



ALEX AVENUE PUBLIC SCHOOL, SCHOFIELDS

CONSTRUCTION TRAFFIC MANAGEMENT PLAN

FOR

GROUP GSA



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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_9368) for the new Alex Avenue Public School at the corner of Farmland Drive and future realignment of Pelican Road in Schofields (the site). The site is legally described as proposed Lots 1 and 2, being part of existing Lot 4 in DP1208329 and Lot 121 in DP1203646.

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 four 2-storey classroom buildings (Block B) containing 40 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, store room areas and amenities;
- Associated site landscaping and open space including associated fences throughout and games courts;
- Pedestrian access points along both Farmland Drive and the future Pelican Road;
- Substation on the north-east corner of the site; and
- School signage to the front entrance.

All proposed school buildings will be connected by a covered walkway providing integrated covered outdoor learning areas (COLAs). School staff will use the Council car park for the adjacent sports fields pursuant to a Joint Use agreement. The proposed School pick up and drop off zone will also be contained within the future shared car park and will be accessed via Farmland Drive.

The purpose of this CTMP is to prepare a preliminary strategic traffic management plan for the construction works for the Alex Avenue 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.

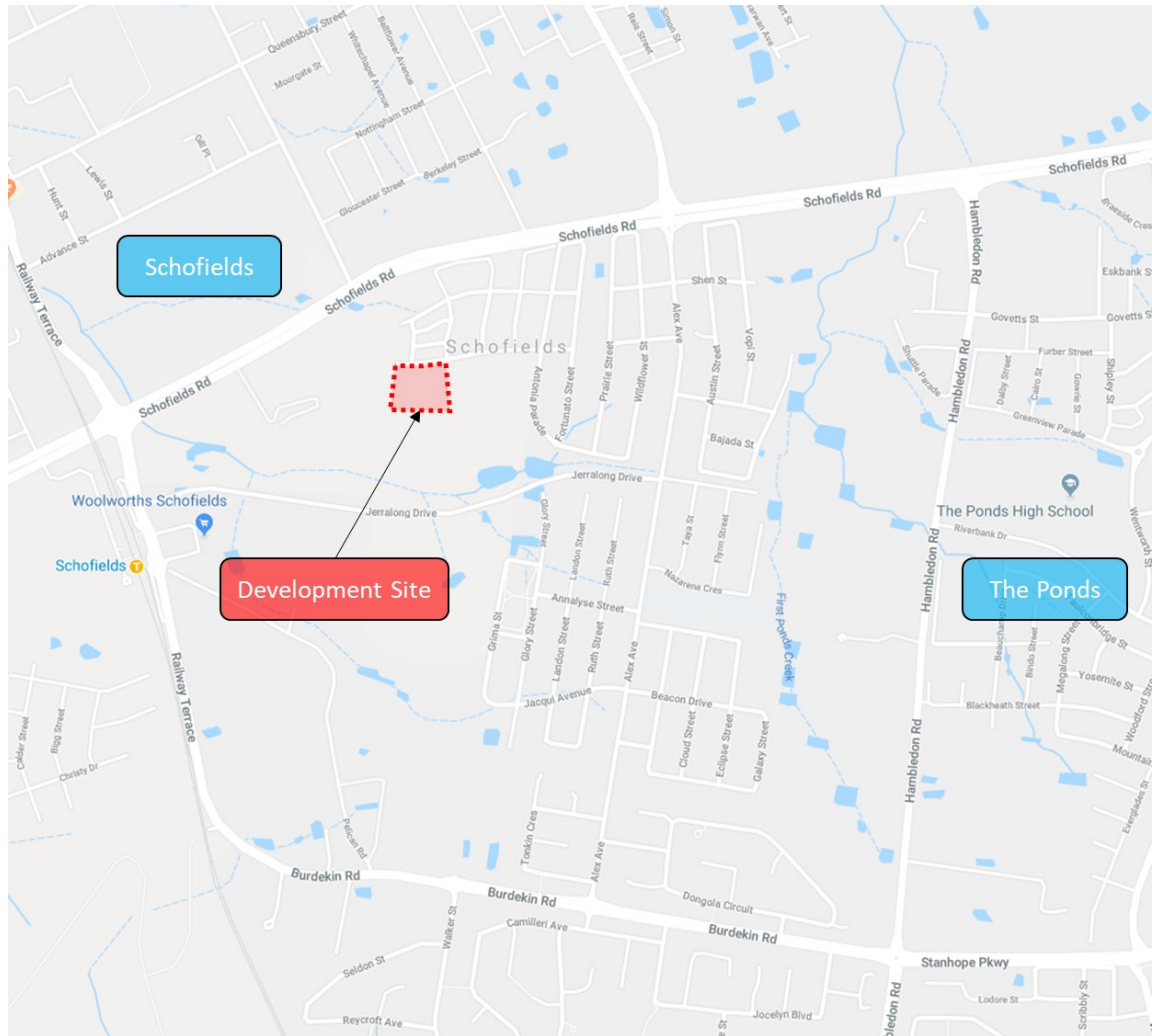


Figure 1.1: Locality of Development Site

1.2 RESPONSE TO SEARS

The CTMP is required by the Secretary's Environmental Assessment Requirements (SEARs) for SSD 18_9368. 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);	<ul style="list-style-type: none"> Section 5.6
An assessment of road safety at key intersection and locations subject to heavy vehicle construction traffic movements and high pedestrian activity;	<ul style="list-style-type: none"> 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;	<ul style="list-style-type: none"> Section 1.3.1
Details of anticipated peak hour and daily construction vehicle movements to and from the site;	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Section 6.5, 6.6 Section 9.1, 9.3, 9.5
Details of temporary cycling and pedestrian access during construction.	<ul style="list-style-type: none"> 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, for a Day 1 Term 1 (D1T1) opening in 2020:

- 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 a number of 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; and
- 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 Blacktown 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 Blacktown 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 Alex Avenue 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 (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 QA Specification G10 Traffic Management, Clause 1.5.3.

No detailed TCPs have been prepared at this stage due to lack of information about site specific constructions works and vehicles. Detailed TCPs should be prepared at a later stage before 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 Schofields, only Schofields Road is designated as acceptable for a haulage route for a 19m B-Double RAV. Local streets (including Alex Avenue and Farmland Drive) are not included. In proximity to the site, besides Schofields Road, only Richmond Road and Windsor Road are approved routes, connecting south to the M7 Westlink and M4 Western Motorways, and other major roads towards Blacktown.

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 Schofields, based on expected site access points on Alex Avenue and Farmland Drive.

Approach Routes:

- Travel east/west on Schofields Road;
- Turn left/right onto Alex Avenue;
- Turn right onto Farmland Drive; and
- Turn left into the site (into Farmland Drive access gate).

Exit Routes:

- Exit routes for the above routes are the reverse of the proposed access routes.
- For vehicles that do not enter the site (e.g. concreting vehicles for kerbside works), the exit haulage route is to include a detour via Hyde Street, Heathland Avenue and Antonia Parade to return to the main haulage routes.
 - Where possible, vehicles are to turn around and return to Farmland Drive to minimise construction vehicle impacts on the local residential streets.

The proposed haulage routes are depicted in Figure 5.2.

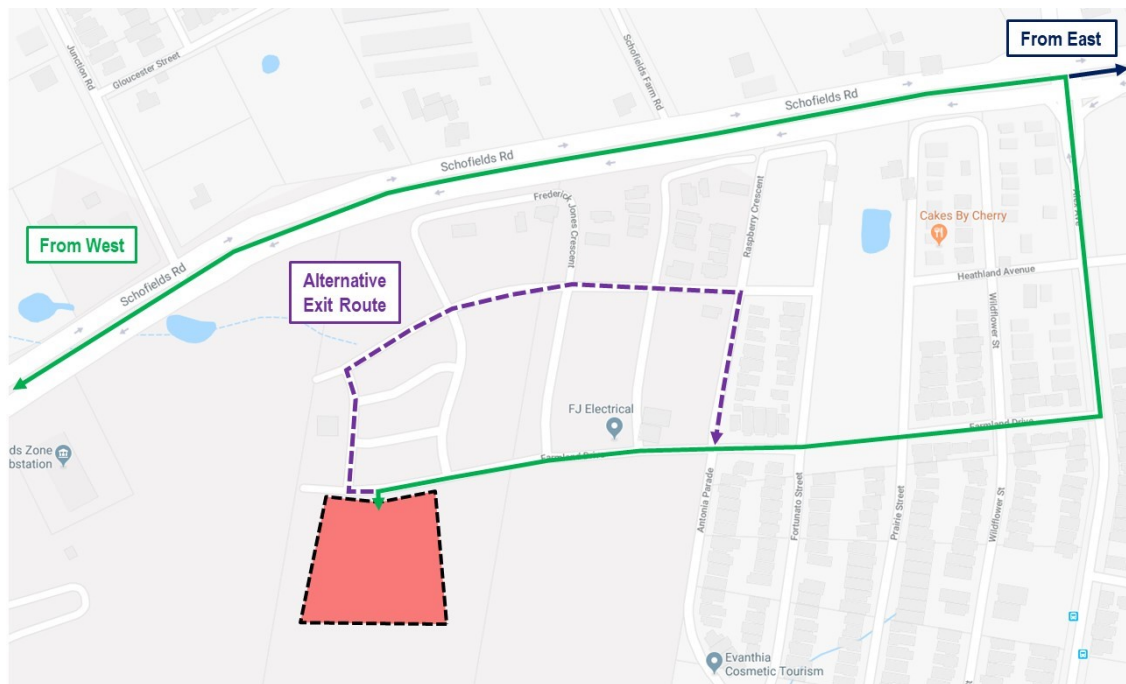


Figure 5.2: Recommended Haulage Routes

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 SWEEP 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 quantitatively 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 sub-arterial, collector and local streets of Schofields are not heavily trafficked streets, with intersections performing at acceptable levels of service with minimal delays and moderate degrees of saturation;
- At the current stage, Farmland Drive is not expected to experience a significant volume of daily traffic. It is observed that most of the residential properties along the street finished construction in 2018 and are vacant or only recently occupied; 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).

Consequently, at this stage it is not expected that the introduction of construction traffic will significantly affect traffic operations of Schofields' local intersections.

The signalised intersections along the proposed haulage route in vicinity of the site are key points of interaction between construction traffic and pedestrian movements. The two main intersections are Schofields Road / Junction Road and Schofields Road / Alex Avenue. Pedestrians are provided with

signalised pedestrian crossings on all approaches of these intersections and are therefore protected from truck turning movements. At the local intersections along Farmland Drive, truck drivers should take care to observe the priority rules (mostly Give Ways) to ensure safety of others in the area.

5.6 CUMULATIVE TRAFFIC IMPACTS

Preliminary construction works are noted to be under way at the adjacent Council playing fields site (establishment of site, delivery of materials, etc). Due to the integrated nature of the two sites (for future shared use as detailed in the TIA), construction activities may overlap.

While specific details on the construction management plan for the adjacent development are not available at this time, the access gate is expected to be via Farmland Drive, approximately opposite Arcadia Street. As such, construction vehicles travelling to the Alex Avenue Public School construction site must pass the works zone and access gate for the playing field construction site. This cumulative interaction between construction traffic is largely unavoidable without excessive diversion onto the surrounding local residential streets.

Where possible, construction activities should be staged with consideration of those of the playing fields, such that there is minimal overlap between key project stages / milestones. Material deliveries should be scheduled in a staggered timing to prevent additional holding time waiting for other construction vehicles to clear the roadway and mitigate any cumulative impact of the heavy vehicles.

6. IMPACTS ON EXISTING CONDITIONS

6.1 PEDESTRIANS

6.1.1 Existing Pedestrian Infrastructure

The majority of the Alex Avenue Precinct in vicinity of the construction site does not currently have any pedestrian infrastructure (concrete footpaths), with the exception of a recently constructed short footpath link on Farmland Drive between Fortunato Street and Prairie Street. Off-road shared paths along the southern footpath of Schofields Road and along the western side of Railway Terrace are the only other existing pedestrian or cycle links in proximity to the site.

The nearby signalised intersections on Schofields Road at Railway Terrace, Junction Road/Pelican Road and Boundary Road/Alex Avenue are 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 path on the southern side of Farmland Drive may be necessary.

Furthermore, during the associated construction stages, full closures of the path may be necessary on Farmland Drive to facilitate construction of the access driveways, proposed roundabout and the drop-off / pick-up zone or indented parking area (depending on which plan will be approved for construction).

The streets bordering the proposed construction site (Hyde Street, Glacier Street and Heathland Avenue) are not relatively wide and given Farmland Drive will be a cul-de-sac in the interim, it is possible that construction works may require partial/full closure of the roadways in order for trucks accessing the Works Zone (see Section 9.6) to turn around. Construction vehicles are to access and exit the construction site in a forward direction, with turnaround movements contained on-site to minimise impacts of construction traffic on Farmland Drive.

It is noted that pedestrian volumes are expected to be low in the area, due to the lack of through connectivity of Farmland Drive and lack of any public facilities. Any pedestrians are likely to be local residents, who would be expected to be walking on the residential side of Farmland Drive.

6.1.3 Potential Pedestrian Detours

During the impacts to pedestrian movements outlined above, pedestrians must be redirected around the construction area. It is noted that there are no footpaths currently provided in the affected areas, nor on the other side of the road, and it is unlikely that both sides of the road will be closed simultaneously.

Under these conditions, signage should be installed to advise pedestrians of the change in roadside conditions. TCPs for pedestrian redirection (including positioning of signage) are to be prepared as necessary, subject to confirmation of proposed construction staging and activities.

In summary, no significant detours to pedestrian movements are expected to be necessary.

6.1.4 Pedestrian Safety

In all cases where the construction activities require an obstruction, deviation or otherwise interfaces with pedestrians and the 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 Farmland Drive, 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

Off-road shared paths along the southern footpath of Schofields Road and along the western side of Railway Terrace are the only existing pedestrian or cycle links in vicinity to the proposed site. The locations of these shared paths are identified in Figure 6.1.



Figure 6.1: Shared Paths in Schofields

6.2.2 Expected Impacts

The shared paths on Schofields Road and Railway Terrace are not expected to be impacted by any construction works for the proposed school development due to their distance and restricted access from the site. Furthermore, as shared paths are cycling infrastructure separated from the roadway, it is highly unlikely that any construction equipment or vehicles will infringe upon the shared paths.

It is expected that the bulk of the construction traffic will access Schofields from Schofields Road, travelling towards the development site from the east and west. As such, there should be minimal interaction between construction traffic entering and exiting the work site and cyclists on any of the shared paths in the near vicinity.

Signalised pedestrian crossings are provided on all approaches on the two main intersections on Schofields Road (Junction Road/Pelican Road and Alex Avenue). As such, crossing movements are protected from construction traffic.

6.2.3 Potential Cyclist Detours

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 Schofields, servicing Schofields Road, Alex Avenue and Railway Terrace. These bus services include:

- Route 751 – Rouse Hill Town Centre to Blacktown;
- Route T72 – Rouse Hill to Blacktown; and
- Route T74 – Riverstone to Blacktown.

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.

6.4 TRAIN SERVICES

Schofields Railway Station is located west of the site within a 3km walking distance. It is serviced by the T1 Western Line between Richmond and the City via Blacktown, Parramatta and Strathfield, and by the T5 Cumberland Line between Richmond and Leppington via Blacktown, Parramatta and Liverpool. T1 Western Line services operate every 30 minutes throughout the day, with more services during peak periods. T5 Cumberland Line services operate every 30 minutes Monday to Friday.

A map of the existing bus routes and stops, and Schofields Railway Station is shown in Figure 6.2.

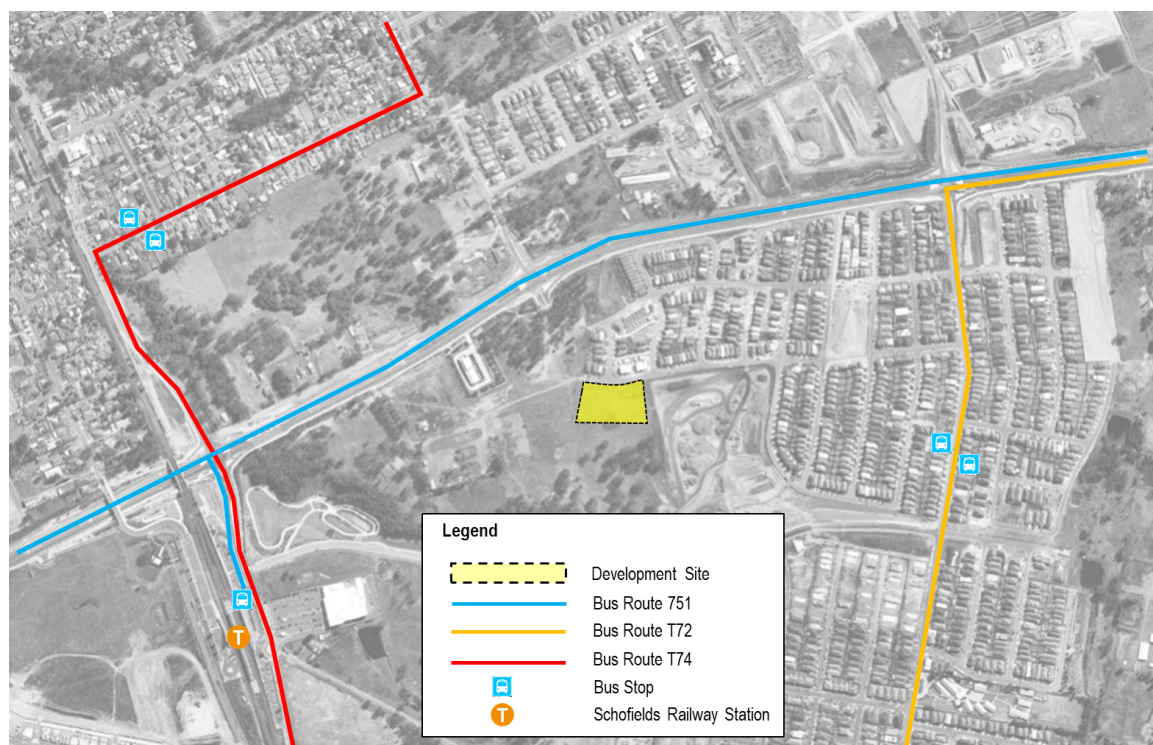


Figure 6.2: Existing Train and Bus Routes

6.5 CAR PARKING

6.5.1 On-site Parking

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

6.5.2 On-street Parking

On-street kerbside parking is currently unrestricted in the vicinity of the development site along Farmland Drive and surrounding roads. 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 residential properties in close proximity to the proposed development site. The majority of these are located on Hyde Street and Glacier Street and are accessed via driveways. To the north of the site, two residential properties are still under construction. These areas are marked out in Figure 6.3.



Figure 6.3: Nearby Driveways and Roads

Access to these 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.

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 – Schofields Fire Station at 58 Hambledon Road (approximately 3.2 km to the south of the site).

The nearest hospital is Blacktown Hospital on Blacktown Road (approximately 13.4km to the south of the site).

The nearest police station is Riverstone Police Station at 4 Elizabeth Street (approximately 5.2km to the north 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 Blacktown City Council's specific guidelines;
- Notify and collaborate with stakeholders and transport agencies affected by the project; and
- Notify and collaborate with Blacktown City 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. TCPs should be implemented by an accredited person certified with Roads and Maritime implementation of work zones (Yellow card).

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 one access gate and one egress gate, both on Farmland Drive.



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 currently a greenfield site with substantial space, construction vehicles may be held on-site, subject to the 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 of 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.

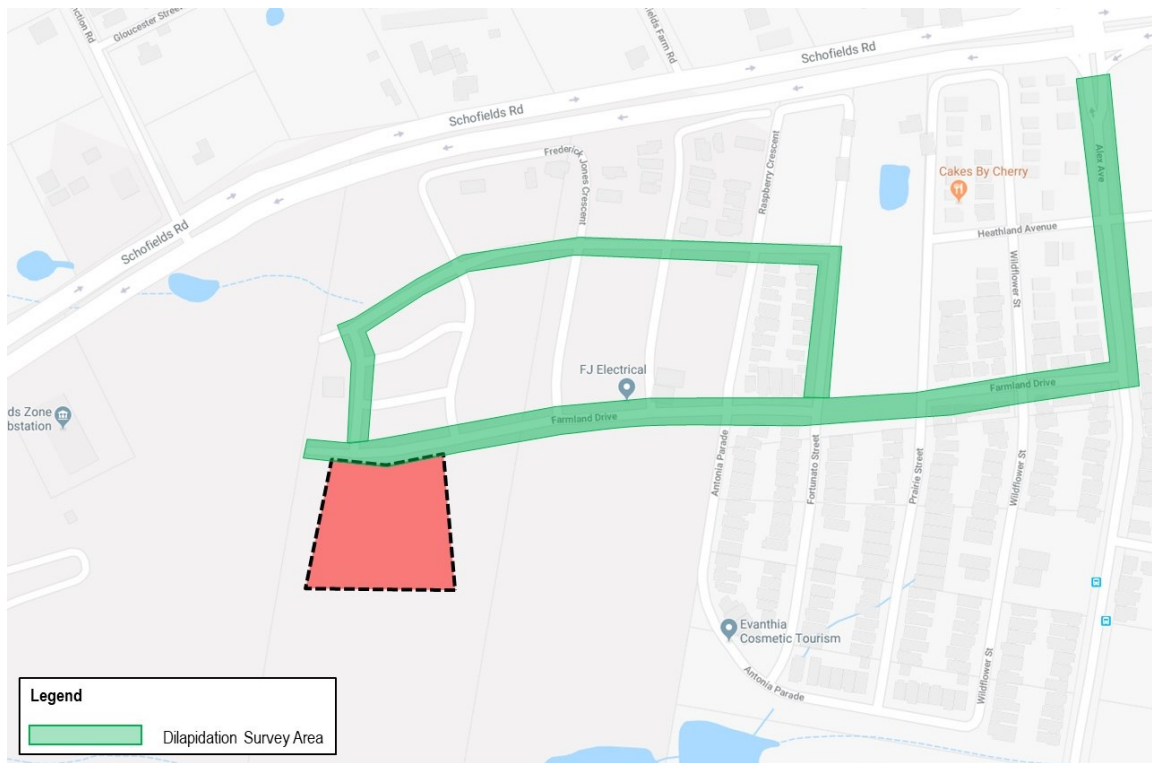


Figure 9.2: Dilapidation Survey Area

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.

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 to travel to work, with the Schofields train station and bus services on Alex Avenue within walking distance of the construction site.

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.

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;
- Does not encroach on pedestrian access ways such as footpaths or shared paths;
- Does not encroach on private property or impede access to private property;
- Does not pose a safety risk or create a road hazard to other road users, including cyclists; and
- Does not impede on bus operations in the area.

9.5.2 Alternative Options

Given the limited and distant existing public transportation options, workers should aim to car-pool where possible to reduce the number of construction worker vehicles travelling to and from the site and to minimise the traffic and parking impact on the local area.

9.6 WORKS ZONE

The construction site access points will be located on Farmland Drive. As such, a temporary Works Zone may be necessary on the southern side of Farmland Drive to control parking in the area.

An indicative location and length of this Works Zone is shown in Figure 9.3.

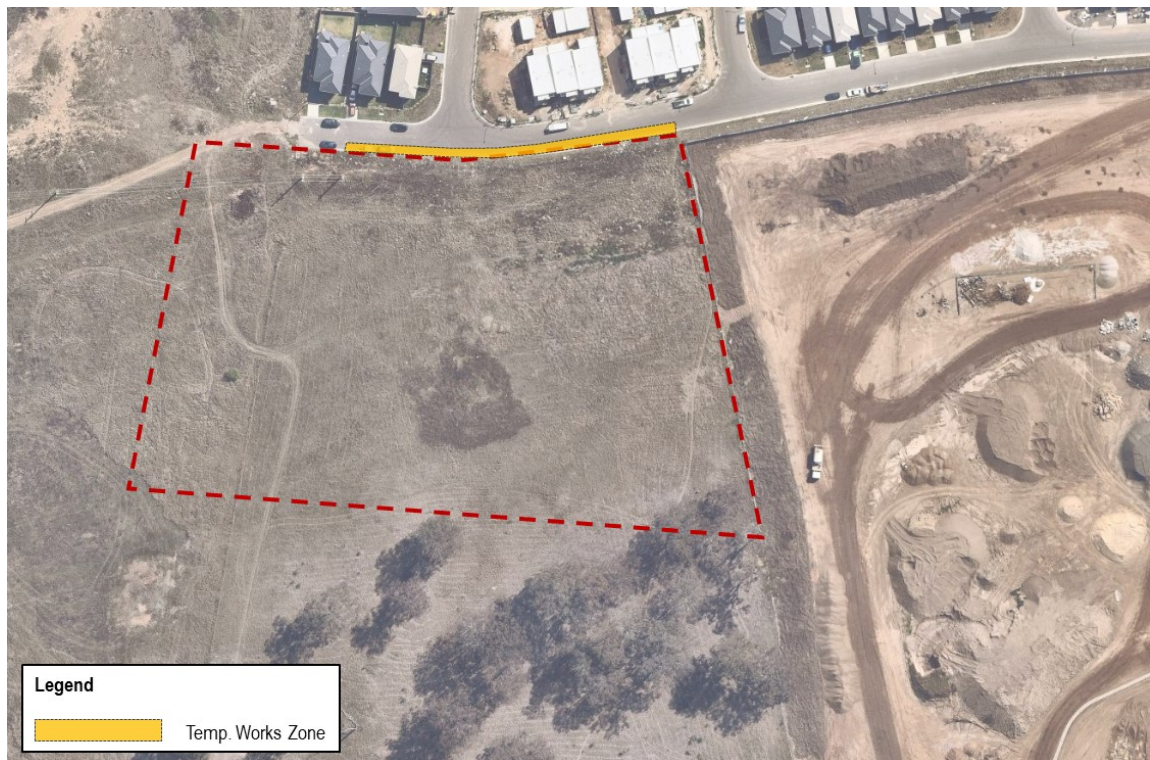


Figure 9.3: Indicative Temporary Works Zone

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 Blacktown City Council prior to the implementation of any temporary works zones.

9.7 ROAD OCCUPANCY

It is expected that construction works are required on Farmland Drive for the construction of access driveways and the proposed roundabout.

Any work areas (including delivery unloading areas) that require a partial or full occupancy of a public road way or footpath will require a Section 138 Road Act approval from Blacktown City Council, subject to submission of a Road Opening Permit / Road Occupation Licence Application.

The requirement for a Road Opening Permit / Road Occupation Licence 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 Roads and Maritime *Traffic Control at Works Sites Manual* and submitted to the Blacktown City 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.