Preliminary Construction Traffic Management Plan

The Gables New Primary School

Prepared for School Infrastructure NSW

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241021

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Contents

Section 1 Background

1.1 Introduction

This Preliminary Construction Traffic Management Plan (CTMP) has been prepared by TTW on behalf of School Infrastructure NSW (SINSW) (the **Applicant**) to assess the potential environmental impacts that could arise from the development of The Gables New Primary School at Lot 301 DP 1287967 on Fontana Drive, Gables (the **site**).

This report has been prepared to assess and address the construction traffic impacts of the proposed development and define the necessary management process and mitigation measures for construction of the project.

This report accompanies a Review of Environment Factors that seeks approval for the construction and operation of a new primary school at the site, which involves the following works:

- Construction of school buildings, including learning hubs, a school hall and an administration and library building.
- Construction and operation of a public pre-school.
- Delivery of a sports court and fields.
- Construction of car parking, on-site waste storage and loading area.
- Separated vehicle access to primary school and pre-school via Cataract Road
- Associated site landscaping and open space improvements.
- Associated off-site infrastructure works to support the school, including (but not limited to) services, driveways and pedestrian crossings.

For a detailed project description, refer to the Review of Environmental Factors prepared by Ethos Urban.

This CTMP prepared for the REF however is considered preliminary in nature and would be finalised post-approval as a condition of consent. This document should also be read in conjunction with the Transport and Accessibility Impact Assessment (TAIA) prepared for the REF.

1.2 Site Introduction

The site is located on Cataract Road, Gables, within The Hills Local Government Area (LGA), approximately 50km northwest of the Sydney CBD and 10km north of the Rouse Hill Town Centre. It comprises one lot, legally described as Lot 301 DP 1287967, that measures approximately 2.2ha in area. The site is bound by Pennant Way to the north, Cataract Road to the east, Fontana Drive to the west and a vacant lot to the south.

The site is currently vacant, largely cleared of vegetation (with the exception of grasses and small shrubs). The site is roughly trapezium layout and is bordered by roads to the north, east and west sides of the site. The surrounding context of the site has experienced significant transformation as part of the Gables new precinct and rapid housing growth in release areas that has seen development of greenfield sites to new communities.

An aerial view of the site and the surrounding road network is shown in Figure 1.

Figure 1: Site Aerial
Source: Nearmap, edits by Ethos Urban

1.3 Statement of Significance

Based on the identification of potential issues, and an assessment of the nature and extent of the impacts of the proposed development, it is determined that:

- The extent and nature of potential impacts are moderate, and will not have significant adverse effects on the locality, community and the environment;
- Potential impacts can be appropriately mitigated or managed to ensure that there is minimal effect on the locality, community.

Section 2 Construction Overview

Until the appointment of a contractor and the development of a detailed construction methodology, few details are known about the precise scope of works, and construction vehicle movements required to service this site. However, preliminary estimates can be made based on the site constraints, existing connections, and proposed new works. Once a contractor is appointed, and a construction methodology is developed, these details will be further refined and published in an updated CTMP.

2.1 Scope of Works

The proposed development comprises a new primary school in The Gables accommodating 1,000 students, and approximately 68 staff. This report accompanies a Review of Environment Factors that seeks approval for the construction and operation of a new primary school at the site, which involves the following works:

- Construction of school buildings, including learning hubs, a school hall and an administration and library building.
- Construction and operation of a public preschool.
- Delivery of a sports court and fields.
- Construction of 51 car parking, waste storage and loading area accommodating 12.5m HRV.
- Associated site landscaping and open space improvements.
- Associated off-site infrastructure works to support the school, including (but not limited to) services, driveways and pedestrian crossings.

2.2 Construction Operation

2.2.1 Access Arrangements

Based on the proposed site plan as shown in Figure 2, the primary school building will be constructed adjacent to Fontana Drive and Pennant Way, while the staff car park will be built adjacent to Cataract Road.

Due to the wide road width and minimal traffic activity outside of school peak hours, the frontages of Cataract Road provide a good opportunity for construction to enter and exit the site.

It is important to note that the discussed are potential access point estimated based on existing information that are preliminary in nature. The real-time access points will require the establishment of a construction. This includes the construction and operation status, such as any potential on-road work zones designated for public domain works, and potential site sheds. However, any final construction access methods must be developed and managed to not significantly impact day-to-day operation of the school

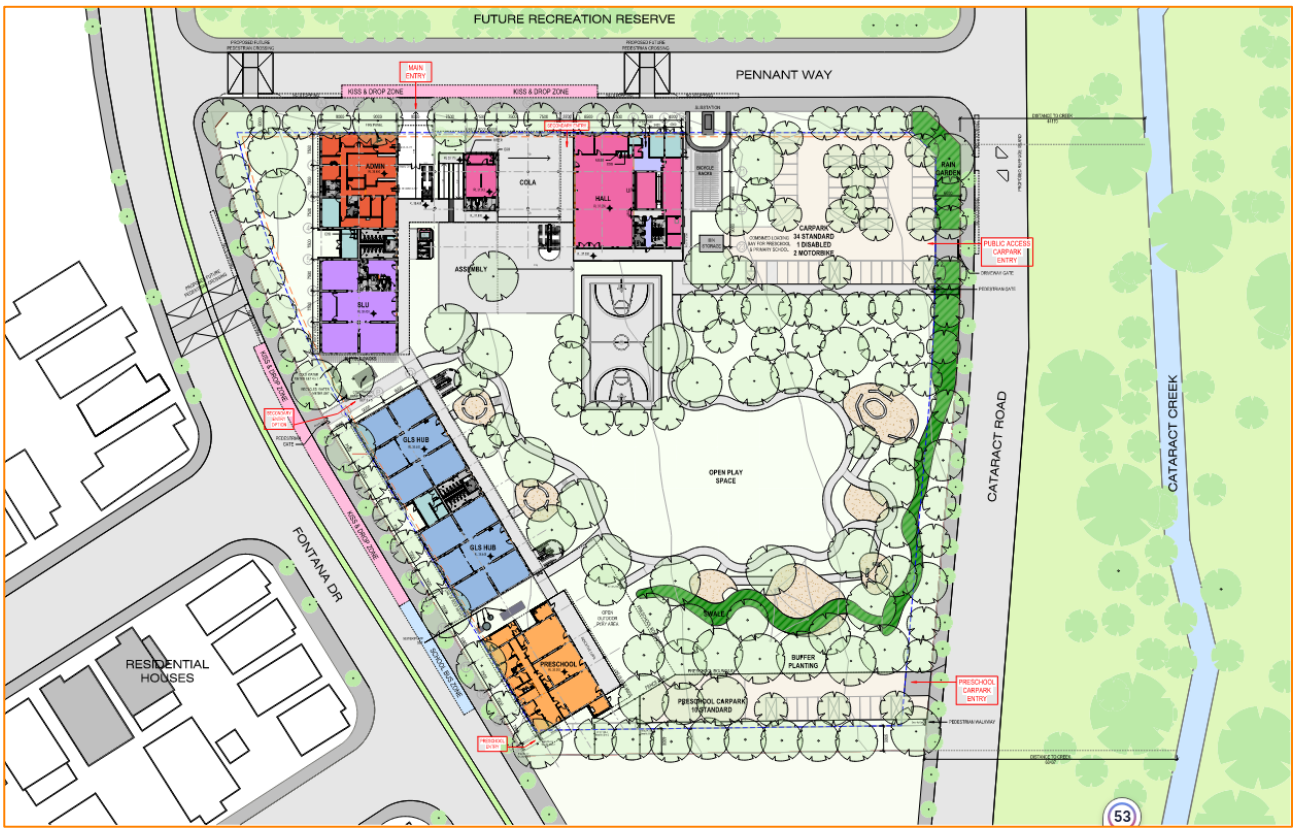

Figure 2: Proposed Site Plan

Source: Oculus

2.2.2 Construction Vehicle Volumes

It is assumed that the average volume of construction vehicle traffic to and from the site would be consistent with other similar SINSW projects. Sample data from other projects is provided in Table 2 below.

To better understand the potential impacts of construction vehicle traffic, it is useful to consider the size of the school. Table 2 includes data on SINSW projects with their increased student populations (as a result of the construction works) listed. However, this information is provided for reference only, and more accurate data would be provided by the appointed contractor prior to the commencement of construction.

Table 1: Construction Vehicle Volumes at Similar Construction Sites

Project	Projected Student Population	Peak No. of trucks per day	Typical No. of trucks per day
Pendle Hill High School	1,320 students	20	6 – 8
Smalls Road Public School	1,000 students	30	2 – 8
Santa Sophia Catholic College	1,920 students	69	11 – 30

Therefore, with a proposed school population of 1,000 students, it is estimated that this project will involve approximately 20 – 40 trucks during peak phase (80 for two way movements), and around 5 – 10 on a typical day (20 for two-way movements).

2.2.3 Worker Parking

Table 2: Typical and Peak Workforce Numbers at Similar Construction Sites

Project	Projected Student Population	Typical Daily Workforce #	Peak Daily Workforce #
Smalls Road Public School	1,000 students	70	130
Glenwood High School	1,820 students	80	120
Melonba Education Campus	3,000 students	100	400
Santa Sophia Catholic College	1,920 students	-	275*

*Values has been referenced from Santa Sophia Catholic College TAIA Section 10.14

Based on similar projects as listed above, it is estimated that there will be a maximum workforce of 100 – 200 staff, with approximately 60 – 100 worker vehicles. Once a contractor is appointed, a strategy shall be developed to minimise demand for parking in nearby public and residential streets.

As detailed in Transport and Accessibility Impact Assessment (TAIA), local roads surrounding the site have good on-street parking capacity which may also be utilised by workers. Be that as it may, travelling by private vehicle is discouraged, workers are strongly encouraged to utilise alternatives such as public transport, carpooling, or active travel modes. Furthermore, it is suggested that the contractor accommodate worker vehicles on-site where possible, to alleviate any additional demands on the existing on-street parking spaces.

2.2.4 Construction Vehicle Types

The most common vehicle types are expected to range from 8.8 metre Medium Rigid Vehicle (MRV) to 12.5 metre Heavy Rigid Vehicles (HRV). Truck and dog (up to 19.6 metres in length) may also be used from time to time, during bulk earthworks.

Larger special-purpose vehicles may be required for activities such as installation and removal of tower cranes. These may be subject to special approval which would be obtained on a case-by-case basis. The necessary approvals would be discussed with TfNSW and Council at the time, subject to the affected road location.

2.2.5 Hours of Operation

The hours of operation for construction activities are to be determined by the planning authority, and will likely contain similar work hours to the following:

- Monday to Friday 7:00 am – 6:00 pm
- Saturday 8:00 am – 1:00 pm
- Sunday and Public Holidays None

2.2.6 Construction Program

The construction program has not yet been determined, and a detailed CTMP would be prepared by the appointed contractor prior to construction.

2.3 Construction Traffic Management

2.3.1 Construction Delivery Management

The delivery of material to and from the site will result in some generated traffic activity associated with the works. The estimated construction traffic volume for the standard operation for the worst case is 20 trucks per day. This is equivalent to approximately 3 trucks per hour. It is expected that the heavy vehicles would generally arrive outside of AM and PM peaks, therefore there is no impact on the peak period traffic volume associated with the heavy construction vehicles.

2.3.2 Construction Traffic Management

Light vehicle traffic generation would be generally associated with construction worker movements to and from the site. Construction workers would be comprised of project managers, various trades and general construction employees. Over the full construction period, the peak workforce detailed in Section 2.2.3 shows that 60-100 vehicles would be the worst number of vehicles generated by the construction workers. The peak construction traffic periods for the workforce will typically arrive and depart at 6:30 – 7:00am and 6:00 – 6:30pm respectively each day. Based on the TIA, the intersection's peak hours are 7:15 to 8:15 am and 2:00 to 3:00pm. Therefore, the peak construction traffic will not overlap with the typical peak commuter traffic and thus, the construction traffic will have a minimal impact on the local network.

Heavy vehicles would be generally associated with deliveries and construction machinery to and from the site. As mentioned previously in Section 2.3.1, any deliveries will be conducted outside of the school peak period in the morning and afternoon. Hence, heavy vehicles will have a minimal impact on the local network.

Although, construction traffic for light vehicles will have minimal impact, workers should be encouraged to use active and public transport options.

2.3.3 Construction Vehicle Management

During days of high estimated vehicle movements, communication between the site and incoming vehicles will be maintained to stagger the arrival of vehicles, in order for them to be accommodated within the worksite and to minimise traffic disruptions.

Loading and unloading activities will occur within the site, at the nominated vehicle zones, or within any approved Works Zone. All deliveries should be made outside of any posted School Zone times where possible to ensure the highest level of safety for students at the adjacent primary school. Truck movements to and from the site will be scheduled outside peak hours where possible to reduce impacts to the local and state road network. All deliveries are to be made within the approved work hours.

Non-tonal reversing beepers (or an equivalent mechanism) shall be fitted and used on all construction vehicles and mobile plants regularly used on-site (i.e., greater than one day) and for any out of hours work.

2.3.4 Construction Vehicle Routes

All construction vehicles are to travel on the main road network (such as motorways and arterial roads) as far as practical, except where strictly required to reach the construction site.

It is anticipated that trucks travelling to / from the north / south will mainly utilise Old Windsor Road and Boundary Road, as shown in Figure 3 and Cataract Road, as shown in Figure 4. However, note that these are suggested routes only. Drivers are expected to travel to their intended destination using routes that are deemed as appropriate depending on local traffic conditions.

Figure 3: Truck Travelling Routes
Source: Modified from Google Maps

Figure 4: Truck Travelling Routes Near the Site
Source: Modified from Google Maps

Section 3 Cumulative Impacts and Coordination

3.1 Neighbouring Construction Works

As the proposed primary school is located in a precinct that is undergoing development. An assessment has been undertaken to evaluate the potential cumulative impacts of the neighbouring construction works, which has been reproduced in Table 3 and illustrated in Figure 5.

Table 3: Neighbouring Construction Projects

No.	Address	Development Application no. / Application Status*
1	2 Lakefront Crescent, Gables NSW 2765	1118/2023/JP – In construction (August 2024)
2	99 Fontana Drive Gables 2765	110/2019/HA – In construction (August 2024)
3	95 Fontana Drive Gables 2765	730/2023/JP – In construction (August 2024)
4	93 Fontana Drive Gables 2765	1739/2022/JP – In construction (August 2024)

*The DA Number have been referenced from The Hills Shire Planning Portal Website

Figure 5: Neighbouring Construction Project
Source: Modified from Nearmap

The listed construction projects may coincide with the School's construction program. Nonetheless, these projects are anticipated to not significantly affect the local traffic and the School's construction as it is assumed that all relevant roadways can accommodate the extra heavy vehicle trips generated by the project. The road network is already used by heavy vehicles such as trucks and buses. Additionally, the road network is designed to accommodate future population growth and associated traffic volumes; the construction vehicle volumes associated with these sites would be substantially lower than the total volumes on these roads in future.

3.2 Public Transport

There shall be no changes to local public transport routes and services due to construction.

3.3 Cumulative Impacts

As indicated in Section 3.1, there are currently a number of construction activities occurring across The Gables Precinct. Due to the different construction timelines and traffic flow, it would be difficult to assess the total cumulative impacts of all the construction projects within the vicinity of the site. Nevertheless, should the construction timelines overlap, consultation with the neighbouring project will be conducted as a part of CC stage and coordination of construction vehicles will be managed to prevent congestion in the area and minimise impacts to local traffic. A construction vehicle scheduling and management will be further investigated once a contractor has been appointed to the project prior to construction.

3.4 Local Impacts

The site manager shall be responsible for liaising with the site manager of any surrounding construction projects once identified. In particular, communication across sites should ensure:

- Overall project programs are to be identified and shared.
- High-volume days or periods (such as concrete pours) are to be communicated, and where possible are to be coordinated to avoid excessive impact to the road network.
- Oversize / over mass delivery days are to be communicated, and where possible are to be coordinated to avoid excessive impact to the road network.
- Traffic control measures (including Traffic Control Plans / Traffic Guidance Schemes) are to be shared if these may be relevant to construction vehicle routes for surrounding projects.

As the Gables is a developing area, there may be residential construction activities ongoing in the surrounding area. However, these sites are minor projects in nature and are unlikely to result in any noticeable cumulative impacts. Additionally, the low occupancy levels in the precinct during the ongoing construction will result in a reduced number of impacted residents.

3.5 Community Notification

Community notification shall be undertaken as per any School or SINSW requirements and should include:

- Temporary notification signage installed around the site and affected areas highlighting the upcoming changes / impact.
- Door knocking to the immediately surrounding stakeholders advising them of the upcoming works.
- Mailbox drops within a set radius around the project, distributing the monthly project updates.
- Project updates on School websites containing project updates, notifications, and contact numbers.
- Project specific distribution lists that can be signed up to by members of the public who wish to receive notifications electronically.

Section 4 Impact Management and Mitigation Measures

4.1 Road Network Impacts

The potential impacts to the road network, and associated mitigation measures, are detailed in Table 4.

Table 4: Construction Impacts to the Traffic Network

Project Stage Design (D) Construction (C) Operation (O)	Impact	Mitigation Measures
Construction	**Construction traffic increases traffic volumes on road network.**	As stated in Section 3.1, the local road network has already been designed to accommodate the additional volumes, hence no mitigation measures are required. Furthermore, construction traffic movements are to be scheduled outside peak periods where possible.
Construction	**Construction worker parking exerting additional demand to on-street parking.**	On-site car parks are to be made available to workers as soon as practical; additional areas such as the staff car park, which are anticipated to be built at early phases of the project, are to be made available for workers car parking if possible. Construction Worker Transport Strategy shall be prepared to encourage alternate transport modes, and reductions in car usage by construction workers. Workers choosing to park on-street to be instructed to park in areas of least impact to neighbours.
Operation	**Congestion during Santa Sophia Catholic College (SSCC) drop-off and pick-up times.**	Vehicle movements related to the project are to be scheduled outside school peak periods where possible. Construction truck routes are to be located away from SSCC where possible.
Operation	**Impacts to Fontana Drive during road works (including crossings and bus bay).**	Construction works are to be staged and/or managed (e.g. contraflow movements) to maintain vehicle flows along Fontana Drive. Any road closures (if required) are to be coordinated with Transport for NSW and Council.
Operation	**Local impacts**	Sufficient communication measures as documented in Section 3.4 are to be implemented to ensure nearby neighbours are well-informed of any project updates.

4.2 Pedestrian and Cyclists Impacts

The potential impacts to the pedestrian network, and associated mitigation measures, are detailed in Table 5.

Table 5: Construction Impacts to the Pedestrian Network

Project Stage Design (D) Construction (C) Operation (O)	Impact	Mitigation Measures
Construction	**Impacts on Fontana Drive cycling path during road works (including intersections and bus bay).**	Construction works are to be staged and/or managed (e.g. contraflow movements) to maintain cyclist flows along Fontana Drive. Bike lanes may need to be temporarily closed, requiring cyclists to share the main travel lanes. Any road closures (if required) to be coordinated with Transport for NSW and Council.
Construction	**Impacts to Fontana Drive footpaths during footpath reconstruction / extension works.**	Pedestrians to be diverted to appropriate locations either in the kerbside parking lane (with suitable barrier protection) or on the opposite side of the road (with suitable crossing points provided).
Construction	**Materials lifting / construction activities adjacent to Fontana Drive footpaths.**	Appropriate hoarding to be provided at site boundary.

Section 5 Conclusions

In summary, this preliminary CTMP has been prepared as part of the preliminary construction works for the proposed Gables primary school. The plan aims to assess and address the construction traffic impacts of the proposed development and define the necessary management process and mitigation measures for construction of the project.

The proposed traffic management arrangements recommended in this plan satisfy the requirements of TfNSW Traffic Control at Work Sites Manual, AS 1742.3 and AS 2890.2, and the plan seeks to minimise the impact of construction activities on the surrounding community, in terms of both vehicle traffic and pedestrian amenity. It is important to reiterate this plan is preliminary in nature and is required to be updated once a contractor has been appointed.