely;
- Your guide to driving and parking safely near schools;
- Keeping safe around school crossings; and
- 40 km/h school zones.

A Road Safety Campaign to inform and educate staff, students and their parents and local residents would be a suitable solution to address any issues raised in a Road Safety Program.

5.3.6 Road Safety Audit

It is recommended that a Road Safety Audit be undertaken for the Construction Traffic Management Plan, swept paths and Construction Management Plan before Construction Certificate is issued.

6. CONCLUSIONS

6.1 CAPPING STUDENT NUMBERS

The existing conditions of the site indicate that excessive queueing, traffic blockages and high numbers of staff utilising private vehicles are issues affecting the surrounding road network. The proposed development fails to provide adequate mitigation measures to manage these issues. The proposed Operational Transport Management Plan must be demonstrated to reduce traffic congestion around drop-off and pick-up times, otherwise any increase in student numbers is not supportable.

The community responses show that some residents are frustrated with the state of the traffic, and as the existing student numbers are causing considerable strain on the road network, it is not recommended that any increase in student numbers be permitted until the Operational Transport Management Plan is proven.

6.2 OPERATIONAL TRANSPORT MANAGEMENT PLAN

The proposed traffic wardens are expected to have a negligible impact in relieving the pressure on the road network, as they are unable to enforce any of the road or parking restrictions existing around the site, as the roads are public. The school and its employees do not have the authority to direct and regulate traffic in such a manner. If the school considers this a necessity, it should consult with the NSW Police in order to mitigate the impacts of the vehicles performing the offending actions.

6.3 ROAD SAFETY EVALUATION

As noted in Transport for NSW's response dated 12 March 2018, that prior to an occupation certificate a Road Safety Evaluation (RSE, refer to NSW Centre for Road Safety *Guidelines for a Road Safety Audit Practices* Provided in Appendix C) that specifically evaluates the conditions during school pick-up/drop-off periods along Carabella Street and any other roads significantly utilised for pick-up/drop-off. Appropriate road safety measures shall be implemented based on the outcomes of the RSE in consultation with North Sydney Council.

It is recommended that given the feedback and assessment of the current situation that a RSA is conducted prior to the issue of the Construction Certificate for Stage 1 of the development and prior to the issue of a Construction Certificate for the subsequent stages.

6.4 TRIAL MONITORING PROGRAMME

Concerns raised by residents and stakeholders demonstrate that the applicant is required to implement a successful trial for the limiting of drop-off and pick-ups by senior school students prior to the issue of a construction certificate.

6.5 IMPLEMENTATION OF A WORK PLACE TRAVEL PLAN

As noted in this report, a reduction year on year of staff driving to the site should be introduced as part of the Stage 1 development and continue to be implemented over the lifecycle of the master plan.

6.6 ON-SITE PARKING, DROP-OFF AND PICK-UP, AND SERVICING

Consideration should be given beyond Stage 1 for the development of a drop-off and pick-up zone within the site. Given that the masterplan is for a 50 year period, there would be opportunities for consideration to be given to an on-site drop off, pick up and servicing area.

To ensure that the on-street loading zone is not used for servicing or deliveries during school drop-off and pickup times, it is recommended that deliveries to the school using the on-street loading zone on Carabella Street is limited to be from 10:00am - 2:00pm. Deliveries and servicing by vehicles less than 5.2 metres that can access the internal loading dock may be permitted outside of this time.

7. DRAFT CONDITIONS OF APPROVAL

This section provides draft conditions of approval to avoid, minimise, mitigate, and/or manage residual impacts and we recommend approval be based on the introduction of these conditions.

7.1 ON-SITE PARKING

Provide one (1) Persons with a Disability parking space as per AS 2890.6, as a minimum as part of the Stage 1 development. All parking on the site would be required to comply with AS2890.1 over the 50-year time frame of the project.

7.2 WORKPLACE TRAVEL PLAN

Update the Workplace Travel Plan to include:

- clear targets for reduction in private car use by staff, senior students, and parent drop-off and pick-up at the school;
- travel information for modes other than private vehicle;
- measures to reduce private car use, such as:
  - Charging for staff and senior students to park on site or at an alternative location;
  - a car pooling scheme, for a reduced price or free parking;

Make the Workplace Travel Plan available to view on the school website and school intranet.

7.3 CONSTRUCTION TRAFFIC MANAGEMENT PLAN AND CONSTRUCTION MANAGEMENT PLAN UPDATES

Updates to the CTMP and CMP are required prior to issuing of a Construction Certificate and should include the following:

- Conditions to ensure that emergency vehicle access is maintained for all adjoining properties;
- Make construction delivery times as per APG report at 7:00am - 7:45am, 10:00am - 11:00am and 1:00pm - 2:00pm, prohibiting any deliveries to the site outside of this time;
- Provide an off-site satellite parking area for construction workers, as to be noted in Section 7.5; alternatively provide options for construction workers to park in off-street parking facilities;
- Consider where possible on-site parking for construction vehicles, relocating car share parking for work zones should only be done as a last resort;
- Update swept paths to avoid entering the opposite lane or coming into contact with parked vehicles. If this cannot be achieved, provide Traffic Control Plans for these areas before construction commences. These areas include:
  - Near 71 Broughton Street, Kirribilli;
  - Near 31 Broughton Street, Kirribilli;
  - The intersection of Broughton Street and Bligh Street, Kirribilli;
  - Opposite 27A/27B Elamang Avenue, Kirribilli;
  - The intersection of Hipwood Street and High Street; and
  - The intersection of Elamang Avenue and Willoughby Street, Kirribilli.
- Swept path analysis should be undertaken for proposed truck and dog arrangements; and
- A Road Safety Audit is to be conducted of the CTMP and CMP prior to issue of a construction certificate for Stage 1.

All commercial and delivery vehicles are to be managed according to measures outlined in the Construction Traffic Management Plan specific for the site. Traffic Control Plans (TCPs) are to be prepared in accordance with the RMS *Traffic Control at Work Sites Manual*.

Pedestrian management around the work areas will be required during all stages of work. It is expected that pedestrian management will be required during Stage 1 development. Traffic Control Plans (TCPs) are to be prepared in accordance with the RMS *Traffic Control at Work Sites Manual*.

The site-specific CTMPs will be required to manage people with mobility impairments and consider options to ensure that pedestrians are not severely impacted by construction work. Additionally, they must safely manage pedestrians around the worksite and must produce Pedestrian Management Plans (PMPs) where pedestrian routes are modified or affected by construction.

7.4 ROAD SAFETY EVALUATION

Undertake a Road Safety Evaluation particularly for pedestrian crossing, local road network and for students accessing Bradfield Park. Should the issues raised in the Road Safety Evaluation not be able to adequately mitigated or managed, consideration may be required to reduce the number of students attending the school during significant construction periods, potentially being relocated to another school / temporary site, which is commonly done during construction / significant upgrades to schools.

7.5 CONSTRUCTION WORKER AND SPECIAL EVENT PARKING

Where construction workers are travelling to the site, they are to prioritise utilising public transport where practical. The site manager is to explore the option of a "tool drop" area, where workers can store their tools between shifts to increase the ability of personnel to use public transport options. If workers are travelling to site by vehicle, they are to be encouraged not to use on-street parking, and instead park in off-street parking facilities.

In addition to the updates to the CTMP and CMP as noted in Section 7.3, there is a need to develop a long-term strategy for off-site parking for construction and special events at the school. Further to this, there would be a need to develop Traffic Management Plans for excursion pick up and drop off, particularly noting that these activities are to occur outside of AM drop off and PM pick up times.

7.6 SERVICING AND DELIVERIES

Deliveries to the school using the on-street loading zone on Carabella Street shall be limited to 10:00am - 2:00pm. Deliveries and servicing by vehicles less than 5.2 metres may use the internal loading dock outside of this time.

7.7 OPERATIONAL TRANSPORT MANAGEMENT PLAN AND TRIAL MONITORING PROGRAMME

The applicant must prepare and implement (within 3 months of its approval) an Operational Transport Management Plan (OTMP) for Loreto Kirribilli School in consultation with Council and the local community, which must identify mode share targets for the proposed travel strategies that target a reduction (and ensure "no increase") in private vehicle trips to the site (as compared to the figures provided in the EIS). The OTMP must be approved by the Secretary:

a) Prior to the issue of any Construction Certificate and must include details regarding the travel strategies and interim traffic management measures (including details for management of the drop-off/pick-up zones, including training for supervising staff/traffic controllers) and must be updated to the satisfaction of the Secretary;

b) Prior to the issue of any Occupation Certificate for the Stage 1 work and must include details regarding the travel strategies and the final traffic management measures (including details for management of the drop-off/pick-up zones, including training for supervising staff/traffic controllers), and taking the monitoring results (required in the following condition) into account; and

c) Prior to any increase in student/staff numbers above 1,100 students and 180 staff and taking the monitoring and road safety audit results into account.

The OTMP must provide details for each of the travel strategies and must address the following matters for each of the travel strategies:

a) Objectives and targets;

b) Timing;

c) Responsibility;

d) Funding;

e) Implementation;

f) Monitoring regime to evaluate each strategy; and

g) Monitoring of whether the overall strategies are meeting the targeted reductions in private car trips.

Traffic Wardens are only to supervise behaviour at the drop-off and pick-up areas only, which are located on Carabella Street near the entrance to the school. (NSW Police and North Sydney Council officers have authority to manage local traffic conditions and enforce road rules and parking regulations in other areas.)

7.8 CAPPING STUDENT AND STAFF NUMBERS

No increase in student enrolments or staff numbers is permitted until the Operational Transport Management Plan is proven to be effective in reducing traffic congestion around drop-off and pick-up times.

7.9 PEDESTRIAN AND CYCLISTS ACCESS AND DROP-OFF/PICK-UP CONSIDERATIONS

The OTMP must address the following:

a) Detailed pedestrian and cyclist analysis including the identification of safe route options for the routes used by students to reach public transport. This should cover routes to Milsons Point Railway Station, key bus interchanges and Kirribilli Ferry Wharf. An assessment should be made of the routes, covering safety, ease of access, and availability of public transport in the area;

b) The location and operational management procedures of the drop-off/pick-up zones on Carabella Street near the entrance to the school, including staff management/traffic controller arrangements;

c) The location and operational management procedures for the pick-up and drop-off of students by buses and coaches for excursions and sporting activities, including staff management/traffic controller arrangements;

d) Delivery and services vehicle access and management arrangements;

e) Management of approved access arrangements;

f) Potential traffic impacts on surrounding road networks and mitigation measures to minimise impacts including measures to mitigate queuing impacts associated with vehicles accessing drop-off/pick-up zones on Carabella Street near the entrance to the school; and

g) A monitoring and review program.

8. RECOMMENDATIONS

It is recommended that the above Draft Conditions of Approval are required and to be addressed and approved by NSW Department of Planning & Environment in conjunction with Roads and Maritime Services, Transport for NSW and North Sydney Council.

APPENDIX A

NSW DEPARTMENT OF PLANNING AND ENVIRONMENT

SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS DATED 22 SEPTEMBER 2016

Secretary's Environmental Assessment Requirements

Section 78A(8A) of the *Environmental Planning and Assessment Act* Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*

Application Number	SSD 7919
Proposal Name	Redevelopment of Loreto School
Development Description	Staged development application for redevelopment of Loreto School including: • concept proposal for the staged redevelopment of the school over three stages, including demolition, building envelopes for new buildings, alterations and additions to improve access arrangements and landscaping works; and • concurrent first stage of the development comprising demolition and construction of an Innovation Centre and gymnasium extension in the western precinct and alteration and additions across the campus to improve access, including vertical connection pods.
Location	85 Carabella Street, Kirribilli (Lot 200 DP 1166282)
Applicant	Artazan Property Group
Date of Issue	22 September 2016
General Requirements	The Environmental Impact Statement (EIS) must be prepared in accordance with, and meet the minimum requirements of clauses 6 and 7 of Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* (the Regulation). Notwithstanding the key issues specified below, the EIS must include an environmental risk assessment to identify the potential environmental impacts associated with the development. Where relevant, the assessment of key issues below, and any other significant issues identified in the risk assessment, must include: • adequate baseline data • consideration of the potential cumulative impacts due to other developments in the vicinity (completed, underway or proposed); and • measures to avoid, minimise and if necessary, offset predicted impacts, including detailed contingency plans for managing any significant risks to the environment The EIS must also be accompanied by a report from a qualified quantity surveyor providing: • a detailed calculation of the capital investment value (CIV) (as defined in clause 3 of the Regulation) of the proposal, including details of all assumptions and components from which the CIV calculation is derived. The report shall be prepared on company letterhead and indicate applicable GST component of the CIV; • an estimate of jobs that will be created during the construction and operational phases of the proposed development; and • certification that the information provided is accurate at the date of preparation.

Key issues	**<u>Concept Proposal</u>** The EIS must address the following specific matters: **1. Statutory Context** – including: Address the statutory provisions applying to the concept proposal contained in all relevant environmental planning instruments, including: • State Environmental Planning Policy (State & Regional Development) 2011; • State Environmental Planning Policy (Infrastructure) 2007; • State Environmental Planning Policy No.55 – Remediation of Land; and • North Sydney Local Environmental Plan 2013. *Permissibility* Detail the nature and extent of any prohibitions that apply to the development. *Development Standards* Identify compliance with the development standards applying to the site. Justify any development standards not being met. *Contamination* Demonstrate that the site is suitable for the proposed use in accordance with SEPP 55. → *Relevant Policies and Guidelines:* • *Managing Land Contamination: Planning Guidelines - SEPP 55 Remediation of Land (DUAP)* **2. Policies and Guidelines** Address the relevant planning provisions, goals and strategic planning objectives in the following: • NSW State Priorities; • A Plan for Growing Sydney; • NSW Long Term Transport Master Plan; • Sydney's Bus Future 2013; • Sydney's Cycling Future 2013; • Sydney's Walking Future 2013; and • Healthy Urban Development Checklist, NSW Health. **3. Built Form and Urban Design** • Provide a building envelope study to justify the proposed built form. • Establish appropriate design guidelines and development parameters within the context of the locality, including but not limited to: o site layout; o gross floor area; o building footprints; o height and massing of the building envelopes; and o open spaces, landscaping and tree planting. • Provide a visual impact assessment that identifies any potential impacts on the surrounding built environment and adjoining heritage items. **4. Amenity** Assess amenity impacts on the surrounding locality, including view impacts, overshadowing and acoustic impacts.

5. Staging

Provide details regarding the staging of the proposed development.

6. Transport and Accessibility

Prepare a transport and accessibility impact assessment including, but not limited to the following:

- the existing and proposed pedestrian and bicycle movements and facilities within the vicinity of the site and to public transport facilities as well as measures to maintain road and personal safety in line with CPTED principles;
- an estimate of the total daily and peak hour trips generated by the proposal, including vehicle, public transport, pedestrian and bicycle trips;
- the adequacy of public transport to meet the likely future demand of the proposed development;
- impact of the proposed development on existing and future public transport infrastructure within the vicinity of the site;
- measures to promote travel choices that support sustainable travel, such as a location-specific sustainable travel plan, provision of end-of-trip facilities, green travel plans and wayfinding strategies;
- the daily and peak (AM, PM and events) transport trip movements impact on nearby intersections, with consideration of the cumulative impacts from other approved developments in the vicinity, and the need/associated funding for upgrading or road improvement works (if required);
- the proposed active transport access arrangements and connections to public transport services;
- the proposed access arrangements, including car and bus pick-up/drop-off facilities, and measures to mitigate any associated traffic impacts and impacts on public transport, pedestrian and bicycle networks;
- proposed car and bicycle parking provision, including consideration of the availability of public transport and the requirements of the relevant parking codes and Australian Standards; and
- service vehicle access, delivery and loading arrangements and estimated service vehicle movements (including vehicle type and the likely arrival and departure times).

→ *Relevant Policies and Guidelines:*

- *Guide to Traffic Generating Developments (RMS)*
- *EIS Guidelines – Road and Related Facilities (DoPI)*
- *Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development*
- *Cycling Aspects of Austroads Guides*
- *NSW Planning Guidelines for Walking and Cycling*
- *NSW Bicycle Guidelines (RMS)*
- *Development Near Rail Corridors and Busy Roads – Interim Guideline*

7. Noise and Vibration

Identify and provide a quantitative assessment of the main noise and vibration generating sources during operation. Outline measures to minimise and mitigate the potential noise impacts on surrounding occupiers of land.

→ *Relevant Policies and Guidelines:*

- *NSW Industrial Noise Policy (EPA)*

	8. Ecologically Sustainable Development (ESD) • Detail how ESD principles (as defined in clause 7(4) of Schedule 2 of the Environmental Planning and Assessment Regulation 2000) will be incorporated in the design, construction and ongoing operation phases of the development. • Include a description of the measures that would be implemented to minimise consumption of resources, water (including water sensitive urban design) and energy. **9. Heritage** • Provide a statement of significance and an assessment of the impact on the heritage significance of the heritage items on the site in accordance with the guidelines in the NSW Heritage Manual. • Address any archaeological potential and significance on the site and the impacts the development may have on this significance. **10. Aboriginal Heritage** Where relevant, address Aboriginal Cultural Heritage in accordance with the *Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW* (OEH, 2011) and *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*. **11. Contributions** Address Council's Section 94A Contribution Plan and/or details of any Voluntary Planning Agreement. **12. Flooding** Assess any flood risk on site and consideration of any relevant provisions of the NSW Floodplain Development Manual (2005), including the potential effects of climate change, sea level rise and an increase in rainfall intensity. **<u>Stage 1</u>** The EIS for the construction early works must address the following specific matters: **1. Built Form and Urban Design** • Address the height, bulk, scale and setbacks of the proposed development within the context of the locality, surrounding development, topography and streetscape. • Demonstrate design quality of the proposed development, with specific consideration of site layout, connectivity, open spaces and edges, massing, building separation, building articulation, materials, choice of colours and an assessment against the Crime Prevention through Environmental Design principles. • Detail how services, including but not limited to, waste management, loading zones, mechanical plant are integrated into the design of the development. **2. Amenity** Assess amenity impacts on the surrounding locality, including view impacts, overshadowing and acoustic impacts. **3. Transport and Accessibility** Detail access arrangements for construction of Stage 1 and measures to mitigate any associated pedestrian, cyclist or traffic impacts, including the preparation of a preliminary Construction Traffic

	Management Plan (CTMP) to demonstrate the proposed management of the impact. The CTMP should also consider cumulative impacts associated with other construction activities and assess road safety at any key intersections subject to heavy vehicle movements and high pedestrian activity. → *Relevant Policies and Guidelines:* • *Guide to traffic generating developments (RMS)* **4. Noise and Vibration** Identify and provide a quantitative assessment of the main noise and vibration generating sources and activities during the construction of Stage 1. Outline measures to minimise and mitigate the potential noise impacts on surrounding occupiers of land. → *Relevant Policies and Guidelines:* • *Interim Construction Noise Guideline (DECC)* • *Assessing Vibration: A Technical Guideline 2006* **5. Ecologically Sustainable Development (ESD)** • Include a description of the measures that would be implemented to minimise consumption of resources, water (including water sensitive urban design) and energy. • Demonstrate that the Stage 1 of the development has been assessed against a suitably accredited rating scheme to meet industry best practice. **6. Drainage** Provide a stormwater concept plan detailing how water quality and quantity impacts on drainage systems would be managed. **7. Waste** Preparation of a Waste Management Strategy that identifies, quantifies and classifies the likely waste streams to be generated during construction works for Stage 1 and describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste.
Plans and Documents	The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the Environmental Planning and Assessment Regulation 2000. Provide these as part of the EIS rather than as separate documents. In addition, the EIS must include the following: • Architectural drawings, including dimensions and RLs (Concept and Stage 1); • Site Survey Plan, showing existing levels, location and height of existing and adjacent structures / buildings and boundaries; • Site Analysis Plan; • Stormwater Concept Plan (Stage 1); • Sediment and Erosion Control Plan (Stage 1); • Shadow Diagrams (Concept and Stage 1); • View Analysis / Photomontages (Concept and Stage 1); • Landscape Plan, including identifying any trees to be removed and trees to be retained or transplanted (Concept and Stage 1); • Preliminary Construction Management Plan, inclusive of a Preliminary CTMP detailing vehicle routes, number of trucks, hours of operation, access arrangements, parking arrangements and traffic control measures at all stages of

	construction (Stage 1); • Geotechnical and Structural Report (Stage 1); • Accessibility Report (Stage 1); • Arborist Report; • Acoustic Report; • Acid Sulphate Soils Management Plan (if required); and • Schedule of materials and finishes (Stage 1).
Consultation	During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups and affected landowners. In particular you must consult with: • North Sydney Council; and • Transport for NSW. The EIS must describe the consultation process and the issues raised, and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided.
Further consultation after 2 years	If you do not lodge a development application and EIS for the development within 2 years of the issue date of these SEARs, you must consult further with the Secretary in relation to the preparation of the EIS.
References	The assessment of the key issues listed above must take into account relevant guidelines, policies, and plans as identified.

APPENDIX B

TRAFFIC REPORT AUTHOR - RESPONSES TO QUERIES FROM COUNCIL AND TO QUERIES ON *TRAFFIC REPORT*

M^CLAREN TRAFFIC ENGINEERING

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

4 May 2018 Reference: 16575.07FA

Artazan Property Group
Level 8,
210 George Street,
Sydney, NSW 2000
Attention: Cian Fitzgerald

LETTER RESPONSE TO NORTH SYDNEY COUNCIL WITH REGARD TO THE LORETO KIRRIBILLI SCHOOL AT 85 CARABELLA STREET, KIRRIBILLI

Dear Cian,

Reference is made to your request to provide a response to the comments provided by North Sydney Council with regards to the State Significant Development Application for the proposed staged development of the Loreto Kirribilli School. A response to each of the points raised by North Sydney Council is provided below. This letter should be read as an addendum to the Traffic and Parking Impact Assessment dated 25 July 2017 by M^CLaren Traffic Engineering.

Each of the comments from North Sydney Council is reproduced in *italics* and responded to thereafter in the following sections.

1 Drop-Off/Pick-Up Facilities

1. *That the School be required to review the operation of the existing drop off and pick up facility and include a reconfiguration of the drop off and pick up facility to ensure that all queuing occurs within the School site and not onto the public road, as part of the proposed development.*

The above comment from North Sydney Council can be broken down into two items:

- That a review of the existing drop-off/pick-up operations is undertaken; and
- That an on-site drop-off/pick-up facility be provided with the capacity for the maximum number of queued vehicles currently experienced.

A response to each of these comments is provided in the following subsections. With respect to student numbers, the primary intent of the Concept Proposal is to provide flexible space for existing students in line with the modern-day teaching methods and standards at a rate of 3sqm per student. Whereas schools increasing student numbers can access capital grants through the Association of Independent Schools, Loreto Kirribilli's intent to maintain their existing enrolment patterns is evidenced by the fact that the school is not applying for any capital grants to fund the project.

It has been advised by the School that the current student population is 1096 students and that the maximum future occupancy of the school under the proposal is 1116 students, an increase of just 20 students.

1.1 Provision of On-Site Drop-Off/Pick-Up Facilities

It should be noted that the provision of on-site kiss and drop facilities will result in an increased proportion of parents electing to drop-off and pick-up their children, increasing the total traffic generation of the school. It is likely that the addition of on-site kiss and drop facilities alone would increase the traffic generation of the school by a much greater level than the existing proposal, as it would encourage the parents of *existing* students to drive.

Considering that North Sydney Council's previous position with regards to reducing staff parking was based on the desired reduction of traffic generation, the provision of on-site kiss and drop facilities seems counter to the desired outcomes of Council and it would be beneficial to discuss this aspect of the request for on-site kiss and drop facilities to a greater degree.

Irrespective of the potential negative impacts on the wider traffic network, in anticipation of the request for on-site kiss and drop facilities options for the provision of on-site facilities have been considered by the Architect and the School, with the result being that it is physically and operationally impossible to provide the facilities requested by Council for the following reasons:

- Heritage and landscaping factors which restrict the addition of driveways or alteration of structures along both street frontages of the school;
- The physical and regulatory constraints of the site.

Plans illustrating the constraints of the site have been produced and are reproduced in **Annexure A**.

An assessment of the physical nature of the site and the existing site parking facilities has been conducted from a traffic and parking perspective to establish the opportunities and constraints for the site in providing on-site kiss and drop facilities, with the results summarised in the following sub-sections.

1.1.1 Physical Constraints of Site

The Loreto Kirribilli site is extremely steep, with a difference of approximately 20m of elevation between the Carabella Street and Elamang Street frontages. In addition, any on-site facilities would require extra driveway crossings, resulting in the loss of on-street parking and creating additional points of conflict.

Through a consideration of the numerous traffic, heritage, environmental, topological and planning factors affecting the site, it has been concluded that the addition of an on-site kiss and drop facility is impossible.

1.1.2 Constraints of Existing Car Parking Facilities

The use of the existing school car parking facility off Elamang Avenue for kiss and drop operations has been discussed but is not considered to be an appropriate option for a number of reasons including:

- The existing car parking area is a service area for the site and is generally unsuitable for children on a number of safety grounds including:
    - Lack of safe area in which to wait;

- Air quality concerns;
- Use of this car parking area for deliveries and waste collection operations.

- The entrance and particularly the exit of the car park are unsafe for use by parents, as demonstrated by **Figure 1**, which depicts the sight distance available to drivers exiting the car park;
- Staff would be entering and departing during peak drop-off and pick-up hours and cannot be prevented from doing so under the current independent teachers multi-enterprise agreement (MEA);
- That, as discussed above, any provision of facilities on-site will result in an increase in traffic generation;
- The existing (and increased) traffic generation will be relocated to Elamang Avenue;
- There is not sufficient length within the car park to accommodate the entire queue of vehicles and the overflow onto the street would have the same impact as the current operations of the site.

FIGURE 1: DRIVER SIGHT DISTANCE AT EXISTING CAR PARK EXIT

1.2 Review of Drop-Off/Pick-Up Operations

1.2.1 Existing Operations

A site visit was undertaken on 1 May 2018 in the afternoon to examine the existing operations of the school during pick-up times. In the experience of *M^C^Laren Traffic Engineering*, the pick-up operations of a school have a larger impact on the local traffic network than drop-off operations and for the purposes of this advice, a morning site visit was not necessary.

The pick-up operations along the Carabella Street site frontage were observed during the site visit on 1 May 2018 between the times of 2:40 pm and 3:35 pm. The following relevant notes were made:

- Parents were waiting in the pick-up zone at 2:40 pm when I arrived at the site, with the surrounding area at a very high level of parking occupancy.
- The pick-up operations are well managed by teaching or other staff and are efficient, in that Children are quickly loaded into their parents' vehicles upon their arrival in the signposted area along Carabella Street;
- The limited length of the sign posted pick-up area, with capacity for approximately six cars, is the limiting factor for the pick-up operations;
- Parents were observed to queue in Carabella Street, effectively blocking two-way traffic flow (due to the narrow width of Carabella Street) between approximately 2:50 pm and 3:20 pm.
- During this time when traffic flow was constrained, it was not observed that any traffic attempted to travel north on Carabella Street, all traffic heading north made a left turn at Fitzroy Street.
- No buses were observed to pick up students along the Carabella Street frontage, though two buses (Route 269) were observed travelling north along Carabella Street between 2:40 pm and 3:35 pm.
- A total of 85 vehicles were observed to pick up students between 2:55 pm and 3:25 pm.
- The pedestrian crossing was controlled by a traffic controller from 2:50 pm until 3:45 pm.
- Due to the traffic queues extending north in Carabella Street, the traffic flow in the road was not inhibited by the crossing operations, despite the lollypop man stopping traffic approximately once a minute.

Subsequent to the site visit it has been noted that some senior students were present at the pick-up facility, which is intended as a junior-school-only operation.

1.2.2 School Initiatives

The school is committed to improving the existing function of the drop-off and pick-up and has committed to the following initiatives:

- A new permit system will be implemented, whereby parents will be provided with a card to display in their windshield in order to inform teaching staff on duty of which student is being picked-up by that vehicle. These cards will be provided only to junior school parents and vehicles without a card will not be permitted to pick-up a child. Senior students will not be provided with these cards and will be unable to be picked up from Carabella Street.
- The school has recently hired traffic wardens to control traffic along both Carabella and Elamang Streets. A role description for these wardens is provided in **Annexure B**. The traffic wardens will prevent parents from double parking and undertaking unsafe U-turns and will provide traffic control where required to ensure the safe operation of the two roads for both drivers and pedestrians.
- The lollypop man has recently been granted permission by the police to act as a traffic controller in addition to his duties controlling the operations of the pedestrian crossing. Where necessary he will direct traffic to alleviate blockages in Carabella Street.
- The school will author a formal management plan detailing all the initiatives in place both the discourage the use of private vehicles and to manage the impacts of drop-off and pick-up operations.

1.2.3 Impact of Proposed Initiatives on Existing Operation

It is anticipated that the implementation of the initiatives described in **Section1.2.2** will have the following effects on the operation of the drop-off and pick-up operations of the school:

- The implementation of the permit system will cause a net reduction in vehicles utilising the existing pick-up zone along Carabella Street and reduce or eliminate traffic queues in Carabella Street;
- The addition of suitably qualified traffic wardens to both Elamang Avenue and Carabella Street will increase the traffic flow efficiency and safety of both roads;
- The implementation of a management plan will result in a lower overall private car usage and reduce the impact of the school on the surrounding road network.

1.2.4 Impact of Proposed Development on Existing Operations

Considering that the purpose of the proposed development is to improve the facilities of the school with regards teaching outcomes and that there is no change proposed to the enrolment pattern of the school, it is unlikely that there will be any noticeable impact on the everyday pick-up operations of the site.

In addition, it should be noted that any additional students will be senior students. As previously noted, senior students will be prevented from using the existing drop-off and pick-up zone along Carabella Street and will have no impact on the existing everyday pick-up operations of the site.

2 Recommendation

In summary, the school is committed to improving the drop-off and pick-up operations of the site as a result of the proposed development. Whilst consideration has been given to the provision of kiss and drop facilities on-site, it is impossible to achieve due to the constraints of the site.

Please contact Tom Heal or the undersigned on 02 8355 2440 should you require further information or assistance.

McLaren Traffic Engineering

Tom Heal
Traffic Engineer
BE Civil AMAITPM GradIEAust
RMS Accredited Level 1 Road Safety Auditor
RMS Accredited Work Zone Traffic Management Plan Designer and Inspector

ANNEXURE A: SITE CONSTRAINTS

Internalised Pick-up and Drop-off Options Analysis

Loreto Kiribilli Concept Master plan
Site Plan

▲ Vehicular Entry / Exit Points

Carabella Street

1 Location of existing built form restricts the opportunity for alteration of street frontage.

2 Line of mature trees along the Carabella Street boundary and mature external street trees inhibit the opportunity for alternations along this frontage.

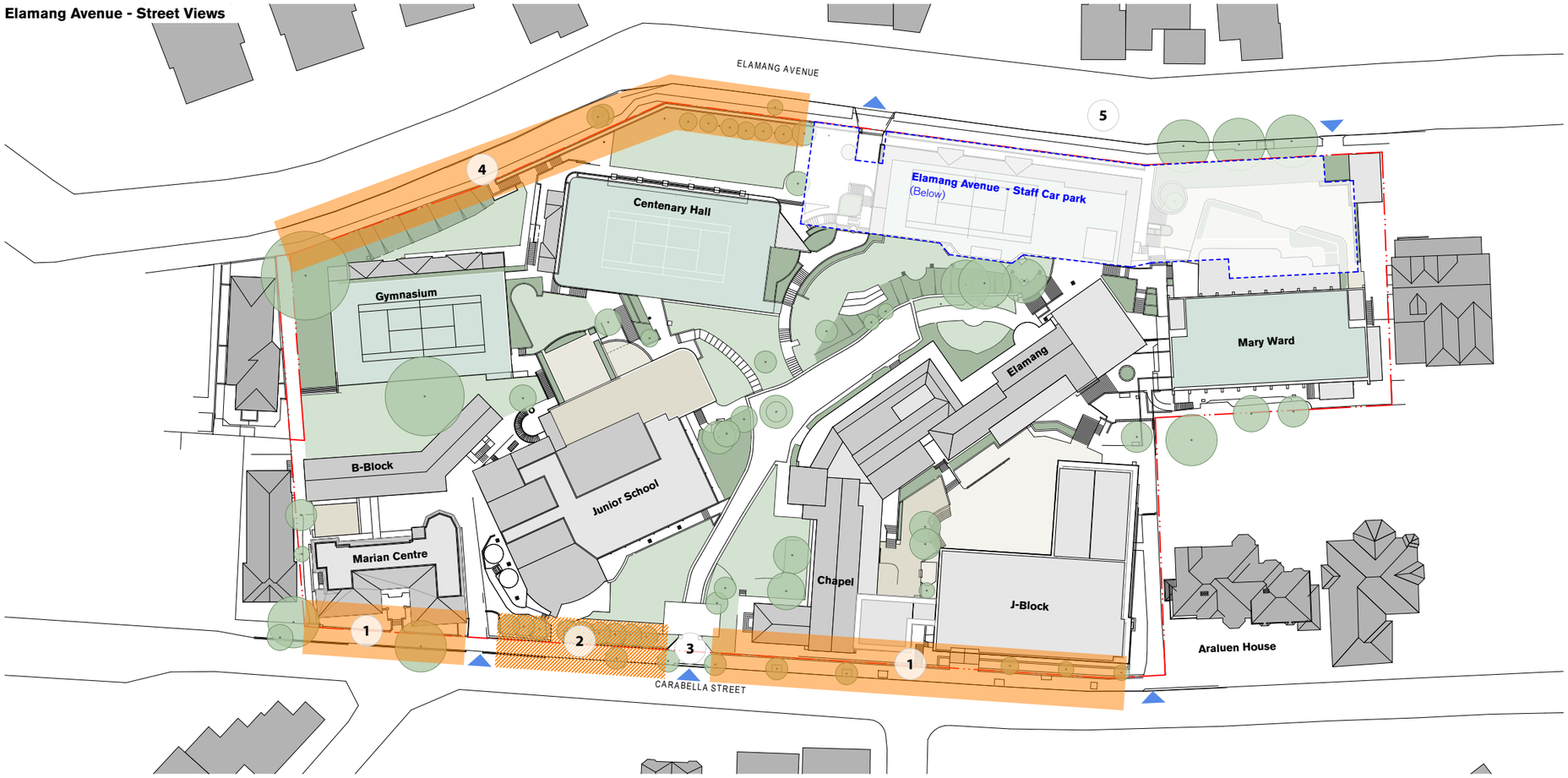
3 Main entry driveway is the main pedestrian entry/exit into the site. It is currently used for intermittent vehicular access for loading and service vehicles only (outside of student movement times). This would not be suitable for pick up and drop off as it is not possible to accomodate a drive through alternate exit point, alterations are restricted by the surrounding heritage built forms. It will also conflict with the major pedestrian entry/exit.

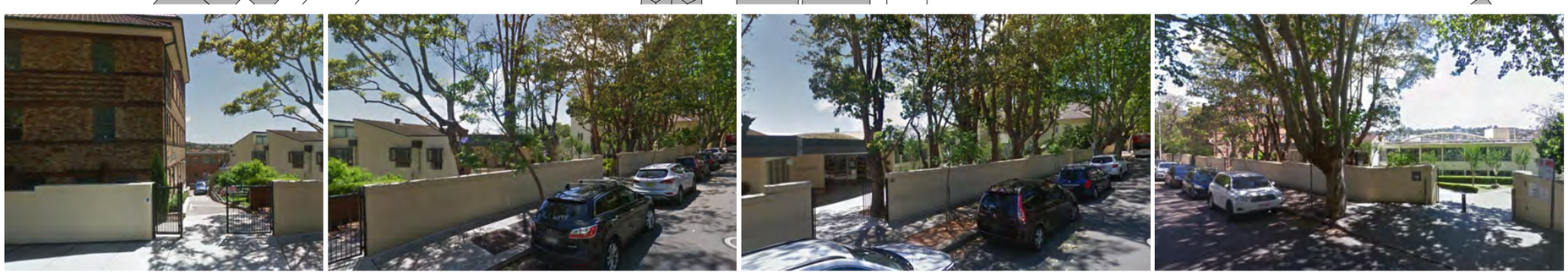
Elamang Avenue

4 The topography of the northern boundary at the interface between the boundary and Elamang Avenue inhibits vehicular access along this frontage.

5 The staff carpark off Elamang Avenue is the only opportunity on the site where vehicles are able to enter, drive through and exit the site. Refer to drawing SK.02 outlining the constraints of utilising the existing car park for this operation.

Elamang Avenue - Street Views





Carabella Street - Street Views

fjmt

Traffic - Pick-up and Drop-off Options Analysis - Site

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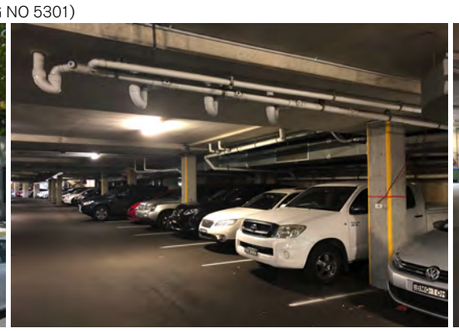
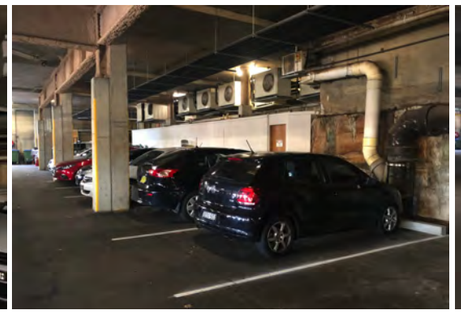
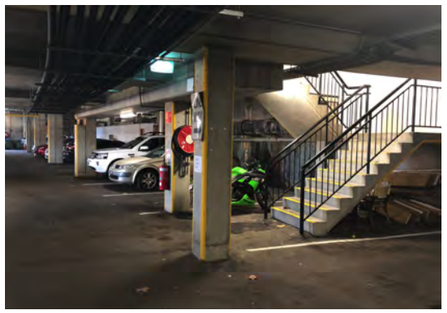
Loreto Kirribilli - Master plan

SK.01

Internalised Pick-up and Drop-off Options Analysis

Loreto Kiribilli Concept Master plan
Stage 1 Master plan - Car park Plan

Constraints

1

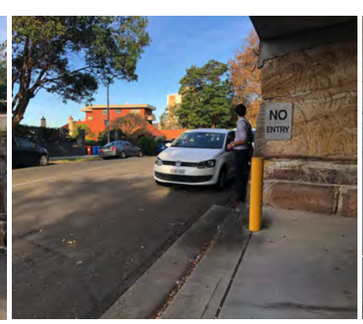
The existing car parking area is a service area of the site and is generally unsuitable for student access on a number of safety grounds including:

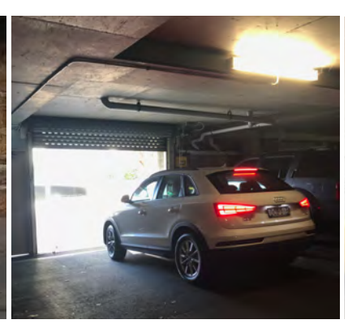
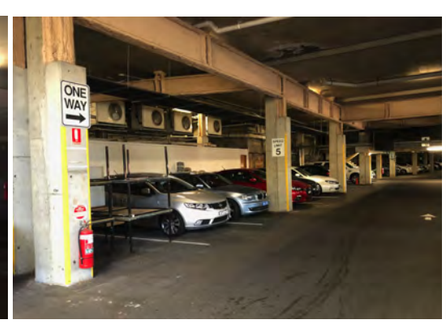
- It is a confined space which inhibits a safe shared pedestrian and vehicular environment.
- Poor visibiltiy due to the low ceiling heights, column and service obstructions.
- Inhabitily to provide a safe and large enough student waiting area.

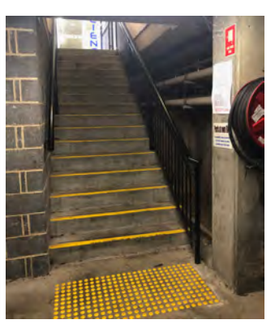
The entrance and particularly the exit of the car park are unsafe for use by parents, there is restricted visibility due to the existing on street car parking.

Staff would be entering and departing during peak drop-off and pick-up hours which would therefore inhibit the operation of pick up and drop off within the carpark. This is unable to be restricted under the current Independent Schools Multi Enterprise Agreement (MEA)

There is insufficient length within the car park to accommodate the entire queue of vehicles required. Due to limited capacity, a carline would be required with potential queues onto the street and over the footpath.



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Traffic - Pick-up and Drop-off Options Analysis - Car park

Loreto Kirribilli - Master plan

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SK.02

ANNEXURE B: TRAFFIC WARDEN ROLE DESCRIPTION

TRAFFIC WARDEN

Role Description

The Traffic Warden is responsible to the Principal for ensuring that traffic control is implemented where required to ensure the safe operation of Carabella Street and Elamang Avenue. Support of the Catholic ethos of the school is reflected in the role.

KEY AREAS OF RESPONSIBILITY

1. Support for a Cohesive School Community
2. General Duties
3. Hours

1. SUPPORT FOR A COHESIVE SCHOOL COMMUNITY

Assist in the continuing development of a culture that is in harmony with Catholic tradition, the charism of Mary Ward and the heritage of Loreto.

1.1 Encourage and support the growth, appreciation and acceptance of the values and beliefs of the Catholic Church.

1.2 Gives personal witness to these values in carrying out daily duties.

1.3 Support the policies and procedures that realise the goals of the Loreto Schools of Australia Mission Statement.

1.4 Provide support and loyalty to the Principal.

1.5 Support the prayer and liturgical life of the School.

2. GENERAL DUTIES

2.1 Perform traffic control along both Carabella Street and Elamang Avenue.

2.2 Ensure that parents are prevented from double parking and undertaking unsafe U-turns.

2.3 Ensure that the parking regulations are adhered to.

2.4 Ensure the safe operation of Carabella Street and Elamang Avenue for both drivers and students.

2.5 Monitor the flow of traffic to remain continuous.

3. HOURS

Monday-Friday	8.00am to 8.45am
	2.30pm to 4.00pm

Student Term- time only

M^CLAREN TRAFFIC ENGINEERING

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 RPEQ: 19457

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

11th May 2018 Reference: 16575.06FA

Artazan Property Group
Level 8,
210 George Street,
Sydney, NSW 2000
Attention: Cian Fitzgerald

LETTER RESPONSE TO DEPARTMENT OF PLANNING AND ENVIRONMENT WITH REGARD TO THE LORETO KIRRIBILLI SCHOOL AT 85 CARABELLA STREET, KIRRIBILLI

Dear Cian,

Reference is made to your request to provide a response to the comments provided by the New South Wales Department of Planning and Environment (DoP&E) traffic consultant with regards to the proposed staged development of the Loreto Kirribilli School. A response to the DoP&E is provided below. This letter should be read as an addendum to the Traffic and Parking Impact Assessment dated 25 July 2017 by M^CLaren Traffic Engineering.

The DoP&E request for information are shown below (italicised) with a response thereafter.

1. *An updated assessment of the proposed development under State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 which has superseded State Environmental Planning Policy (Infrastructure) 2007. (Section 1.2 - McLaren Report)*

MTE Response: Loreto Kirribilli has an existing approval for a total of 1,100 students. The current proposal is for an increase of 30 students to a total of 1,130 students (modified from the original DA submission).

Based upon the above scale, the proposed Stage 1 Masterplan development does not qualify as a traffic generating development under Clause 57 of the newly introduced SEPP (Educational Establishments and Child Care Facilities) 2017 (current proposal is less than 50 additional students). As such formal referral to the RMS is not required and the DoP&E can assess the proposal accordingly.

Regardless of the above, the proposed development was referred to the RMS and that they did not raise any issues around traffic.

2. *Detailed description and analysis of existing school drop off and pick up area on Carabella Street between the junctions of Fitzroy Street and Parkes Street, including analysis and data relating to school pick up and drop off for the busiest period of the year (Sections 1.3 and 4.2 - McLaren Report)*

MTE Response: Considering the proposal is for an increase of some 30 high school students, the pick-up and drop-off parking demand is not expected to change from the current operation. The current use of the pick-up / drop-off area is limited to only Primary School students, and any additional drop-off / pick-up up demand by the additional 30 high school students can be undertaken in the streets surrounding the site such that students can walk the short distance to the school entrance / vehicle.

Considering the proposal does not look to increase the demand of the existing drop-off / pick-up operation, a detailed analysis is not warranted.

Regardless of the above, Loreto Kirribilli is undertaking the following initiatives to improve the existing function of the drop-off and pick-up operations along Carabella Street.

- A new permit system will be implemented, whereby parents will be provided with a card to display in their windshield in order to inform teaching staff on duty of which student is being picked-up by that vehicle. These cards will be provided only to junior school parents and vehicles without a card will not be permitted to pick-up a child. Senior students will not be provided with these cards and will be unable to be picked / dropped off up from Carabella Street.
- The school has recently hired traffic wardens to control traffic along both Carabella and Elamang Street. The traffic wardens will prevent parents from double parking and undertaking unsafe U-turns and will provide traffic control where required to ensure the safe operation of the two roads for both drivers and pedestrians.
- The school will author a formal management plan detailing all the initiatives in place both the discourage the use of private vehicles and to manage the impacts of drop-off and pick-up operations.

It is anticipated that the implementation of the initiatives described above will have the following effects on the operation of the drop-off and pick-up operations of the school:

- The implementation of the permit system will cause a net reduction in vehicles utilising the existing pick-up zone along Carabella Street and reduce or eliminate traffic queues in Carabella Street;
- The addition of suitably qualified traffic wardens to both Elamang Avenue and Carabella Street will increase the traffic flow efficiency and safety of both roads;
- The lollypop man has recently been granted permission by the police to act as a traffic controller in addition to his duties controlling the operations of the pedestrian crossing. Where necessary he will direct traffic to alleviate blockages in Carabella Street.
- The implementation of a management plan will result in a lower overall private car usage and reduce the impact of the school on the surrounding road network.

3. *Could you please confirm the reference criteria for classifying Carabella Street as a local road given the traffic volumes? (Section 2.1 - McLaren Report)*

MTE Response: Collector roads generally provide access from local roads to arterial roads Willoughby Street is not an arterial road. The two-way traffic flows along Carabella Street based upon the tube surveys do not exceed 200 vehicles per hour, traffic flows along Carabella Street are closer to a local road than a collector road.

4. *Observations from AM peak (8-9am) / School Peak (3-4pm) / PM peak (4-6pm) site visits for validation of SIDRA modelling, to ensure surveys accurately reflect the information to be inserted into the SIDRA models and to demonstrate the current conditions are suitable for use of the school (Section 2.3.3 - McLaren Report)*

MTE Response: As stated within Section 2.3.3 of the M^{C}Laren Engineering report, SIDRA intersection modelling cannot model the impacts of a high turnover of on-street parking or of a pedestrian-dominant environment (as generally exists around schools).

A site visit was undertaken on 1 May 2018 in the afternoon to examine the existing operations of the school during pick-up times. In the experience of *M^{C}Laren Traffic Engineering*, the pick-up operations of a school have a larger impact on the local traffic network than drop-off operations and for the purposes of this advice, a morning site visit was not necessary.

The pick-up operations along the Carabella Street site frontage were observed during the site visit on 1 May 2018 between the times of 2:40 pm and 3:35 pm. The following relevant notes were made:

- Parents were waiting in the pick-up zone at 2:40 pm when I arrived at the site, with the surrounding area at a very high level of parking occupancy.
- The pick-up operations are well managed by teaching or other staff and are efficient, in that students are quickly loaded into their parents' vehicles upon their arrival in the signposted area along Carabella Street;
- The limited length of the sign posted pick-up area, with capacity for approximately six cars, is the limiting factor for the pick-up operations;
- Parents were observed to queue in Carabella Street, effectively blocking two-way traffic flow (due to the narrow width of Carabella Street) between approximately 2:50 pm and 3:20 pm.
- During this time when traffic flow was constrained, it was not observed that any traffic attempted to travel north on Carabella Street, all traffic heading north made a left turn at Fitzroy Street.
- No buses were observed to pick up students along the Carabella Street frontage, though two buses (Route 269) were observed travelling north along Carabella Street between 2:40 pm and 3:35 pm.
- A total of 85 vehicles were observed to pick up students between 2:55 pm and 3:25 pm.
- The pedestrian crossing was controlled by a traffic controller from 2:50 pm until 3:45 pm.
- Due to the traffic queues extending north in Carabella Street, the traffic flow in the road was not inhibited by the crossing operations, despite the lollypop man stopping traffic approximately once a minute.

Subsequent to the site visit it has been noted that some senior students were present at the pick-up facility, which is intended as a junior-school-only operation.

Considering the proposal is for an increase of 30 highs school students, which is approximately 12 additional private vehicles (based upon the existing surveys) arriving to the school is considered minor and will not have a detrimental impact upon the surrounding operation of nearby intersections. Further, with the implementation of the initiatives described in Response 2, the traffic flow along Carabella Street is expected to improve. It should be noted that the drop-off / pick-up facility provided along Carabella Street is restricted to primary school students only. Therefore there will be no additional vehicle trips at the existing pick-up / drop-off facility by the proposed increase in senior students.

5. *Road Hierarchy - (Section 2.1.1 and Section 2.1.2 - McLaren Report) provide information on 40km/h School Zone.*

MTE Response: There currently exists 40km/h school zones within close proximity to the site along both Elamang Avenue and Carabella Street.

6. *Assessment of pedestrian crossing at intersection of Carrabella Street and Fitzroy Street using RMS warrants and how the additional students would be accommodated. (Not included in current McLaren Report)*

MTE Response: The existing pedestrian crossing operates with a traffic controller and allows students to cross approximately once a minute during school pick-up times. The additional 30 students are not expected to add loading above the current operation and a full assessments of RMS warrants is unnecessary.

7. *Assessment of availability of all day parking in the area for residents, staff and visitors. We note that there are 2P restrictions observed on local streets from Google Maps. (Section 2.4 - McLaren Report)*

MTE Response: The current proposal is increasing by 30 students, of which there will be nil (0) additional staff for the operation of the school. Considering this, the additional parking impact is minor and is not expected to change over the existing operation. A detailed assessment in relation to unrestricted parking is unnecessary. It is also relevant to note that the school complies with the parking requirements set out within Council's DCP.

8. *Assessment of bus parking / pick up / drop off area - with 21 dedicated school buses being at the site during the undetermined PM period (Section 2.5 and Table 5 - McLaren Report).*

MTE Response: While the traffic report details 21 dedicated school buses, these do not pick up students directly in front of the school (Carabella Street). The buses collect students from Bradfield Park.

9. *Assessment of the adequacy of the 40km/h school zone and road safety assessment as 85th percentile speed is greater than 40 km/h during all periods. This should be broken down into AM 8am-9am, School 3pm-4pm and PM Peak 5pm-6pm (Not included in current McLaren report).*

MTE Response: In our view this is not necessary for the proposed development. Rather if people are exceeding the posted speed limit of 40km/h during school zones this is a matter for the NSW police.

10. *A breakdown by school grade by mode of survey considering the different requirements for Student Opal card requirements for all students. (Section 3.1 - McLaren Report)*

MTE Response: A detailed breakdown by school grade is unnecessary for an increase of only 30 students. The summary of transport modes summarised for K – Year 6 and Year 7 – Year 12 is considered satisfactory.

11. *Clarification on the Educational Facilities and Standards Guide (EFSG) and its use on a non-Government school (Section 4.1.2 - McLaren Report)*

MTE Response: The EFSG provides information to assist in the management, planning, design, construction and maintenance of school facilities. The EFSG is not a minimum standard, but would be rather a guideline. Regardless of the EFSG, the planning controls are based upon Council's DCP. The existing development and Stage 1 development exceeds Council's minimum car parking controls. The EFSG only strictly applies to Government Schools, however can be referred to as a guide / benchmarks for non-government schools.

12. *Upon a response to Point 7 above, a re-assessment of Parking Impacts (Section 4.1.3 - McLaren Report) would be required*

MTE Response: Refer to point 7.

13. *Analysis of existing loading zone and information on how vehicles that are greater than 5.2 metres are to travel on to and off the site in a forward direction. (Section 4.4 - McLaren Report) and the proposed loading bay as part of the Stage 1 Works (as referred to in Ethos Urban EIS Page 69 Section 7.3). There is no reference to the assessment provided in Annexure I. More details on the Servicing Movements (as specified in Table 12 of Ethos Urban EIS), "once per term" is not specific enough for an assessment. Needs an assessment under AS2890.2.*

MTE Response: There will be no change to the existing operation of the site within the loading zones and waste collection areas along Elamang Avenue and Carabella Street. A detailed analysis of this is unnecessary. In relation to the new learning hub building, this will include a loading area with access via the existing driveway to Carabella Street. The constraint of the loading area is limited to a 5.2m length vehicle as insufficient turning area is available for larger vehicles. As detailed in Section 4.6 of the traffic report, **Annexure I** shows the operation of the proposed on-site loading area under the forward entry / forward out arrangement. It is expected that deliveries to this loading zone will occur outside of peak school periods and will be of low scale, up to 5 deliveries per day.

14. *Further details to be provided on make up of traffic volumes, i.e. time periods noting which peak is referred to in Table 13 (Section 5.4 - McLaren Report).*

MTE Response: The peak volumes in Table 13 of the traffic report refer to the largest average volume surveyed within the peak AM and PM period. These time periods are 11:00am and 17:00pm along Carabella Street and 11:00am and 12:00pm along Elamang Avenue. These do not overlap with the peak school periods (typically 8-9am and 2:30-3:30pm), although were used as a conservative measure showing a worst-case scenario for residential amenity. As indicated within the traffic report, the future two-way volumes are within the environmental goal volumes of the RMS.

15. *Compliance and provision of Persons with a Disability parking as per North Sydney Council DCP and AS2890.6-2009 - Off-street parking for people with disabilities (Section 4.5 - McLaren Report)*

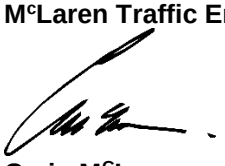
MTE Response: Refer to Section 4.5 of the traffic report for disabled parking rates for North Sydney Council DCP. Considering there is no change to the existing car parking layout or additional on-site car parking proposed, the existing provision and operation for disabled car parking will be unchanged.

16. *Notwithstanding the on-site car park not being modified, as a Development Application is proposed to change the site, consideration would need to be given to ensure that the existing car park meets AS2890.1, this should be provided (Section 4.6 - McLaren Report)*

MTE Response: It is considered unnecessary to update the car parking areas to meet AS2890.1. There are no changes proposed to the car parking area and the car park will continue to operate as per the existing operation.

Please contact Matthew M^{C}Carthy or the undersigned on 02 8355 2440 should you require further information or assistance.

M^{c}Laren Traffic Engineering



Craig M^{C}Laren
Director
BE Civil. Graduate Diploma (Transport Eng) MAITPM MITE [1985]
RMS Accredited Level 3 Road Safety Auditor
RMS Accredited Traffic Management Plan Designer [2018]

M^CLAREN TRAFFIC ENGINEERING

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 RPEQ: 19457

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

4 June 2018 Reference: 16575.08FA

Artazan Property Group
Level 8,
210 George Street,
Sydney, NSW 2000
Attention: Cian Fitzgerald

LETTER RESPONSE TO DEPARTMENT OF PLANNING AND ENVIRONMENT WITH REGARD TO THE LORETO KIRRIBILLI SCHOOL AT 85 CARABELLA STREET, KIRRIBILLI

Dear Cian,

Reference is made to your request to provide a response to the comments provided by the New South Wales Department of Planning and Environment (DoP&E) traffic consultant with regards to the proposed staged development of the Loreto Kirribilli School. A response to the DoP&E is provided below. This letter should be read as an addendum to the Traffic and Parking Impact Assessment dated 25 July 2017 by *M^CLaren Traffic Engineering* (document reference 16575.01FA) and the letter by *M^cLaren Traffic Engineering* dated 11 May 2018 (document reference 16575.06FA).

The DoP&E request for information are shown below (italicised) with a response thereafter.

1 Management of Kiss and Drop Operations on Carabella Street

It is noted that the applicant is responding to Council's position in regards to traffic generation and site constraints in regards to an on-site pickup area. However, how is the proposed school management plan to stop parents from picking up their students on Carabella Road? This is a public road and the School and its administration have no control over parents who may wish to pick their children up;

Section 1.2.2 School Initiatives notes that "junior school students and vehicles without a card will not be permitted to pick up a child". This proposed initiative would work if the pickup and drop off areas were on school property. However, the above point notes that the School and its administration have no control over a publicly accessible road. What is the applicant's response to this?

Further to the above, the note that "Senior Students will not be provided with these cards (referring to authority to pick up a child) and will be unable to be picked up from Carabella Street". This does not pass a reasonability test as noted above. This is a public road with only NSW Police being able to stop vehicles due to an accident or incident. Does the applicant intend on closing access to Carabella Street, as this is not legally enforceable?

To provide some clarification, the management plan and "card" system proposed will apply to the existing time-restricted pick-up and drop-off zone along Carabella Street along the frontage of Loreto Kirribilli, rather than the entire public road. It should be noted that no drop-off or pick-up operations are proposed other than in this time restricted zone. It is acknowledged that the school cannot prevent vehicles from using Carabella Street and this is not proposed, the scope of the management plan with regards to restricting senior students applies only to the existing time-restricted pick-up and drop-off zone.

As per the existing operation of the drop-off and pick-up area, school staff will be positioned to manage the kiss and drop operations and, where necessary, turn away parents that are not in possession of a card. The school and its staff will take note of the names and license plates of any students/vehicles that use this area in contravention of the Plan of Management and will follow up the transgressor with educational materials to discourage repeat offences.

2 Implementation of Honour System

To limit the number of senior students being picked up, an honour system could be implemented. This more suitable and reasonable solution may be that Junior Students are to be issued with passes for each school day, approximately 200 per year and Senior Students are only to be issued with 40 passes a year. This would allow for pick up after school for Senior Students' extracurricular activities requiring special equipment, such as sports days, band practice or other such activities. This system would need to be included in a Traffic Management Plan to be developed by a qualified person or organisation as part of the Development Application.

The implementation of such a system would result in a net increase in the number of students being picked-up and dropped-off. Currently the time restricted area along the Carabella Street frontage of the site is restricted to junior school students only during peak drop-off and pick-up times and any system which expressly permits senior students to use this facility would result in a significant deterioration of traffic conditions, particularly on days of inclement weather. Senior students are able to manage their travel to and from school under the existing arrangements and no change to this operation is proposed as part of this application. It is understood that such a system may be suitable for some schools, however the specific characteristics of Loreto Kirribilli (particularly the existing high use of public transport) make such a system unsuitable and potentially detrimental.

3 Bradfield Park Bus Stop Access

Could the applicant please confirm how existing school students (junior and senior) access the Bradfield Park location where the school special buses operate to and from in the AM and PM periods respectively?

Students currently walk to and from the Bradfield Park bus stop location and no change to this operation is proposed.

4 Internal Loading Operations

The Ethos Urban Report Loreto Kirribilli State Significant Development Application Environmental Impact Statement | September 2017 notes in Section 7.3.3 that only vehicles of up to 5.2 metres can be accommodated by the loading area in the new Learning Hub. Table 12 shows that all vehicles loading at the site will be greater than 5.2 metres in length. Can the applicant please explain this discrepancy?

Deliveries in vehicles of greater than 5.2m in length will be accommodated in the existing loading zone along Carabella Street, as per the existing operation of the site. No changes to the loading or servicing practices of the site are proposed as part of this application and the addition of a loading area is to serve any occasional deliveries of learning materials to the new learning hub and gymnasium buildings.

5 External Loading Operations

> *Further to this the letter dated 11/5/2018 from McLaren Traffic Engineering states that the existing loading dock "will occur outside of peak school periods". Could the applicant please confirm hours of operation for the loading zone? Could the applicant confirm if they "7:00am to 6:00pm Monday to Saturday" or would they be outside of school peak periods i.e. say from 10:00 am to 2:00 pm (as per McLaren Engineering advice)? Therefore, a loading zone would only be required to operate during these times and be a no parking or no stopping zone outside of these times.*

Deliveries will occur outside of school peak periods i.e. between 10:00 am and 2:00 pm. The existing loading zone on Carabella Street is restricted to "8:30 am - 4:00 pm Mon-Fri" and no changes are proposed.

Please contact Tom Heal or the undersigned on 02 8355 2440 should you require further information or assistance.

McLaren Traffic Engineering

Craig McLaren
Director
BE Civil. Graduate Diploma (Transport Eng) MAITPM MITE [1985]
RMS Accredited Level 3 Road Safety Auditor
RMS Accredited Traffic Management Plan Designer [2018]

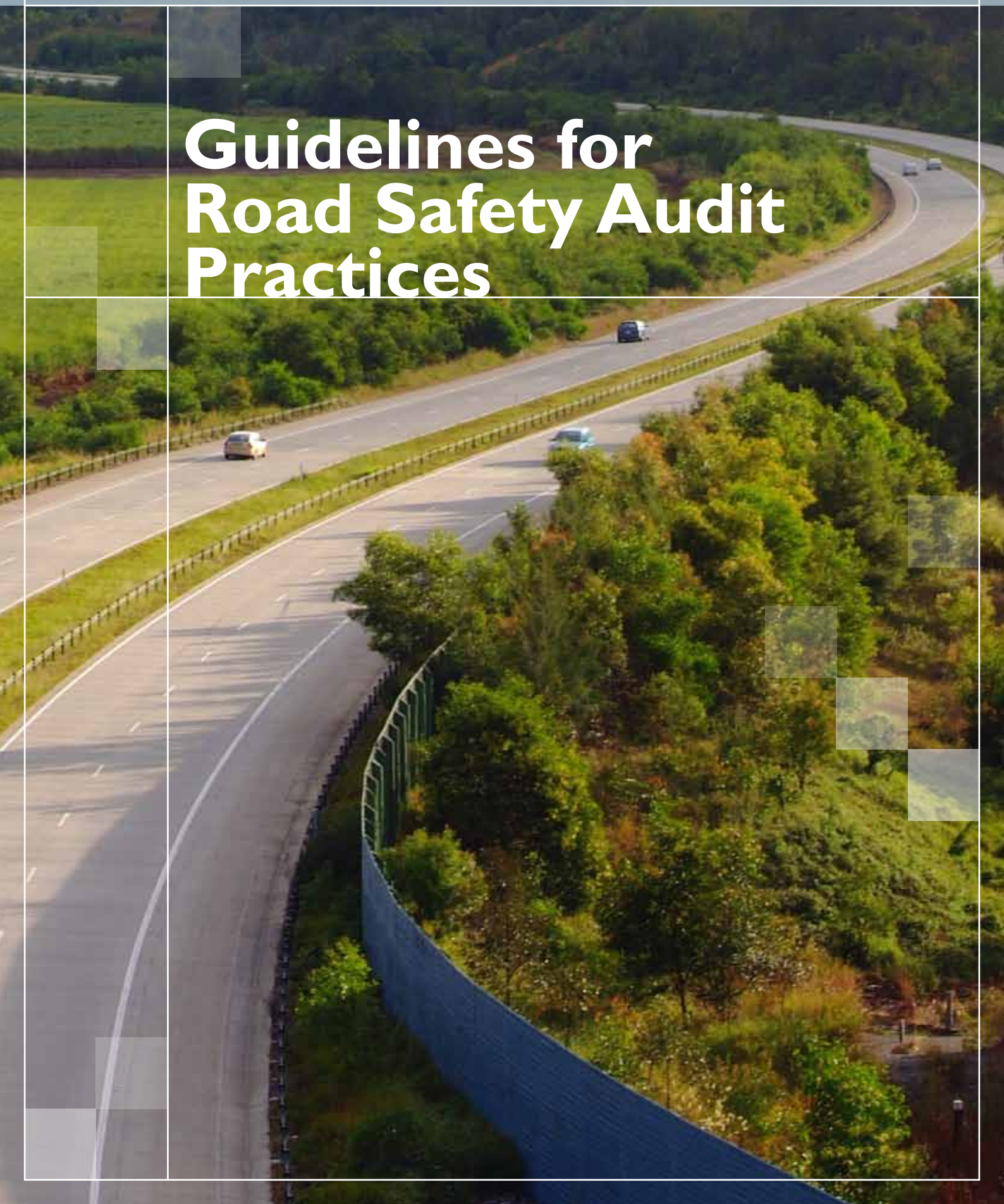
APPENDIX C

NSW CENTRE FOR ROAD SAFETY GUIDELINES FOR ROAD SAFETY AUDIT PRACTICES

NSW Centre for Road Safety

NSW GOVERNMENT Transport Roads & Traffic Authority

Guidelines for Road Safety Audit Practices



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NSW GOVERNMENT | Transport Roads & Traffic Authority

PART 1:

Road safety audit

Part 1: Road safety audit

CONTENTS

1 Introduction

Road Safety Audits are a pro-active approach to road safety.

Road Safety Audits form an integral part of the safe system approach.

Austroads publication *Guide to Road Safety Part 6: Road Safety Audit* provides general guidance at a National level. This includes information on the safe systems approach, principles of road safety audits, legal issues, the audit process and road safety principles.

This document follows the principles outlined in the Austroads publication and provides specific guidance at the State level for New South Wales. It includes detailed procedures for commissioning, conducting and completing road safety audits.

This document replaces the RTA publication, *Accident Reduction Guide Part 2: Road Safety Audits* (2005).

1.1 About this document

This document is designed to be used as the primary source of procedures for commissioning, conducting and completing road safety audits for the Roads and Traffic Authority (RTA) of NSW.

Where there are differences between this document and the Austroads publication *Guide to Road Safety Part 6: Road Safety Audit*, this guide should take precedence.

This guide is divided into four sections:

- Section 1 provides introductory and background information relating to road safety audits.
- Section 2 provides details of the procedures involved in commissioning road safety audits. These procedures are meant for the project sponsor.
- Section 3 provides details of the procedures involved in conducting road safety audits. These procedures are meant for the lead road safety auditor and road safety audit team.
- Section 4 provides details of the procedures involved in completing road safety audits. These procedures are meant for the project sponsor.

1.2 Definitions

Road safety audit

A road safety audit is a formal examination of proposed or existing roads and road related areas from the perspective of all road users with the intention of identifying road safety deficiencies and areas of risk that could lead to road crashes. It does not consider crash history. It is conducted by an independent, qualified team of professionals.

Road safety auditor

A practicing professional with experience and capabilities in road design, traffic engineering, traffic / transport management, road construction techniques, road safety engineering, road user behaviours or another closely related road safety discipline, who is qualified to undertake road safety audits and has recent and regular demonstrated experience in conducting road safety audits.

The practicing professional is registered on the NSW Centre for Road Safety's *Register of Road Safety Auditors*.

The table on the following page, provides definitions of the roles that are referred to in this document.

TABLE 1.1 DEFINITIONS OF ROLES WITHIN THE ROAD SAFETY AUDIT PROCESS

ROLE	MEANING
Project sponsor	The project manager or officer (employed or contracted by the road jurisdiction) responsible for delivering or overseeing the road infrastructure related works.
Lead auditor	A road safety auditor with qualifications, experience and skills required to lead and manage the conducting phase of the road safety audit process and participate in the entire undertaking of the road safety audit.
Audit team member	A road safety auditor with qualifications, experience and skills required to participate in the entire undertaking of the road safety audit.
Active observer	A person with an interest in undertaking the road safety audit who participates in the road safety audit as directed by the lead auditor. The person may be gaining experience to become a road safety auditor, offering the local perspective on the works or overseeing the auditing practices.
Specialist advisor	A practicing professional with specific skill sets, experience or knowledge of subject matter required to provide independent specialist advice to the project sponsor or the audit team on critical aspects of the project. A specialist advisor does not participate in the entire road safety audit.
Road safety advisor	A practicing professional with specific skill sets, experience or knowledge in road safety matters required to provide road safety advice to the project sponsor on critical aspects of the road safety audit process. A road safety advisor may participate/assist in the entire road safety audit process. The advisor does not need to be independent of the works.
Project stakeholder	A person with an interest in the road infrastructure related works. May be a planner, designer, construction manager, asset manager, operations manager, or alliance member.
Approval manager	The manager employed by the road jurisdiction who is accountable for delivering or overseeing the road infrastructure related works.
Service provider	The person, contractor, organisation or party required to deliver services.
Library administrator	The manager or officer (employed or contracted by the road jurisdiction) responsible for administering the Road Safety Audit Reports Library.

1.3 Building safer roads

Road Safety Audits form an integral part of the safe system approach. For background information relating to the safe systems approach refer to Austroads *Guide to Road Safety Part 6: Road Safety Audits*, Section 1.1 and Austroads *Guide to Road Safety Part 1: Road Safety Overview,* Section 2.

Best practice in road safety is achieved by applying the basics of road safety engineering safety principles. For background information relating to the safety principles refer to Austroads *Guide to Road Safety Part 6: Road Safety Audits*, Section 8.

1.4 An explanation of Road Safety Audits

For background information relating to what, when, why, who, and how of road safety audits refer to Austroads *Guide to Road Safety Part 6: Road Safety Audits,* Sections 1.4, 1.5 and 2.

1.5 Types of road safety audits

For the purpose of road safety auditing, projects fall into three distinct categories. A project is either in the pre-construction phase of its life cycle, in the construction phase of its life cycle or in the post-construction phase of its life cycle.

These phases are further divided into the key life cycle stages of the project: strategic design, concept design, detailed design, roadworks, pre-opening, finalisation and existing road.

Road safety audits are typically conducted at these key life cycle stages of a project. The types of road safety audits therefore reflect these key stages. The table below provides a description of each type of road safety audit.

TABLE 1.2 DESCRIPTION OF EACH TYPE OF ROAD SAFETY AUDIT

PROJECT PHASE	TYPE OF ROAD SAFETY AUDIT	PROJECT STAGE DESCRIPTION
Pre-construction	Strategic design	Conducted at the completion of the strategic design stage of the project life cycle. The strategic design stage is where broad options for a proposed project are determined. Also known as the feasibility stage.
	Concept design	Conducted at the completion of the concept design stage of the project life cycle. The concept stage is where options are examined for a proposed project and a preferred option is selected. Also known as the preliminary design stage.
	Detailed design	Conducted at the completion of the detailed design stage of the project life cycle. The detailed design stage is where a design is completed to sufficient detail to commence construction.
Construction	Roadworks	Conducted at the commencement of each stage of the roadworks where changes affect traffic operations, traffic travel path characteristics, or traffic roadside characteristics during the construction stage of the project life cycle. This may be a one-off. Also known as road work traffic scheme stage.
	Pre-opening	Conducted immediately after the completion of construction of the entire project works or the construction of a roadworks stage and where possible prior to the road / path being used by traffic.
Post-construction	Finalisation[1]	Conducted on an existing road, path or road network some time after the completion of the construction of road infrastructure works. It is typically conducted once road user patterns have settled following the works, or immediately prior to the change-over of ownership or responsibility in regard to the assets or network operations following the works. Also known as post-opening stage.
	Existing road[1]	Conducted on an existing road, path or road network where no recent construction works were undertaken.

[1] This type of road safety audit is a component of a Road Safety Evaluation.

Conducting road safety audits during the pre-construction phase of a project delivers the greatest road safety benefits. The earlier a project is audited the more likely that the road safety issues or risks identified can be significantly reduced or eliminated. As a result this minimises compromises in road safety and costly treatments at later stages of the project (for example once operating with traffic).

The same type of road safety audit can be conducted more than once for a particular project.

For background information and case studies relating to types of road safety audits refer to Austroads *Guide to Road Safety Part 6: Road Safety Audits*, Sections 5, 6 and 7.

1.6 Legal issues

For background information relating to road authorities' responsibilities and legal issues refer to Austroads *Guide to Road Safety Part 1: Road Safety Overview*. Section 3 and Austroads *Guide to Road Safety Part 6: Road Safety Audits*, Section 3.

1.7 Road safety audit process

A road safety audit is only one component of the road safety audit process. The road safety audit process consists of a variety of tasks which together deliver the greatest road safety benefits back into the community.

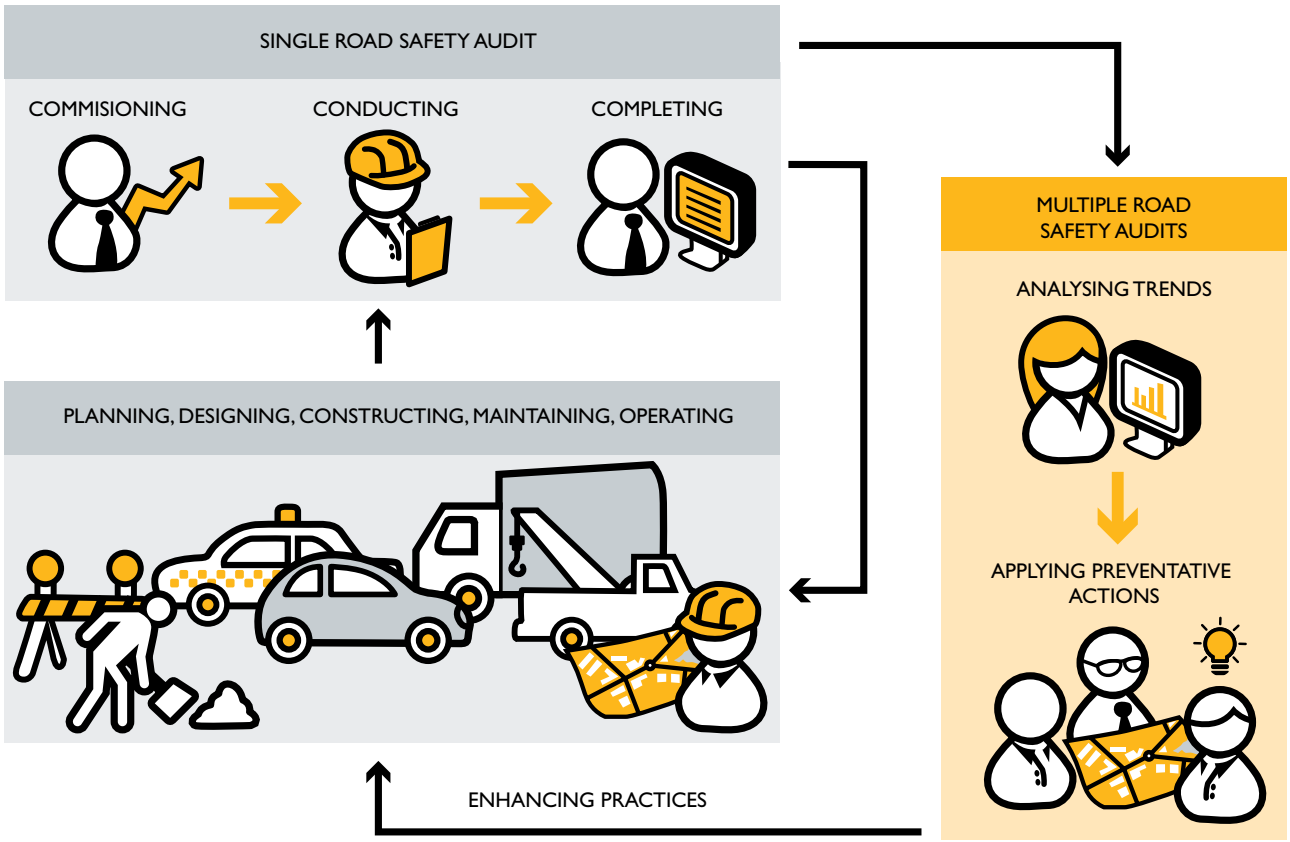
The phases of the road safety audit process for a single road safety audit are:

- Commissioning a road safety audit. This is undertaken by the project sponsor.
- Conducting a road safety audit. This is undertaken by the road safety audit team.
- Completing corrective actions to address road safety deficiencies arising from a road safety audit. This is undertaken by the project sponsor.

The phases of the road safety audit process relating to multiple road safety audits across a region are:

- Analysing recurring road safety deficiencies.
- Applying preventative actions, such as modifying standard drawings, improving training outcomes, enhancing policies.
- Enhancing practices in planning, development, construction, maintenance or operations of the road and road related areas.

For background information relating to disseminating knowledge gained from road safety audits refer to Austroads *Guide to Road Safety Part 6: Road Safety Audits*, Section 4.9.



1.8 References

This guide provides details of the procedures to use for road safety audits.

For introductory and background information relating to road safety audits, refer to the following:

Austroads (2009), *Guide to Road Safety Part 6: Road Safety Audits*. Austroads Incorporated, Sydney, Australia.

Austroads (2009), *Guide to Road Safety Part 1: Road Safety Overview*. Austroads Incorporated, Sydney, Australia.

2 Commissioning a road safety audit

The procedures in this section are meant for the project sponsor.

2.1 Overview

Objective - To establish the requirements, limitations and expectations for the conduct of a road safety audit.

ROLE	RESPONSIBILITY
Project sponsor	• Produce a road safety audit brief which provides a clear statement of the scope of the audit and the expectations of the audit team. • Select and engage the road safety audit team. • Gather background information. • Hold the commencement meeting.
Lead auditor	• Represent the road safety audit team.
Road safety advisor (Optional)	• Provide advice on road safety matters and outcomes as directed by the project sponsor.
Project stakeholders (Optional)	• Provide advice on project scope, deviations from standards, restraints and compromises as directed by the project sponsor.

The commissioning phase is important to the road safety audit process. It is concerned with achieving the right combination of road safety auditors who are most suited to understanding the characteristics, needs and outcomes of the project to be audited. The commissioning phase also provides an opportunity to establish clear and concise communications and understanding between all parties.

The key steps that determine a successful outcome when commissioning a road safety audit involve:

- Preparing a road safety audit brief.
- Selecting the road safety audit team.
- Gathering background information about the project and delivering it to the audit team.
- Holding a commencement meeting.

2.2 Preparing a road safety audit brief

Objective - To create a brief which identifies the project and the phase of the project to be audited and sets the parameters for the road safety audit.

ROLE	RESPONSIBILITY
Project sponsor	• Draft the road safety brief. • Arrange for the review of the project brief. • Prepare the final road safety audit brief.
Road safety advisor (Optional)	• Provide advice on road safety matters and outcomes as directed by the project sponsor.

A successful project brief for a road safety audit identifies the project and the phase of the project to be audited and specifies the scope and deliverables of the audit. It is specific, clear and comprehensive and it is in writing.

The brief document becomes part of the contract agreement between the commissioning organisation and the auditor's organisation/employer.

2.2.1 Steps

1. **Draft a road safety audit brief.**

☑ The brief must be in writing.

☑ It should be specific, clear and comprehensive.

☑ The brief must define the audit tasks and what is required of the audit team.

☑ The brief must define the contents and format of the formal road safety audit report.

☑ The brief should include the following sections:

- Purpose.
- Background.
- Scope of the audit.
- Information and material.
- Deliverables.
- Audit timeframes.
- Submission information
- Contact information.

☑ The brief should be uniquely identified with a road safety audit number.

2. **Review of road safety audit brief.**

☑ Select the appropriate road safety advisor to review the brief, if required.

☑ Confirm that the road safety audit process will achieve the required road safety outcomes.

3. **Finalise the brief.**

2.3 Selecting the road safety audit team

Objective - To select a multidisciplinary team of independent, qualified and experienced road safety experts who can successfully conduct the road safety audit and provide the necessary outcomes.

ROLE	RESPONSIBILITY
Project sponsor	• Select the road safety audit team members and confirm their roles. • Confirm the experience, qualifications, performance and independence of the road safety audit team members.
Road safety advisor (Optional)	• Provide advice on the selection of members for the audit team.

The most effective audits are those where the skills of the audit team match the skills needed by the project. The road safety audit team must consist of qualified and experienced professionals with the required knowledge, skills, experience and attitudes to deliver a successful road safety audit outcome. They must also be independent of the project being audited.

A successful audit team should be able to use their skills to visualise the completed project and view the road network from the perspective of all road users.

For background information relating to selecting the road safety audit team refer to Austroads *Guide to Road Safety Part 6: Road Safety Audits*, Section 4.1.

2.3.1 Steps

1. **Review the knowledge and capabilities of potential road safety audit team members.**

☑ Select the appropriate road safety advisor to make recommendations on the composition of the team, if required.

☑ All members of the road safety audit team require:

- Knowledge of road safety principles.
- An understanding of NSW traffic legislation/ road rules.
- The ability to view road safety from the perspective of different types of road users.
- Familiarity with traffic operations.

☑ Confirm qualifications, experience, performance and capabilities required of audit team members, by completing the *Selecting the road safety audit team* checklist.

☑ All members of the audit team must be independent of the project to be audited. Confirm the independence of audit team members by completing the *Selecting the road safety audit team* checklist.

2. **Select the road safety audit team.**

☑ The team must consist of at least two people and no more than four people.

☑ The lead auditor must be registered at Level 3 certification and be listed on the NSW Centre for Road Safety's *Register of Road Safety Auditors* at the time the road safety audit is conducted.

☑ One other audit team member must be registered at Level 2 certification or higher and be listed on the NSW Centre for Road Safety's *Register of Road Safety Auditors* at the time the road safety audit is conducted.

☑ Each team member must actively participate in the entire road safety assessment.

3. **Confirm the role of specialist advisors or active observers** (optional).

☑ Confirm the role of any specialist advisors and their independence of the project.

☑ Confirm the role of any active observers and their independence of the project. They must not be included as members of the team.

4. **Engage the road safety audit team through a contract agreement.**

2.4 Gathering and delivering background information

Objective - To gather all the relevant project information, decide what is to be made available to the road safety audit team and provide it to them to assist with the delivery of a successful road safety audit.

ROLE	RESPONSIBILITY
Project sponsor	• Decide what information is appropriate to be provided to the road safety audit team. • Gather all relevant information/ material and ensure it is available. • Deliver the relevant information to the lead auditor.

The type of information provided to the road safety audit team varies depending upon the project and the phase/ stage of the project to be audited.

Background information is supplied to the road safety audit team members to enhance their understanding of the project background and constraints. The information may include details of any restrictions and compromises that were a part of the design process to enable them to identify measures that were taken.

For further information relating to gathering background information refer to Austroads *Guide to Road Safety Part 6: Road Safety Audits*, Sections 4.2 and 10.

2.4.1 Steps

1. **Collect all the relevant information/material.**

2. **Determine what information is appropriate to provide and the format in which to provide it.**

☑ Do not provide the crash history of the site to be audited.

☑ Do not provide the auditors with any company details or anything that could be considered private or confidential.

☑ The latest full set of design plans, the design report and information on the project background must be provided for all pre-construction phase road safety audits.

☑ It is highly desirable to provide traffic data.

☑ It is desirable to provide any previous road safety audit reports of earlier stages.

☑ Details of all corrective actions which still need to be actioned/completed from previous road safety audits must be provided.

☑ Provide the information in the appropriate format for dissemination to the road safety audit team.

3. **Deliver the information to the lead auditor.**

☑ This may be done at the commencement meeting.

2.5 Holding the commencement meeting

Objective - To set the context for the road safety audit by bringing together the project sponsor, the road safety audit team representatives and all relevant stakeholders to discuss the scope of the road safety audit, the project constraints, the supplied and required information/ material and clarify the understanding of expectations.

ROLE	RESPONSIBILITY
Project sponsor	• Determine which of the relevant stakeholders are required to attend the meeting. • Convene and hold the meeting with all the applicable stakeholders. • Record the meeting outcomes.
Lead auditor	• Attend the commencement meeting. • Seek clarification about the project.
Project Stakeholders (Optional)	• Attend the commencement meeting as directed by the project sponsor. • Explain the details of the project to the audit team representatives to ensure that they understand the project purpose and scope, deviations from standards, restraints, compromises and previous road safety audits.

The commencement meeting is an important part of the road safety audit process. It is held before the audit team begins assessments/inspections and is attended by the project sponsor and members of the road safety audit team, or at least the lead auditor.

The meeting enables the project sponsor to hand over relevant information for the road safety audit to the lead auditor. It also provides an opportunity for the project sponsor to explain the purpose of the road safety audit and for the auditors to clarify any issues.

For background information relating to the commencement meeting and checklists refer to Austroads *Guide to Road Safety Part 6: Road Safety Audits*, Sections 4.3, 10 and 11.

2.5.1 Steps

1. **Decide which of the relevant stakeholders are required at the commencement meeting and what information is to be provided.**

☑ At a minimum, the meeting must be attended by the project sponsor and the lead auditor as the audit team representative.

2. **Convene the commencement meeting in an appropriate format.**

☑ The commencement meeting must be held.

☑ Decide how to conduct the meeting (eg face-to-face, phone).

3. **Hold the commencement meeting.**

☑ Provide adequate information to enable the road safety audit team to understand the project and successfully conduct the road safety audit.

☑ The checklists to be used for the road safety audit must be identified. Refer to Austroads *Guide to Road Safety Part 6: Road Safety Audits*, Section 11.

☑ Communicate matters of importance to the audit team. For example, do not review/analyse crash history, no recommendations are to be included in the report, the expected structure of the report.

☑ Confirm the agreed schedule for the completion of the road safety audit and the expectations for the outputs of the audit.

☑ Confirm the arrangements for the completion meeting, such as how and when it is to be conducted.

☑ Set up lines of communication with the lead auditor and relevant stakeholders.

☑ The meeting outcomes must be recorded.

4. **Confirm meeting actions/outcomes.**

☑ Confirm the outcomes of the meeting with the lead auditor.

☑ The record of the meeting outcomes must be filed in the official file for the project.

3 Conducting a road safety audit

The procedures in this section are meant for the lead auditor and road safety audit team.

3.1 Overview

Objective - To conduct a formal examination of proposed or existing roads and road related areas from the perspective of all road users, with the intention of identifying road safety deficiencies and areas of risk that could lead to road crashes.

ROLE	RESPONSIBILITY
Project sponsor	• Hold the commencement meeting. • Represent the organisation commissioning the road safety audit at the completion meeting.
Lead auditor	• Represent the road safety audit team at the commencement meeting. • Lead/manage the overall road safety audit. • Undertake the road safety audit. • Hold the completion meeting. • Produce and deliver the final road safety audit report to the project sponsor.
Audit team member	• Undertake the road safety audit. • Assist in preparing the road safety audit report.
Specialist advisor (Optional)	• Provide specialist advice to the road safety audit team, as directed by the lead auditor.
Active observer (Optional)	• Observe or participate in the road safety audit, as directed by the lead auditor.

The conducting phase is the actual road safety audit. It is concerned with identifying road safety deficiencies and areas of risk that could lead to road crashes and articulating these findings into a formal report for the project sponsor.

The key steps that determine a successful outcome for conducting a road safety audit involve:

- Attending the commencement meeting.
- Undertaking the road safety audit.
- Preparing the road safety audit report.
- Holding a completion meeting.
- Finalising the road safety audit report.

3.2 Attending the commencement meeting

Objective - To set the context for the road safety audit by discussing the scope of the road safety audit and the project constraints, clarify the understanding of expectations and receiving the relevant information/materials.

ROLE	RESPONSIBILITY
Project sponsor	• Hold the commencement meeting. • Record and confirm meeting outcomes.
Lead auditor	• Attend the commencement meeting as the road safety audit team representative. • Determine who else is to attend the commencement meeting as the road safety audit representatives.
Audit team member	• Attend the commencement meeting as directed by the lead auditor.
Specialist advisor (Optional)	• Attend the commencement meeting as directed by the lead auditor.
Active observer (Optional)	• Attend the commencement meeting as directed by the lead auditor.

The commencement meeting is an important part of the road safety audit process. It is held before the audit begins and is attended by the project sponsor and at least the lead auditor.

The meeting enables the project sponsor to hand over responsibility for the road safety audit to the lead auditor. It also provides an opportunity for the project sponsor to explain the purpose of the road safety audit and for the auditors to clarify any issues.

For background information relating to the commencement meeting and checklists refer to Austroads *Guide to Road Safety Part 6: Road Safety Audits*, Sections 4.3, 10 and 11.

3.2.1 Steps

1. **Determine and advise who is to attend the commencement meeting.**

☑ The lead road safety auditor must attend the commencement meeting.

☑ It is highly desirable for all the audit team members to attend the meeting.

2. **Attend the commencement meeting.**

☑ Confirm the checklists that are to be used for the audit. Refer to Austroads *Guide to Road Safety Part 6: Road Safety Audits*, Section 11.

☑ Confirm the way in which all the necessary information/materials to conduct the audit are to be received. This includes the:

- Delivery method to be used.
- Format in which they are provided.
- Timing of delivery.

☑ Confirm that the project sponsor understands the road safety audit process and agrees to the timeframes and outputs.

☑ Confirm with the project sponsor the method of communication to be used and the frequency of communication expected throughout the road safety audit process.

☑ Confirm the arrangements for the completion meeting, such as how and when it is to be conducted.

3.3 Undertaking the road safety audit

Objective - To conduct a formal examination of proposed or existing roads and road related areas from the perspective of all road users, with the intention of identifying road safety deficiencies and areas of risk that could lead to road crashes.

ROLE	RESPONSIBILITY
Lead auditor	• Manage the overall road safety audit process including occupational health and safety. • Plan and schedule the road safety audit assessments/inspections. • Manage/delegate road safety audit responsibilities/activities. • Participate in the entire road safety audit.
Audit team member	• Participate in the entire road safety audit.
Specialist advisor (Optional)	• Provide specialist advice to the road safety audit team, as directed by the lead auditor.
Active observer (Optional)	• Observe or participate in the road safety audit, as directed by the lead auditor.

Undertaking the road safety audit is the core of the road safety audit process. A road safety audit involves different activities depending upon the phase of the project being audited.

The table below specifies the minimum activities for a road safety audit of each phase of a project.

For background information relating to undertaking the road safety audit refer to Austroads *Guide to Road Safety Part 6: Road Safety Audits*, Sections 4.4 and 4.5.

TABLE 3.1 MINIMUM ACTIVITIES FOR A ROAD SAFETY AUDIT OF EACH PHASE OF A PROJECT

PROJECT PHASE	TYPE OF ROAD SAFETY AUDIT	MINIMUM ACTIVITIES
Pre-construction	Strategic design Concept design Detailed design	• View the site. • Assess the project from the design plans. • Record all road safety deficiencies.
Construction	Roadworks	• Assess the project from the construction plans. • Assess the project by inspecting the site, both during day and night conditions. • Record all road safety deficiencies.
	Pre-opening	• Review the design plans. • Assess the project by inspecting the site, both during day and night conditions. • Record all road safety deficiencies.
Post-construction	Finalisation Existing road	• Assess the road and road related areas by inspecting the site, both during day and night conditions. • Record all road safety deficiencies.

3.3.1 Steps

Pre-construction phase road safety audits

1. **Review all the information/material.**

- ☑ Gather any additional information/material necessary for the road safety audit.
- ☑ The latest design plans must be reviewed.
- ☑ Follow up any missing information/material and clarify any uncertainties with the project sponsor.
- ☑ Details of any information/material that is not supplied but is needed/desirable to achieve the required road safety audit outcomes must be recorded.
- ☑ Must not review/analyse any crash history information that may have been supplied for separate processes following the road safety audit. This must be reviewed after the road safety audit assessments are complete.

2. **View the site.**

- ☑ It is highly desirable to physically visit the site.
- ☑ All audit team members must view the current site along all approaches, from the perspective of all the relevant different road users (use images if needed).
- ☑ It is desirable to use photographs/images to capture details of the current site.

3. **Assess the project from the design plans plus other material.**

- ☑ All audit team members must participate in the entire assessment.
- ☑ The assessment must be conducted from the perspective of all the relevant different road users.
- ☑ The project must be assessed for potential road safety risks, that is, the assessment must go beyond assessing the conformance to standards.
- ☑ Consult specialist advisors where necessary.

4. **Record all road safety deficiencies that are identified.**

- ☑ Complete the checklists as agreed.

Construction phase road safety audits

1. **Review all the information/material.**

- ☑ Gather any additional information/material necessary for the road safety audit.
- ☑ The latest design plans must be reviewed.
- ☑ Follow up any missing information/material with the project sponsor.
- ☑ Details of any information/material that is not supplied but is needed/desirable to achieve the required road safety audit outcomes must be recorded.
- ☑ Must not review/analyse any crash history information that may have been supplied for separate processes following the road safety audit. This must be reviewed after the road safety audit assessments are completed.

2. **Assess the project from the construction plans and by inspecting the site.**

- ☑ All audit team members must participate in the entire assessment.
- ☑ The assessment must be conducted along all approaches from the perspective of all the relevant different road users.
- ☑ The project must be assessed for potential road safety risks, that is, the assessment must go beyond assessing the conformance to standards.
- ☑ It is highly desirable to perform inspections before the project is opened to traffic.
- ☑ The site must be inspected during daylight conditions.
- ☑ The site must be inspected during night lighting conditions.
- ☑ It is desirable to observe the site during peak and off-peak operating conditions.
- ☑ It is desirable to conduct inspections under adverse weather conditions such as fog, rain, snow, etc, if the opportunity arises.
- ☑ Consult specialist advisors where necessary.

3. Record all road safety deficiencies that are identified.

- ☑ Complete the checklists as agreed.
- ☑ It is highly desirable to use photos/images to support the descriptions of deficiencies.

Post-construction phase road safety audits

1. Review all the information/material.

- ☑ Gather any additional information/material necessary for the road safety audit.
- ☑ Follow up any missing information/material with the project sponsor.
- ☑ Details of any information/material that is not supplied but is needed/desirable to achieve the required road safety audit outcomes must be recorded.
- ☑ Must not review/analyse any crash history information that may have been supplied for separate processes following the road safety audit. This must be reviewed after the road safety audit assessments are completed.

2. Assess the road and road related areas by inspecting the site.

- ☑ All audit team members must participate in the entire assessment.
- ☑ The assessment must be conducted along all approaches from the perspective of all the relevant different road users.
- ☑ The road and road related areas must be assessed for potential road safety risks, that is, the assessment must go beyond assessing the conformance to standards.
- ☑ The site must be inspected during daylight conditions.
- ☑ The site must be inspected during night lighting conditions.
- ☑ It is highly desirable to observe the site during peak and off-peak operating conditions.
- ☑ It is desirable to conduct inspections under adverse weather conditions such as fog, rain, snow, etc, if the opportunity arises.
- ☑ Consult specialist advisors where necessary.

3. Record all road safety deficiencies that are identified.

- ☑ Complete the checklists as agreed.
- ☑ It is highly desirable to use photos/images to support descriptions of deficiencies.
- ☑ It is desirable to capture spatial references to support location descriptions of deficiencies where appropriate.

3.4 Preparing the road safety audit report

Objective - To produce a written report documenting all the road safety deficiencies identified during the road safety audit. It must be produced in the specified format and it must be specific, clear and comprehensive.

ROLE	RESPONSIBILITY
Lead auditor	• Oversee the preparation of the report. • Finalise the draft report.
Audit team member	• Assist in the preparation of the report as directed by the lead auditor. • Review and provide support for the contents of the road safety audit report.
Active observer (Optional)	• Assist in the preparation of the report as directed by lead auditor.

A written road safety audit report is required for each road safety audit conducted. The report is a concise document which clearly identifies and describes all the road safety deficiencies identified during the road safety audit.

The lead auditor is responsible for producing the road safety audit report. The road safety audit team prepares the audit report and all team members sign the report to verify that they concur with the contents.

The report does not contain suggested actions or recommendations. These are the responsibility of the project sponsor.

For background information relating to preparing the road safety audit report refer to Austroads *Guide to Road Safety Part 6: Road Safety Audits,* Section 4.6.

3.4.1 Steps

1. **Draft the road safety audit report.**

☑ The report must be in writing and should be specific, clear and comprehensive.

☑ The report must be uniquely identified by a road safety audit number as supplied by the Library administrator.

☑ The report must not include any crash history of crash analysis comments or details.

☑ It should include the following sections:

- Purpose.
- Background.
- Scope of the audit.
- Audit team details.
- Assessment methodology and details.
- Information and material supplied, used and referenced.
- Meeting and assessment details
- Deficiency details (findings).
- Formal statement.

☑ The report must include details of:

- Each audit team member's status on the NSW Centre for Road Safety's *Register of Road Safety Auditors* at the time of the assessments, including details of the auditor's identification number, certification level and certification expiry date.
- Specialist advisors or active observers who assisted during the road safety audit process.
- The dates the assessments were conducted and the dates and times of site inspections.
- The dates the commencement and completion meetings were held and a list of persons who attended these meetings. If a meeting was not held an explanation must be provided.
- The scope of the road safety audit assessments, including lists of all plans reviewed and the area covered by the audit.
- Risk levels used in the report.

☑ Each identified road safety deficiency or group of deficiencies must:

- Be categorised into one of the groups as shown on the *Road safety categories* information sheet.
- Have a risk level assigned to it.

☑ For each identified road safety deficiency or group of deficiencies, the report must:

- Include a comprehensive description of the location.
- Include an explanation of the potential road safety impact (ie in relation to crash types).
- Not contain any suggested actions or recommendations.

☑ The formal statement in the report must provide for support by each team member, including details of their auditor identification number issued by the NSW Centre for Road Safety's *Register of Road Safety Auditors*.

2. The road safety audit team review the draft report.

☑ The contents of the report must be supported by all team members.

3. Finalise the draft road safety audit report.

3.5 Holding the completion meeting

Objective - To discuss the road safety audit findings and outcomes and finalise the contract agreement.

ROLE	RESPONSIBILITY
Lead auditor	• Convene and hold the completion meeting. • Record and confirm the outcomes/ actions of the meeting.
Project sponsor	• Attend the completion meeting. • Determine and advise which project stakeholders need to attend the completion meeting.
Audit team member (Optional)	• Attend the completion meeting as directed by the lead auditor.

The completion meeting is an important part of the road safety audit process. It is held after the audit team has finished the assessments/inspections and produced a draft report of their findings. It is attended by the members of the road safety audit team or at least the lead auditor and the project stakeholders or at least project sponsor.

The meeting enables the lead auditor to present a draft report and discuss the audit findings and other relevant information from the road safety audit with the project sponsor. It also provides an opportunity for the project sponsor to confirm the expectations of the road safety audit report. Presenting the draft report at the meeting enables the lead auditor, the project sponsor and project stakeholders to work together to ensure the road safety audit outcomes can be achieved.

For background information relating to the completion meeting refer to Austroads *Guide to Road Safety Part 6: Road Safety Audit,* Section 4.7.

3.5.1 Steps

1. Convene the completion meeting in the appropriate forum.

- ☑ The completion meeting must be held (face-to-face, phone).
- ☑ It must be held prior to the submission of the final report.
- ☑ At a minimum, the meeting must be attended by the project sponsor and the lead auditor (team representative).
- ☑ Decide which other road safety audit representatives need to attend the completion meeting.

2. Hold the meeting.

- ☑ Copies of the draft road safety audit report must be made available at the completion meeting.
- ☑ Discuss the draft road safety audit report, ensuring that its contents maintain the integrity and independence of the road safety audit.
- ☑ The deficiencies identified during the road safety audit must be presented/discussed.
- ☑ Discuss possible corrective action options for key findings if requested by the project sponsor. These are not included in the report.
- ☑ Confirm the layout, format and level of detail of the draft road safety audit report with the project sponsor.
- ☑ Return all relevant information/materials that were used to conduct the audit.
- ☑ Confirm other matters to complete the contract agreement.
- ☑ The meeting outcomes/actions must be recorded.

3. Confirm meeting actions/outcomes.

- ☑ A copy of the record of the meeting must be provided to the project sponsor.

3.6 Finalising the road safety audit report

Objective - To produce and deliver the final written report which specifically, clearly and comprehensively documents all the road safety deficiencies identified during the road safety audit. The report is produced in the expected format and is signed and dated by all members of the road safety audit team.

ROLE	RESPONSIBILITY
Lead auditor	• Produce the final road safety audit report, signed and dated by all members of the road safety audit team. • Deliver the expected number of copies of the final road safety audit report to the project sponsor.
Audit team member	• Verify and agree with the contents of the final report by signing and dating it.

Delivering the final road safety audit report marks the end of the involvement of the road safety audit team.

The road safety audit report is the formal product of the road safety audit. It is an important document which represents the road safety audit team members professional position. It is the document on which decisions about corrective actions will be based. The document is recognised by the legal system.

3.6.1 Steps

1. Amend the draft road safety audit report.

☑ In accordance with the outcomes of the completion meeting.

☑ In accordance with the project sponsor's feedback in relation to the draft road safety audit report.

2. Review the final road safety audit report.

☑ Each member of the road safety audit team must sign (and include their road safety auditor identification number) and date the report to verify that they have read the report and agree with its contents.

☑ Copies of the report that are not signed and dated are not acceptable.

3. Deliver the final road safety audit report.

☑ The agreed number of copies of the report must be provided in the agreed format.

☑ Original copies of the final road safety audit report must be provided to the project sponsor.

4 Completing a road safety audit

The procedures in this section are meant for the project sponsor.

4.1 Overview

Objective - To manage the implementation of actions which enhance road safety and comprehensively record the completed action for every deficiency identified in the final road safety audit report.

ROLE	RESPONSIBILITY
Project sponsor	• Represent the organisation commissioning the road safety audit at the completion meeting. • Accept and review the final road safety audit report. • Produce and implement a corrective action program. • Close the corrective action program.
Specialist advisor (Optional)	• Provide specialist advice, as requested by the project sponsor.
Service provider	• Deliver implemented corrective action, as directed by the project sponsor.
Approval manager	• Overall road safety audit outcomes.

The completing phase is critical to the road safety audit process. It is designed to ensure that the project delivers the best possible road safety outcomes. It also ensures transparency and accountability in relation to decision making and actions.

The key steps that determine a successful outcome for the completion of a road safety audit involve:

- Attending the completion meeting.
- Accepting the road safety audit report.
- Reviewing the report.
- Producing a corrective action program.
- Implementing corrective actions.
- Closing the corrective action program.

4.2 References

For introductory and background information relating to road safety and road safety treatments refer to the following references which are available on the Austroads website: www.austroads.com.au

Austroads (2009) *Guide to Road Safety - Part 1: Road Safety Overview.* Austroads Incorporated, Sydney, Australia.

Austroads (2006) *Guide to Road Safety - Part 2: Road Safety Strategy and Evaluation.* Austroads Incorporated, Sydney, Australia.

Austroads (2008) *Guide to Road Safety - Part 3: Speed Limits and Speed Management.* Austroads Incorporated, Sydney, Australia.

Austroads (2009) *Guide to Road Safety - Part 4: Local Government and Community Road Safety.* Austroads Incorporated, Sydney, Australia.

Austroads (2006) *Guide to Road Safety - Part 5: Road Safety for Rural and Remote Areas.* Austroads Incorporated, Sydney, Australia.

Austroads (2006) *Guide to Road Safety - Part 7: Road Network Crash Risk Assessment and Management.* Austroads Incorporated, Sydney, Australia.

Austroads (2008) *Guide to Road Safety - Part 9: Roadside Hazard Management.* Austroads Incorporated, Sydney, Australia.

4.3 Attending the completion meeting

Objective - To discuss the road safety audit findings, outcomes and finalise the contract agreement.

ROLE	RESPONSIBILITY
Lead auditor	• Hold the completion meeting. • Record and confirm the outcomes/ actions of the meeting.
Project sponsor	• Attend the completion meeting. • Determine which project stakeholders need to attend the completion meeting and advise them.
Project stakeholders (Optional)	• Attend the completion meeting as directed by the project sponsor.

The completion meeting is an important part of the road safety audit process. It is held after the audit team has finished the assessments/inspections and produced a draft report of their findings. It is attended by the members of the road safety audit team, or at least the lead auditor and the project stakeholders, or project sponsor.

The meeting enables the lead auditor to present the draft report and discuss the audit findings and other relevant information resulting from the road safety audit with the project sponsor. It also provides an opportunity for the project sponsor to confirm the expectations of the road safety audit report. The draft report enables the lead auditor, the project sponsor and project stakeholders to work together to ensure the road safety audit outcomes can be achieved.

4.3.1 Steps

1. **Determine which relevant stakeholders are to attend the completion meeting and invite them.**

☑ It is highly desirable to invite the project stakeholders.

2. **Attend the completion meeting.**

☑ Provide feedback on the layout, format and level of detail of the draft road safety audit report.

☑ Discuss the deficiencies identified during the road safety audit.

☑ Confirm that each identified deficiency is a road safety deficiency.

☑ Must not compromise the integrity of the audit by requesting that deficiencies be amended, removed or added.

This is dealt with under the key step Reviewing the road safety audit report in section 4.4.

☑ It is highly desirable to discuss corrective action options for key findings. However, these are not to be included in the report.

☑ Confirm the expectations and delivery of the final road safety audit report.

☑ Confirm the arrangements for finalising the contract agreement.

3. **Confirm meeting actions/outcomes.**

☑ The record of the meeting outcomes must be filed in the official file for the project.

4.4 Accepting the road safety audit report

Objective - To ensure that the submitted final road safety audit report meets the expectations and requirements specified in the contract agreement.

ROLE	RESPONSIBILITY
Project sponsor	• Review the deliverables and confirm that they conform to the contract agreement. • Submit a copy of the final report to the Road Safety Audit Reports Library.
Library administrator	• Acknowledge receipt of a copy of the final road safety audit report for the Road Safety Audit Reports Library.

All the original final road safety audit reports that are submitted must be signed and dated by all members of the road safety audit team. The report must meet the requirements of the contract agreement.

4.4.1 Steps

1. **Confirm the receipt of the final road safety audit report and deliverables.**

☑ Confirm that all the deliverables listed in the contract agreement have been received and are satisfactory.

☑ Reports must be presented as originals.

☑ Reports must be signed and dated by all members of the road safety audit team.

☑ Confirm that the data/materials are returned, as required.

☑ Complete the notification of completion of the contract, as required.

2. **Submit the final report to the Road Safety Audit Report Library.**

☑ A copy of the final road safety report must be submitted to the Road Safety Audit Reports Library. The Library collects copies of all road safety audits undertaken for the organisation.

☑ The copy of the report must be submitted in the format required by the Road Safety Audit Reports Library.

☑ Record the acceptance receipt number issued by the Road Safety Audit Reports Library. This will need to be reported in the corrective action program.

4.5 Reviewing the road safety audit report

Objective - To review each deficiency identified in the road safety audit report to determine responsibilities, the requirement for further information and corrective actions and to assess the risks in relation to the organisation and project.

ROLE	RESPONSIBILITY
Project sponsor	• Review the road safety audit report and each identified deficiency. • Propose and document corrective actions for each identified deficiency.
Specialist advisor (Optional)	• Provide specialist advice, as requested by the project sponsor.

The review of the final road safety audit report and each identified deficiency is an important step in preparation for the proposal of corrective actions.

The responsibility for reviewing each deficiency needs to be determined. Each identified deficiency is comprehensively checked to determine all possible actions and the risks to the organisation associated with each action. For each deficiency identified, corrective actions are proposed.

The corrective actions developed must be in the best interests of road safety, feasible and designed in accordance with the safe systems approach to road safety, in order to potentially reduce the incidence and/or severity of crashes.

For background information relating to reviewing the road safety audit report refer to Austroads *Guide to Road Safety Part 6: Road Safety Audit,* Section 4.8.

4.5.1 Steps

1. Review each identified deficiency.

☑ Confirm that each identified deficiency is a road safety deficiency.

☑ Identify the road authority, agency or directorate responsible for addressing each deficiency. This must be in accordance with legislation and organisational responsibilities.

☑ Obtain further advice or information if required or seek suggestions about actions to take to address each deficiency. This may include commissioning a separate project.

☑ Assign the priority rating in relation to road safety for each deficiency as shown in the *Risk assessment* information sheet. This should be reviewed in relation to community risks initially, then organisational risks and finally project risks. The priority rating should also be reviewed against the risk level assigned to the deficiency in the final road safety audit report.

2. Propose corrective actions.

☑ Each deficiency must be documented.

☑ Obtain sufficient advice/information from relevant sources to be able to determine and develop corrective actions. It is highly desirable to obtain advice from specialists.

☑ For each deficiency a corrective action (response) must be identified and it must be documented.

☑ For each corrective action the risks to the organisation in performing the action must be comprehensively documented. This includes actions such as 'no further action', 'referred to agency for action', etc.

☑ The corrective actions developed to address the deficiencies may be short, medium or long term.

3. Select and document the proposed corrective actions for each deficiency.

☑ Include all proposed corrective action options and the reasons for selecting the preferred option, including details of the safety benefit.

☑ Corrective actions must be clearly and comprehensively described.

☑ If no further action is proposed, a comprehensive explanation must be provided.

4.6 Producing a corrective action program

Objective - To assign accountability in relation to organisational responsibilities and obtain approval for the appropriateness of the corrective actions and the safety benefits they provide.

ROLE	RESPONSIBILITY
Project sponsor	• Prepare the corrective action program. • Obtain written support for the corrective action program from the approval manager. • Record details of the corrective actions in the information system.
Approval manager	• Take overall responsibility for the corrective action program and road safety audit outcomes.

Each corrective action is incorporated into a corrective action program.

The list of corrective actions should be signed off by an appropriate officer who verifies that they are appropriate and provide safety benefits. The person signing should have some road safety audit qualifications, knowledge and expertise or occupy a position of sufficient rank in the organisation to take full responsibility for the outcomes.

4.6.1 Steps

1. **Prepare the corrective action program.**

- ☑ The corrective action program must detail each deficiency identified in the final road safety audit report.
- ☑ It must specify the priority rating for each deficiency.
- ☑ It must clearly and concisely detail all the suggested actions/options considered for each deficiency. Where multiple options for actions to address a deficiency have been suggested, an explanation for the selection of the preferred option is required.
- ☑ It must clearly and concisely detail the proposed corrective action for each deficiency.
- ☑ It must provide an indication of the proposed timeframe for completing the implementation of each corrective action.
- ☑ It must provide an indication of the estimated total costs of implementation of the corrective action.
- ☑ It must include an action for the submission of the road safety report to the Road Safety Audit Reports Library.
- ☑ The corrective action program must be signed and dated by the project sponsor.

2. **Obtain approval for the corrective action program.**

- ☑ Amend the corrective action program as directed.
- ☑ Approval must be obtained from an officer with the appropriate delegation.
- ☑ The approval must be documented in writing.

3. **Record details of the corrective action program in the appropriate information management system.**

- ☑ The original corrective action program must be filed in the official file for the project.
- ☑ Enter details of each identified deficiency in the appropriate information management system.

4.7 Implementing corrective actions

Objective - To completely implement all corrective actions and clearly and concisely record the details of each completed corrective action implemented to address the deficiencies identified in the final road safety audit report.

ROLE	RESPONSIBILITY
Project sponsor	• Refer identified deficiencies to other internal branches or external agencies. • Initiate or delegate the implementation of corrective actions. • Prepare documentation for variations. • Verify that the completed corrective actions have been satisfactorily implemented.
Approval manager	• Approve variations to the corrective action program.
Service provider	• Deliver implemented corrective actions, as directed by the project sponsor.

The implementation of corrective actions to address some or all of the identified deficiencies can be delegated, but it remains the responsibility of the project sponsor until they have all been satisfactorily addressed.

If a deficiency relates to infrastructure that is maintained by a third party, forward the details to the relevant authority for action. File the acceptance of the referral from the third party.

Document all completed corrective actions. It is important to ensure that details of the work that was completed are documented as this may become a legal issue in the future.

4.7.1 Steps

1. **Refer identified deficiencies to other internal branches or external agencies.**

☑ Must receive a written acceptance of the referral. Until the acceptance is received, the deficiency remains the responsibility of the project sponsor. If the issue cannot be resolved, elevate it through the organisation until acceptance is acknowledged.

☑ The corrective action can only be recorded as complete after acceptance of the referral is received.

2. **Initiate the implementation of corrective actions.**

☑ Scheduled actions cannot be recorded as complete until the action has actually been implemented.

☑ Obtain progress reports of implementation of the corrective actions.

☑ Variations to a corrective action must be appropriately approved and documented. If there are variations, it must be able to be demonstrated that the relevant safety deficiency is still being addressed.

☑ Record details of approved variations in the information system.

☑ Regularly monitor the progress of all corrective actions and update the details in the information system.

3. **Verify that the completed corrective action has been satisfactorily implemented.**

☑ The implemented corrective action must be inspected/viewed. The inspection may be delegated, but it remains the responsibility of the project sponsor.

☑ The corrective action can only be recorded as complete when the completed action has been verified.

☑ At a minimum, record the date completed, the details of the project sponsor and the name of the officer who verified the completed action.

☑ The details must be recorded in the information system.

4.8 Closing the corrective action program

Objective - To produce a written report that clearly and concisely records the details of all the completed corrective actions which were implemented to address each road safety deficiency identified in the final road safety audit report.

ROLE	RESPONSIBILITY
Project sponsor	• Produce the completed corrective action program report. • Obtain final approval and close out the overall road safety audit.
Approval manager	• Take overall responsibility for road safety audit outcomes.

It is important to ensure that all completed corrective actions are documented in one report to indicate that all road safety deficiencies identified in the final road safety audit report were addressed. This closing report must be endorsed by the appropriate delegated officer as it may become a legal issue in the future.

4.8.1 Steps

1. **Produce a closing road safety audit report.**

☑ At a minimum, the report must include details of each deficiency identified in the final road safety audit report, together with details of the completed corrective action and the date it was completed.

☑ The project sponsor must sign and date the report.

2. **Obtain final approval.**

☑ Approval must be obtained from an officer with the appropriate delegation. It is preferable to obtain approval from the same position that approved the corrective action program.

☑ Approval must be documented in writing.

3. **Close out.**

☑ All corrective actions must be closed out in the appropriate information management system.

☑ The original report must be filed in the official file for the project.

☑ A copy of the final program report must be submitted to the Road Safety Audit Reports Library. It must be submitted in the format required by the Road Safety Audit Reports Library.

☑ Record the acceptance receipt number issued by the Road Safety Audit Reports Library. This will need to be recorded in the official file for the project.

For further enquiries
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NSW GOVERNMENT
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Roads & Traffic
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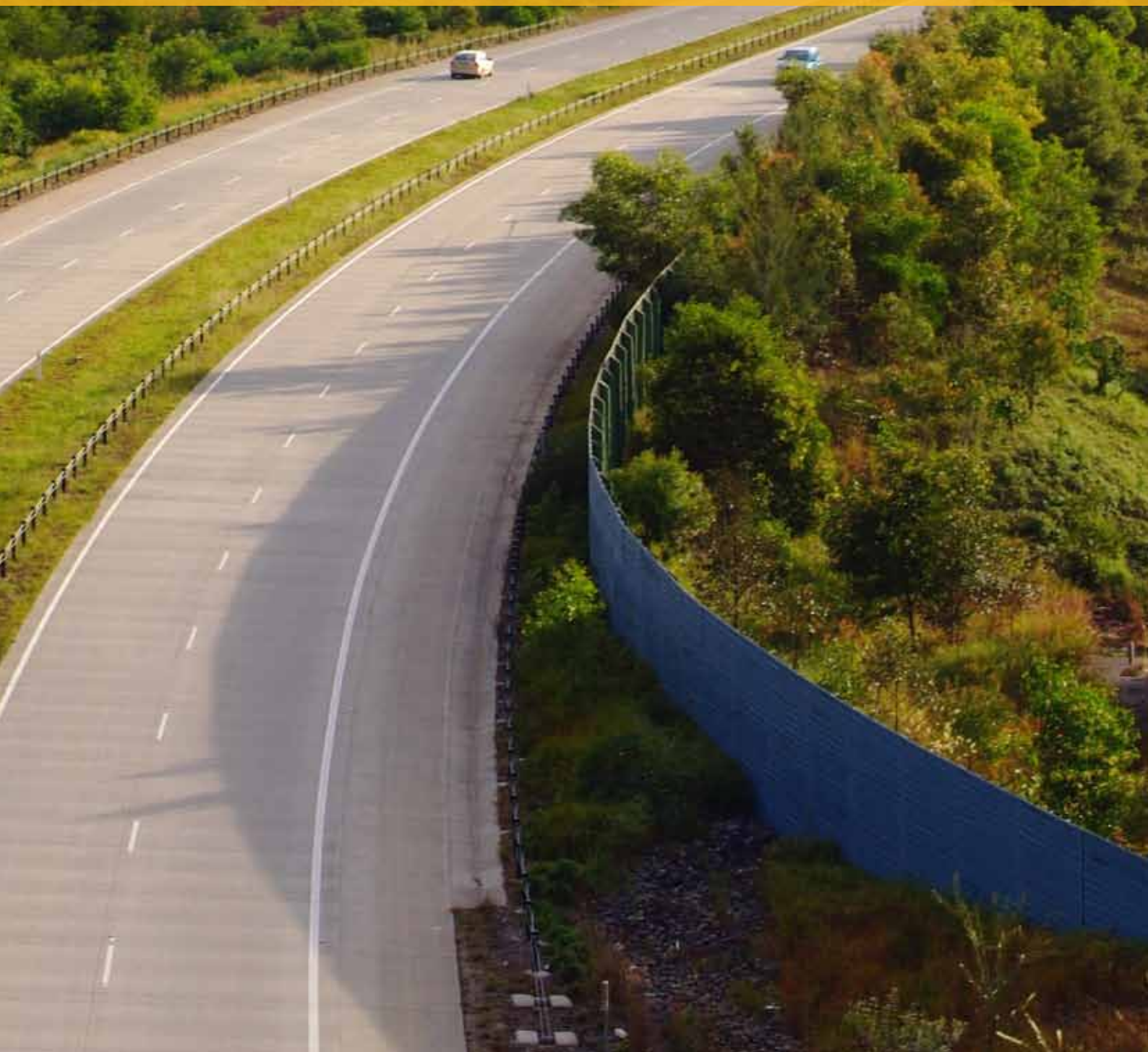
PART 2:

Road safety evaluation



Part 2: Road safety evaluation

CONTENTS

1 Introduction

Road Safety Evaluations are a pro-active approach to road safety.

Road Safety Evaluations form an integral part of the safe system approach to road safety.

The Austroads publication *Guide to Road Safety Part 6: Road Safety Audits* provides general guidance at a National level. It includes information on the safe systems approach, principles of road safety audits, legal issues, the audit process and road safety principles.

The Austroads publication *Guide to Road Safety Part 8: Treatment of Crash Locations* also provides general guidance at a National level. It includes information on the safe systems approach, road safety strategies, road crash data, components and characteristics, and the process for the treatment of crash locations.

While following the principles outlined in these Austroads publications, this document provides specific guidance at the State level for New South Wales. It includes detailed procedures for commissioning, conducting and completing road safety evaluations.

1.1 About this document

This document is designed to be used as the primary source of procedures for commissioning, conducting and completing road safety evaluations for Roads and Traffic Authority (RTA) of NSW.

Where there are differences between this document and the Austroads publications, this guide should take precedence.

This guide is divided into four sections:

- Section 1 provides introductory and background information relating to road safety evaluations.
- Section 2 provides details of the procedures involved in commissioning road safety evaluations. These procedures are meant for the project sponsor.
- Section 3 provides details of the procedures involved in conducting road safety evaluations. These procedures are meant for the lead road safety auditor and road safety audit team.
- Section 4 provides details of the procedures involved in completing road safety evaluations. These procedures are meant for the project sponsor.

1.2 Definitions

Road safety evaluation

A road safety evaluation involves a road safety audit, a crash investigation and a review of the speed zone. It is a formal examination of existing roads and road related areas from the perspective of all road users with the intention of identifying road safety deficiencies and areas of risk that have led to or could lead to road crashes. It is conducted by an independent, qualified team of professionals.

Road safety audit

A road safety audit is a formal examination of proposed or existing roads and road related areas from the perspective of all road users with the intention of identifying road safety deficiencies and areas of risk that could lead to road crashes. It does not consider crash history. It is conducted by an independent, qualified team of professionals.

Crash investigation

A crash investigation is a formal analysis of the road crash history for a specific period along existing roads or road related areas with the intention of identifying crash clusters, common crash characteristics, trends in the road crash statistics, site road safety deficiencies and areas of risk that have led to or could lead to more road crashes. It is conducted by a qualified professional or a team of professionals.

Speed Zone Review

A speed zone review is a formal assessment of the speed limits along existing roads, conducted with the intention of providing for the credible and consistent application of speed limits throughout NSW, as well as an appropriate balance between road safety, land use amenity, transport efficiency and environment on public roads.

Roles

The table on the following page, provides definitions of the roles that are referred to in this document.

TABLE 1.1 DEFINITIONS OF ROLES WITHIN THE ROAD SAFETY EVALUATION PROCESS

ROLE	MEANING
Project sponsor	The project manager or officer (employed or contracted by the road jurisdiction) responsible for delivering or overseeing the road infrastructure related works.
Lead auditor	A road safety auditor with qualifications, experience and skills required to lead and manage the conducting phase of the road safety audit process and participate in the entire undertaking of the road safety audit.
Audit team member	A road safety auditor with qualifications, experience and skills required to participate in the entire undertaking of the road safety audit.
Lead investigator	A professional with qualifications, experience and skills required to lead and manage the conducting phase of the crash investigation process and participate in the entire undertaking of the crash investigation.
Crash investigation team member	A professional with qualifications, experience and skills required to participate in the undertaking of the crash investigation.
Lead speed zone reviewer	A professional with qualifications, experience, skills and delegations required to lead, manage and authorise speed zone reviews and participate in the undertaking of speed zone reviews.
Specialist advisor	A practicing professional with specific skill sets, experience or knowledge of subject matter required to provide independent specialist advice to the project sponsor or the audit team on critical aspects of the project. A specialist advisor does not participate in the entire road safety audit.
Road safety advisor	A practicing professional with specific skill sets, experience or knowledge in road safety matters required to provide road safety advice to the project sponsor on critical aspects of the road safety audit process. A road safety advisor may participate/assist in the entire road safety audit process. The advisor does not need to be independent of the works.
Project stakeholder	A person with an interest in the road infrastructure related works. May be a planner, designer, construction manager, asset manager, operations manager, or alliance member.
Approval manager	The manager employed by the road jurisdiction who is accountable for delivering or overseeing the road infrastructure related works.
Service provider	The person, contractor, organisation or party required to deliver services.
Library administrator	The manager or officer (employed or contracted by the road jurisdiction) responsible for administering the Road Safety Audit Reports Library.

1.3 Building safer roads

Road safety audits and crash investigations form an integral part of the safe system approach. For background information relating to the safe systems approach refer to Austroads *Guide to Road Safety Part 6: Road Safety Audits*, Section 1.1, Austroads *Guide to Road Safety Part 8: Treatment of Crash Locations*, Section 3; and Austroads *Guide to Road Safety Part 1: Road Safety Overview*, Section 2.

Best practice in road safety is achieved by applying the basics of road safety engineering safety principles. For background information relating to the safety principles refer to Austroads *Guide to Road Safety Part 6: Road Safety Audits*, Section 8 and Austroads *Guide to Road Safety Part 8: Treatment of Crash Locations,* Section 9.

1.4 An explanation of Road Safety Audit and Crash Investigation

For background information relating to the what, when, why, who, and how of road safety audits refer to Austroads *Guide to Road Safety Part 6: Road Safety Audits*, Sections 1.4, 1.5 and 2.

For background information relating to the what, when, why, who and how of road crash investigation refer to Austroads *Guide to Road Safety Part 8: Treatment of Crash Locations,* Sections 2 and 4.

1.5 Types of road safety evaluations

For the purpose of road safety evaluations, an existing road or road related area is a project which is considered to be in the post-construction phase of its life cycle.

This phase is further divided into the key life cycle stages of a project: finalisation and existing road. Road safety evaluations are typically conducted at these key life cycle stages of a project.

The table below provides a description of each type of road safety evaluation.

TABLE 1.2 DESCRIPTION OF EACH TYPE OF ROAD SAFETY EVALUATION

PROJECT PHASE	TYPE OF ROAD SAFETY AUDIT	PROJECT STAGE DESCRIPTION
Post-construction	Finalisation	Conducted on an existing road, path or road network some time after the completion of the construction of road infrastructure works. It is typically conducted once road user patterns have settled following the works, or immediately prior to the change over of ownership or responsibility in regard to the assets or network operations following the works.
	Existing road	Conducted on an existing road, path or road network where no recent construction works has been undertaken.

For background information and case studies relating to existing road safety audits refer to Austroads *Guide to Road Safety Part 6: Road Safety Audits*, Sections 6.4, 7.8 and 7.9.

1.6 Legal issues

For background information relating to road authorities' responsibilities and legal issues refer to Austroads *Guide to Road Safety Part 1: Road Safety Overview,* Section 3 and Austroads *Guide to Road Safety Part 6: Road Safety Audits,* Section 3.

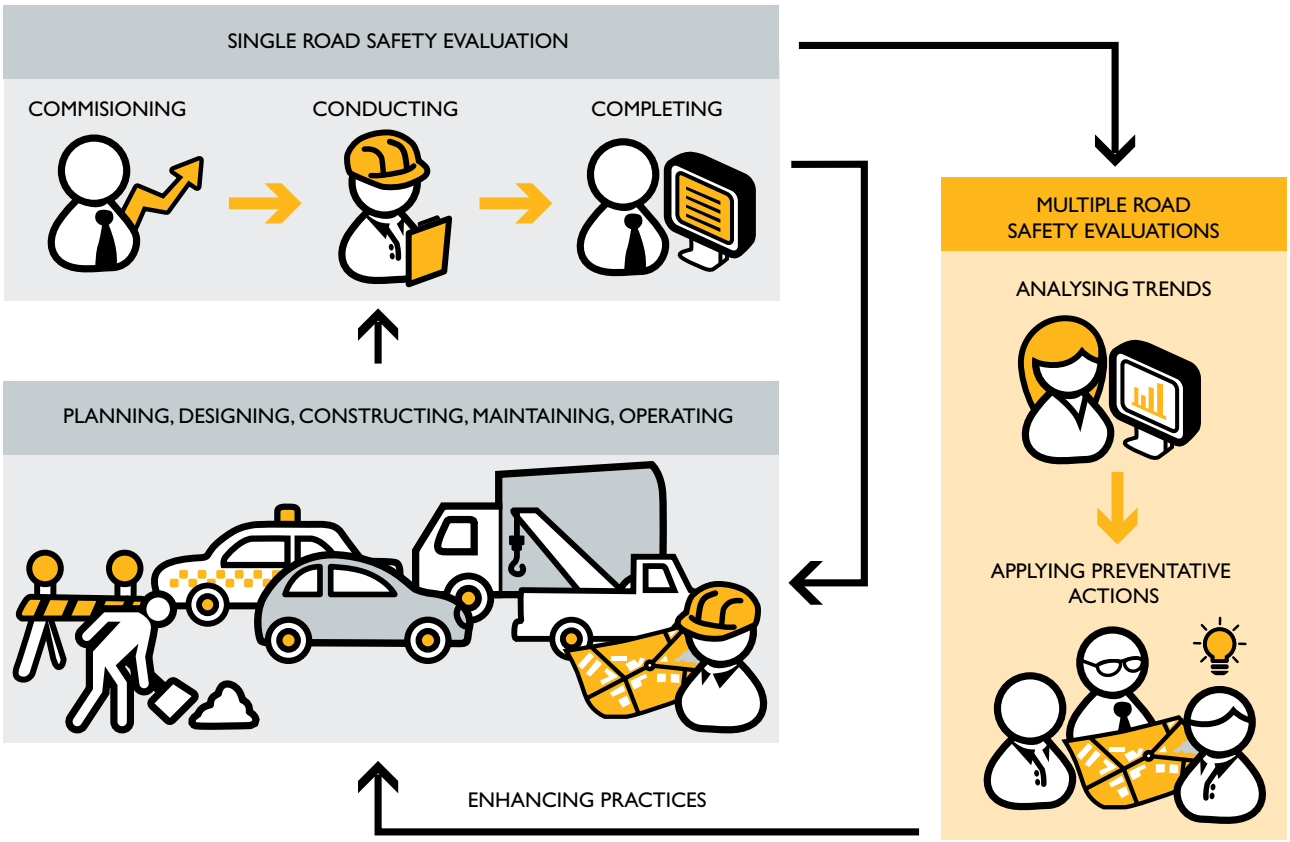
1.7 Road safety audit process

As part of a road safety evaluation, a road safety audit is conducted.

A road safety audit is only one component of the road safety audit process. The road safety audit process consists of a variety of tasks which together deliver the greatest road safety benefits to the community.

The phases of the road safety audit process in relation to a single road safety audit or road safety evaluation are:

- Commissioning a road safety audit/evaluation. This is undertaken by the project sponsor.
- Conducting a road safety audit/evaluation. This is undertaken by the road safety audit team, crash investigation team and lead speed zone reviewer.



- Completing corrective actions to address road safety deficiencies identified by a road safety audit/ evaluation. This is undertaken by the project sponsor.

The phases of the road safety audit process relating to multiple road safety audits/evaluations across a region are:

- Analysing recurring road safety deficiencies.
- Applying preventative actions, such as modifying standard drawings, improving training outcomes, enhancing policies.
- Altering practices in planning, development, construction, maintenance or operations of the road and road related areas.

1.8 References

This guide provides details of the procedures to use for road safety evaluations.

For introductory and background information relating to road safety principles, practices and explanations, refer to the following documents:

RTA (2004), *Accident Reduction Guide Part 1: Accident investigation and Prevention.* Roads and Traffic Authority of NSW, Sydney, Australia.

RTA (2009) *NSW Speed Zoning Guidelines*. Roads and Traffic Authority, Sydney, Australia.

Austroads (2009), *Guide to Road Safety Part 1: Road Safety Overview.* Austroads Incorporated, Sydney, Australia.

Austroads (2006), *Guide to Road Safety Part 6: Road Safety Audits*. Austroads Incorporated, Sydney, Australia.

Austroads (2009), *Guide to Road Safety Part 8: Treatment of Crash Locations*. Austroads Incorporated, Sydney, Australia.

2 Commissioning a road safety evaluation

The procedures in this section are meant for the project sponsor.

2.1 Overview

Objective - To establish the requirements, limitations and expectations for the conduct of a road safety evaluation.

ROLE	RESPONSIBILITY
Project sponsor	• Produce the road safety audit brief, crash investigation brief and speed zone review request. These provide clear statements of the scope of work and the expectations of the relevant team. • Select and engage the road safety audit team and crash investigation team. • Gather background information. • Hold the commencement meetings.
Lead auditor	• Represent the road safety audit team.
Lead investigator	• Represent the road crash investigation team.
Road safety advisor (Optional)	• Provide advice on road safety matters and outcomes as directed by the project sponsor.
Project stakeholders (Optional)	• Provide advice on road and road related operational characteristics and practices, maintenance practices, enforcement practices, planning and development projects and regional history, as directed by the project sponsor.

The commissioning phase is important to the road safety evaluation process. It is concerned with achieving the right combination of individuals to make up the road safety audit and road crash investigation teams. These teams should consist of individuals who together are most suited to understanding the characteristics, needs and outcomes of the project to be evaluated. The commissioning phase also provides an opportunity to establish clear and concise communications and understanding between all parties.

It is most important to undertake the road safety audit separately from the road crash investigation and speed zone review in order to ensure that the road safety audit process is not tainted by the other processes or their outcomes.

The key steps that determine a successful outcome for commissioning a road safety evaluation are:

- Commissioning a road safety audit.
- Commissioning a road crash investigation.
- Requesting a speed zone review.

2.2 Commissioning a road safety audit

Objective - To establish the requirements, limitations and expectations for the conduct of a road safety audit.

ROLE	RESPONSIBILITY
Project sponsor	• Produce a road safety audit brief which provides a clear statement of the scope of the audit and the expectations of the audit team. • Select and engage the road safety audit team. • Gather background information. • Hold the commencement meeting.
Lead auditor	• Represent the road safety audit team.
Road safety advisor (Optional)	• Provide advice on road safety matters and outcomes as directed by the project sponsor.
Project stakeholders (Optional)	• Provide advice on road and road related operational characteristics and practices, maintenance practices, enforcement practices, planning and development projects and regional history as directed by the project sponsor.

The commissioning phase is an important part of the road safety audit process. It is concerned with achieving the right combination of road safety auditors who are most suited to understanding the characteristics, needs and outcomes of the project to be audited. It also provides an opportunity to establish clear and concise communications and understanding between all parties.

The road safety audit and road crash investigation may be conducted by the same team, provided they have the necessary qualifications and meet the requirements. If the same team is to conduct both the road safety audit and the road crash investigation, it is crucial that the road safety audit is performed first and before the team views any of the crash history.

The key steps that determine a successful outcome for commissioning a road safety audit involve:

- Preparing a road safety audit brief.
- Selecting the road safety audit team.
- Gathering background information about the project and delivering it to the audit team.
- Holding a commencement meeting.

For detailed instructions on commissioning a road safety audit refer to *Commissioning a road safety audit,* in *Part 1: Road Safety Audits of Guidelines for Road Safety Audit Practices.*

2.3 Commissioning a road crash investigation

Objective - To establish the requirements, limitations and expectations for the conduct of a road crash investigation.

ROLE	RESPONSIBILITY
Project sponsor	• Produce a road crash investigation brief which provides a clear statement of the scope of the investigation and the expectations of the crash investigation team. • Select and engage the road crash investigation team. • Gather background information. • Hold the commencement meeting.
Lead investigator	• Represent the road safety audit team.
Road safety advisor (Optional)	• Provide advice on road safety matters and outcomes as directed by the project sponsor.
Project stakeholders (Optional)	• Provide advice on road and road related operational characteristics and practices, maintenance practices, enforcement practices, planning and development projects and regional history as directed by the project sponsor.

The commissioning phase is important to the road crash investigation process. It is concerned with achieving the right combination of road crash investigators who are most suited to analysing and interpreting the crash data, understanding the road, road user and network characteristics and outcomes of the project to be investigated.

The road safety audit and road crash investigation may be conducted by the same team provided they have the necessary qualifications and meet the requirements. If the teams are the same it is crucial that the road safety audit is performed before team members view any of the crash history. The road crash investigation team may consist of one person.

The commissioning phase also provides the opportunity to establish clear and concise communications and understanding between all involved parties.

The key steps that determine a successful outcome for commissioning a road crash investigation involve:

- Preparing a road crash investigation brief.
- Selecting the road crash investigation team.
- Gathering background information about the project and delivering it to the crash investigation team.
- Holding a commencement meeting.

For detailed instructions on commissioning a road crash investigation refer to RTA (2004), *Accident Reduction Guide Part 1: Accident investigation and Prevention*. Roads and Traffic Authority of NSW, Sydney, Australia.

2.4 Requesting a speed zone review

Objective - To obtain advice on the correct speed zone for the characteristics, needs and outcomes of the road.

ROLE	RESPONSIBILITY
Project sponsor	• Produce a speed zone review request which provides a clear statement of the scope of the project and the requested review. • Gather background information. • Issue the speed zone request to the relevant lead speed zone reviewer.
Lead speed zone reviewer	• Conduct the speed zone review. • Provide the speed zone review outcomes.

The requesting phase is concerned with determining the right speed zone for the characteristics, needs and outcomes of the road to be reviewed. It also provides an opportunity to establish clear and concise communications and understanding between the parties involved.

The key steps that determine a successful outcome to a request for a speed zone review are:

- Preparing a speed zone review request.
- Gathering background information about the project and delivering it to the speed zone review team.
- Issuing the speed zone review request.
- Obtaining the latest speed zone review outcome.

For further information on speed zoning reviews refer to RTA (2009), *NSW Speed Zoning Guidelines*. Roads and Traffic Authority of NSW, Sydney, Australia.

3 Conducting a road safety evaluation

The procedures in this section are meant for the lead auditor, lead investigator and the associated teams.

3.1 Overview

Objective - To conduct two formal examinations of existing roads and road related areas from the perspective of all road users with the intention of identifying road safety deficiencies and areas of risk that could lead to or have led to road crashes.

ROLE	RESPONSIBILITY
Project sponsor	• Request a speed zone review. • Provide a copy of the final road crash investigation report to the lead auditor.
Lead auditor	• Conduct the road safety audit. • Produce and deliver the final road safety audit report to the project sponsor. • Produce and deliver the final road safety evaluation report to the project sponsor.
Lead investigator	• Conduct the road crash investigation. • Produce and deliver the final road crash investigation report to the project sponsor.

The conducting phase is the actual road safety evaluation. It involves conducting a road safety audit, a road crash investigation and a speed zone review and articulating the findings in a formal report to the project sponsor. This report does not include recommendations.

The key steps that determine a successful outcome to the conduct of a road safety evaluation involve:

- Conducting the road safety audit.
- Conducting the road crash investigation.
- Requesting a speed zone review.
- Finalising the road safety evaluation report.

3.2 Conducting a road safety audit

Objective - To conduct a formal examination of proposed or existing roads and road related areas from the perspective of all road users with the intention of identifying road safety deficiencies and areas of risk that could lead to road crashes.

ROLE	RESPONSIBILITY
Project sponsor	• Hold the commencement meeting. • Represent the organisation commissioning the road safety audit at the completion meeting.
Lead auditor	• Represent the road safety audit team at the commencement meeting. • Lead/manage the overall road safety audit. • Undertake the road safety audit. • Hold the completion meeting. • Produce and deliver the final road safety audit report to the project sponsor.
Audit team member	• Undertake the road safety audit. • Assist in preparing the road safety audit report.
Specialist advisor (Optional)	• Provide specialist advice to the road safety audit team, as directed by the lead auditor.

The conducting phase is the actual road safety audit. It is concerned with identifying road safety deficiencies and areas of risk that could lead to road crashes and articulating these findings in a formal report to the project sponsor.

It is crucial that the road safety auditors performed the audit without viewing of any of the crash history.

The road safety audit report does not contain suggested actions or recommendations. These are the responsibility of the project sponsor.

The key steps that determine a successful outcome for the conduct of a road safety audit involve:

- Attending the commencement meeting.
- Undertaking the road safety audit.
- Preparing the road safety audit report.
- Holding a completion meeting.
- Finalising the road safety audit report.

For detailed instructions on conducting a road safety audit refer to Section 3: *Conducting a road safety audit* in *Part 1: Road Safety Audits of Guidelines for Road Safety Audit Practices.*

3.3 Conducting a road crash investigation

Objective - To conduct a formal analysis of the road crash history for a specific period along existing roads or road related areas, with the intention of identifying crash clusters, common crash characteristics, trends in the road crash statistics and site road safety deficiencies and areas of risk that have led to or could lead to more road crashes.

ROLE	RESPONSIBILITY
Project sponsor	• Hold the commencement meeting.
Lead investigator	• Represent the road crash investigation team at the commencement meeting. • Lead/manage the overall road crash investigation. • Produce and deliver the final road crash investigation report to the project sponsor.
Crash investigation team member	• Undertake the road crash investigation. • Assist in preparing the road crash investigation report.
Specialist advisor (Optional)	• Provide specialist advice to the road crash investigation team, as directed by the lead investigator.

The conducting phase is the actual road crash investigation. It involves performing an analysis of crash data and identifying road safety deficiencies and areas of risk that have led to or could lead to road crashes and articulating the findings in a formal report to the project sponsor.

The road crash investigation report does not contain suggested actions or recommendations. These are the responsibility of the project sponsor.

The key steps that determine a successful outcome for the conduct of a road crash investigation involve:

- Attending the commencement meeting.
- Undertaking the road crash investigation.
- Preparing the road crash investigation report.
- Finalising the road crash investigation report.

For detailed instructions on conducting a road crash investigation refer to RTA (2004), *Accident Reduction Guide Part 1: Accident investigation and Prevention.* Roads and Traffic Authority of NSW, Sydney, Australia.

3.4 Preparing the road safety evaluation report

Objective - To produce a written report in the specified format, documenting all the road safety deficiencies identified during the road safety audit and crash investigation. The report must be specific, clear and comprehensive.

ROLE	RESPONSIBILITY
Project sponsor	• Provide a copy of the final road crash investigation report to the lead auditor.
Lead auditor	• Oversee the preparation of the report. • Finalise the draft report.
Audit team member	• Assist in the preparation of the report, as directed by the lead auditor. • Review and provide support for the contents of the road safety evaluation report.

A written road safety evaluation report is required for each road safety evaluation conducted. The report is a concise document which clearly identifies and describes all the road safety deficiencies identified during the road safety audit and crash investigation.

The lead auditor is responsible for producing the road safety evaluation report. The road safety audit team prepares the evaluation report and all team members sign the report to verify that they concur with the contents.

The report does not contain suggested actions or recommendations. These are the responsibility of the project sponsor.

3.4.1 Steps

1. Collate all reports.

☑ The road safety evaluation report must include a final signed copy of the road safety audit report as an appendix.

☑ It must include a final signed copy of the road crash investigation report as an appendix.

2. Draft the road safety evaluation report.

☑ The report must be in writing and should be specific, clear and comprehensive.

☑ It must be uniquely identified by a road safety evaluation number as supplied by the Library administrator.

☑ The road safety evaluation report should include the following sections:

- Purpose.
- Background.
- Scope of the evaluation.
- The evaluation team.
- Information and material supplied, used and referenced.
- Meeting and assessment details.
- Aggregated deficiency details (findings) based on the road safety audit, road crash investigation and speed zone review.
- Formal statement.

☑ The report must include:

- Details of specialist advisors who assisted during the road safety evaluation process.
- The dates the commencement and completion meetings were held and a list of persons who attended these meetings. If a meeting was not held an explanation must be provided.
- A statement verifying that the road safety audit was conducted prior to the road crash investigation and that none of the audit team members had any knowledge of the crash history when undertaking the road safety audit.
- Details of the risk levels used in the report.

☑ Each identified road safety deficiency or group of deficiencies must be:

- Categorised into one of the groups as shown on the *Road safety categories* information sheet.
- Assigned a risk level.

☑ For each identified road safety deficiency or group of deficiencies the report must:

- Include a comprehensive description of the location.
- Include an explanation of its potential or real road safety impact (ie in relation to crash types).
- Not contain any suggested actions or recommendations.

☑ The formal statement in the report must provide for the support of each team member.

3. The road safety audit team review the draft report.

☑ The contents of the report must be supported by all members of the road safety audit team.

4. Finalise the draft road safety evaluation report.

3.5 Holding the completion meeting

Objective - To discuss the road safety evaluation findings and outcomes and finalise the contract agreement.

ROLE	RESPONSIBILITY
Lead Auditor	• Convene and hold the completion meeting. • Record and confirm the outcomes/ actions of the meeting.
Project sponsor	• Attend the completion meeting. • Determine and advise which project stakeholders need to attend the completion meeting.
Audit team member (Optional)	• Attend the completion meeting as directed by the lead auditor.

The completion meeting is an important part of the road safety evaluation process. It is held after the road safety audit and crash investigation teams have finished their assessments/inspections/analyses and produced a draft report of their findings. It is attended by the members of the road safety audit and crash investigation teams or at least the lead auditor and the project stakeholders or at least project sponsor.

The meeting enables the lead auditor to present a draft report and discuss the evaluation findings and other relevant information resulting from the road safety evaluation with the project sponsor. It also provides an opportunity for the project sponsor to confirm the expectations of the road safety evaluation report. By presenting a draft at the completion meeting, the lead auditor, the project sponsor and project stakeholders can work together to ensure the road safety evaluation outcomes can be achieved.

3.5.1 Steps

1. **Convene the completion meeting in the appropriate forum.**

☑ The completion meeting must be held (eg face-to-face, phone).

☑ It must be held prior to the submission of the final report.

☑ At a minimum, the meeting must be attended by the project sponsor and the lead auditor (team representative).

☑ Decide which other road safety audit or crash investigation representatives need to attend the completion meeting.

2. **Hold the meeting.**

☑ Copies of the draft road safety evaluation report must be made available at the completion meeting.

☑ Discuss the draft road safety evaluation report, ensuring that it maintains the integrity and independence of the road safety evaluation.

☑ The deficiencies identified during the road safety evaluation must be presented/discussed.

☑ It is highly desirable to discuss corrective action options for key findings. However, these options are not to be included in the report.

☑ Confirm the layout, format and level of detail of the draft road safety evaluation report from the project sponsor.

☑ Return all relevant information/materials that were used to conduct the evaluation.

☑ Confirm matters that are required to complete the contract agreement.

☑ The meeting outcomes/actions must be recorded.

3. **Confirm meeting actions/outcomes.**

☑ A copy of the record of the meeting must be provided to the project sponsor.

3.6 Finalising the road safety evaluation report

Objective - To produce and deliver the final written report which specifically, clearly and comprehensively documents all the road safety deficiencies identified during the road safety audit and road crash investigation. The report is produced in the expected format and is signed and dated by all members of the road safety audit team.

ROLE	RESPONSIBILITY
Lead Auditor	• Produce the final road safety evaluation report, signed and dated by all members of the road safety audit team. • Deliver the expected number of copies of the final road safety evaluation report to the project sponsor.
Audit team member	• Verify that they agree with the contents of final report by signing and dating it.

Delivery of the final road safety evaluation report meeting marks the end of the involvement of the road safety audit team and the crash investigation team.

The road safety evaluation report is the formal document which presents the findings of the road safety evaluation. It is an important document which represents the professional position of the members of the road safety audit and crash investigation teams in relation to the road safety audit and road crash investigation outcomes. It is the document on which decisions about corrective actions will be based. This document is legally recognised.

3.6.1 Steps

1. **Amend the draft road safety evaluation report.**

☑ In accordance with the outcomes of the completion meeting.

☑ In accordance with any feedback from the project sponsor's resulting from the review of the draft road safety evaluation report.

2. **Review the final road safety evaluation report.**

☑ Each member of the road safety audit team must sign and date (and include their auditor identification number) the report to verify that they have read the report and agree with its contents.

3. **Deliver the road safety evaluation report.**

☑ Must provide the agreed number of copies of the report in the agreed format.

☑ The project sponsor must receive original copies of the final road safety audit report.

☑ Copies of the report that are not signed and dated are not acceptable.

4 Completing a road safety evaluation

The procedures in this section are meant for the project sponsor.

4.1 Overview

Objective - To manage the implementation of actions which are designed to enhance road safety and comprehensively record the completed action for every deficiency identified in the final road safety evaluation report.

ROLE	RESPONSIBILITY
Project sponsor	• Represent the organisation commissioning the road safety evaluation at the completion meeting. • Accept and review the final road safety evaluation report. • Produce and implement a corrective action program. • Close the corrective action program.
Specialist advisor (Optional)	• Provide specialist advice, as requested by the project sponsor.
Service Provider	• Deliver implemented corrective actions, as directed by the project sponsor.
Approval manager	• Overall road safety audit outcomes.

The completing phase is critical to the road safety evaluation process. It involves ensuring that the project delivers the best possible road safety outcomes. It also ensures transparency and accountability in relation to decision making and actions.

The key steps that determine a successful outcome for the completion of a road safety evaluation are:

- Attending the completion meeting.
- Accepting the road safety evaluation report.
- Reviewing the report.
- Producing a corrective action program.
- Implementing corrective actions.
- Closing the corrective action program.

4.2 References

For introductory and background information relating to road safety and road safety treatments refer to the following references which are available on the Austroads website, www.austroads.com.au

Austroads (2009) *Guide to Road Safety - Part 1: Road Safety Overview.* Austroads Incorporated, Sydney, Australia.

Austroads (2006) *Guide to Road Safety - Part 2: Road Safety Strategy and Evaluation.* Austroads Incorporated, Sydney, Australia.

Austroads (2008) *Guide to Road Safety - Part 3: Speed Limits and Speed Management.* Austroads Incorporated, Sydney, Australia.

Austroads (2009) *Guide to Road Safety - Part 4: Local Government and Community Road Safety.* Austroads Incorporated, Sydney, Australia.

Austroads (2006) *Guide to Road Safety - Part 5: Road Safety for Rural and Remote Areas.* Austroads Incorporated, Sydney, Australia.

Austroads (2006) *Guide to Road Safety - Part 7: Road Network Crash Risk Assessment and Management.* Austroads Incorporated, Sydney, Australia.

Austroads (2008) *Guide to Road Safety - Part 9: Roadside Hazard Management.* Austroads Incorporated, Sydney, Australia.

4.3 Attending the completion meeting

Objective - To discuss the road safety evaluation findings, outcomes and finalise the contract agreement.

ROLE	RESPONSIBILITY
Lead auditor	• Hold the completion meeting. • Record and confirm the outcomes/ actions of the meeting.
Project sponsor	• Determine which project stakeholders need to attend the completion meeting and advise them. • Attend the completion meeting.
Project stakeholders (Optional)	• Attend the completion meeting as directed by the project sponsor.

The completion meeting is an important part of the road safety evaluation process. It is held after the audit and crash investigation teams have finished the assessments/ inspections/analyses and produced a draft report of their findings. It is attended by the members of the road safety audit and crash investigation teams or at least the lead auditor, and the project stakeholders or at least project sponsor.

The meeting enables the lead auditor to present a draft report and discuss the evaluation findings and other relevant information resulting from the road safety evaluation with the project sponsor. It also provides an opportunity for the project sponsor to confirm the expectations of the road safety evaluation report. Presenting the draft report at the completion meeting enables the lead auditor, the project sponsor and project stakeholders to work together to ensure the road safety evaluation outcomes can be achieved.

4.3.1 Steps

1. **Determine which relevant stakeholders are required to attend the completion meeting and advise them.**

☑ It is highly desirable to invite the project stakeholders.

2. **Attend the completion meeting.**

☑ Provide feedback on the layout, format and level of detail of the draft road safety evaluation report.

☑ Discuss the deficiencies identified during the road safety evaluation.

☑ Do not damage the integrity of the evaluation by requesting deficiencies be amended, removed or added. These issues are dealt with in *Section 4.5: Reviewing the road safety evaluation report*

☑ Consider discussing corrective action options for key findings.

☑ Confirm the expectations and delivery of the final road safety evaluation report.

☑ Confirm the arrangements for finalising the contract agreement.

4.4 Accepting the road safety evaluation report

Objective - To ensure that the submitted final road safety evaluation report meets the expectations and requirements specified in the contract agreement.

ROLE	RESPONSIBILITY
Project sponsor	• Review the report and confirm that the deliverables conform to the contract agreement. • Submit the final report to the Road Safety Audit Reports Library.
Library administrator	• Acknowledge receipt of a copy of the final road safety evaluation report for the Road Safety Audit Reports Library.

All the original final road safety evaluation reports that are submitted must be signed and dated by all members of the road safety audit team. They must also meet the requirements of the contract agreement.

4.4.1 Steps

1. **Confirm the final road safety evaluation report and deliverables.**

☑ Confirm that all the deliverables in the contract agreement have been received and are satisfactory.

☑ The reports must be presented as originals.

☑ The reports must be signed and dated by all members of the road safety audit team.

☑ Confirm that all data/materials are returned, as required.

☑ Complete the notification of completion of the contract, as required.

2. **Submit the final report to the Road Safety Audit Reports Library.**

☑ A copy of the final road safety evaluation report must be submitted to the Road Safety Audit Reports Library. The Library collects copies of all road safety audit and road safety evaluation reports produced for the organisation.

☑ The copy must be submitted in the format required by the Road Safety Audit Reports Library.

☑ Record the acceptance receipt number issued by the Road Safety Audit Reports Library. This will need to be reported in the corrective action program.

4.5 Reviewing the road safety evaluation report

Objective - To review each identified deficiency to determine responsibilities, the requirement for further information, corrective actions and to assess the risks in relation to the organisation and project.

ROLE	RESPONSIBILITY
Project sponsor	• Review the road safety evaluation report and each identified deficiency. • Propose and document corrective actions for each identified deficiency.
Specialist advisor (Optional)	• Provide specialist advice, as requested by the project sponsor.

The review of the final road safety evaluation report and each identified deficiency is an important step in preparation for the proposal of corrective actions.

The responsibility for reviewing each deficiency needs to be determined. Each identified deficiency is comprehensively checked to determine all possible actions and the risks to the organisation associated with each action. For each deficiency, corrective actions are proposed.

The corrective actions developed must be in the best interests of road safety, feasible and designed in accordance with the safe systems approach to road safety, in order to potentially reduce the incidence and/or severity of road crashes.

4.5.1 Steps

1. **Review each identified deficiency.**

- ☑ Confirm that each identified deficiency is a road safety deficiency.
- ☑ Identify the road authority, agency or directorate responsible for addressing each deficiency in accordance with legislation and organisational responsibilities.
- ☑ Obtain further advice or information if required or seek suggestions in relation to actions to take to address the deficiencies. This may include commissioning a separate project.
- ☑ Assign the priority rating in relation to road safety for each deficiency as shown in the *Risk assessment* information sheet. This should be reviewed in relation to community risks initially, then organisational risks and finally project risks. The priority rating should also be reviewed against the risk level assigned to the deficiency in the final road safety audit report and crash investigation report.

2. **Propose corrective actions.**

- ☑ Take the speed zone review outcome into consideration.
- ☑ Each deficiency must be documented.
- ☑ For each deficiency there must be a corrective action (response) and it must be documented.
- ☑ Each corrective action must comprehensively document the risks to the organisation in performing that action. This includes actions such as 'no further action', 'referred to agency for action', etc.
- ☑ The corrective actions developed to address the deficiencies may be short, medium or long term.
- ☑ Obtain sufficient advice/information from relevant sources to be able to decide upon and develop corrective actions. It is highly desirable to obtain advice from specialists.

3. **Select and document the proposed corrective actions for each deficiency.**

- ☑ Include details of all proposed options and the reasons for selecting the preferred option, including details of the safety benefit.
- ☑ Describe the selected corrective action clearly and comprehensively.
- ☑ If proposing no further action a comprehensive explanation must be provided.

4.6 Producing a corrective action program

Objective - To assign accountability in relation to organisational responsibilities and obtain approval for the appropriateness of the corrective actions and the safety benefits they provide.

ROLE	RESPONSIBILITY
Project sponsor	• Prepare the corrective action program. • Obtain written support for the corrective action program from the approval manager. • Record details of the corrective actions in the information system.
Approval manager	• Take overall responsibility for the corrective action program and road safety evaluation outcomes.

Each corrective action is incorporated into the corrective action program.

The list of corrective actions should be approved by an appropriate officer who verifies that they are appropriate and provide safety benefits. The person approving should have some road safety audit qualifications, knowledge and expertise or occupy a position of sufficient rank in the organisation to take full responsibility for the outcomes.

4.6.1 Steps

1. **Prepare the corrective action program.**

☑ The program must detail each deficiency identified in the final road safety evaluation report.

☑ It must specify the priority rating for each deficiency.

☑ It must clearly and concisely detail all the suggested actions/options considered for each deficiency. Where multiple options are suggested to address a deficiency, an explanation for the selection of the preferred option is required.

☑ It must clearly and concisely detail the proposed corrective action for each deficiency.

☑ It must indicate the proposed timeframe for completing the implementation of each corrective action.

☑ It must provide the estimated total costs of implementation of the corrective action.

☑ It must include an action for the submission of the road safety evaluation report to the Road Safety Audit Reports Library.

☑ The corrective action program must be signed and dated by the project sponsor.

2. **Obtain approval for the corrective action program.**

☑ Amend the corrective action program as directed.

☑ Approval must be obtained from an officer with the appropriate delegation.

☑ The approval must be documented in writing.

3. **Record details of the corrective action program in the appropriate information management system.**

☑ The original corrective action program must be filed in the official file for the project.

☑ Enter details of each identified deficiency in the appropriate information management system.

4.7 Implementing corrective actions

Objective - To completely implement corrective actions and to clearly and concisely record the details of each completed corrective action implemented to address the deficiencies identified in the final road safety evaluation report.

ROLE	RESPONSIBILITY
Project sponsor	• Refer identified deficiencies to other internal branches or external agencies. • Initiate or delegate the implementation of corrective actions. • Prepare documentation for variations. • Verify that the completed corrective actions have been satisfactorily implemented.
Approval manager	• Approve variations to the corrective action program.
Service provider	• Deliver implemented corrective action, as directed by the project sponsor.

The implementation of corrective actions to address some or all of the identified deficiencies can be delegated, but it remains the responsibility of the project sponsor until they have all been satisfactorily addressed.

If a deficiency relates to matters that are the responsibility of a third party, forward the details to the relevant authority for action. File the acceptance of the referral from the third party.

Document all completed corrective actions. It is important to ensure that details of the work that was completed are documented as this may become a legal issue in the future.

4.7.1 Steps

1. **Refer identified deficiencies to other internal branches or external agencies.**

☑ A written acceptance of the referral must be received. Until an acceptance is received, the deficiency remains the responsibility of the project sponsor.

If the issue cannot be resolved, elevate it through the organisation until acceptance is acknowledged.

☑ The corrective action can only be recorded as complete after acceptance of the referral is received.

2. **Initiate the implementation of corrective actions.**

☑ Scheduled actions cannot be recorded as complete until the action has actually been implemented.

☑ Obtain progress reports on the implementation of the corrective actions.

☑ Any variations to the corrective action must be appropriately approved and documented. Where there are variations it must be able to be demonstrated that the relevant safety deficiency is still being addressed.

☑ Record details of approved variations in the information system.

☑ Regularly monitor the progress of all corrective actions and update the details in the information system.

3. **Verify that the completed corrective action has been satisfactorily implemented.**

☑ The implemented corrective action must be inspected/viewed. The inspection may be delegated but it remains the responsibility of the project sponsor.

☑ The corrective action can only be recorded as complete when the completed action has been verified.

☑ At a minimum, record the date completed, the details of the project sponsor and the details of the officer who verified the completed action.

☑ The details must be recorded in the information system.

4.8 Closing the corrective action program

Objective - To produce a written report that clearly and concisely records the details of all the completed corrective actions that were implemented to address each road safety deficiency identified in the final road safety evaluation report.

ROLE	RESPONSIBILITY
Project sponsor	• Produce the completed corrective action program report. • Obtain final approval and close out the overall road safety evaluation.
Approval manager	• Take overall responsibility for road safety evaluation outcomes.

It is important to ensure that all completed corrective actions are documented in one report to verify that all road safety deficiencies identified in the final road safety evaluation report were addressed. This closing report must be endorsed by the appropriate delegated officer as it may become a legal issue in the future.

4.8.1 Steps

1. **Produce a closing road safety evaluation report.**

☑ At a minimum, the report must include details of each deficiency identified in the final road safety evaluation report, together with details of each completed corrective action and the date of completion.

☑ The report must be signed and dated by the project sponsor.

2. **Obtain final approval.**

☑ Approval must be obtained from an officer with the appropriate delegation. It is preferable to obtain approval from the same position that approved the corrective action program.

☑ The approval must be documented in writing.

3. **Close out.**

☑ All corrective actions must be closed out in the appropriate information management system.

☑ The original report must be filed in the official file for the project.

☑ A copy of the final program report must be submitted to the Road Safety Audit Reports Library. It must be submitted in the format required by the Road Safety Audit Reports Library.

☑ Record the acceptance receipt number issued by the Road Safety Audit Reports Library in the official file for the project.

For further enquiries
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NSW GOVERNMENT | Transport Roads & Traffic Authority

PART 3:

Road safety check

Part 3: Road Safety Check

CONTENTS

1. Introduction

Road safety checks are a pro-active approach to road safety.

Road safety checks form an integral part of the safe system approach.

A road safety check is designed to identify road safety deficiencies and areas of risk and implement corrective actions to address each identified road safety deficiency. It can be conducted in the pre-construction, construction or post-construction phases of a project.

A road safety check involves the principles of road safety auditing and crash investigation. It is conducted by a road safety professional.

1.1 About this document

This document is designed to be used as the primary source of procedures for commissioning, conducting and completing road safety checks for the Roads and Traffic Authority (RTA) of NSW.

This guide is divided into four sections:

- Section 1 provides introductory and background information relating to road safety checks.
- Section 2 provides details of the procedures involved in commissioning road safety checks. These procedures are meant for the project sponsor.
- Section 3 provides details of the procedures involved in conducting road safety checks. These procedures are meant for the road safety professional.
- Section 4 provides details of the procedures involved in completing road safety checks. These procedures are meant for the project sponsor.

1.2 Definitions

Road safety check

A road safety check is an assessment of proposed or existing roads and road related areas from the perspective of all road users with the intention of identifying road safety deficiencies and areas of risk that could lead to or have led to road crashes. It is conducted by a road safety professional.

The following table provides definitions of the roles that are referred to in this document.

TABLE 1.1 DEFINITIONS OF ROLES WITHIN THE ROAD SAFETY CHECK PROCESS

ROLE	MEANING
Project sponsor	The project manager or officer (employed or contracted by the road jurisdiction) responsible for delivering or overseeing the road infrastructure related works.
Road safety professional	A practicing professional with experience and capabilities in road safety engineering, who either holds a position with road safety responsibilities or accountabilities, or is a qualified road safety auditor or road crash investigator with recent and regular demonstrated experience in conducting road safety audits or road crash investigations.
Specialist advisor	A practicing professional with specific skill sets, experience or knowledge of subject matter required to provide independent specialist advice to the project sponsor or the road safety professional on critical aspects of the project.
Project stakeholder	A person with an interest in the road infrastructure related works. May be a planner, designer, construction manager, asset manager, operations manager, or alliance member.
Approval manager	The manager employed by the road jurisdiction who is accountable for delivering or overseeing the road infrastructure related works.
Service provider	The person, contractor, organisation or party required to deliver services.

1.3 Building safer roads

Road safety checks form an integral part of the safe system approach. For background information relating to the safe systems approach refer to Austroads *Guide to Road Safety Part 1: Road Safety Overview*, Section 2.

Best practice in road safety is achieved by applying the basics of road safety engineering safety principles. For background information relating to the safety principles refer to Austroads *Guide to Road Safety Part 6: Road Safety Audits*, Section 8.

1.4 Types of road safety checks

For the purpose of road safety checks, projects fall into one of three distinct categories. The project is either in the pre-construction phase, the construction phase or the post-construction phase of its life cycle.

These phases are further divided into the key life cycle stages of the project: strategic, concept design, detailed design, roadworks, pre-opening, finalisation and existing road.

Road safety checks are typically conducted at these key life cycle stages of a project. The types of road safety checks therefore reflect these key stages.

The table on the following page provides a description of each type of road safety check.

Continuously performing road safety checks at all the different phases/stages of a project produces road safety benefits. In particular, conducting road safety checks when road safety audits or road safety evaluations are not undertaken. As a result this ensures that road safety is constantly assessed throughout the project.

TABLE 1.2 TYPES OF ROAD SAFETY CHECKS

PROJECT PHASE	TYPE OF ROAD SAFETY CHECK	PROJECT STAGE DESCRIPTION
Pre-construction	Strategic	Conducted at the completion of the strategic stage of the project life cycle. The strategic stage is where broad options for a proposed project are determined.
	Concept design	Conducted at the completion of the concept design stage of the project life cycle. The concept stage is where options are examined for a proposed project and a preferred option is selected.
	Detailed design	Conducted at the completion of the detailed design stage of the project life cycle. The detailed design stage is where a design is completed to sufficient detail to commence construction.
Construction	Roadworks	Conducted at the commencement of each stage of the roadworks where changes affect traffic operations, traffic travel path characteristics, or traffic roadside characteristics during the construction stage of the project life cycle.
	Pre-opening	Conducted immediately after the completion of construction of the entire project works or the construction of a roadworks stage and where possible prior to the road/path being used by traffic.
Post-construction	Finalisation	Conducted on an existing road, path or road network some time after the completion of the construction of road infrastructure works. It is typically once road user patterns have settled following the works, or immediately prior to the change-over of ownership or responsibility in regard to the assets or network operations following the works.
	Existing road	Conducted on an existing road, path or road network where no recent construction works were undertaken.

The same type of road safety check can be conducted more than once for a particular project.

1.5 References

This guide provides details of the procedures to use for road safety checks.

For introductory and background information relating to road safety principles and practices, refer to the following references:

Austroads (2009) *Guide to Road Safety - Part 1: Road Safety Overview*. Austroads Incorporated, Sydney, Australia.

Austroads (2006) *Guide to Road Safety - Part 5: Road Safety for Rural and Remote Areas*. Austroads Incorporated, Sydney, Australia.

Austroads (2009) *Guide to Road Safety - Part 6: Road Safety Audit*. Austroads Incorporated, Sydney, Australia.

Austroads (2009) *Guide to Road Safety - Part 8: Treatment of Crash Locations*. Austroads Incorporated, Sydney, Australia.

Austroads (2008) *Guide to Road Safety - Part 9: Roadside Hazard Management*. Austroads Incorporated, Sydney, Australia.

2. Commissioning a road safety check

The procedures in this section are meant for the project sponsor.

2.1 Overview

Objective - To establish the requirements, limitations and expectations for the conduct of a road safety check.

ROLE	RESPONSIBILITY
Project sponsor	• Produce a brief which provides a clear statement of the scope of the check and the expectations of the road safety professional. • Select and engage the road safety professional. • Gather background information. • Provide information to the road safety professional.
Road safety professional	• Provide advice on road safety matters and outcomes as directed by the project sponsor.
Project stakeholders (Optional)	• Provide advice on project scope, limitations, deviations from standards, restraints and compromises as directed by the project sponsor.

The commissioning phase is concerned with identifying the road safety professional who is most suited to understanding the characteristics, needs and outcomes of the project to be checked. This phase also provides an opportunity to establish clear and concise communications and understanding between all parties.

The key steps that determine a successful outcome for commissioning a road safety check are:

- Preparing a brief.
- Selecting and engaging the road safety professional.
- Providing information to the road safety professional.

2.2 Preparing a brief

Objective - To create a brief which identifies the project and the phase of the project to be checked and sets the parameters for the road safety check.

ROLE	RESPONSIBILITY
Project sponsor	• Prepare the road safety brief. • Decide what information/access is appropriate to provide for the road safety check. • Gather all relevant information/ material and ensure that it is available.

A successful project brief for a road safety check identifies the project and the phase of the project to be checked and specifies the scope and deliverables of the check. It is specific, clear and comprehensive.

The type of information provided to the road safety professional who is to perform the check varies depending upon the project and the phase/stage of the project to be checked.

Background information is supplied to the road safety professional to enhance their understanding of the project background and constraints. The information may include details of any restrictions and compromises that were involved in the design process to enable them to identify measures that were taken.

2.2.1 Steps

1. **Prepare a road safety check brief.**

☑ It is highly desirable for the brief to be provided in writing.

☑ The brief must define what is required of the road safety professional.

☑ The brief should include the following:

- Purpose.
- Background.
- Scope of the check.
- Information and material provided.
- Deliverables.
- Check timeframes.
- Format of the final report

2. **Collect all the relevant information/material necessary to perform the check.**

☑ Do not provide any company details or anything that could be considered private or confidential.

☑ The latest set of design plans must be provided for all pre-construction phase road safety checks.

☑ It is desirable to provide previous road safety audit reports or road safety evaluation reports.

2.3 Selecting and engaging the road safety professional

Objective - To select a qualified and experienced road safety expert who can successfully conduct the road safety check and provide road safety related outcomes.

ROLE	RESPONSIBILITY
Project sponsor	• Select the road safety professional based on the experience, qualifications, performance and position. • Invite the road safety professional to undertake the road safety check. • Verify the road safety professional's relevant certifications. • Enter into an agreement.
Road safety professional	• Seek clarification about details of the project. • Submit a response to the invitation to conduct the road safety check.

The most effective road safety checks are those where the skills of the road safety professional conducting the check match the skills needed by the project. The road safety professional should be a trained and experienced professional with the required knowledge, skills, experience and attitudes to deliver a successful road safety check outcome. They should be able to use their skills to visualise the completed project and view the road network from the perspective of all road users.

2.3.1 Steps

1. **Review the knowledge and capabilities of potential road safety professionals.**

☑ It is highly desirable to use a road safety auditor who is registered at Level 2 or higher. Refer to the NSW Centre for Road Safety's *Register of Road Safety Auditors*.

☑ The road safety professional's areas of expertise should match the skills needed by the project.

☑ Seek details of the qualifications, experience, performance and position of the road safety professional.

☑ The road safety professional must have:

- An understanding of NSW traffic legislation/ road rules.
- The ability to view road safety from the perspective of different types of road users.
- Familiarity with traffic operations.
- Experience with road safety auditing or road crash investigations.

2. **Select the road safety professional.**

3. **Invite the road safety professional to undertake the road safety check.**

☑ The invitation must be in writing, either initially or as a follow-up to verbal discussions. Email is acceptable.

☑ Provide the road safety check brief to the road safety professional through the appropriate forum. For example, it could be delivered by email, phone, face-to-face meeting.

4. **Enter into an agreement with the road safety professional.**

2.4 Providing information to the road safety professional

Objective - To provide the road safety professional with details of the scope of the road safety check, the project constraints, the supplied and required information/material, access arrangements to information/site and expectations in order to successfully conduct the road safety check.

ROLE	RESPONSIBILITY
Project sponsor	• Determine the appropriate method of delivery of the information to the road safety professional. For example, it could be delivered by email, phone, face-to-face meeting. • Deliver the relevant information to the road safety professional. • Determine the appropriate method for the road safety professional to deliver the findings of the road safety check and advise. For example, the findings could be delivered by phone or at a face-to-face meeting.
Road safety professional	• Seek clarification of any details of the project, as required.

Meeting with the road safety professional to provide information is an important part of the road safety check process. The information is provided before the road safety professional begins to perform assessments/inspections. The forum for the meeting depends upon the project and the phase/stage of the project to be checked.

A telephone or face-to-face meeting provides a forum in which the project sponsor can discuss/hand over relevant information, explain the purpose of the road safety check and the road safety professional can clarify any issues.

2.4.1 Steps

1. **Determine the appropriate forum for delivering the information to the road safety professional.**

☑ It is highly desirable to hold a meeting in some form, eg phone, face-to-face.

2. **Deliver the information to the road safety professional.**

☑ This may be done via email or at a face-to-face meeting.

☑ Advise the road safety professional of the forum in which the findings of the road safety check are to be delivered.

3. Conducting a road safety check

The procedures in this section are meant for the road safety professional.

3.1 Overview

Objective - To conduct an assessment of proposed or existing roads and road related areas from the perspective of all road users, with the intention of identifying road safety deficiencies and areas of risk that could lead to road crashes.

ROLE	RESPONSIBILITY
Project sponsor	• Represent the organisation commissioning the road safety check.
Road safety professional	• Undertake the road safety check. • Provide the findings resulting from the road safety check. • Produce and deliver the final road safety check report to the project sponsor.

The conducting phase is the actual road safety check. It is concerned with the identification of road safety deficiencies and areas of risk that could lead to or have led to road crashes and articulating these findings in a report for the project sponsor.

The key steps that determine a successful outcome for the conduct of a road safety check are:

- Undertaking the road safety check.
- Advising the findings to the project sponsor.
- Producing a road safety check report.

3.2 Undertaking the road safety check

Objective - To conduct an assessment of proposed or existing roads and road related areas from the perspective of all road users, with the intention of identifying road safety deficiencies and areas of risk that could lead to or have lead to road crashes.

ROLE	RESPONSIBILITY
Road safety professional	• Plan and schedule the road safety check assessments/inspections. • Manage and participate in the road safety check process.
Specialist Advisor (Optional)	• Provide specialist advice, as directed by the road safety professional.

Undertaking the road safety check is the core road safety check process. The activities involved in a road safety check vary depending upon the phase of the project being checked.

3.2.1 Steps

1. **Review all the information/material.**

☑ The latest design plans must be reviewed, if applicable.

☑ Follow up any additional or missing information/ material that is necessary for the road safety check and clarify any uncertainties with the project sponsor.

2. **Assess the project/site.**

☑ Apply the principles/practices for conducting a road safety audit. Refer to Austroads *Guide to Road Safety Part 6: Road Safety Audits*.

☑ Apply the principles/practices for conducting a road crash investigation. Refer to Austroads *Guide to Road Safety Part 8: Treatment of Crash Locations*.

☑ The assessment must be conducted along all approaches from the perspective of all the relevant different road users.

☑ The road and road related areas must be assessed for potential and actual road safety risks. That is, the assessment must go beyond checking for conformance to standards.

☑ Consult specialist advisors, where necessary.

3. **Record all road safety deficiencies that are identified.**

3.3 Reporting the findings to the project sponsor

Objective - To discuss the road safety check findings and outcomes and finalise the contract agreement.

ROLE	RESPONSIBILITY
Road safety professional	• Convene and hold discussions in the appropriate forum. • Confirm the outcomes/actions of the discussion.
Project sponsor	• Be available for a discussion.

Advising the findings of the road safety check to the project sponsor provides an opportunity to discuss the findings, further assessments and actions.

By discussing the findings, the road safety professional and the project sponsor can work together to ensure road safety outcomes can be achieved.

3.3.1 Steps

1. **Hold the discussion.**

- ☑ Discuss the deficiencies identified during the road safety check.
- ☑ Discuss possible corrective action options for the key findings.
- ☑ Confirm the format and level of detail required in the road safety check report from the project sponsor.
- ☑ Confirm matters to complete the agreement.

2. **Confirm discussion actions/outcomes.**

3.4 Producing the road safety check report

Objective - To produce and deliver the written report which specifically, clearly and comprehensively documents all the road safety deficiencies identified during the road safety check.

ROLE	RESPONSIBILITY
Road safety professional	• Produce the road safety check report. • Deliver the road safety check report to the project sponsor.

The road safety check report documents the findings of the road safety check and represents the road safety professional's professional position. It is the document on which decisions about corrective actions will be based.

The report does not contain suggested actions or recommendations. These, if requested by the project sponsor, are documented in a separate report. Suggested actions or recommendations are the responsibility of the project sponsor.

3.4.1 Steps

1. **Draft the road safety check report.**

☑ The draft should be in accordance with the outcomes of discussions.

☑ It must be in writing and should be specific, clear and comprehensive.

☑ The report should be uniquely identified by a road safety check number or title as supplied by the project sponsor.

☑ It should include details of the:

- Purpose and background.
- Assessment methodology and details including the scope of the check, the dates on which assessments were conducted, dates and times of site inspections, the design plans assessed and references used.
- Deficiency details (findings).

☑ For each identified road safety deficiency or group of deficiencies the report must:

- Include a comprehensive description of the location.
- Include an explanation of the potential road safety impact, ie in relation to crash types.
- Not contain any suggested actions or recommendations.

2. **Deliver the road safety check report.**

☑ Provide the report in the agreed format.

4. Completing a road safety check

The procedures in this section are meant for the project sponsor.

4.1 Overview

Objective - To manage the implementation of actions which enhance road safety and record the completed action for every deficiency identified in the road safety check report.

ROLE	RESPONSIBILITY
Project sponsor	• Review the road safety check report. • Develop and implement a corrective action program. • Close the corrective action program.
Specialist advisor (Optional)	• Provide specialist advice, as requested by the project sponsor.
Service provider	• Implement corrective actions, as directed by the project sponsor.
Approved manager	• Overall road safety check outcomes.

The completing phase is critical to the road safety check process. It is concerned with ensuring that the project delivers the best possible road safety outcomes. It also ensures transparency and accountability in relation to decision making and actions.

The key steps that determine a successful outcome for completing a road safety check involve:

- Producing a corrective action program.
- Implementing corrective actions.
- Closing the corrective action program.

4.2 Producing a corrective action program

Objective - To review each identified deficiency in order to assign accountability for organisational responsibilities and obtain approval for the appropriateness of the corrective actions and the safety benefits they provide.

ROLE	RESPONSIBILITY
Project sponsor	• Review the road safety check report and each identified deficiency. • Prepare the corrective action program. • Obtain written support for the corrective action program from the approval manager.
Specialist advisor (Optional)	• Provide specialist advice, as requested by the project sponsor.
Approved manager	• Accept overall responsibility for the corrective action program and road safety check outcomes.

The review of the road safety check report and each identified deficiency is an important step in preparing for the proposal of corrective actions.

The responsibility for reviewing each deficiency needs to be determined. Each identified deficiency is comprehensively checked to determine all possible actions and the risks to the organisation associated with each action. For each deficiency, corrective actions are proposed.

The corrective actions developed must be in the best interests of road safety, feasible and designed in accordance with the safe systems approach to road safety, in order to potentially reduce the incidence and/or severity of crashes.

The list of corrective actions should be approved by an appropriate officer who verifies that they are appropriate and provide safety benefits. The person signing should occupy a position in the organisation of sufficient rank to take full responsibility for the outcomes.

4.2.1 Steps

1. Review each identified deficiency.

- ☑ Identify the road authority, agency or directorate responsible for addressing each deficiency. This must be in accordance with legislation and organisational responsibilities.
- ☑ Obtain further advice or information if required or seek suggestions about actions to take to address the deficiencies.

2. Prepare the corrective action program.

- ☑ Include details of each deficiency identified in the final road safety check report.
- ☑ Obtain sufficient advice/information from relevant sources to be able to decide upon and develop corrective actions. It is highly desirable to obtain advice from specialists.
- ☑ Clearly and concisely detail the proposed corrective action for each deficiency.
- ☑ If no further action is proposed, a comprehensive explanation must be provided.
- ☑ Indicate the proposed timeframe for completing the implementation of each corrective action.
- ☑ Provide an estimate of the total costs of implementation of each corrective action.
- ☑ Include the name of the project sponsor and submission date.

3. Obtain approval for the corrective action program.

- ☑ Amend the corrective action program as directed.
- ☑ Approval must be obtained from an officer with the appropriate delegation.
- ☑ Approval must be documented in writing.
- ☑ File the corrective action program in the official file for the project.

4.3 Implementing corrective actions

Objective - To completely implement the corrective actions and clearly and concisely record the details of each completed corrective action which was implemented to address the deficiencies identified in the road safety check report.

ROLE	RESPONSIBILITY
Project sponsor	• Refer identified deficiencies to other internal branches or external agencies. • Initiate or delegate the implementation of corrective actions. • Prepare documentation for variations. • Verify that the completed corrective actions have been satisfactorily implemented.
Approved manager	• Approve variations to the corrective action program.
Service provider	• Implement corrective action, as directed by the project sponsor.

The implementation of corrective actions to address some or all of the identified deficiencies can be delegated, but it remains the responsibility of the project sponsor until they have all been satisfactorily addressed.

If a deficiency relates to matters that are the responsibility of a third party, forward the details to the relevant authority for action. File the acceptance of the referral received from the third party.

Document all completed corrective actions. It is important to ensure that details of the work that was completed are documented as this may become a legal issue in the future.

4.3.1 Steps

1. **Refer identified deficiencies to other internal branches or external agencies.**

☑ Must receive a written acceptance of the referral. Until the acceptance is received, the deficiency remains the responsibility of the project sponsor. If the issue cannot be resolved, elevate it through the organisation until acceptance is acknowledged.

☑ The corrective action can only be recorded as complete when acceptance of the referral is received.

2. **Initiate the implementation of corrective actions.**

☑ Scheduled actions cannot be recorded as complete until the action has actually been implemented.

☑ Variations to the corrective action must be appropriately approved and documented. If there are variations, it must be able to be demonstrated that the relevant safety deficiency is still being addressed.

3. **Verify that the completed corrective action has been satisfactorily implemented.**

☑ The implemented corrective action must be inspected/viewed. The inspection may be delegated, but it remains the responsibility of the project sponsor.

☑ The corrective action can only be recorded as complete when the completed action has been verified.

☑ At a minimum, record the date completed, the details of the project sponsor and the details of the officer who verified the completed action.

4.4 Closing the corrective action program

Objective - To produce a written report that clearly and concisely records the details of all the completed corrective actions that were implemented to address each road safety deficiency identified in the road safety check report.

ROLE	RESPONSIBILITY
Project sponsor	• Produce the completed corrective action program report. • Obtain final approval and close out the overall road safety check.
Approved manager	• Accept overall responsibility for road safety check outcomes.

It is important to ensure that all completed corrective actions are documented in one report. This indicates that all road safety deficiencies identified in the road safety check report have been addressed. The closing report must be endorsed by the appropriate delegated officer.

4.4.1 Steps

1. **Produce a closing road safety check report.**

☑ At a minimum, the report must include details of each deficiency identified in the final road safety check report, together with details of the completed corrective action and the date of completion.

☑ The project sponsor must sign and date the report.

2. **Obtain final approval.**

☑ Approval must be obtained from an officer with the appropriate delegation. It is preferable to obtain approval from the same position that approved the corrective action program.

☑ Approval must be documented in writing.

For further enquiries
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