JORDAN SPRINGS PUBLIC SCHOOL
CONSTRUCTION TRAFFIC MANAGEMENT PLAN

FOR

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1. INTRODUCTION

1.1 BACKGROUND

This Construction Traffic Management Plan (CTMP) has been prepared by Bitzios Consulting on behalf of the Schools Infrastructure NSW (the Applicant). It accompanies an Environmental Impact Statement (EIS) in support of State Significant Development Application (SSD 18_9354) for the new Jordan Springs Public School at 14-28 Cullen Avenue, Jordan Springs (the site).

The new school will cater for approximately 1,000 primary school students and 70 full-time staff upon completion. The proposal seeks consent for:

- Construction of a 2-storey library, administration and staff building (Block A) comprising:
  - School administrative spaces including reception;
  - Library with reading nooks, makers space and research pods;
  - Staff rooms and offices;
  - Special programs rooms;
  - Amenities;
  - Canteen;
  - Interview rooms; and
  - Presentation spaces.
- Construction of three 2-storey learning hubs containing 42 homebases comprising:
  - Collaborative learning spaces;
  - Learning studios;
  - Covered outdoor learning spaces;
  - Practical activity areas; and
  - Amenities.
- Construction of a single storey assembly hall (Block C) with a performance stage and integrated covered outdoor learning area (COLA). The assembly hall will have OOSH facilities and store room areas;
- Associated site landscaping and open space including associated fences throughout and sporting facilities;
- Pick-up and drop-off zone from Cullen Avenue;
- Pedestrian access points along both Cullen Avenue and Lakeside Parade;
- Construction of an at-grade carpark containing 62 spaces accessible from Lakeside Parade and 2 spaces accessible from Cullen Avenue;
- School signage to the front entrance; and
- New substation fronting Cullen Avenue.

All proposed school buildings will be connected by a double storey covered walkway providing integrated covered outdoor learning areas (COLAs).

The purpose of this CTMP is to prepare a preliminary strategic traffic management plan for the construction works for the Jordan Springs Public School. This report proposes haulage routes for construction traffic, and identifies expected impacts on pedestrian, cycling and vehicular routes in the area. Where necessary, indicative detour routes are nominated. An in-depth site-specific CTMP should be prepared for each work area for each stage by the Principal Contractor engaged to undertake the works, upon confirmation of construction activities, staging and project milestones.

The site location and its surrounding locality is shown in Figure 1.1.

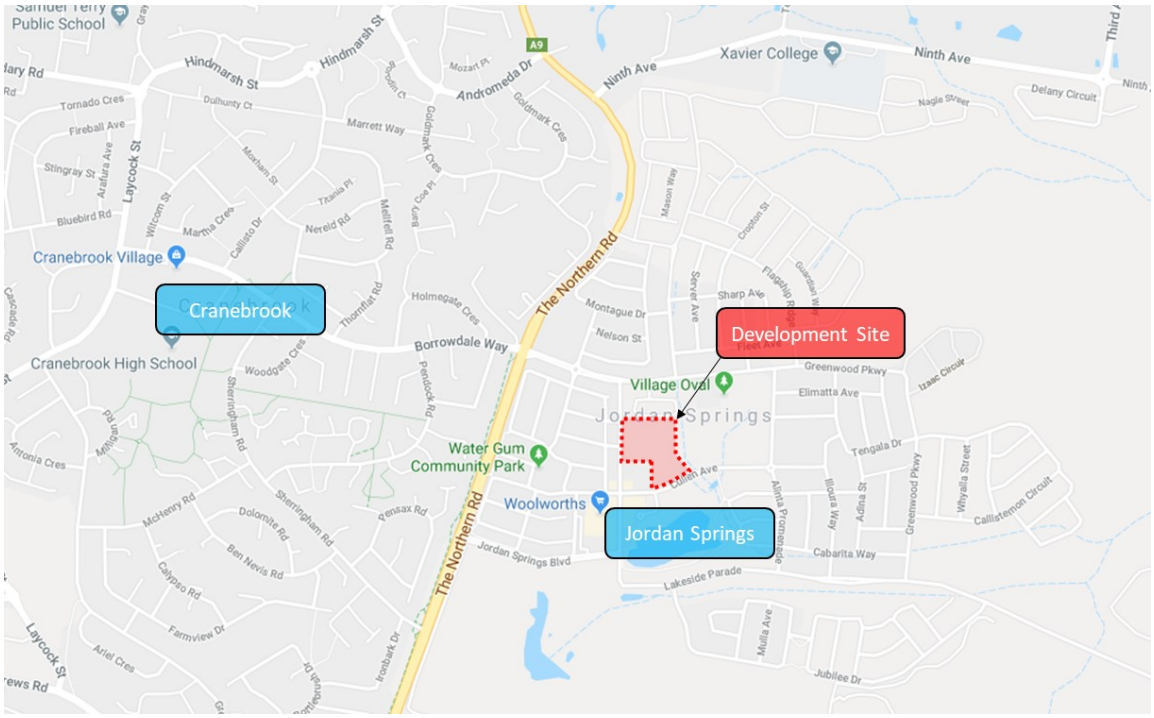


Figure 1.1: Locality of Development Site

1.2 RESPONSE TO SEARS

The CTMP is required by the Secretary's Environmental Assessment Requirements (SEARs) for SSD 18_9354. This table identifies the SEARs and relevant reference within this report.

Table 1.1: SEARS - Transport and Accessibility Requirements

Performance Objective	Document Reference
Assessment of cumulative impacts associated with other construction activities (if any);	▪ Section 5.6
An assessment of road safety at key intersection and locations subject to heavy vehicle construction traffic movements and high pedestrian activity;	▪ Section 5.3, 5.5 ▪ Section 6.1.4
Details of construction program detailing the anticipated construction duration and highlighting significant and milestone stages and events during the construction process;	▪ Section 1.3.1
Details of anticipated peak hour and daily construction vehicle movements to and from the site;	▪ Section 5.4, 5.5
Details of on-site car parking and access arrangements of construction vehicles, construction workers to and from the site, emergency vehicles and service vehicles; and	▪ Section 6.6 ▪ Section 9.1, 9.3, 9.5
Details of temporary cycling and pedestrian access during construction.	▪ Section 6.1, 6.2

1.3 GENERAL PROJECT REQUIREMENTS

1.3.1 Project Timing

At this stage, it is anticipated that the main works will follow the timeline below:

- Site Establishment: 1 week (max)
- Main Works: 48 weeks (max)
- Handover: 1 week (max)

Detailed project staging and schedule of key construction milestones are to be confirmed following the appointment of the Principal Contractor.

1.3.2 General Requirements

The construction activities for the proposed development are subject to the planning and management procedures outlined in the Preliminary Construction Management Plan (prepared by TSA Management for the EIS).

1.3.3 Work Hours

The standard hours of work expected for this project are as follows:

- Monday to Friday: 7:00 AM – 6:00 PM
- Saturday: 7:30 AM – 3:30 PM

Work is not to be undertaken on:

- Sundays;
- Saturday and Sundays that form part of public holiday weekends;
- Public Holidays; and
- Saturdays and Sundays which immediately precede or follow industry Rostered Days Off (as agreed by the CFMEU and Master Builders Association of NSW).

Work hours are subject to change based on approval by Penrith City Council. Following confirmation of construction items in the project work stages, any instances which require works to be conducted outside of the standard hours identified above are to be defined and the necessary approvals sought from Penrith City Council.

1.3.4 Construction Noise

To minimise impacts and disturbances caused by construction work for the proposed development, on-site processes should comply to the *Interim Construction Noise Guideline* published by The Department of Environment and Climate Change (July 2009).

2. MANAGEMENT OF THE CTMP

The processes and measures identified in this CTMP will form part of the overall CMP (prepared by TSA Management) for the proposed Jordan Springs Public School development. In combination, the two documents will outline the management processes related to construction activities for the development.

The specified contractor (to be confirmed) will provide people, materials, resources and systems to perform the services including related traffic management.

Council and Roads and Maritime Services (Roads and Maritime) require the people to be competent, experienced, and qualified to carry out the Services.

3. IMPLEMENTATION

Procedures for traffic management for the proposed development site will be in accordance with *Traffic Control at Worksites Manual Version 5.0* published by Roads and Maritime Services (July 2018), adapted as necessary to the specific site conditions.

4. TRAFFIC CONTROL PLANS

Traffic Control Plans (TCPs) will be required where there are changes to traffic operation through or around the work site. The TCP must be designed and approved by Roads and Maritime accredited personnel, with the appropriate and current qualification. Similarly, anyone that is engaged to perform a traffic controlling role is required to have the appropriate qualification (see Section 8).

The qualifications (and associated Roads and Maritime Training Courses) are outlined in Roads and Maritime Services QA Specification G10 Traffic Management, Clause 1.5.3.

No detailed TCPs have been prepared at this stage due to a lack of information about site specific constructions works and vehicles. Detailed TCPs should be prepared at a later stage prior to the commencement of construction works.

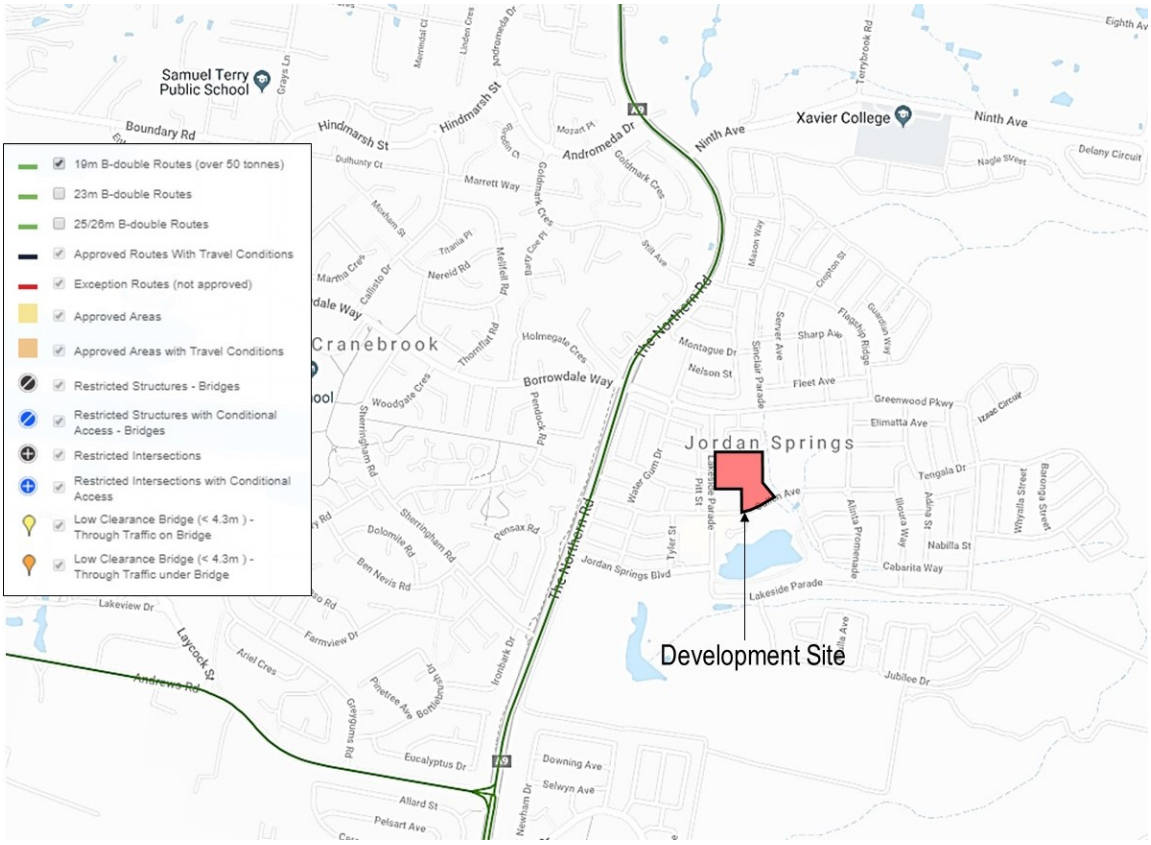
5. CONSTRUCTION TRAFFIC

5.1 HAULAGE ROUTES

5.1.1 Restricted Access Vehicles

Restricted access vehicles (RAVs) have specific Roads and Maritime approved routes on the NSW road network. For Jordan Springs, only The Northern Road is designated as acceptable for a haulage route for a 19m B-Double RAV. The local streets of Jordan Springs (including Jordan Springs Boulevard and Greenwood Parkway) are not included. In proximity to the site, besides The Northern Road, only Andrews Road is an approved route, connecting west to Castlereagh Road on the other side of Cranebrook.

Figure 5.1 depicts the Roads and Maritime approved haulage routes in the area.



Source: NSW Combined Higher Mass Limits (HML) and Restricted Access Vehicle (RAV) Map – Roads and Maritime Services

Figure 5.1: Approved Haulage Routes for 19m B-Doubles

5.1.2 Local Haulage Routes

The following haulage routes are proposed for access to the site via the local streets of Jordan Springs, based on expected site access points on Lakeside Parade and Cullen Avenue.

From North:

- Travel south on The Northern Road;
- Turn left onto Greenwood Parkway;
- Turn right onto Lakeside Parade;
- Turn left into site (for Lakeside Parade access); or
- Turn left onto Cullen Avenue; and
- Turn left into site (for Cullen Avenue access).

From South:

- Travel north on The Northern Road;
- Turn right onto Jordan Springs Boulevard;
- Turn left onto Lakeside Parade;
- Turn right into site (for Lakeside Parade access); or
- Turn right onto Cullen Avenue; and
- Turn left into site (for Cullen Avenue access).

Exit Routes:

- Exit routes for the above routes are the reverse of the proposed access routes.
- For vehicles that access Cullen Avenue eastbound but do not enter the site (e.g. concreting vehicles for kerbside works), the exit haulage route is to include a detour via Cullen Avenue, Alinta Promenade and Greenwood Parkway to return to the main haulage routes.
  - Where possible, vehicles are to turn around and return down Cullen Avenue to minimise construction vehicle impacts on the local streets.

The proposed haulage routes are depicted in Figure 5.2.

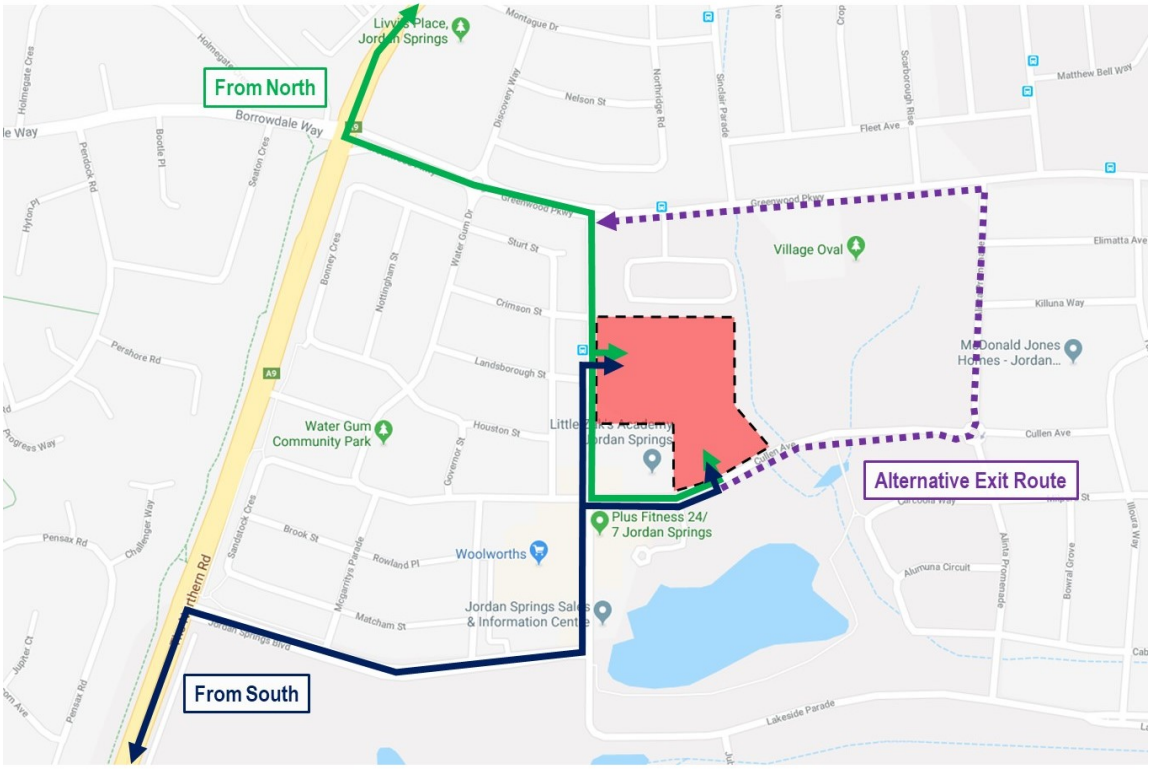


Figure 5.2: Recommended Haulage Routes

5.2 MOVEMENT RESTRICTIONS

No relevant signposted movement restrictions have been identified in the surrounding road network. These include weight and turning restrictions.

5.3 SWEPT PATH ANALYSIS

Following confirmation of proposed construction vehicles to be used on site, the site specific CTMP is to include swept path analysis for the vehicle types (or design vehicles of similar size) to determine the suitability of the proposed routes to access and leave the site and surrounds. Alternatively, swept path analysis may be used to determine the maximum sized vehicle allowed to use the recommended route.

5.4 CONSTRUCTION VEHICLES TRAFFIC VOLUMES

At this project stage, details on truck and delivery schedules have not been confirmed, therefore construction vehicles traffic volumes cannot be quantitively assessed.

5.5 TRAFFIC IMPACTS

As outlined above, truck volumes and the exact delivery schedule have not been determined yet. However, a number of factors are noted relevant to construction traffic impacts:

- The signalised intersections into Jordan Springs on The Northern Road have high capacities, each with four northbound approach lanes and three southbound approach lanes;
- Roads and Maritime Traffic Volume Viewer records Annual Average Daily Traffic volumes of over 40,000 vehicles closer to Penrith, indicating that there is an existing high volume of traffic;
- During existing network peak hour periods, there are between 40-70 heavy vehicles traveling along The Northern Road; and
- Given the standard work hours during the week, construction workers making the journey to site via car are likely to be travelling outside of the network peak hours (starting earlier and ending later).

Considering the above, as a high-level assessment, it is not expected that construction traffic volumes will have significant impacts on the operation and efficiency of The Northern Road.

The collector and local streets of Jordan Springs are not heavily trafficked streets relative to The Northern Road, with intersections performing at optimal levels of service with minimal delays and low degrees of saturation. This includes the key signalised intersection at Lakeside Parade / Cullen Avenue / Water Gum Drive. Consequently, it is also not expected that the introduction of construction traffic will significantly affect traffic operations of Jordan Spring's local intersections.

The key signalised intersections along the proposed haulage route are points of interaction between construction traffic and pedestrian movements. Pedestrians are provided with signalised pedestrian crossings at all of these intersections, especially relevant to the areas of higher pedestrian activity along Lakeside Parade within the Jordan Springs town centre. The only construction traffic movement where pedestrians are not protected by signals is at the Greenwood Parkway / Lakeside Parade priority intersection, across Lakeside Parade. However, it is noted that sight lines at this intersection are clear and largely uninterrupted, with flat and open intersection geometry. Therefore, pedestrian safety is maintained along the proposed construction traffic route.

5.6 CUMULATIVE TRAFFIC IMPACTS

It is noted that there is a residential development located across the road from the Jordan Springs Public School project site, address at 1 Charlotte Street. The development (DA17/1083) comprises 25 three-storey dwelling houses connected to Charlotte Street and Cullen Avenue via a new internal road. The notice of determination for this development has been in effect from 1 November, 2018.

While specific details on the construction management plan for the development are not available at this time, the access gate to the construction site is expected to be located on Charlotte Street. As such, while the two developments are closely positioned, interaction between construction vehicles will be limited to Cullen Avenue between Lakeside Parade and Charlotte Street.

An assessment of any cumulative traffic impact of construction works must be determined following confirmation of project timeline, staging and milestones by the Principal Contractor. A cumulative impact is expected only if there is a notable overlapping of construction schedules between the two developments. As a mitigating measure, separation of construction traffic can be achieved as necessary through a utilisation of the Lakeside Parade site access, as opposed to the closer Cullen Avenue site access.

At a high level, due to the scale of development it is not expected at this stage that a cumulative introduction of construction traffic (from both the Jordan Springs Public School project and the residential development) will cause a significant traffic impact to key intersections in the area.

6. IMPACTS ON EXISTING CONDITIONS

6.1 PEDESTRIANS

6.1.1 Existing Pedestrian Infrastructure

The majority of Jordan Springs is well-serviced in terms of pedestrian infrastructure, with a comprehensive network of wide footpaths on both sides of the street especially in vicinity to the proposed site. These provide dedicated off-road links across the precinct, including along Jordan Springs Boulevard, Lakeside Parade, Greenwood Parkway, Alinta Promenade and Cullen Avenue.

Paired kerb blisters are provided along Lakeside Parade within the main town centre to facilitate provision of refuge for pedestrians crossing the street. The nearby signalised intersections are also all provided with pedestrian crossings on all sides.

Where possible, pedestrian connectivity and accessibility is to be maintained on the public streets adjacent to the proposed development site during construction work stages.

If any redirection of pedestrian movements is necessary, specific Pedestrian Management Plans (PMPs) are to be prepared to identify detour arrangements as a part of construction stage TCPs.

6.1.2 Expected Impacts

Due to construction vehicle traffic to and from the site via the access locations, construction activities that are expected to impact pedestrian movements near the site include:

- Excavation;
- Removal of spoil;
- Material delivery;
- Bulky equipment delivery (pile drivers); and
- Concrete pouring.

During these works, temporary closures of the footpath on the northern side of Cullen Avenue and on the eastern side of Lakeside Parade may be necessary.

Furthermore, during the associated construction stages, full closures of the pedestrian footpath will be necessary on Cullen Avenue and Lakeside Parade (as nominated above) to facilitate construction of the access driveways on both streets, the drop-off / pick-up zone on Cullen Avenue and the raised children crossing on Cullen Avenue with accompanying kerb blisters.

As the construction of the raised children's crossing spans the width of Cullen Avenue and interfaces with the footpath and kerb on both sides, it is likely to require a full closure of the roadway, including both footpaths, subject to specific details on construction staging.

6.1.3 Potential Pedestrian Detours

During the impacts to pedestrian footpath connections outlined above, pedestrians must be redirected around the construction area. Safety barriers and/or hoarding should be implemented to protect pedestrians near the work site.

For most construction activities, as it is not expected that both footpaths on the streets will be closed, pedestrians can be directed to the footpath on the other side of the road with 'USE OTHER FOOTPATH' (Sign No. T8-3) signage. While the affected footpaths are continuous, the diversion will require additional road crossings (Charlotte Street on Cullen Avenue and Landsborough Street on Lakeside Parade). The construction of the raised children's crossing may require a simultaneous closure of both footpaths. If so, a pedestrian detour route is suggested through a redirection of pedestrian traffic to Alinta Promenade and a returning to Cullen Avenue through the Village Oval shared path (shown in Figure 6.1).

TCPs for pedestrian redirection (including positioning of signage) are to be prepared as necessary, subject to confirmation of proposed construction staging and activities.

Figure 6.1: Pedestrian Detour Routes

6.1.4 Pedestrian Safety

In all cases where the construction activities require an obstruction, deviation or otherwise interfaces with pedestrian facilities and public spaces, hoarding or fencing must be installed to maintain separation of the construction work site. This includes the edges of the work site fronting onto Lakeside Parade and Cullen Avenue, as well as any temporary fencing for footpath or road closures.

At construction site access gates (construction vehicle crossover locations), warning signage is to be installed to maximise pedestrian awareness of vehicle movements. Functional lighting is to be installed at the corresponding locations and operated under low-light conditions.

6.2 CYCLISTS

6.2.1 Existing Cyclist Infrastructure

Jordan Springs is provided with shared paths along a number of the footpaths, including on The Northern Road, Lakeside Parade (south of the intersection with Jordan Springs Boulevard), Cullen Avenue and Lakeside Parade. The locations of these shared paths are identified in Figure 6.2.

Figure 6.2: Shared Paths in Jordan Springs

The network of shared paths east of the development site provides a continuous route for cyclists travelling towards the town centre (located on Lakeside Parade). Furthermore, a shared path extends through the Village Oval (alongside the Jordan Springs Dog Park), improving the permeability of cycling infrastructure.

A similar shared path route is located on Lakeside Parade south of the development site, linking the lower Jordan Springs catchment to the town centre.

6.2.2 Expected Impacts

No formal cycling infrastructure is located on the immediate south and west sides of the development site. The shared paths on The Northern Road and along Lakeside Parade are not expected to be impacted by any construction works for the proposed school development due to their distance from the site.

The shared paths to the east of the development site begin just beyond the creek leading from Jordan Springs Lake. While they will not be located immediately against the boundary of construction works, they are in close proximity (within 100m distance). However, due to the topography of the land and separating creek, it is highly unlikely that any construction equipment or vehicles will infringe upon the shared path.

Furthermore, it is expected that the bulk of the construction traffic will access Jordan Springs from The Northern Road, traveling towards the development site from the west. As such, there should be minimal interaction between construction traffic entering and exiting the work site and cyclists on shared paths.

6.2.3 Potential Cyclist Detours

While little to no impacts are expected to cyclist movements on shared paths through the area, cyclists reaching the end of the shared path east of the site may be required to cross Cullen Avenue to travel on the

other side of the road, divert onto the roadway or follow a detour route in the case that the footpath is closed (See Section 6.1.2).

In the unlikely situation that the shared path leading through the Village Oval is required to be closed due to construction works, cyclists are able to continue along Cullen Avenue or Greenwood Parkway until they reach Alinta Promenade and distribute at the intersections as required (shown in Figure 6.3). This would incur a slight increase in travel times (extra 250-500 metres to travel).

Figure 6.3: Potential Cyclist Detour

Any required closure of the shared path is subject to confirmation of proposed construction staging and activities. Where possible, the shared path should remain open at all times with protective barriers and/or hoarding to protect shared path users from construction activities.

Specific Traffic Control Plans (TCPs) must be created for any redirection of cyclist movements from existing paths. Details of cyclist related TCPs are subject to confirmation of proposed construction staging and activities.

6.3 BUS SERVICES

6.3.1 Existing Bus Routes and Stops

A number of bus routes operate within the vicinity of Jordan Springs – however, the majority of them primarily service The Northern Road without entering the precinct. The bus services include:

- Route 783 – Penrith to Jordan Springs;
- Route 677 – Richmond to Penrith; and
- Route 786 – Penrith to Cranebrook.

There are also a number of school bus services (for other existing schools) that run along The Northern Road during the school peaks. There is one school bus service which operates within Jordan Springs, Route 5081 travelling from Jordan Springs to Henry Fulton Public School in Cranebrook (north). A map of the existing bus routes and stops is shown in Figure 6.4.

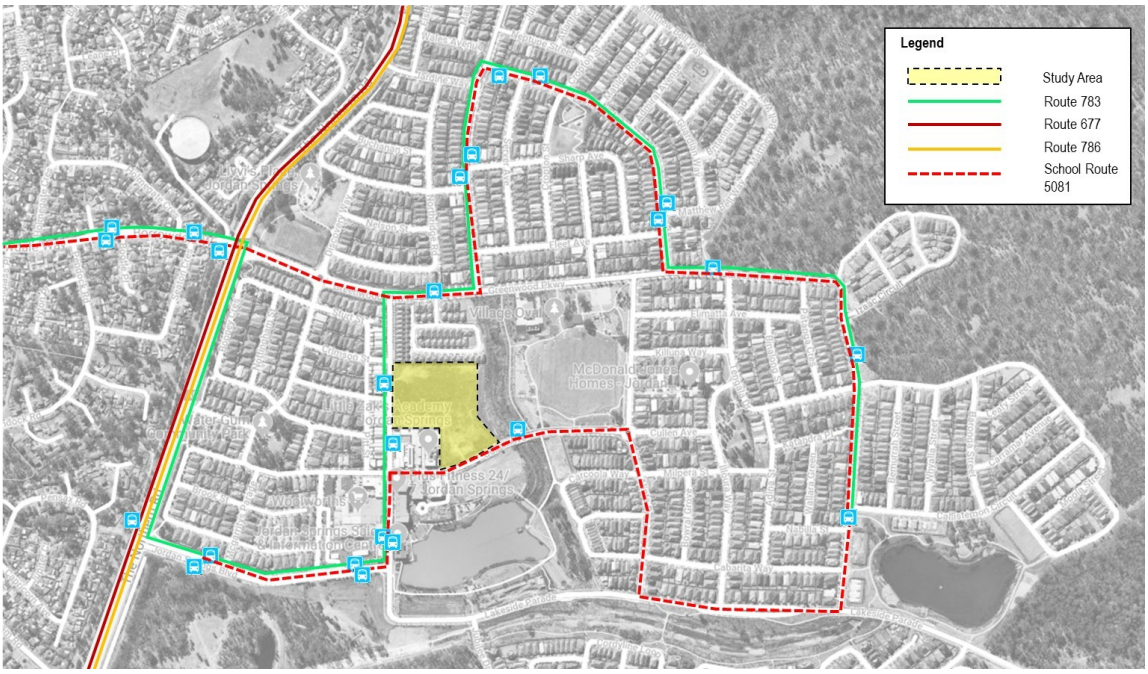


Figure 6.4: Existing Bus Routes

6.3.2 Expected Impacts

As most of the bus services do not access the roads adjacent to the development site, they are not expected to be significantly impacted by construction traffic. There are two exceptions to this: Route 783 which accesses Lakeside Parade, and Route 5081 which accesses Cullen Avenue.

Lakeside Parade

The bus stop (ID: 2747384) located on Lakeside Parade approximately 50m north of Cullen Avenue is not located along the school frontage. However, it is also noted to approximately 50m south of the future development's car park entrance. As such, possible that a construction access point will be located in the vicinity, which may impact bus services operating from this stop (increased heavy vehicle traffic volumes along potential haulage routes and heavy vehicle manoeuvres into and out of site).

Cullen Avenue

The bus stop (ID: 2747380) located on Cullen Avenue before Alinta Promenade is beyond the edge of the construction site, and therefore not directly impacted by construction activities. However, similar to the bus service on Lakeside Parade, increased heavy vehicle traffic volumes along the street due to material haulage or other construction needs may increase delays on services.

It is noted that the only service currently operating from the existing bus stop on Cullen Avenue is a single school bus service in the morning peak (between 8:00 AM to 9:00 AM). Therefore, there will not be a consistent detrimental influence on bus services throughout the day.

During the construction of the raised children's crossing, a full road closure will be required and traffic will need to be redirected. Due to the limited frequency and specific function as a school bus service, the impact to Route 5081 can be avoided through staging of works outside of the trafficked periods (e.g. evening/night work, weekends, school holidays, etc).

At this stage, it is not proposed to relocate bus stops along Lakeside Parade during construction activities. Following confirmation of specific construction site accesses and layout, any required changes to bus services and/or bus stops are to be discussed with Transport for NSW and detailed in the site specific CTMP.

6.3.3 Public Transport Interchanges

No major public transport interchange is located near the development site. The closest interchanges are located to the south at the town centres of Kingswood and Penrith (around 4.5km and 5.8km away respectively).

6.4 VEHICULAR TRAFFIC

A full closure of the roadway is expected for the construction of the raised children's crossing on Cullen Avenue. It is noted that Cullen Avenue sees a relatively low amount of traffic during the peak hours. However, during the works period vehicular traffic through the area must be considered.

The suggested detour route for vehicles during a full closure of the roadway at the Cullen Avenue children's crossing is:

- For eastbound vehicles: north on Lakeside Parade, turn right onto Greenwood Parkway, turn right onto Alinta Promenade and distribute accordingly at the Cullen Avenue / Alinta Promenade roundabout.
- For westbound vehicles: north on Alinta Promenade (prior to entering Cullen Avenue), turn left onto Greenwood Parkway, turn left onto Lakeside Parade and distribute accordingly at the Lakeside Parade / Cullen Avenue / Water Gum Drive signalised intersection.

This route is shown in Figure 6.5 below.

As there are no side roads or access driveways along Cullen Avenue between the proposed crossing location and Village Oval, vehicles will not need to access the area. To reduce the amount of drivers turning into Cullen Avenue westbound (planning on connecting through to Lakeside Parade) who must then turn around upon reaching the blockage, warning and detour signage should be installed at the Cullen Avenue / Alinta Promenade roundabout (specific signage requirements are subject to a detailed TCP).

Figure 6.5: Vehicle Detour Route

To minimise impact on vehicular traffic, where possible construction works should be undertaken at times with minimal traffic flow along Cullen Avenue (and in the general road network nearby).

6.5 CAR PARKING

6.5.1 On-site Parking

As the development site is currently undeveloped, there is no on-site car parking infrastructure.

6.5.2 On-street Parking

On-street kerbside parking is currently largely unrestricted in the vicinity of the development site along Cullen Avenue and Lakeside Parade. Temporary restrictions to car parking in these areas may be required for areas immediately adjacent to the development site to allow access and egress of construction vehicles to and from the site (see Section 9). Specific scope of restrictions should be identified in the site-specific CTMP following confirmation of construction site layout.

6.5.3 Nearby Properties

There are a number of properties in close proximity to the proposed development site. On the corner of Lakeside Parade / Cullen Avenue, adjacent to the development, there is a childcare centre and a church each providing on-site car parking. The car parks are accessed via driveways on Cullen Avenue (the church has a secondary access on Lakeside Parade). To the south of the site, there is the opening to Charlotte Street (leading to a cul-de-sac at Caribbean Promenade), which is still undergoing residential development. Further to the east, there is to be a future roadway (currently unconstructed), providing access to a new residential development and connecting through to Charlotte Street. These areas are marked out in Figure 6.6.

Figure 6.6: Nearby Driveways and Roads

Access to the existing properties must be maintained at times during all construction stages to allow for unimpacted operation of their respective functions. To minimise interaction between traffic, construction vehicles should be scheduled to arrive outside of the morning and afternoon commuter peak periods (childcare centre peaks).

6.6 EMERGENCY VEHICLES

During construction stages, unimpeded access to the site must be maintained for emergency vehicles. This includes fire, ambulance and police services.

The nearest fire station is Fire and Rescue NSW – Penrith Fire Station at 290-294 High Street (approximately 4.7km to the south of the site).

The nearest hospital is Nepean Hospital on Derby Street, Kingswood (approximately 4.4km to the south of the site).

The nearest police station is St Marys Police Station at 38-42 King Street (approximately 10.6km to the south-east of the site).

7. RESPONSIBILITIES

7.1 SITE MANAGERS

The responsibilities of the site managers for this project include the following items:

- Ensure this CTMP and the site specific CTMPs are being correctly and safely implemented;
- Ensure that correctly accredited personnel are implementing TCPs, VMPs, and PMPs;
- Ensure the project is following the project specific and Penrith Council specific guidelines;
- Notify and collaborate with stakeholders and transport agencies affected by the project; and
- Notify and collaborate with Penrith Council.

Specific detailed responsibilities are to be defined in the site-specific CTMPs.

7.2 DRIVERS

Drivers are to:

- Obey road rules at all times;
- Follow the haulage routes defined in this CTMP or the site specific CTMP;
- Notify site contact / escort of arrival;
- Follow instructions from traffic controllers to access the site or perform manoeuvres specified in a TCP;
- Follow instructions from site contact / escort, including directions to nominated laydown or holding areas;
- After arriving at the nominated laydown area, exit the vehicle and remain on a pre-defined safe area while loading or unloading of freight is undertaken;
- Once unloading of the freight has been completed, return to the vehicle and exit the site, following instructions from site contact / escort and traffic controllers. The driver is then to follow the designated haulage routes; and
- Read, understand and follow this CTMP, site specific CTMPs and any other relevant project documentation regarding road safety and traffic management.

8. TRAFFIC CONTROLLERS

Traffic controllers are required to be certified with Roads and Maritime Traffic Controller (Blue Card). They must ensure the TCPs are implemented safely and correctly. The exact responsibilities of traffic controllers are to be defined in the specific Traffic Control Plans.

9. CONSTRUCTION WORKING AREAS

9.1 SITE ACCESS GATES

The preliminary construction site access and egress gates are shown in Figure 9.1. The site is planned to have two access gates, one each on Lakeside Parade and Cullen Avenue, and one egress gate on Lakeside Parade.

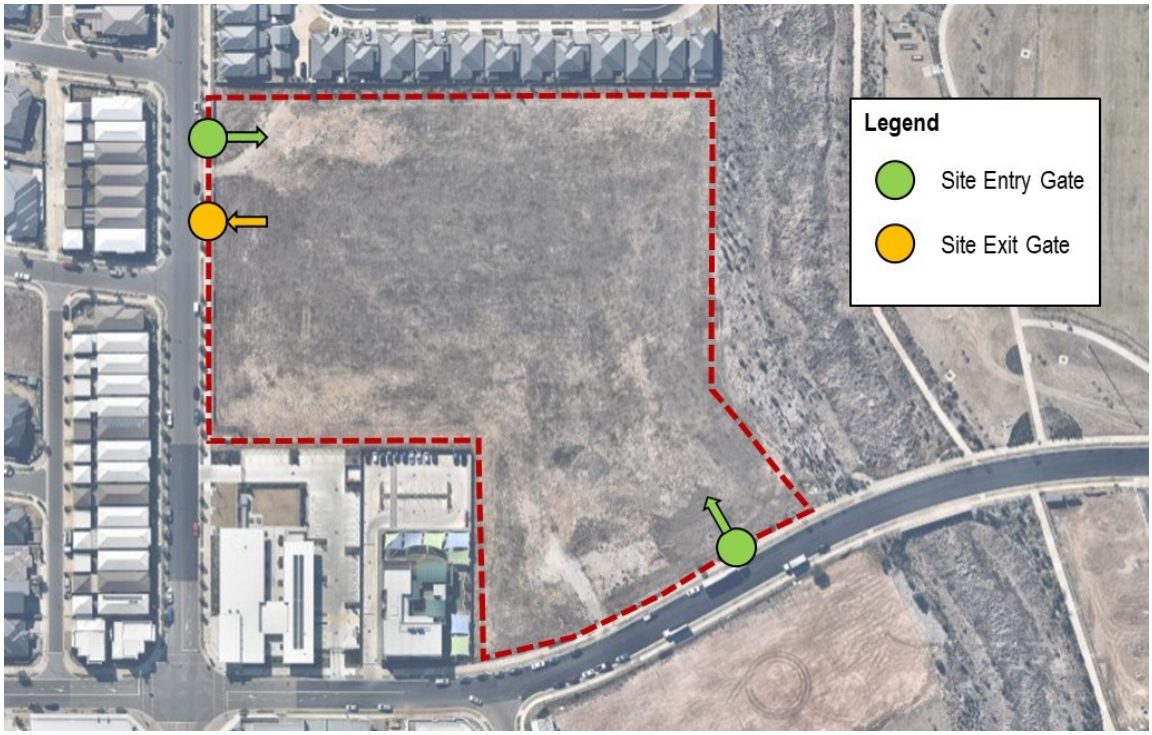


Figure 9.1: Construction Site Access Gates

9.2 WORKING AREAS

The exact work areas will be defined when the proposed construction activities, staging and details are confirmed by the contractor. The proposed work areas will be subject to a site specific CTMP and is to be implemented during construction.

9.3 HOLDING AREAS

As the proposed development site is a greenfield site with substantial space, construction vehicles are able to be held on-site, subject to site layout arrangement. Construction vehicles are not to be held outside of work areas. Queueing is to be avoided by scheduling deliveries and staggering heavy vehicle arrivals, to ensure that there is no build up of heavy vehicles either on-site or off-site on the local streets. Construction vehicles are not to utilise on-street parking facilities.

9.4 DILAPIDATION SURVEY

A dilapidation survey is to be conducted for roads affected by the project. The survey must cover:

- All roads where construction occurs; and
- Local roads surrounding the project area that are utilised by construction vehicles for deliveries.

An indicative dilapidation survey area is shown in Figure 9.2.

Figure 9.2: Dilapidation Survey Area

9.5 WORKER PARKING

To minimise parking impact on the local streets near the development site, it is recommended to implement restrictions on parking areas for construction workers.

Workers are to not park their vehicles on the off-street car parks in vicinity of the work site, including the adjacent church and child-care centre car parks, to minimise parking impact due to construction activities. The Village Oval off-street car park is also to be kept clear for visitors to the park.

Furthermore, parking is recommended to be restricted on Lakeside Parade, as the section south of Cullen Avenue is part of the Jordan Springs town centre and also time restricted 1P parking, while the section north of Cullen Avenue is either along the main bus route, alongside the church, or adjacent to the site (where manoeuvring space should be kept clear for construction vehicles).

The areas of restricted parking include the following (as shown in Figure 9.2 below):

- Lakeside Parade – Between Jordan Springs Boulevard and Greenwood Parkway;
- Water Gum Drive – Between Lakeside Parade and Tyler Street;
- Cullen Avenue – Between Lakeside Parade and potential site access point;
- Charlotte Street – to cul-de-sac at Caribbean Promenade;
- Little Zak's Academy Car Park;
- Jordan Springs Anglican Church Car Park; and
- the Village Oval Car Park.

Where possible, worker parking should be provided on-site, space allowing, to reduce parking impact on the surrounding area. Workers should be encouraged to use public transportation, with bus services immediately adjacent to the construction site linking to major transport hubs like Penrith Station.

If driving, workers are to avoid parking their vehicles on local residential streets to minimise impacts on resident parking. However, it is noted in satellite image observations that occupancy of on-street kerbside parking is relatively low, and that residential properties are nearly all provided with off-street parking garages.

Figure 9.3: Worker Restricted Parking Areas

9.5.1 Parking Requirements

All construction workers parking vehicles are to ensure that their vehicle is parked such that:

- The vehicle obeys any signposted or marked parking restrictions;
- The vehicle does not encroach on pedestrian access ways such as footpaths or shared paths;
- The vehicle does not encroach on private property or impede access to private property;
- The vehicle does not pose a safety risk or create a road hazard to other road users, including cyclists; and
- The vehicle does not impede on bus operations in the area.

9.5.2 Alternative Options

With existing public transportation options from major town centres such as Penrith, workers should be encouraged to utilise public transportation where possible to minimise the traffic and parking impact on the local area. Similarly, workers should aim to car-pool where possible to reduce the number of construction worker vehicles travelling to and from the site.

9.6 WORKS ZONE

It is expected that the construction site access points will be located on Cullen Avenue and Lakeside Parade. As such, Temporary Works Zones may be necessary at the following locations to control parking in the area:

- Northern side of Cullen Avenue east of Charlotte Street; and
- Eastern Side of Lakeside Parade between Crimson Street and Landsborough Street.

Indicative locations and lengths of these Works Zones are shown in Figure 9.4.

Figure 9.4: Indicative Temporary Works Zone

This would facilitate uninhibited construction traffic access to the site for delivery of materials or removal of spoil. Temporary works zone specifications are subject to confirmation of proposed construction staging and activities.

A Works Zone Permit Application must be submitted to Penrith Council prior to the implementation of any temporary works zones.

9.7 ROAD OCCUPANCY

It is expected that construction works are required on Cullen Avenue and Lakeside Parade for the construction of access driveways and the drop-off / pick-up zone. The construction of the raised children's crossing will require a full occupancy of the road due to the nature of the work spanning the whole width of Cullen Avenue.

Any works areas (including delivery unloading areas) that require a partial or full occupancy of a public road way or footpath will be require a Section 138 Road Act approval from Penrith City Council, subject to submission of a Temporary Road Occupancy Application.

The requirement for a Temporary Road Occupancy Permit is pending confirmation of proposed construction staging, activities and details and is to be investigated as part of the site specific CTMP as a Condition of Approval.

10. PLANT AND EQUIPMENT

10.1 SCOPE

At this stage, the expected plant and equipment to be utilised as part of construction activities are as follows:

- Piling Rigs;
- Small Excavators;
- Concrete Pumps/Trucks; and
- Cranes (Mobile).

Plant and equipment usage on-site are subject to construction noise restrictions (see Section 1.3.4 for guidelines).

11. OUT OF WORKING HOURS CONTACTS

Contact details (at minimum name and mobile phone number) are to be made available for the overall project manager and out of working hours contact.

12. TRAFFIC CONTROL PLANS

Prior to implementation, construction traffic management measures will require the preparation of approved detailed Traffic Control Plans (TCPs). Each TCP should be prepared in accordance with the RMS's (formerly RTA) *Traffic Control at Works Sites Manual* and submitted to the Penrith Council for approval. The TCP should include details of construction signage and the proposed location and duty of traffic controllers.

It is expected that all TCPs will be implemented overnight or during-off peak times to minimise traffic impacts.

13. CONCLUSION

This report details a preliminary assessment per SEARs on the traffic impact and management procedures for the construction works for the proposed Jordan Springs Public School development. The key items are summarised below:

- General project requirements including construction work hours and noise management should comply with the main CMP document and *NSW Interim Construction Noise Guidelines* recommendations where possible;
- At this stage, no traffic control plans have been prepared due to insufficient details on construction activities. TCPs are to be prepared as necessary for the site-specific CTMP once the aforementioned information is available;
- Existing pedestrian facilities in the vicinity of the construction site are extensive, therefore impacts to pedestrian movements through the area are not expected to be significant;
- Diversions across the roadway to the other footpath may be required due to potential footpath closures on the eastern side of Lakeside Parade and the northern side of Cullen Avenue during construction works;
- At most, a detour via the Village Oval shared path and Greenwood Parkway may be necessary during any works simultaneous closure of both footpaths on Cullen Avenue (construction of the raised pedestrian crossing);
- Existing cycling facilities in the vicinity of the construction site comprise of a network of shared paths to the east of the development site, commencing adjacent to the Village Oval;
- It is not expected that any closures of these shared paths will be required by the construction works, therefore cyclist impact is minimal;
- There is one main public bus service which operates within Jordan Springs in vicinity to the construction site, the 783 bus route from Penrith to Jordan Springs (and vice versa);
- The existing bus stop on Lakeside Parade opposite Landsborough Street is located just south of the site frontage, and bus operations at the stop may be affected by construction traffic and site access, subject to detailed construction site layout;
- Any changes (including temporary relocations) of bus stops must be communicated with Transport for NSW;
- Vehicular detours via Greenwood Parkway are identified for the closure of Cullen Avenue during the construction of the raised children's crossing;
- Access to the existing access driveways in vicinity of the construction site on Cullen Avenue (including the adjacent childcare centre and Jordan Springs Anglican Church), must be maintained during construction activities;
- Provision must be made for unimpeded emergency vehicle access to the site;
- The proposed haulage route to the site involves construction vehicles travelling to Jordan Springs via The Northern Road:
  - From the north: via Greenwood Parkway, Lakeside Parade and Cullen Avenue;
  - From the south: via Jordan Springs Boulevard, Lakeside Parade and Cullen Avenue;
- Upon determination of the construction vehicles required, vehicle swept path diagrams along the proposed haulage route are to be prepared for the site-specific CTMP;
- A dilapidation survey is to be undertaken for the roads along the proposed haulage route to the site;
- Construction works areas that necessitate an occupancy of the road reserve (including the public footpath) will require a Temporary Road Occupancy Permit from Penrith City Council; and
- While there is insufficient information at this stage for a meaningful assessment on construction traffic volumes and their impact on the surrounding road network, a high-level evaluation of the capacity of The Northern Road suggests that construction traffic should be accommodated within the existing road geometry.