

Jordan Spring Village Five Residential Subdivision Construction Traffic Management Plan

transportation planning, design and delivery

GTA consultants

Jordan Spring Village Five Residential Subdivision

Construction Traffic Management Plan

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1. Introduction

GTA Consultants has prepared this Construction Traffic Management Plan (CTMP) for Maryland Development Company for the proposed infrastructure works associated with the construction of Village 5 within the Jordan Springs residential development.

A CTMP is required as part of the Development Application stage of the Jordan Springs Village 5 subdivision given the proposed works comprises the use of over 100,000 tonnes of fill. This CTMP has been prepared in accordance with AS1742.3 "Traffic Control Devices for Works on Roads" and the Roads and Maritime Services publication "Traffic Control at Worksites" manual.

The Traffic Control Plan has been prepared which addresses construction vehicle routes, construction vehicle generation, operating hours, and access arrangements.

The objectives of this report are:

- To provide a detailed description of the project.
- To examine and consider the proposal's likely impact to traffic on the surrounding road network.
- To provide mitigating measures to address those impacts.

The report has been prepared and checked by engineers who hold the Roads and Maritime Services (RMS) Design/ Amend Traffic Control Plans (Red Card) and Audit Traffic Control Plans (Orange Card) certification.

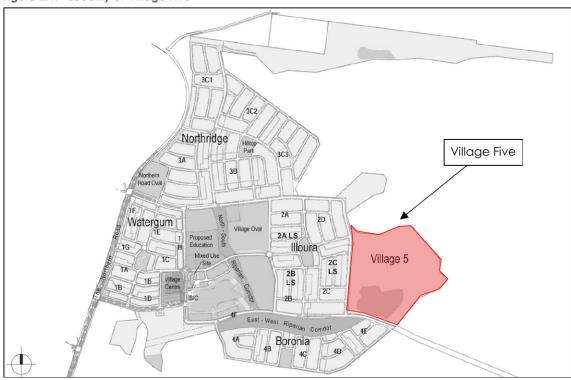


2. Existing Conditions

2.1 Site Location

The Village Five subdivision lies at the eastern end of the Jordan Springs residential subdivision. The location of the proposed Village Five subdivision is shown below in Figure 2.1.

Figure 2.1: Locality of Village Five



2.2 Traffic Flows

Peak hour traffic and classification surveys were conducted at the intersection of The Northern Road with the Jordan Spring Boulevard on Saturday 30 April 2011 and Monday 2 May 2011. The surveyed traffic volumes along The Northern Road which correspond to the construction work hours and staff arrival times are shown in Table 2.1.

Table 2.1: Surveyed Peak Hour Traffic Volumes

Peak Hour		Traffic Volumes (per hour)				
		Northbound	Southbound	Total		
	7:00am – 8:00am (construction peak)	622	620	1242		
Thursday	7:45am – 8:45am (Peak AM)	869	960	1829		
	4:30pm – 5:30pm (Peak PM)	913	831	1744		
Saturday 12:00pm – 1:00pm (Peak weekend)		785	694	1479		

From Table 2.1, it can be seen that The Northern Road carries heavy traffic flows. The survey found that the heavy vehicle component of the total flows along The Northern Road was on average 2% in the surveyed periods in both counts.



Recently (March 2014), traffic counts were undertaken at the intersection of The Northern Road and Ninth Avenue. The results of the survey are summarised in Table 2.2.

Table 2.2: 2014 Surveyed Peak Hour Traffic Volumes

Peak Hour		Traffic Volumes (per hour)				
		Northbound	Southbound	Total		
Thursday	7:00am – 8:00am (construction peak)	722	682	1404		
	7:45am – 8:45am (Peak AM)	862	854	1716		
	4:00pm – 5:00pm (Peak PM)	798	918	1716		
Saturday 11:45am – 12:45pm (Peak weekend)		674	725	1399		

Table 2.1 and Table 2.2 show that the traffic volumes on The Northern Road immediately south of Ninth Avenue have reduced by 6% during the weekday AM peak period and by 2% during the weekday PM peak period. It is thought that the reduction in traffic volumes along The Northern Road maybe associated with the current construction work on The Northern Road and that traffic is using an alternative route to The Northern Road.

The proportion of heavy vehicles has increased from an average of 2% from 2011 to an average of 4.5% in 2014.

2.3 Public Transport

Bus route 783 (Penrith and Jordan Springs Loop) operates within walking distance to the site. Services operate on approximately half hour intervals between 6:42am and 7:44pm on a typical weekday. Additionally, bus services 673, 677 and 786 are within walking distance to the site, these provide alternate access to Penrith Railway Station. Other limited bus services on routes 673 and 677 connect the site to Windsor and Richmond.

A network route is shown in Figure 2.2.

Figure 2.2: Local Bus Network





3. Description of Construction

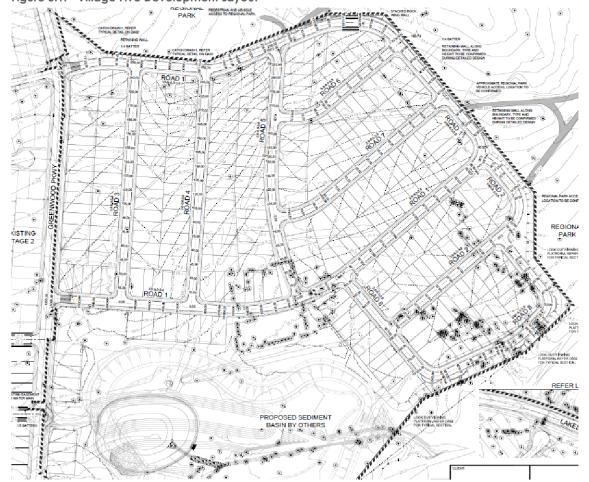
3.1 Description of Works

The works involve the excavation/ clearing and construction of road, stormwater infrastructure and the likes for the residential subdivision.

3.2 Staging of Construction

It is understood that the construction of Village Five and its associated roads will be undertaken in one stage if market conditions remain. In the event that the market conditions changes, the village will be delivered in three stages; 5a, 5b and 5c. It is proposed to commence Village Five construction in August 2014 and it is expected to be completed by March 2015.

The layout of the proposed Village Five residential development and stages of construction (if required) are shown in Figure 3.1 and Figure 3.2.



Source: J. Wyndham Prince

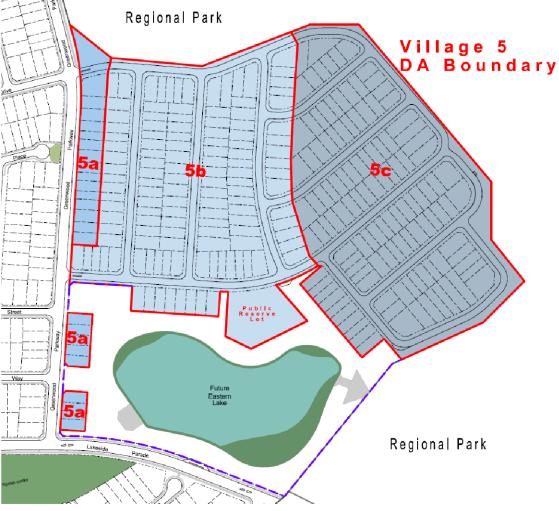


Figure 3.2: Village Five Development Staging Plan (if required)

Source: Maryland Development Group

3.3 Construction Details

3.3.1 Construction Period

The construction of Village Five is expected to be completed within 8 months. In addition, other developments within Jordan Springs that will be constructed concurrently with the construction of Village Five include:

- Village 3C Stage 2
- Village 3C Stage 3
- Village 12/ Riparian Corridors.

3.3.2 Plant and Equipment

Construction vehicles likely to be generated by the proposed construction activities include:

- Articulated vehicles for the delivery of large earthmoving machinery (bulldozers etc.)
- Truck and dog for the delivery of fill
- Heavy, medium and small rigid trucks for the delivery of materials, etc.



3.3.3 Work Hours

Construction activities would be undertaken between 7:00am and 6:00pm Monday to Friday and 7:00am to 1:00pm Saturday, if inaudible on neighbouring residential properties, otherwise 8:00am to 1:00pm. No work will take place on Sunday or public holidays.

Any construction work outside the hours listed above requires appropriate consultation with Penrith City Council or the Roads and Maritime Services (e.g. special permits to transport larger equipment outside of peak traffic hours) prior to work commencing.



4. Construction Traffic Assessment

4.1 Site Access Arrangements

Access to and from the Village Five construction site will be provided via the following routes:

- The Northern Road
- Greenwood Parkway
- Jordan Springs Boulevard
- Lakeside Parade

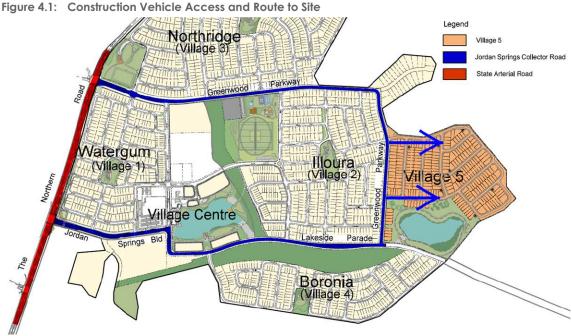
The Northern Road is currently being upgraded between Andrews Road and Borrowdale Way, Cranebrook. Greenwood Parkway will form a signalised intersection with Borrowdale Way and The Northern Road. This will provide the most direct link to the external arterial road network and minimise disturbance to residents already living within Jordan Springs.

4.2 Loading and Unloading

All loading and unloading materials associated with on-site works will be accommodated within the Village Five construction site. There will be some on-street Works Zone as part of these works particularly for the lots fronting Greenwood Parkway. These works will involve construction of vehicle crossovers, footpaths and services. A modified traffic control plan based on TCP 61 of the RMS Traffic Control at Work Sites manual will be implemented for this work.

4.3 Truck Routes

Vehicular access to and from the site will be from The Northern Road via Greenwood Parkway or Jordan Springs Boulevard/ Lakeside Parade, as shown in Figure 4.1.



Source: Maryland Development Group



Construction vehicles importing material from the Sydney region (where possible) and accessing the Village Five construction site will use the route shown in Figure 4.1.

Approximately 90,000m³ of imported fill is proposed for Village Five with the importation which is likely to occur over an eight to ten week period.

Access to the construction site is from Greenwood Parkway in close proximity of the proposed Road No. 1.

4.4 Staff

It is expected that approximately 15-25 staff would be required for Village Five construction works including on-site operators and subcontractors. It is likely that the majority would be permanently on-site and the rest would be deliveries, off site manufacturers etc.

4.5 Pedestrian Management

There would be no public pedestrian route through the construction site. The existing public pedestrian routes within Jordan Springs would be largely unaffected by these works, except works that occurring along the Greenwood Parkway frontage. Whilst construction works are occurring along Greenwood Parkway, a modified traffic control plan will be prepared based upon traffic control plan No. 61 of the RMS Traffic Control at Work Sites manual to manage pedestrians.

Village 1, Village 2A – 2D, Village 3A and Village 3B would be occupied by some residents throughout these works. There will be some interface between construction vehicles and existing residents occupying homes within the Jordan Springs Precinct.

4.6 Public Transport Services

There will be no re-direction of public transport services during construction works. No adverse impacts are therefore expected to existing public transport services or facilities.

4.7 Emergency Vehicle Access

Emergency vehicle access to, from and around the construction site will be maintained at all times.

Liaison would be maintained with the police and emergency services agencies throughout the construction period and a 24 hour contact would be made available for 'out of hours' emergencies and access.

Emergency protocols on the site would include a requirement for the Principal Contractor to assist with emergency access from the street.

Thus there will be no adverse impacts to the provision of existing emergency vehicle access to other neighbouring properties as a result of the proposed construction activities.



5. Construction Traffic Impacts

5.1 Site Access

The number of occupied homes within Jordan Springs is steadily increasing. Subsequently, we propose that advance traffic warning signs are provided to inform Jordan Springs residents of locations where construction vehicles are turning into construction site accesses and local streets within Jordan Springs.

GTA Consultants have prepared Traffic Control Plans in accordance with the principles of the RMS Traffic Control at Work Sites manual. The Traffic Control Plans are based upon TCP 195 of the RMS Traffic Control at Work Sites manual which shows where "Trucks" and "Trucks Turning" signs should be located on the approach to a construction site and site access. Village Five traffic control plans are shown in Appendix A.

Where works, such as the construction of the site accesses, occur along the site frontage and impact on pedestrian access along the site frontage, TCP 61 of the RMS Traffic Control at Work Sites manual which shows the traffic control setup for a footway closure should be implemented.

5.2 Construction Traffic Generation

There would be an array of vehicles and machinery required on-site including large vehicles to transport fill material as well as to deliver cement, stormwater pipes and other road building materials. It should be noted that not all of the different types of vehicles would visit the site on the same day.

5.2.1 Estimated Movements for Transportation of Fill Material

An estimate of the number of truck movements generated by the transportation of fill material to the Village Five was generated by GTA and is summarised in Table 5.1.

Table 5.1: Estimated Movements for Transport of Fill Material

Fill Site	Quantity of Fill	Total Movements [1] (One-Way)	Movements per Day (One-Way)	Movements per Hour (One-Way)	Approximate Duration (days)
Village 5 Residential Subdivision	90,000m³	6,924	115	10-11	60

^[1] Based on an average of 13m³ per truck.



5.2.2 Summary of Movements

Based on the above, Table 5.2 shows the estimated construction vehicle movements to/ from the site for the construction of Village Five.

Table 5.2: Village Five – Traffic Generation Estimate

	Heavy Rigid Trucks		Cars, Vans and other Trucks		Total	
Time of Day	Into the site	Out of the site	Into the site	Out of the site	Into the site	Out of the site
06:00 to 07:00	5	5	30	0	35	5
08:00 to 09:00	11	11	8	8	19	19
17:00 to 18:00	5	5	0	30	5	35

^{*1} truck delivery = 2 movements (1 movement in + 1 movement out)

5.3 Construction Program

Construction of Village Five will overlap with the construction of the Village 3C Stage 2 (for five months), Village 3C Stage 3, Village 12 and the riparian corridors towards the Village Centre. A cumulative traffic assessment of all these stages occurring at the same time is provided in Table 5.3.

Table 5.3: Cumulative Jordan Springs Construction Traffic Assessment

	Heavy Rigid Trucks		Cars, Vans ar	nd Light Trucks	Total	
Time of Day	Into the site	Out of the site	Into the site	Out of the site	Into the site	Out of the site
06:00 to 07:00	21	21	100	0	121	21
08:00 to 09:00	49	49	26	26	75	75
17:00 to 18:00	21	21	0	100	21	121

The traffic volumes in Table 5.3 should be viewed as a worst case scenario as no allowance has been made for 'shared' trips between work sites. Construction vehicles would be likely to deliver materials/ items to Village Five and the other stages of construction on the same trip, thereby reducing the total cumulative traffic movements.

Nonetheless, the estimates show that the construction traffic impacts are likely to be low (i.e. at worst 2 truck movements every minute in the peak hour). It is considered that the construction traffic generated by the proposed development would not adversely impact on the road network operation with regard to intersection capacity.

The Northern Road intersections with Greenwood Parkway and Jordan Springs Boulevard have been designed to carry traffic volumes well in excess of the estimated traffic generated by Village Five and the other stages of construction being constructed at the same time. This has been previously tested in reporting undertaken for future planning for the area. Therefore it can accommodate the anticipated Village Five construction traffic levels.



6. Construction Traffic Management Mitigation Measures

6.1 Traffic Management Measures

The following construction traffic management mitigation measures would be applied to the construction of Village Five.

6.1.1 Traffic Signs and Devices

Advisory road signage would be installed along Greenwood Parkway and Lakeside
 Parade in accordance with AS 1742.3 Manual of Uniform Traffic Control Devices - Traffic
 Control Devices for Works on Roads and the RMS's Traffic Control at Worksites.

6.1.2 Hours of Operation

- Work is to be undertaken during approved construction hours.
- Any works that cannot be achieved during the approved hours will require separate approval.

6.1.3 Vehicle Access

- Access along all public roads will be maintained at all times.
- All construction vehicles to enter and exit the site in a forward direction.
- Drivers must use the wash down facilities at the exit to ensure that trucks which have been on the site do not carry dirt and debris onto the road. If there are any materials spilt onto the road, site personnel and equipment would be sent to clear it up, subject to appropriate OH&S provision.

6.1.4 Truck Routes

- Site induction would include procedures for accessing the site from The Northern Road.
- Drivers must adhere to the nominated truck routes as shown in Figure 4.1.
- Drivers must be aware of pedestrians and cyclists within the Jordan Springs precinct.
- Drivers should be aware that the local area speed limit is 50km/h as is standard in a residential area.

6.1.5 Pedestrian Access

Pedestrian access along the site's frontages is to be maintained where possible.

6.2 Site Inspections and Record Keeping

The construction operation would be monitored to ensure that it proceeds as set out in the Contractors Construction Traffic Management Plan by the Head Contractor.

A daily inspection before the start of operations would take place to ensure that conditions accord with those stipulated in the plan and there are no potential hazards. Any possible adverse impact would be recorded and dealt with if they arise.



6.3 Site Induction

All staff employed on the site by the Principal Contractor would be required to undergo a site induction.

The induction would include permitted access routes to and from the construction site for site staff and delivery vehicles as well as standard environmental, OH&S, driver protocols and emergency procedures.



7. Conclusion

This report has been prepared to document the proposed construction activities and associated construction traffic management measures necessary to facilitate the proposed construction of Village Five within Jordan Springs.

Based on the findings of the report presented above, it is concluded that:

- Construction vehicle movements to and from the site can be satisfactorily accommodated by the surrounding road network.
- Traffic Control Plans have been prepared to assist trucks turning into the Village Five
 construction site accesses and local streets. Traffic Control Plans would be
 implemented between August 2014 and March 2015, which would advise general
 traffic that trucks are turning into the site access and are on the local road network.
- A number of driver protocols would be established for drivers to ensure the safety of motorists, pedestrians and cyclists and amenity of local residents.

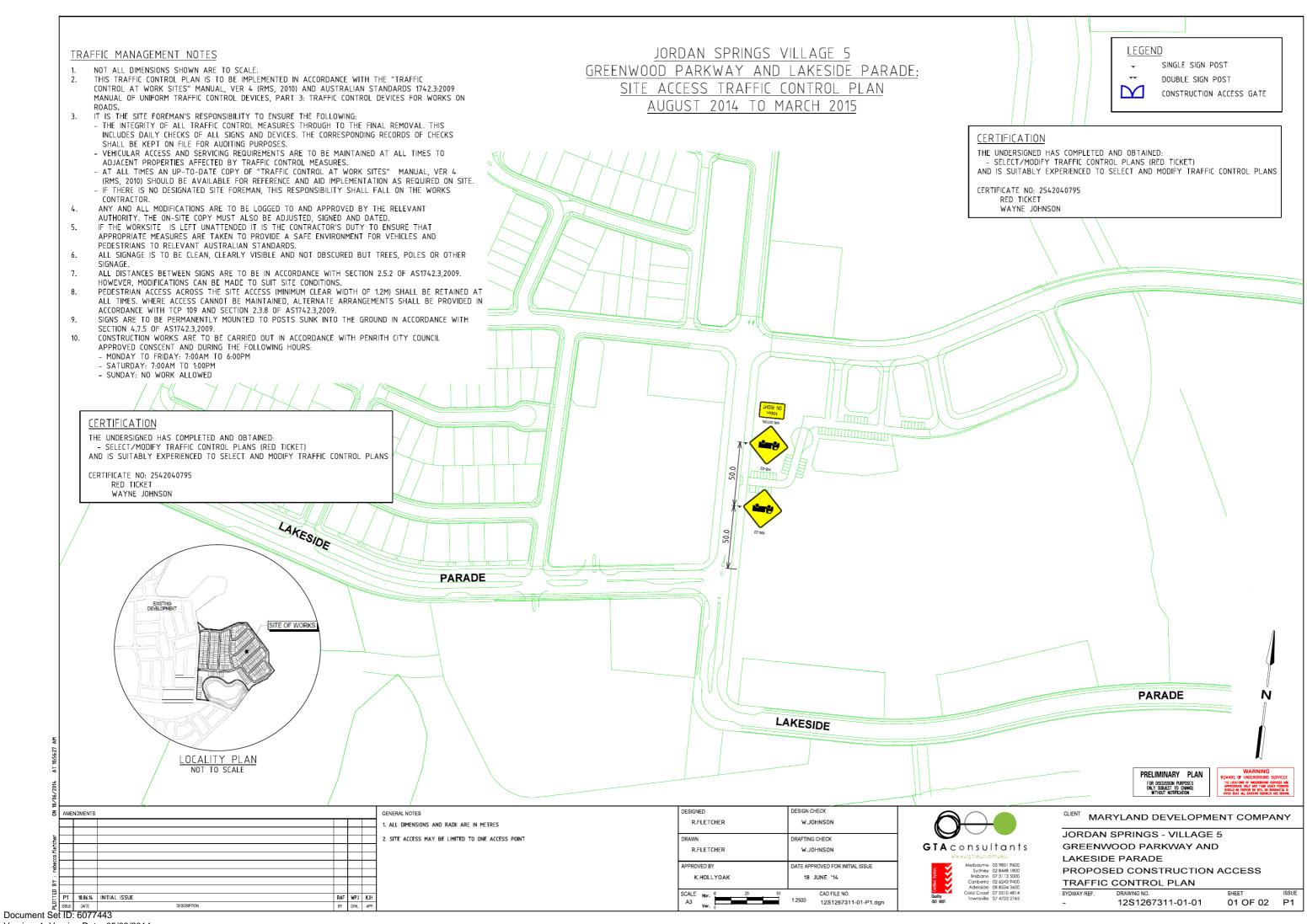
In summary, it is concluded that the proposed measures will adequately address potential implications associated with the proposed construction of Village Five.

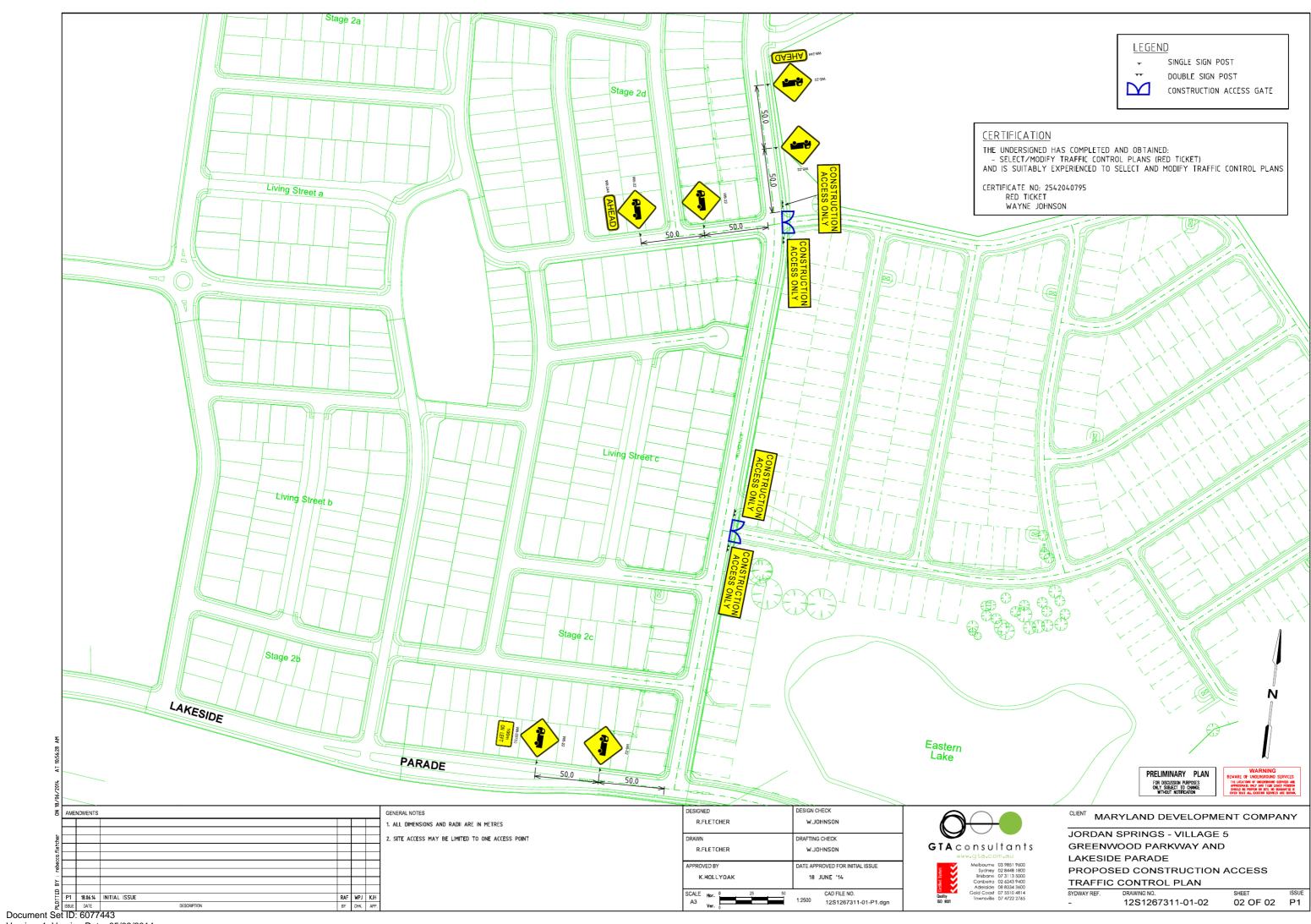


Appendix A

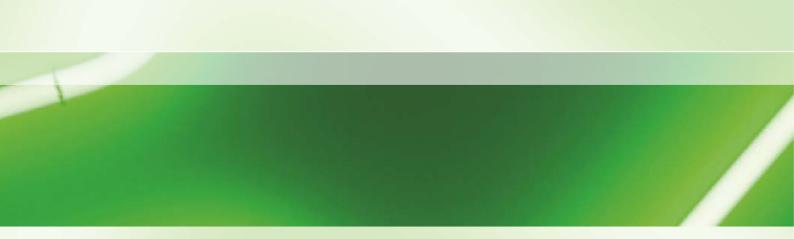
Village Five, Traffic Control Plans

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