

Preliminary Construction Traffic Management Plan (CTMP)

For
Monte Sant Angelo Mercy College



Monte
Scientia
Project

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1. Introduction

1.1. Purpose of this Plan

Cornerstone (NSW) Pty Ltd has been commissioned by Monte Sant Angelo Mercy College (the Applicant) to prepare this Preliminary Construction Traffic Management Plan (CTMP) in accordance with the technical requirements of the Secretary's Environmental Assessment Requirements (SEARs), and in support of the SSD-10393 for the development of a new Sports and Science Building at Monte Sant Angelo Mercy College, North Sydney (Monte).

Broadly, the purpose of this preliminary CTMP is to address the following activities as they relate to the anticipated site operations for the site establishment and delivery phase of the project.

- ingress and egress of vehicles to the site;
- loading and unloading, including construction zones;
- predicted traffic volumes, types and routes
- pedestrian and traffic management methods

This plan will identify potential traffic management initiatives that are to be deployed by the future appointed Head Contractor, responsible for construction planning and delivery, in order to minimise disruption to, and ensure the safety of the wide range of stakeholders potentially affected by the works, including students, motorists, pedestrians, cyclists, public transport users, local residents, property owners, business owners, and workers/staff engaged on the Project.

It is anticipated that the construction contractor will update the CTMP prior to obtaining a Construction Certificate and commencing the works, then provide any updates during the course of construction to deal with any changes to the project or local traffic conditions.

1.2 SEARs Compliance

A summary of the relevant requirements of the SEARs and this CPTMP's compliance with each is provided in Table 1.2.1 on the following page for clarity

Table 1.2.1

SEARs		Report Reference
Key requirement : <i>The preparation of a preliminary Construction Traffic and Pedestrian Management Plan to demonstrate the proposed management of the impact in relation to construction traffic addressing the following;</i>		
1. assessment of cumulative impacts associated with other construction activities (if any)		The cumulative traffic and safety impact of construction activity has been reviewed and management measures have been incorporated within Section 3 of this report

Table 1.2.1 Continued

2. An assessment of road safety at key intersection and locations subject to heavy vehicle construction traffic movements and high pedestrian activity	The heavy vehicle construction traffic movement has been reviewed and management measures have been incorporated within Sections 3.2, 3.3, 3.5 and 3.8 of this report to ensure pedestrian safety
3. Details of construction program detailing the anticipated construction duration and highlighting significant and milestone stages and events during the construction process.	The indicative program can be found in Section Appendix 1 and a general overview of staging and durations in Section 3.1
4. Details of anticipated peak hour and daily construction vehicle movements to and from the site	Section 3.8 outlines estimated heavy vehicle movements the estimated construction traffic vehicle will generate
5. Details of on-site car parking and access arrangements of construction vehicles, construction workers to and from the site, emergency vehicles and service vehicle.	Car parking arrangements for site have been detailed within Section 3.7. On-site car parking will not be provided. It is noted that Traffic Control Plans (TCPs) for the Construction would be produced, by the Principal Contractor once appointed. Access arrangements refer Sections 3.2, 3.3, 3.4 3.5 and 3.6 Emergency vehicles ref Section 4.5
6. Details of temporary cycling and pedestrian access during construction	Temporary Cycling and Pedestrian Access pathways during construction will be submitted as part of the TCP by the Construction Contractor prior to commencement of the works
7. Safety and diversion measures to limit time delay and detour distances should the development require closure of the facility.	Refer Section 4.2

Ref : Relevant Policies and Guidelines: · Guide to Traffic Generating Developments (Roads and Maritime Services, 2002) · EIS Guidelines - Road and Related Facilities (Department of Urban Affairs and Planning (DUAP), 1996) · Cycling Aspects of Austroads Guides · NSW Planning Guidelines for Walking and Cycling (Department of Infrastructure, Planning and Natural Resources (DIPNR), 2004) Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development · Standards Australia AS2890.3 (Bicycle Parking Facilities).

1.3 Legislative Requirements

Traffic Control Plans (TCPs) will be produced by the Contractor appointed to deliver the Construction Contract. The TCPs will be designed in accordance with the RMS Traffic Control at Worksites Manual and AS1742.3.

All personnel dealing with traffic control, being either contractors or sub-contractors are to have the following current accreditation, for the management of each item listed below:

- HS&E general induction certificate (green card)
- MS blue card (for traffic control, performing stop/slow control)
- MS yellow card (for implementation of signage)
- MS red card (for selecting of TCP & modifications to TCP)
- MS orange card (design & inspect traffic control plan)

All staff need to be inducted on site before commencement of works. Staff must carry current accreditation on them at all times whilst on site, and appropriate PPE as outlined in the appropriate SWMS for the works.

All traffic control work and excavation, demolition or construction activities shall be undertaken in accordance with the approved Construction Management Plan and any conditions attached to the approved plan. A copy of the approved Construction Management Plan, and any conditions imposed on that plan, shall be kept on the site at all times and made available to any officer of Council upon request.

1.4 Description of Site

The Monte campus is approximately 2.52 hectares comprises 18 allotments, which are described in Table 1.4.1 below and shown in Figure 1.4.1 on the following page.

It is noted that the new Sports and Science Building and the proposed works are located on Lots 3, 4 and 5 in DP 262534 (the Site) (refer to Figure 1.4.2 over page).

Table 1.4.1 – Monte Campus Allotments

Address	Legal Description
128 Miller Street	Lot 8 in DP 262534
	Lot 1, 2, 3, 4, 5, 6 & 7 in DP 262534
	Lot 4 in DP 5030
	Lot 1 in DP 780403
5 McLaren Street	Lot 1 in DP 104072
9 McLaren Street	Lot A in DP 339358
11 McLaren Street	Lot 11 in DP 5030
21–23 McLaren Street	Lot 10 in DP 5030
27 & 27A McLaren Street*	Lots 7 and 8 in DP 5030
29 McLaren Street*	Lot 6 in DP 5030
31 McLaren Street	Lot 5 in DP 5030

*Sisters of Mercy land is not used by the College.

Figure 1.4.1 - Monte Sant Angelo Mercy College landholdings



Source: Six Maps

Figure 1.4.2 - The Site: Location of proposed Sports and Science Building.



Source: Hayball Architects

The key school elements within and surrounding the Site include:

- The main vehicle entry to the School, the 'Circular-Drive' driveway is located to the north of the Site.
- The 'Holy Grass' lawn is located to the north-west of the Site and is surrounded by several original School buildings including the Chapel, Masalou Building, and Mercy Hall.
- Two existing sports courts centrally located within the site
- The McQuoin Hall / Aquatic Centre is located to the south of the Site.
- To the west of the Site is the Treanor Building, which comprises arts and textile teaching rooms.
- To the north of the 'Holy Grass' is the School Chapel and the O'Regan Arts and Cultural Common Building completed in 2014.

1.5 Monte and the Surrounding Context

Monte is located in the North Sydney Council local government area (LGA). It is directly to the north of the North Sydney CBD, which is the major commercial centre of North Sydney.

Monte is located approximately 3.5km north of the Sydney CBD, 500 metres north of North Sydney Railway Station. Victoria Cross Metro Station is currently under construction diagonally opposite the school at the south-eastern corner of Miller Street and Berry Street, as well as an entrance to the north-east on the corner of McLaren Street. Miller Street runs along the eastern boundary of the Site which provides a major bus corridor to the North Shore and Northern Beaches.

The key land use characteristics surrounding the School campus are:

South: North Sydney CBD commercial core, primarily characterised by high-rise commercial buildings and support services including hotels, retail uses, and Shore Grammar School.

North: mixed precinct including:

- Low-density residential area within a heritage conservation area;
- Community buildings including the North Sydney Council Chambers
- Schools including St Mary's Primary, Wenona School, Marist College and North Sydney Boys High School.
- St Leonards Park

East: The extension of the North Sydney CBD Commercial Core, generally characterised by high density residential and commercial buildings.

West: Medium density residential and high-rise commercial buildings along the Pacific Highway. Further west is a low-density residential area which is identified as a heritage conservation area, and the Australian Catholic University.

Immediately surrounding the Monte campus is best described as:

South (Berry Street): - Commercial buildings and the Victoria Cross Metro Station currently under construction.

North (McLaren Street): McLaren Street is a heritage conservation area under the North Sydney LEP. Monte own most of the buildings on the southern side of McLaren Street which are generally single and two level buildings originally built for residential purposes. The site at the south-western corner of Miller Street and McLaren Street is an Italian restaurant and a four-level commercial building with basement parking. The northern side of McLaren Street is primarily used for community facilities including a preschool, Council Chambers, community hall, and public plaza/park used for a weekend fresh produce market.

East (Miller Street): Mix of commercial, residential and hotel towers, as well as the Rag and Famish Hotel at the corner of Miller and Berry Streets. A northern pedestrian portal to the Victoria Cross Metro Station is proposed on the north-eastern corner of Miller Street and McLaren Street intersection.

West (Angelo Lane): mix of commercial and high-density residential buildings up to 16-storeys with basement parking

On the SE corner of Miller St and Berry St, diagonally apposite the School grounds, a consortia including CPB, John Holland and Ghella are currently constructing the Victoria Cross South Project, as a part of the Sydney Metro City and Southwest (Metro VC) undertaking.

This project is of significant scale and is expected to be active during the course of the Monte, Scientia project, ie into the 2022 calendar year.

1.6 Project Description

The proposed works comprise the following:

- Demolition of two existing sports courts and associated undercroft staff carpark. The demolition works will include demolition of all structures between the main 'circular-drive' driveway entry from Miller Street, and the McQuoin Hall/Aquatic Centre at the corner of Miller and Berry Streets.
- Construction of a new four-storey sports and science building with a basement staff carpark, partially underground dual sports court facility, three levels of new teaching spaces (innovation / science labs) and a rooftop sports court.
- Landscaping works surrounding the new sports and science building.

2 Characteristics of Surrounding Streets

a) Miller Street

Classification & Speed Limits

Miller Street is classified as a regional road. Regional roads typically fall under Council care with control of the road exercised between Council and RMS, with RMS agreement required for changes. It commences at Blue Street in North Sydney and ceases at Cammeray.

The speed limit on Miller Street is 40km/hr due to high pedestrian activity in this area (Refer Figures 2.01 & 2.02). The road has four lanes over a carriage width of approximately 13.5m servicing North and South bound traffic.



Figure 2.01 : Miller St, looking North from Berry St



Fig 2.02 : Street signage

Bus Stops, Parking Restrictions and Clearways

A bus stop exists to the south of the Berry St intersection, and the North end of the School, approaching McLaren Street.

Parking restrictions on the West kerb adjacent the School are as follows;

Berry St to the Main Northern Entry Gates

PM Clearway (3pm -7pm) Monday to Friday (M - F)

2P 7pm to midnight M – F

1P 8.30am to 3pm M – F and 8.30am to 12.30pm Saturdays.

North of the Main “Northern” Entry Gates;

a School Bus Zone is declared for 8.30am to 9.30am and 2.30pm to 4pm School days, which extends up to the Public Bus Zone situated in front of the Commercial Building at 194 Miller St.

There is a kerb side zone of approximately 4m in length, adjacent the carpark entry gates that is dedicated to motorcycles only.

On the West kerb, there are 9 metered carpark spaces South of the carpark entry gates, 5 spaces between the carpark and main entry gates and 9 more spaces North of the main entry gates.

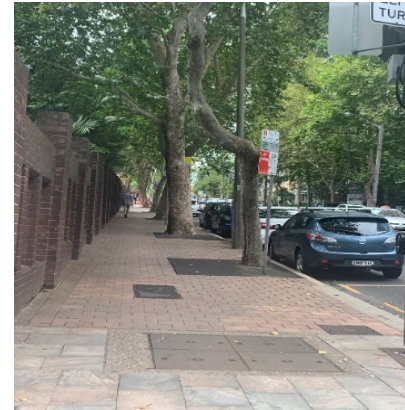
Existing footpaths

Existing footpaths in Miller St, North of Berry St are 3.6m wide on the West side (outside the School) and 4.1m on the East side (opposite the School), with approximately 1.0m of this allocated to street furniture including light posts, parking meters etc.

Large trees line the footpaths approximately 1m from the kerb line and the School boundary on Miller St is defined by a large brick fence, ranging from 2.2m high to 2.7m high.

There are two driveways approximately 34m apart, both of which lead into the School along this boundary:

Fig. 2.03 : Miller St footpath



- the Southern of the two is 6.2m wide (Fig. 2.04 below) and leads into the carpark under the playing courts, which are in the footprint of the proposed Scientia project,
- the Northern of the two is 7.7m wide (Fig 2.05) leading into the main pedestrian entry and secondary driveway into the School. Both entries are fitted with automatic steel gates.



Figure 2.04 : Miller St, Southern Entry



Figure 2.05 : Miller St , Northern Entry

Intersections / Traffic Lights

There are signal crossings on all legs of the intersections with Berry Street and Miller St on the SE corner of the School, and also at the NE corner of the School boundary at McLaren St and Miller Street intersection.

Conclusion : Impact of Construction upon Miller Street

There will be approximately 9 metered on street public car parking spaces lost during the construction phase of the project, as a result of the Construction zone detailed in Section 3.2 and shaded in orange in Figure 3.2.1.

Impact upon pedestrians in Miller Street is anticipated to be limited to;

- short delays whilst Site Traffic Controllers stop pedestrian traffic to allow vehicles to enter and exit the site, using temporary safety barricades similar to that illustrated in Appendix 2, Figure A2.1 of this plan, and
- on occasions, and as identified in the future TCP, diversions of pedestrians from the Western footpath outside our site, to the Eastern footpath of Miller Street. Examples of such a time could be during the erection of the B Class, overhead hoarding on Miller Street

The impact on Traffic may include;

- Subject to an approved TCP, and by prior approval with Council during major pours, (estimated to be 8 occasions over the life of the project), a concrete pump and concrete trucks may be located in the Northbound kerb side lane for extended working hours, resulting in diversions of Northbound traffic out of the kerb side lane, into one lane on Weekdays during the 3pm to 7pm clearway times.
- Occasions where traffic is stopped by site authorized Traffic controllers, to allow construction vehicles to enter or exit the site, or be loaded or unloaded in the construction zone

In all such instances, the signage and controls will be implemented in strict accordance with the Contractors approved TCP.

There are no dedicated provision or facilities for cyclists on Miller Street, and as illustrated in Figure A3.1 in Appendix 3 of this report, it can be seen that Miller Street is highlighted in “Pink / Purple” on the RMS Cycleway Finder interactive map. This denotes a road that is defined as;

“On-Road Medium Difficulty

Purple routes depict (on-road) bicycle lanes, road shoulders and mixed traffic lanes mainly along collector roads. They are more challenging than low difficulty routes and can be considered for usage by cyclists who are confident when riding with traffic.”

As such, Miller Street does not attract a great deal of cyclist activity, but those that do, can adopt another route for their regular commute to avoid this section of Miller Street, or given the speed limit of 40kph, continue to elect to use this route whilst adhering to any signage and direction in connection with the Project TCP.

In preparing any future TCP and the final CTMP, the Construction Contractor will take into account the impacts noted above, and utilise site and temporary street / traffic signage and authorised traffic controllers to manage the impacts of Construction on Miller St pedestrian, vehicular, cycle and public transport (Bus) traffic noted above.

b) Berry Street

Classification & Speed Limits

Berry Street is classified as a State road and is under the control of RMS. Berry Street commences west of the Pacific Highway and ceases at Arthur Street. The speed limit on Berry Street is 40km/hr.

The road is one way, East bound and the carriageway is made up of 4 lanes, which includes restricted parking on both the South and North kerbs.

Bus Stops, Parking Restrictions and Clearways

Metered loading zones are installed between the kerb extensions and operate between 6AM-10AM M-F on the South side kerb. Outside of these hours the parking area reverts to 1P parking between 10AM-6PM M-F and 2P 6PM to midnight M-F.

The Northern kerb immediately adjacent the School boundary allows for restricted parking as follows;

- Clearway 6am to 10am and 3pm to 7pm M – F
- 2P 7pm to Midnight M – F
- 1P 10am to 3pm M – F, and
- A “No Stopping” zone for the first 16m West of the Miller St / Berry St traffic lights

Existing footpaths

The existing Northern footpath has an effective width of 3.7m. There are no cycling facilities along this section of Berry Street.

The School boundary fence is made up of a brick and steel palisade and garden arrangement as illustrated below.



Fig 2.06 : Berry St boundary

Intersections / Traffic Lights

Signals are located at the intersections of Pacific Highway, Miller Street, Walker Street and Arthur Street. As noted above, there are signal crossings on all legs of the Miller Street intersection.

Conclusion : Impact of Construction upon Berry Street

There will be no impact upon parking, pedestrians or traffic in Berry Street, between Pacific Highway and Miller Street, and currently there are no provisions or facilities for cyclists along Berry Street.

c) Angelo Street

Classification & Speed Limits

Angelo Street is one way in the Southerly direction (Refer Fig 2.07 and 2.08) and is classified as a local road and is under the control of Council. Angelo Street extends only the length of the Schools Western boundary, ie from McLaren St in the North to Berry St in the South. It is a narrow carriage width, measuring approximately 9m from kerb to kerb at the Berry St end, which includes provision from restricted parking on both the East and Western sides of the road.



Fig 2.07 : Angelo Street looking South to Berry St intersection



Fig 2.08 : Basement carpark access to residential on West side

In recent times, a number of high density residential buildings have been developed on the West side of Angelo Street, and access to their basement carparks are via Angelo Street. Access to the Wilson Carpark is approximately 25m North of the Berry St intersection, and immediately south of the residential developments referenced above.

The result is that during peak times, this street sees relatively heavy traffic, entering and exiting the three referenced adjacent car parks.

The School has a loading dock entry immediately North of the intersection of Berry Street into the School grounds. The speed limit on Angelo Street is 40km/hr.

Bus Stops, Parking Restrictions and Clearways

There are no Bus stops.

Restricted parking times on the East kerb exist as follows;

- Southern “end” 1P 8.30am to 6pm M – F and 8.30am to 12.30pm Sat
- Northern “end” 2P 8.30am to 6pm M – F and 8.30am to 12.30pm Sat

Existing footpaths

Adjacent the loading dock entry, the existing footpaths have an effective width of 2.1m on the East and 1.3m on the west. There are no cycling facilities.

Intersections / Traffic Lights

There are no traffic lights at either the McLaren St or Berry St intersections.

Conclusion : Impact of Construction upon Angelo Street

There will be no impact upon parking, pedestrians or traffic in Angelo Street between McLaren Street and Berry Street, and there are no formal provisions or facilities for cyclists along Angelo Street.

d) McLaren Street

Classification & Speed Limits

McLaren Street is classified as a local road. The speed limit on McLaren Street is 40km/hr, and the street signage includes School Zone 8am to 9.30am and 2.30pm to 4pm School Days.

Bus Stops, Parking Restrictions and Clearways

Metered parking on the Southern kerb (Refer Fig 2.09), exists as follows;

West of Miller St and East of Bermondsey Lodge (College Shop and Sports Dept)

- Approximately 4m of provision for Motorcycle parking adjacent the intersection
- 1P 8.30am to 6pm M – F and 8.30am to 2.30pm Sat West of Bermondsey Lodge (College Shop and Sports Dept)
- 2P 8.30am to 6pm M – F and 8.30am to 2.30pm Sat

As shown in Figure 2.09 below, a Council approved “drop off” zone is located outside the McLaren Hotel, at 25 McLaren Street, providing parents with a safe drop off location before and after school.



Fig 2.09 : McLaren St Southern Footpath, Council Approved “Drop off” zone outside 25 McLaren St

Existing footpaths

The existing Southern footpath has an effective width of 3.6m. There are no cycling facilities along this section of McLaren Street.

Intersections / Traffic Lights

Signals are located at the intersections of Miller Street and McLaren St with signal crossings on all legs of the intersection.

There are no lights at the intersection of Angelo Street.

A pedestrian crossing is provided just East of the Church St intersection.

Conclusion : Impact of Construction upon McLaren Street

The School Clinic which is located at 21 McLaren Street, will not be impacted upon in regards to Emergency vehicle access or access for parents picking up students.

There will be no impact upon general parking, cyclists, pedestrians or traffic in McLaren Street, East or West of the Miller Street intersection.

3 The Construction Works

3.1 Staging and Duration of the Works

The general progression and the scope of this stage of the works is as follows;

- Site Establishment, erection of the perimeter hoardings and acoustic treatment to adjacent school buildings,
- Demolition & bulk excavation
- Structure
- Building envelope
- Services rough in
- Finishes and FF&E
- Services fit off and commissioning and testing
- Landscaping
- De-mobilisation and Final Cleaning

Figure 3.1.1 : Site Plan



The project commencement is subject to the time frame required to secure the SSDA. With that in mind, Appendix 1 includes an “Indicative Outline Program” that allows for a construction period in the order of 18 months.

It is anticipated that the demolition and bulk excavation (noisy works) would be targeted to commence at the end of term 4 2020, so that as much of the disruptive works can be completed before the 2021 resumption of School

Upon appointment of the Contractor responsible for the delivery of the construction phase will be required to prepare and submit a detailed construction program during the planning phase and prior to commencement on site.

3.2 Construction Zones

In order to ensure optimal outcomes in regards to segregation of school students, staff and members of the public using the roads and footpaths along Miller Street, from truck movements, overhead lifting and general construction loading and unloading activities, it is envisaged that an application for a work zone will be made for the area shaded in orange in Figure 3.2.1 immediately east of the site on Miller Street, (approximately 25m in length) which is currently restricted parallel parking alongside the kerb.

This will enable a tower crane, located within the School grounds, to unload large deliveries from the kerb side, and lift over a 10Kpa hoarding protecting the pedestrians from the overhead works.

This also reduces the number of truck movements crossing the footpath, reducing risk to pedestrians.

During periods of bulk excavation and demolition, the work zones will be used to queue waiting trucks prior to entering onto the site for loading.

It is anticipated that 9 metered car spaces will be affected for approximately 12 months during normal site working hours, whilst the work zone is in place. Work zone applications will be submitted to North Sydney Council for approval prior to commencement of works.

These 9 metered car spaces that will be temporarily affected by the establishment of the work zone, are not currently used for “kiss and drop” and is generally reserved for restricted short term, paid parking. It will have no impact on adjacent “Bus stops” for pick up and drop off for students and members of the public.

Figure 3.2.1 Illustrates the anticipated arrangements for this construction zone, hoardings and general materials handling.

In addition to these construction management planning initiatives, a communication strategy will be implemented to ensure that students, staff, members of the public and construction workers are:

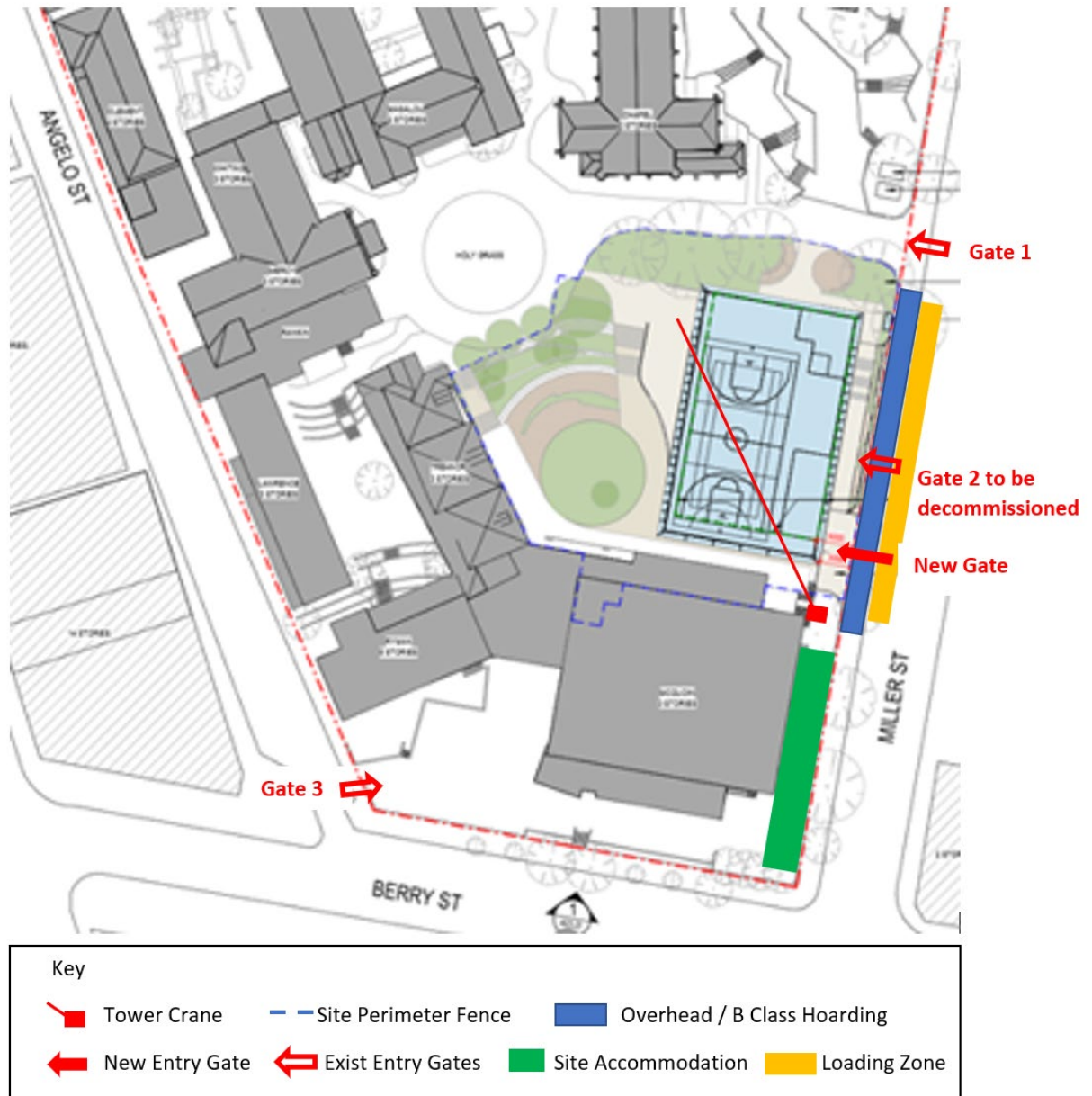
- Informed of changes to paths of travel in and around the school
- aware of upcoming construction activities, such as upcoming concrete pours when construction traffic and activity will be at its peak
- aware of relevant project rules as they apply to each party

The communication strategies will include but not be limited to:

- For Construction Workers - the induction process, daily toolbox meetings or weekly site meetings,

- For Staff, Students and Parents - School assemblies, newsletters or staff meetings, and
- For members of the public - site signage and pedestrian controls

Figure 3.2.1 : Construction Methodology Diagram



3.3 Materials Handling & Hoardings

The Head Contractor, responsible for delivery of the project, will make application to Council for approval of the overhead B Class Hoarding on Miller Street footpath, and the Loading zone in Miller Street, immediately adjacent the hoarding, both as illustrated in Figure 3.2.1 above.

The restricted parking zones on Miller Street are detailed in Section 2.2 (a) of this CTMP, but generally it is anticipated that this Construction Loading Zone will only be available for all hours the site is operational, excluding the hours between 3pm to 7pm Monday to Friday, which are currently designated as “Clearway” times, coinciding with peak traffic flows Northbound on Miller Street.

This construction loading zone and overhead footpath hoarding are crucial to the effective and safe operation of the site given the constraints that exist within the School boundaries. In order to ensure optimal safety outcomes in regards to segregation of materials handling, truck movements, and overhead lifting from school students, staff, and drop off zones within the school. The application to Council for the loading zone and hoarding will be made for the area immediately east of the site on Miller Street, shaded in “blue” in Figure 3.2.1 (approximately 25m in length) by the Contractor prior to commencement on site.

This will enable a tower crane, located within the School grounds, to unload large deliveries from the kerb side, and lift over a 10Kpa hoarding protecting the pedestrians from the overhead works. This also reduces the number of truck movements crossing the footpath, reducing risk to pedestrians.

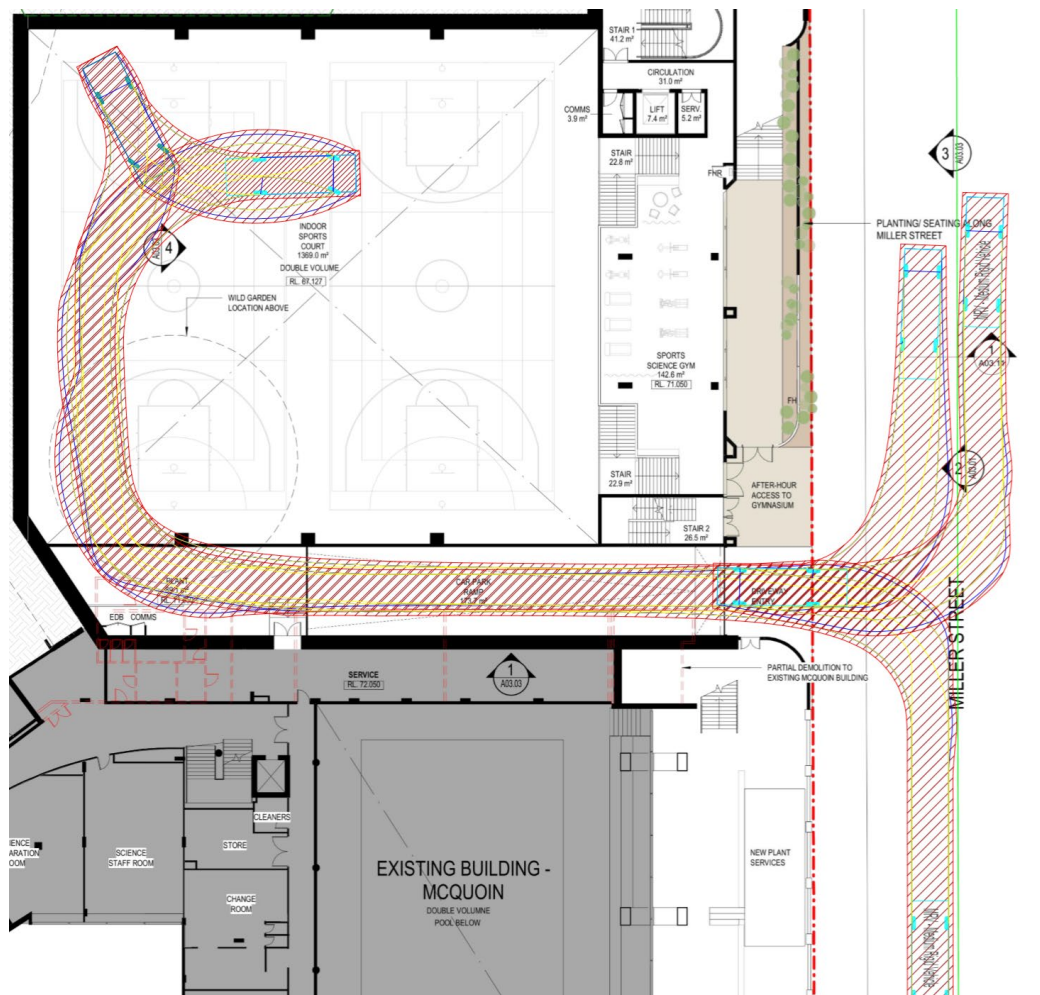
a) Demolition and Bulk excavation and phase

During this phase of the works, trucks will arrive and enter the site under the control of an authorized traffic controller, driving in a forward direction through the new gate immediately South of Gate 2 on Miller Street.

Truck will proceed on to the site and down the ramp adjacent the Southern site boundary at McQuoin Hall, as excavation progresses to the final basement carpark level.

Trucks will use the footprint of the excavation site to turn around and drive back up the ramp, stopping at the boundary where they will again be escorted across the footpath back onto Miller St under the control of an authorized traffic controller, generally as illustrated in Figure 3.2.2 below

Figure 3.2.2 : Swept path analysis for trucks accessing lowest level of excavation (Level -3)
(Source : Traffix)



b) Structure and Building Envelope phase

i) General Materials Handling

During this phase, a tower crane, (located between the new Gate on Miller Street and the Site Compound area, as shown in plan on Figure 3.2.1 in red and in elevation of Figure 3.3.1 on the following page) will be erected at the completion of the bulk earthworks and commencement of the Structure.

At this stage, subject to Council approval the overhead perimeter B Class hoarding over the Miller Street footpath would be in place, as would the construction loading zone in Miller Street.

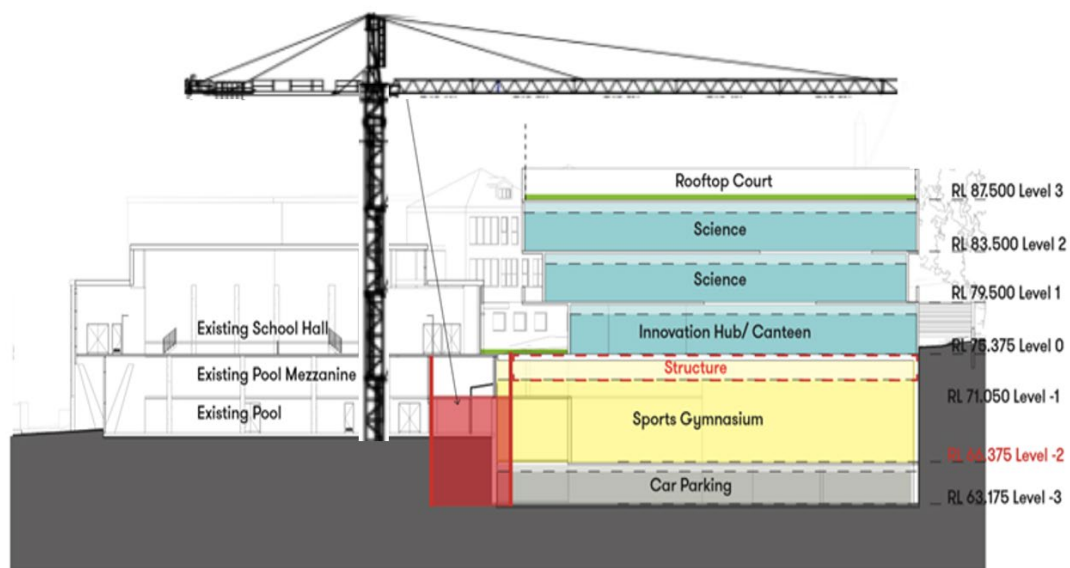
The tower crane would be erected at a height to project the slewing jib above the Miller Street tree line, and the trucks being loaded / unloaded would be positioned in the loading zone between the canopies of the Miller Street trees.

The size of the Tower Crane will be such that it will service the significant loads that may be associated with constructing the transfer slab over the future basketball Level 0 (RL 75.375) which extends over the full footprint of the site.

It is anticipated that the tower crane will be established in this location for approximately 10 months.

The crane would be removed toward the end of the building envelope phase of the works.

Figure 3.3.1 : Materials Handling : Tower Crane Illustration



ii) Concrete Pours

Whilst loading and unloading of vehicles will occur via the tower crane and access to the Miller Street Construction zone, the restricted time (current “Clearway”) that exists in Miller Street between 3pm and 7pm, will make this space difficult to utilize for major concrete pours which are likely to still involve pumping concrete after 3pm.

To mitigate the risk of pumping after 3pm on Monday to Friday, the following options will be examined;

- Saturday pours
- Subject to Council approval, closing the Western footpath of Miller Street for the day, and redirecting pedestrians to the East footpath. Establishing a line pump in the zone between the Miller Street boundary wall and the scaffold on the East face of the building and reversing concrete trucks into the site to access the line pump, and
- In close coordination with the School, and only after the Schools written approval, utilize the School existing main driveway off Gate 1 in Miller Street, particularly during school term breaks.

iii) Waste Management / Construction Waste Collection

Recycling and offsite manufacturing will be encouraged in order to minimize the amount of waste generated on site.

Garbage will be placed in skips located as required around the site in reach / range of the tower crane. Bins will be carefully monitored to avoid excessively heavy loads and loaded onto collection vehicles located in the construction zone.

c) Finishes phase / Balance of the Works

After the decommissioning of the Tower Crane, and dismantling of the B Class Hoarding, the Construction loading zone in Miller Street would remain active up until Practical Completion is achieved.

This loading zone would be used for small deliveries, and access for small vehicles could be facilitated into the Scientia basement carpark, again under the control of an authorized traffic controller as they cross the Miller Street footpath entering and exiting the project.

3.4 Project Work Hours and Peak Hour Traffic

Works shall be restricted to comply with the conditions of the DA but is anticipated to be constructed within the hours of 7am to 6pm Monday to Friday, and 8am to 1pm Saturday. Any works outside of these hours will be the subject of an 'Out of Hours' permit application to be lodged and approved by North Sydney Council.

The following times have been identified as peak times for local traffic movements:
Monday to Friday: 07:30am to 09:30am & 04:30pm to 06:00pm

3.5 Site Access Management

To accommodate trucks during the demolition and bulk excavation phases and for those deliveries which will not be unloaded from the Construction loading zone on Miller Street, a dedicated temporary construction site driveway entrances / exit will be signposted, controlled by a certified traffic controller, to safely manage pedestrians and construction related vehicles in the frontage roadways and footways.

The location of this driveway is illustrated on Figure 3.5.1 on the following page

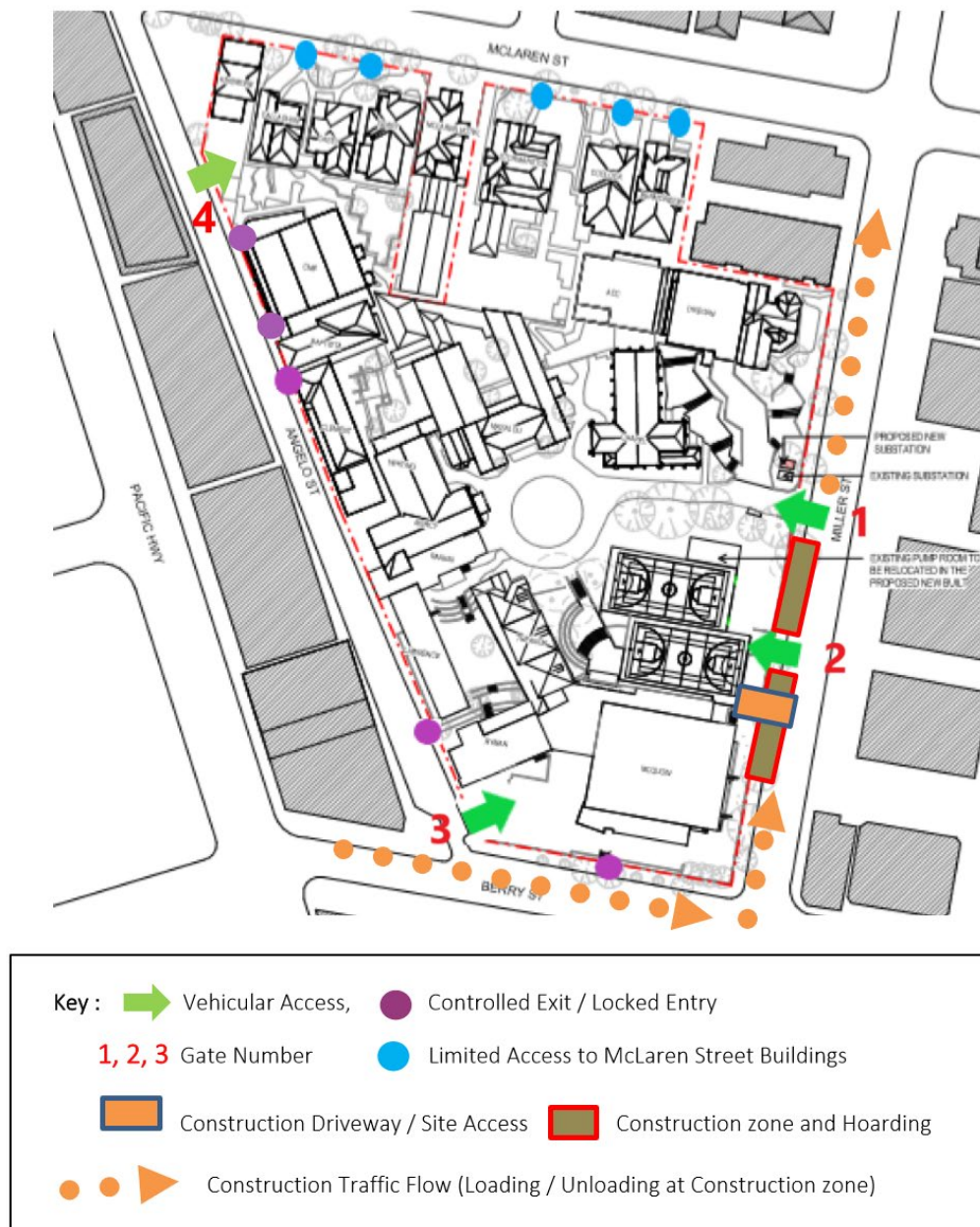
In accordance with RMS requirements, all vehicles transporting loose materials would have the entire load covered and/or secured to prevent any large items, excess dust or dirt particles depositing onto the roadway during travel to and from the site.

Further to covering/securing the load to prevent deposits onto the roadway, a Shaker / Cleaning Device is proposed to be installed at the point of vehicle egress to minimise the risk of dirt on the local roads.

All subcontractors must be inducted by the Contractor to ensure that the procedures are met for all vehicles entering and exiting the construction site. The Head Contractor will monitor the roads leading to and from the site and take all necessary steps to rectify any road deposits caused by site vehicles.

Vehicle movements to, from and within the Site shall do so in a manner, which does not create unreasonable or unnecessary noise or vibration. No tracked vehicles will be permitted or required on any paved roads. Public roads and access points will not be obstructed by any materials, vehicles, refuse skips or the like, under any circumstances.

Figure 3.5.1 : Project Vehicular Traffic and School Access Management



3.6 School Vehicular and Pedestrian Traffic

See Figure 3.5.1 above illustrating the arrangement to ensure safe and logical access and pathways / routes are maintained at all times for ongoing School activities.

The McLaren Street gates are to be the encouraged entry points for the Students during construction. The Main Gate (Gate 1) on Miller Street will be required for students access in the afternoon to buses, similar to the process employed previously during the schools ACC project.

Authorised Traffic Controllers will be in attendance from the start of the works to assist local pedestrian traffic and to assist in conditioning the local pedestrians on the changed conditions. This will be assessed on an on-going basis.

The proposed signage for pedestrian management to comply with AS1742.3 and AS1742.10, including pram ramps.

The Communication Strategies outlined in Section 5.2 of this report, and the Safety Equipment identified in Appendix 2 will be used to assist in the management of School vehicular and Pedestrian Traffic.

3.7 Construction Personnel Parking

There will be no parking provided on-site for Construction personnel. Given the on-street parking time restrictions, there is little to no opportunity for on street parking in close proximity to the site. Included in the Projects Subcontract conditions and through the site induction process, all site personnel will be encouraged to utilise the excellent public transport facilities in lieu of driving to the Site to minimise parking demand and the impact of construction activities on street parking.

In the event that specific personnel have no alternative options other than to use private vehicles travelling to and from site, then there are several public car parks which can be utilised within the immediate vicinity of the Site, in Angelo Street, Miller Street and nearby Ward Street and Dennison Street

3.8 Construction Vehicle Access Routes

The Site Manager or other nominated representative of the Construction Contractor, will coordinate and establish a schedule for deliveries of materials and goods prior to that day, with the Traffic Controllers maintaining radio contact with construction vehicles at the time of delivery.

As a result, there shall be no queueing allowed to occur on the public road network within the North Sydney CBD precinct and surrounds. No trucks are to be queued on local roads. No truck pooling/parking will be permitted at any time during the project

at any frontage to the project or any other roadway within the North Sydney Local Government Area.

Figure 3.8.1 below illustrates the anticipated route for the arrival and departure of construction vehicles accessing the site. All heavy vehicles will follow the approved routes.

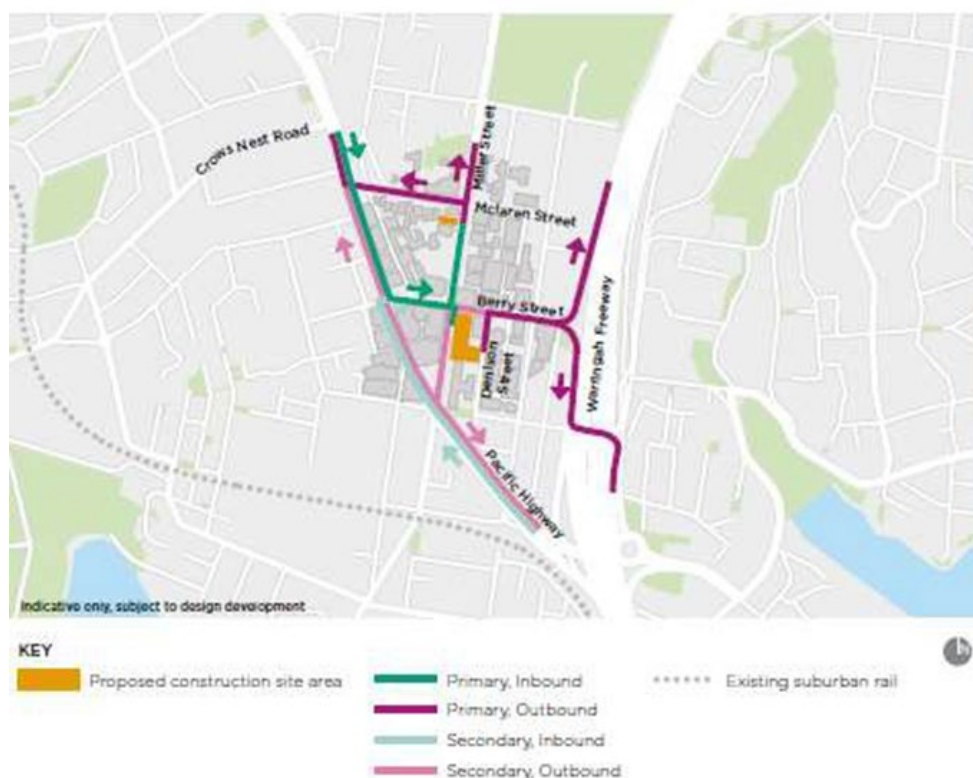
Estimated daily volume of heavy vehicle traffic is expected to be in the order listed below;

Phase of Project	Fcast duration	Estimated No. of Truck movements
Demolition / Excavation	20 weeks	Ave. 10 / day
Structure	26 weeks	Ave. 5 / day
Balance of the works	20 weeks	Ave. 3 / day

Generally, the haulage routes will be via arterial roads/ freeway or Tollway.

Material will be removed from site using a combination of vehicles. These trucks will range in size from 5.5m to 12.5m and taken to authorised disposal sites around Sydney.

Figure 3.8.1



Oversize / Overmass Load Carrying vehicles

On site equipment is required for excavation and demolition. The delivery of onsite equipment to the site would involve the use of Oversize/Overmass Vehicles.

Specific traffic management plans will be developed for each abnormal movement and will be submitted for assessment on a case by case basis. Oversize and over-mass vehicles are not allowed to travel on Local Roads (unless approval for a one-off occasion is obtained from North Sydney Council).

All abnormal and oversize/overmass vehicles will approach and egress from the site on the approved routes.

Abnormal Loads Permit Requirements

- Traffic Management Plan
- RMS Road Occupancy Licence
- North Sydney Council written approval
- Transport Management Plan (High Risk}

Permit issue for vehicles greater than 45.5 tonnes is through the National Heavy Vehicle Regulator (NHVR). This applies to particular special purpose vehicles (SPV) such as mobile cranes and other oversize/over mass vehicles (OSOM). At present, RMS is currently undertaking this permit issue for State Roads and Council for local and regional roads.

For over dimensional vehicles, generally vehicles that are greater than 25m length or 3.5m width require a pilot(s). Extremely long or wide vehicles will require an escort (fee payable). Permits will be applied for by the transport operator.

Oversize vehicles will be required at this site for the delivery and removal of bulk excavation plant. These deliveries will occur outside of peak hours and where required a lane closure on Miller Street will be implemented,

4. Assessment of Traffic & Transport Impacts

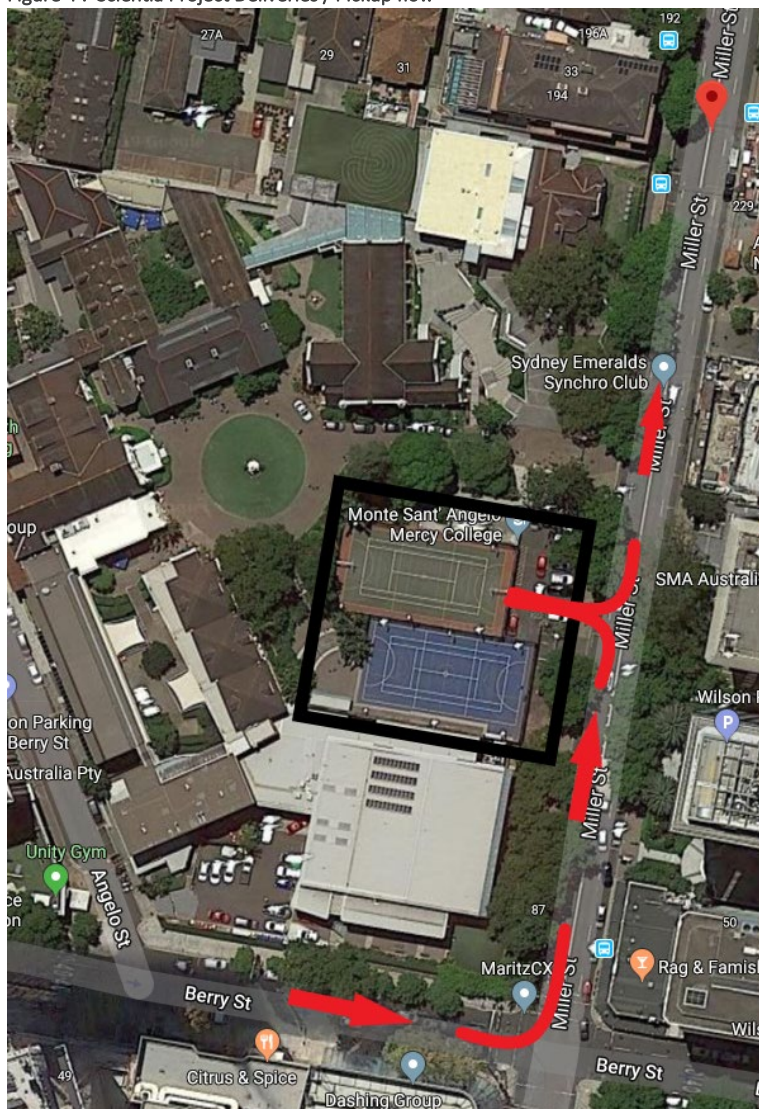
4.1 Impact on Traffic Flows

The operation of the site will have minimal impact on existing traffic conditions as the traffic generation is typically low and intermittent with vehicles restricted to left in/ left out at Miller Street.

Traffic generation at this site may typically be as follows;

During Site Establishment	10 Trucks / mth
Demolition and Bulk Excavation	200 trucks / mth (10 / day on ave)
Structure & Finishes	100 trucks / mth (5 / day)
Balance of the Works	3 trucks / day

Figure 4 : Scientia Project Deliveries / Pickup flow



4.2 Impact on Public Transport, Cyclists and Pedestrians

This project is not expected to have any significant impact on public transport with the closest two Bus station located;

- approximately 300m to the South of the site, on Miller St (South of Berry St), and
- Immediately to the North of the Main vehicular Entry gates to the School, approximately 150m North of the site

Adequate provision for pedestrians will be made by provision of the B Class hoarding on Miller Street, and provision of a qualified Traffic Control on the temporary entry / exit driveway with appropriate control barriers.

Miller Street in the vicinity of the site, does not attract a heavy volume of cyclists. A condition of site inductions and instructions to truck and plant operators will be to brief them on being aware of cyclists when using the loading zone.

4.3 Impact on parking

During the construction phase, the installation of the new driveway on Miller Street and the application for the loading zone will involve the temporary removal of 9 metered parking spaces, which will be the subject of consultation and an application to Council prior to undertaking this work.

Given the excellent access to Public Transport for construction personnel, with North Sydney station only a 5 minute walk away, and bus stops on Miller Street providing access to major bus routes, it is not envisaged that the project will have any material impact on the on-street parking in the North Sydney CBD precinct.

In addition, to offset the impact of construction on car parking, the 8 car spaces to the rear of the Schools property at 27-29 McLaren St which are currently not used, will be made available for School use during the period of construction.

4.4 Impact upon Special Events

In reviewing North Sydney Council's website for special events near the site. The Twilight Food Fair located in the park adjacent to North Sydney Council chambers and administrative buildings, occurs every Friday between 1730-2100.

The construction activities will have no impact upon these events and outside of this no other special events are specifically listed, which would be impacted by the works.

4.5 Impact upon Emergency Services

Emergency service will not be impacted by the works. Service and Emergency vehicles will be allowed to continue through the School site, at all times during the project.

Key points of arrival for Emergency vehicles at the School include;

- Gate 1, off Miller Street, where Services and Emergency vehicles can proceed up the driveway to the roundabout, providing good access well into the School grounds.
- Gate 3 – Off Angelo St, and
- 21 McLaren Street – outside the building that houses the School Clinic

4.6 Authorised Traffic Controller

Authorised Traffic Controllers will be present on-site throughout the construction stage of the project.

The Responsibilities of the Authorised Traffic Controller include:

- Supervision of all construction vehicle movements into and out of site at all times,
- Supervision of all loading and unloading of construction materials during the deliveries in the construction phase of the project, and
- Pedestrian management, to ensure that adverse conflicts between vehicle movements and pedestrians do not occur

5. Controls and Communication Strategies

5.1 Monitoring the CTMP

The site will be monitored by the site supervisor. Any changes as noted in this CTMP, to signs/ lines that impact on the public will be monitored daily during site operating hours.

Traffic control used for pedestrian management, lane closures etc will need to provide records of the traffic control implemented. Any changes required to the traffic control set up will be authorised by a holder of an RMS "Prepare a Work Zone Traffic Management Plan" or equivalent.

Authorised Traffic Controllers will be in attendance at the start of the works to assist local pedestrian traffic and to assist in conditioning the local pedestrians on the changes conditions. This will be assessed on an on-going basis.

5.2 Communication Strategy

The Head Contractor responsible for delivery of the project will develop a Communications Strategy that will outline the most effective methods of communication to ensure adequate information is provided to the community. Notifications will be provided to all impacted stakeholders.

Authorised Traffic Controllers will be the first line of communication with the pedestrian traffic. The Authorised Traffic Controller will use verbal communication and hand signals to instruct pedestrians.

The Police and relevant Emergency Services will be informed in a timely manner of relevant activities proposed within this CTMP.

Appendix 1 Draft Program

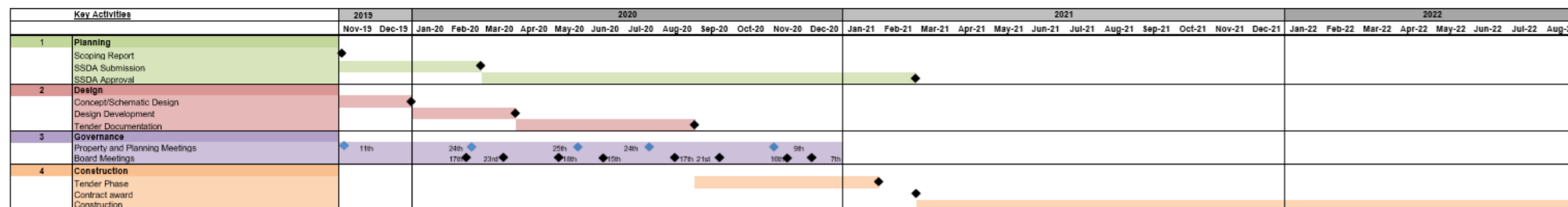


Monte Sant' Angelo Mercy College (Monte)



Indicative Outline Program - November 2019

Monte Scientia Project



Appendix 2 Safety Equipment

Fig A2.1 Pedestrian footpath control barriers



To be utilized by Site Authorised Traffic Planner to control pedestrians when trucks are crossing footpath

Fig A2.2 Vehicular Safety Mirrors

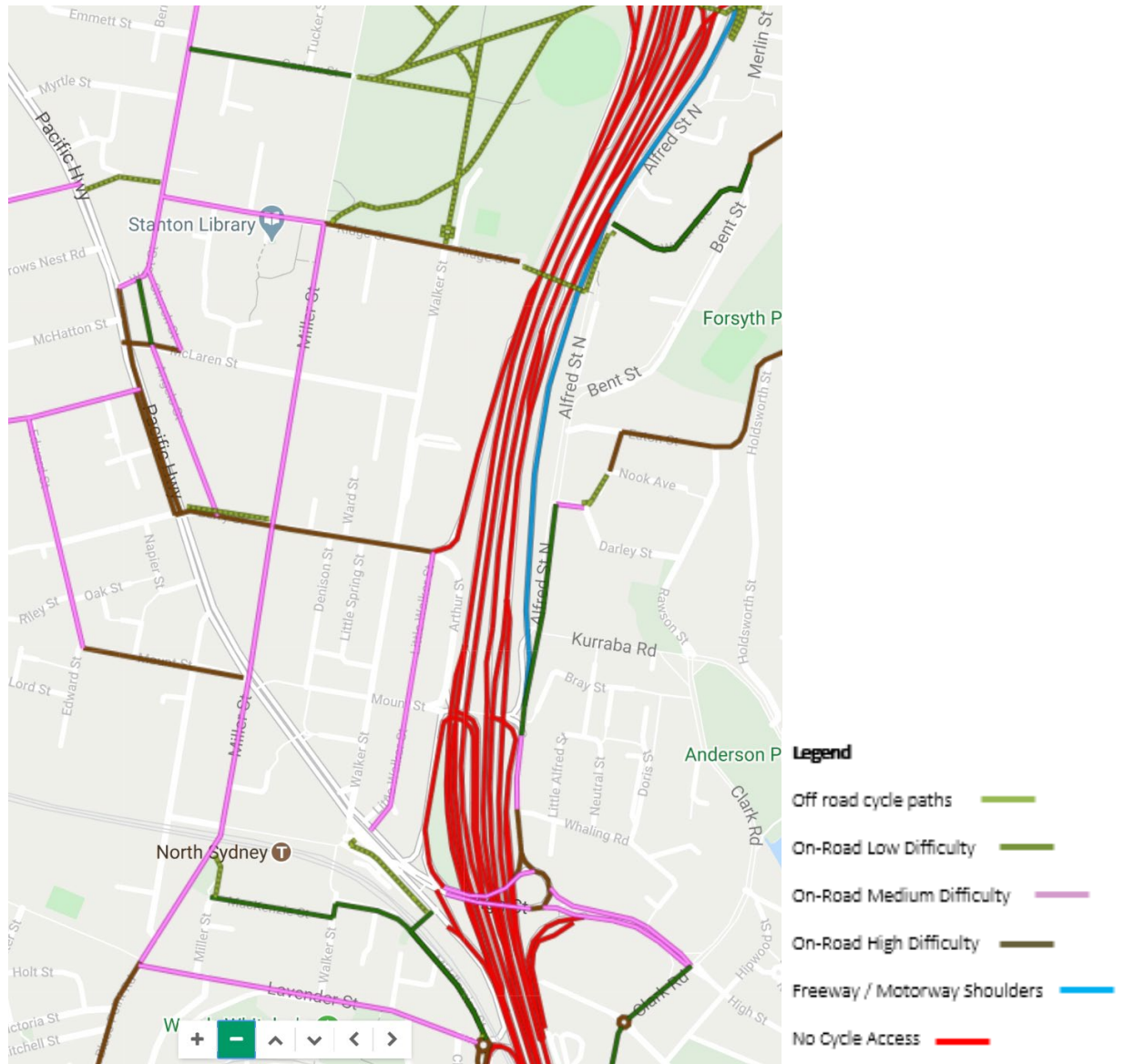


Fixed to hoardings at exit driveway points to assist departing vehicles with identifying pedestrian and vehicular traffic

Appendix 3 Cyclist routes

The following data has been sourced from Transport for NSW, “CyclewayFinder” interactive map;

Figure A3.1



Off Road (bicycle paths, shared paths & separated bike paths)

Light green routes depict (off-road) bicycle paths, shared paths and separated paths. These paths are built, signed and marked specifically for bicycle use. Path routes are suitable for all cyclists. Filter by cycleway infrastructure type, e.g. on-road low difficulty paths or off-road separated cycle paths. Keep in mind that in most instances pedestrians will also be using the paths.

On-Road low difficulty

Dark green routes depict (on-road) bicycle lanes, road shoulders and mixed traffic lanes mainly along local roads. They are suitable for inexperienced riders.

On-Road Medium Difficulty

Purple routes depict (on-road) bicycle lanes, road shoulders and mixed traffic lanes mainly along collector roads. They are more challenging than low difficulty routes and can be considered for usage by cyclists who are confident when riding with traffic.

On-Road High Difficulty

Brown routes depict (on-road) bicycle lanes, road shoulders and mixed traffic lanes - are mainly arterial roads and should only be considered for usage by experienced cyclists. Arterial roads have more than one lane of traffic and are used by high volumes of cars, buses, trucks, etc.

Freeway / Motorway shoulders

Blue routes depict road shoulders along Freeways/Motorways - are for experienced and confident cyclists only. The road shoulders along Freeway/Motorways expose riders to heavy traffic volumes travelling at high speeds.

No Cycle access permitted

Red routes depict sections of road that are closed to cyclists.