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Ref: A24322
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Subject: 1206 Great South Road – Traffic Report
Issued via: joe@saddleback.nz

Dear Joe

Background

Drury Limited Partnership is proposing to use the site at 1206 Great South Road for a storage yard facility. The site is included within the Future Urban Zone, where this activity is permitted within the zone. There are two existing vehicles crossing serving two dwellings, one located on the southern property boundary of the site and the other approximately 40m from the southern property boundary. The subdivision is proposed to include one new vehicle crossing to Great South Road to provide access to the storage yard facility. It is to be noted that the opposite site at 1187A Great South Road is used for a similar outdoor storage yard activity.



Figure 1: Site Location

This report assesses potential vehicle crossing locations in accordance with Austroads design standards, with particular focus on visibility and safety requirements.

Trip Generation

In order to determine the effects of additional traffic on the surrounding road network due to future industrial developments, a SIDRA model has been developed for the intersection connecting Great South Road and the subject site. The number of trips generated by the subject site has been increased until a maximum threshold has been identified as described below.

The modelled layout of this intersection is shown in **Error! Reference source not found.** below. The intersection is modelled as a basic intersection, with the vehicle crossings acting as the site access, as this report is focused only on the capacity of the intersection.

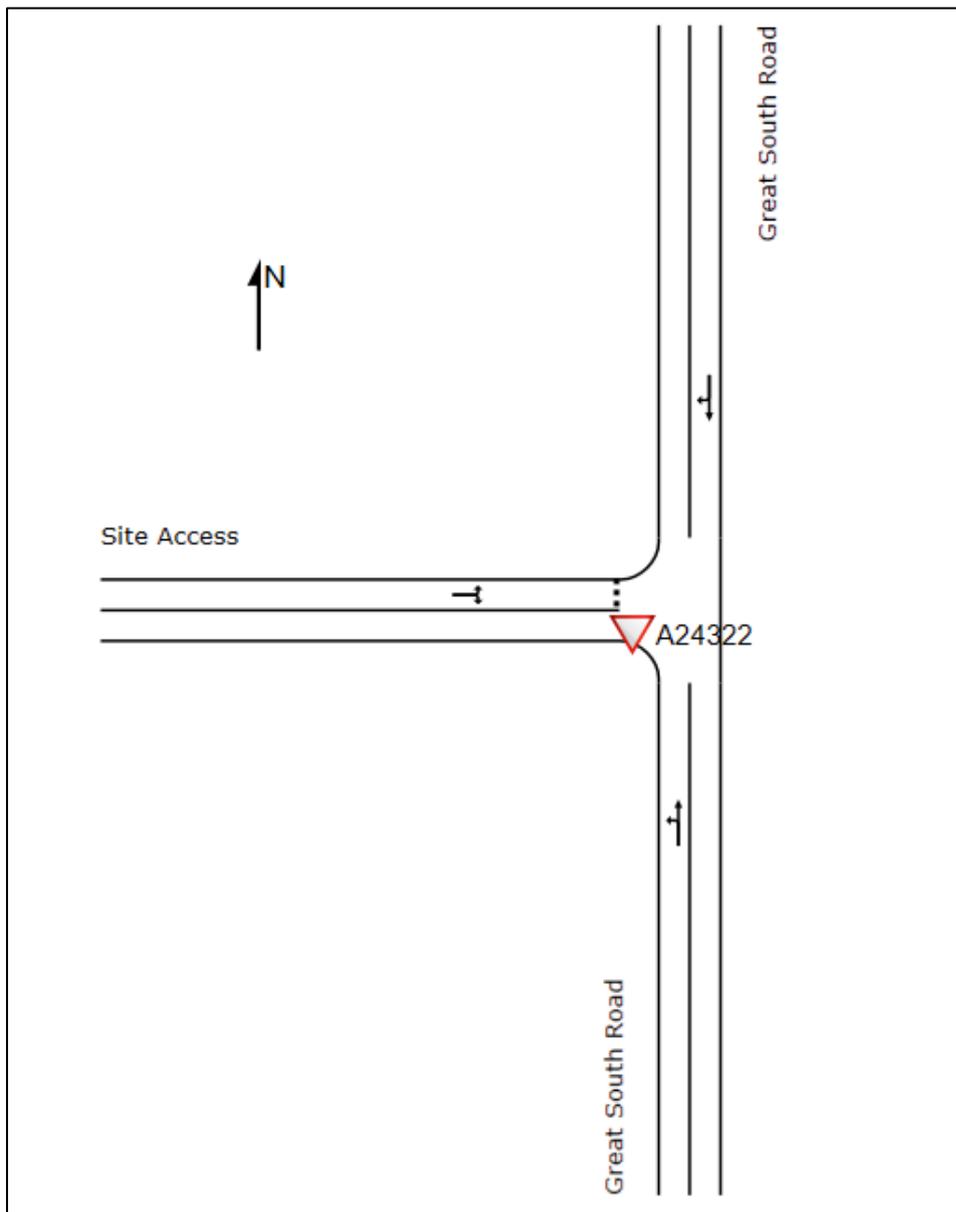


Figure 2: Give Way T-intersection Layout

A traffic count survey was undertaken for the site at 1121 Great South Road, approximately 500m north of the subject site. This site is predominantly used as an outdoor storage yard and is also within the Future Urban Zone. This reflects the likely future use of the subject site given the activities permitted within the Future Urban Zone.

The distribution of vehicle manoeuvres to and from Great South Road is shown below in [Table 1](#) and will be adopted for the assessment of the subject site. This was based on the surveyed observations.

Table 1: Trip Distribution to/ from Great South Road

Direction	AM Peak		PM Peak	
	To Site	To GSR	To Site	To GSR
North	24.0%	29.2%	27.3%	38.6%
South	27.1%	19.8%	13.6%	20.5%
Total	51.1%	49.0%	40.9%	59.1%

Within the analysis undertaken, background traffic growth along Great South Road has increased by 20%. This represents a 2% growth rate over a ten-year period and ensures that the assessment considers future background growth.

The existing Average Annual Daily Traffic (AADT) recorded in June 2024 at the intersection of Great South Road and Quarry Road (north of the subject site) is 2,614 vehicles per day (vpd). Assuming 10% of the AADT is peak hour flows means there are 261vph during peak AM and PM times. Additionally, the flows from 1187 Great South Road will be added to the total flows and disturbed as per [Table 1](#), resulting in the traffic volumes that will be used to assess the maximum capacity of the intersection. Furthermore, a large portion of heavy vehicles is expected to load/unload cargo for storage within the outdoor yard. A 25% heavy vehicle percentage has been adopted in the model, which is based on Mobile Roads data.

Level of Service (LoS) is a common metric to classify the performance of an intersection or movement at an intersection. Any movement that reaches LoS F in either peak hour is considered to represent the failing threshold for the intersection, and therefore, a trip value below this failing threshold would be considered appropriate.

Based on the incremental increase in overall number of trips generated by the site, a maximum capacity of 580 trips has been identified. **Error! Reference source not found.** and **Error! Reference source not found.** below summarise the SIDRA results for the morning and evening peak hours respectively. The 585 trip generation scenario is shown where the right turn out from the site in evening peak crosses the failing threshold to LoS F as highlighted in orange.

Table 2: AM Peak SIDRA Results

Approach	Movement	580 Trips			585 Trips		
		Ave Delay (s)	LOS	95% Q (veh)	Ave Delay (s)	LOS	95% Q (veh)
South: Great South Rd	Through	0.8	A	3.1	0.8	A	3.2
	Right	13.2	B	3.1	13.3	B	3.2
East: Site	Left	5.5	A	0.5	5.5	A	0.5
	Right	12.9	B	0.5	12.9	B	0.5
North: Great South Rd	Left	7.8	A	0.0	7.8	A	0.0
	Through	0.1	A	0.0	0.1	A	0.0
All Vehicles		7.7	NA	3.1	22.2	NA	3.2

Table 3: PM Peak SIDRA Results

Approach	Movement	580 Trips			585 Trips		
		Ave Delay (s)	LOS	95% Q (veh)	Ave Delay (s)	LOS	95% Q (veh)
South: Great South Rd	Through	0.0	A	0.3	0.0	A	0.3
	Right	14.1	B	0.3	14.1	B	0.3
East: Site	Left	38.8	E	23.1	42.2	E	24.6
	Right	47.9	E	23.1	51.4	F	24.6
North: Great South Rd	Left	7.7	A	0.0	7.7	A	0.0
	Through	0.0	A	0.0	0.0	A	0.0
All Vehicles		20.6	NA	23.1	22.2	NA	24.6

Based on the survey, 1121 Great South Road generated up to 54 vehicle movements in the peak hour and has an area of 10.3ha, which equates to a trip generation rate of 5.2 trips/ha. The area of the site to be used for outdoor storage is approximately 2ha. This would give an estimated peak hour trip generation for the site of 10-11 vehicles per hour.

It is noted that consents have been granted for a similar outdoor storage activity at 1159 and 1187A Great South Road, just north of the subject site which is now operational. These sites have an area of 27ha which would therefore be expected to generate 141 trips in the peak hour.

Combined, the proposed site and the recently established outdoor storage areas would generate up to 152 trips in the peak hour. This is well below the 580 trips threshold value which has been identified as representing the capacity of the road. As such, the road network has sufficient capacity to accommodate trips from the subject site.

Access

It is proposed to have a new vehicle crossing located on the southern end of the property, which will provide access to the storage yard facility. No changes are proposed to the existing vehicle crossings to the dwellings and the proposed new crossing ensures that vehicles associated with the outdoor storage yard are separated from the dwellings. Figure 3 below depicts the proposed vehicle crossing locations fronting Great South Road.



Figure 3: Vehicle crossing location

The site has frontage only to Great South Road, which is classified as an arterial road. This represents a technical non-compliance against rule E27.6.4.1 of the Unitary Plan, which does not permit access to an arterial road. However, the site has no other frontage options and therefore compliance is not possible.

The Austroads: *Guide to Road Design Part 4A: Unsignalised and Signalised Intersections* (Austroads) has been used to determine an appropriate sight distance for the two give-way controlled intersections from the site to Great South Road. A 90km/h operating speed has been adopted for Great South Road, 10km/h above the posted speed limit, which equates to at least 214m visibility being required from the site. When looking south, there is more than 250m of sight distance available on Great South Road from the new access site, which satisfies this standard. However, when looking north from the site, there is vegetation immediately adjacent to the proposed that hinders visibility.

It is therefore proposed to trim back this vegetation which would then enable the access to achieve at least 214m visibility. Figure 4 below shows the visibility assessment of the new access including the vegetation to be trimmed back.



Figure 4: Visibility Assessment

The Unitary Plan stipulates that one vehicle crossing is permitted per 50m (or part thereof) of road frontage where access is to an arterial road. The site has over 170m frontage and hence up to three vehicle crossings are permitted. With only one vehicle crossing proposed, compliance is achieved in terms of the number of accesses to the site.

The Unitary Plan also requires at least 6m between vehicle crossings serving the same site and at least 10m separation from an intersection. There is over 10m separation between the proposed vehicle crossing and the nearest existing crossing to the site, and over 50m separation from a nearby intersection. As such, the separation criteria of the Unitary Plan are satisfied.

Given that the number of vehicle crossings is below the maximum permitted threshold, separation is compliant, and that there is good visibility available, providing access directly to the arterial road is unlikely to create adverse effects on the road network.

The new vehicle crossings are proposed to be 7m wide. The subject site is not within a residential, rural or business / industrial zone. Therefore, the Unitary Plan technically requires vehicle crossings to be between 5.5m and 6m in width. However, it is expected that the site, along with the surrounding area, will be converted to industrial zoning at some stage in the future, with likely urban industrial development. With this rezoning, vehicle crossings are required to be between 6m and 7m in width (noting that wider vehicle crossings up are permitted where required to support the tracking of large trucks).

Figure 5 and Figure 6 below show the tracking of the Auckland Transport 19.45m truck turning into and out of an access. The red lines represent the body of the vehicle and the blue lines are a 0.5m buffer around the body. The 7m width is therefore only considered to be a temporary non-compliance until the site is rezoned for industrial activities in the future, and is unlikely to have an adverse effect on the road network.

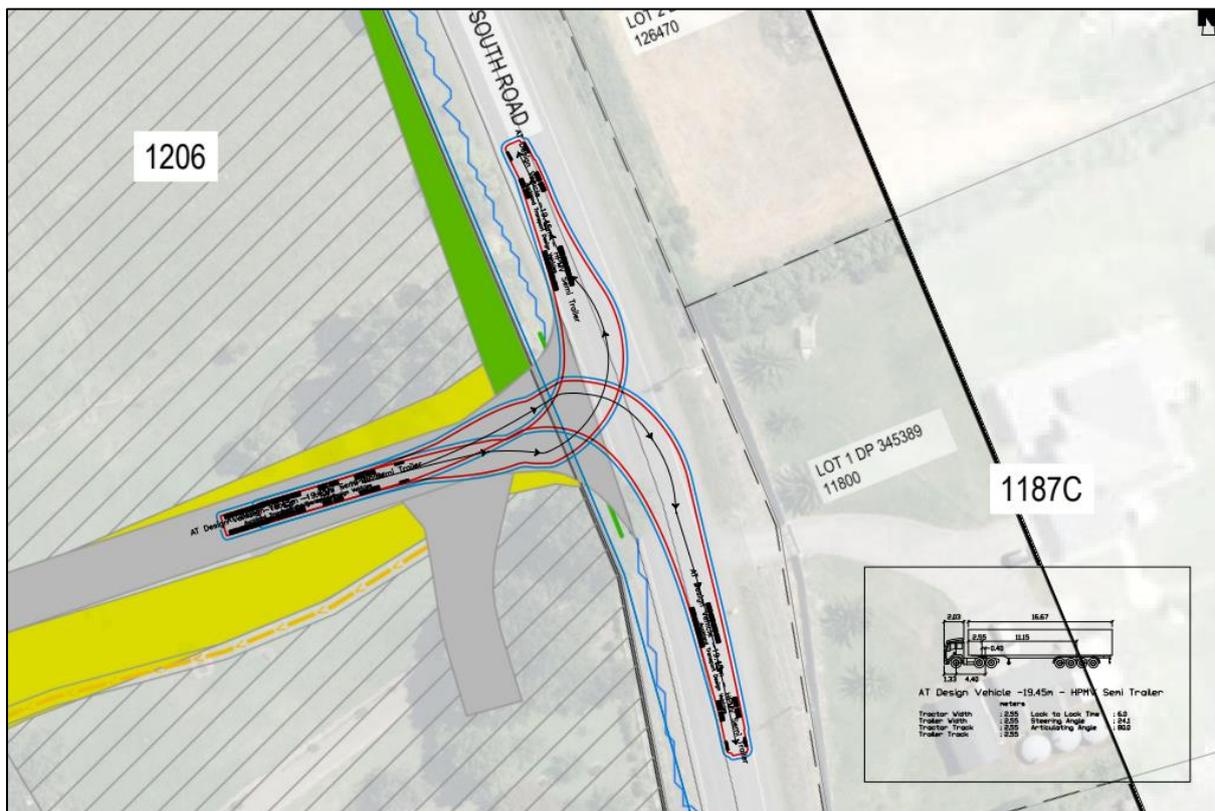


Figure 5: Vehicle Tracking Exit

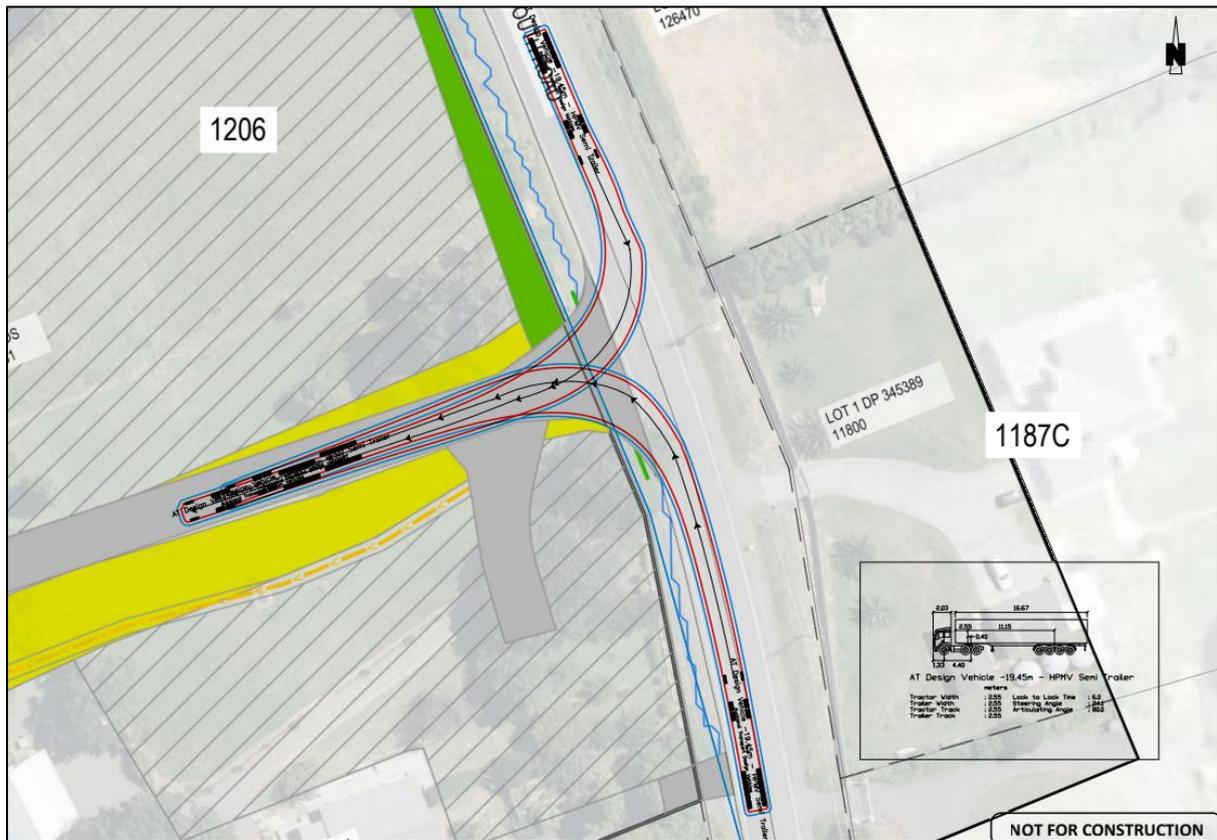


Figure 6: Vehicle Tracking Entry

Conclusion

It is proposed to develop the site at 1206 Great South Road into an outdoor storage yard. The subject site is likely to generate in the order of 10-11 vehicle movements in the peak hour. Based on the assessment undertaken, and considering other neighbouring outdoor storage yards that have been recently established, that the surrounding road network can accommodate these trips.

A new access is proposed to serve the proposed outdoor yard which will be separate from the existing driveway to the on-site dwellings that will be retained. The proposed access is technically wider than standards for the site's present zoning. However, the site is expected to be rezoned as industrial at some stage in the future, at which time the vehicle crossing design will be compliant with Unitary Plan standards.

It is recommended that vegetation south of the proposed access is trimmed back to ensure that appropriate visibility is provided from the access. With this recommendation in place, it is concluded that there are no traffic engineering or transport planning reasons to preclude approval of the proposed development.

We trust this meets your requirements. Please do not hesitate to contact us if you have any questions or require any additional information.

A handwritten signature in black ink, appearing to read 'Aninda Das'.

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