

Memorandum of Advice

Traffic Generation from Proposed Gunnedah Recycling & Resource Recovery Facility

The following responses to Department of Planning and Environment request for further information have been provided by StreetWise Road safety & Traffic Services.

“Confirm the number of construction vehicle movements and provide an assessment of impacts. It is noted construction traffic will enter and exit the site from Allgayer Drive.

It is proposed that all heavy vehicle movements to and from the site during construction will utilise existing B-double routes, then access the site via Torrens Road. A summary of traffic generation during construction is included on Page 41 of the Amendment Report by Outline Planning Consultants Pty Ltd.

The discussion in the Traffic Impact Assessment in regard to construction vehicle volumes and movements was an estimate only. It is assumed that a Construction Traffic Management Plan will be prepared by the construction company prior to commencement of the site works, which will provide a better guide to the vehicle numbers and movements.

“Provide a clear description and diagram of the transport routes. Please confirm the nominated roads are permitted to carry the largest type(s) of vehicles that will be entering and exiting the site.”

It is expected that all unprocessed waste will be transported into the site via the Oxley and Kamillaroi Highways, and other high quality roads which have previously been approved for B-doubles and haulage of quarry materials. Similarly, the haulage of processed waste from the site will utilise similar roads. Figure 11.4 of the Traffic Impact Assessment indicates the traffic movements in & out of Torrens Road to be generated by the proposed Waste Facility. The diagram shows the distribution of traffic to and from Torrens Road into the local road network, including Quia Road, Kamillaroi Hwy, Oxley Hwy and Black Jack Road, which are all approved B-double routes.

Torrens Road is the main access road into an approved industrial precinct, and doesn't include any vehicle weight restrictions. Also, the previous approval for the coal facility (at the western end of Torrens Road) includes an approval from the RTA for up to 125 laden heavy vehicle movements per day, including B-doubles, including the existing intersection of Torrens Road & Quia Road.

“Clarify the proposed number of traffic movements generated by the development. The movements should reflect both a typical day and a worst-case scenario. Please make sure traffic movements make reasonable assumptions about payload and provide justification for any assumptions made.”

At the time of preparing the traffic assessment for the original project (as exhibited), it was expected that a range of different vehicle types would be utilised to deliver unprocessed waste to the Torrens Road facility, while the haulage of processed waste from the site would generally be done by truck & dogs, as currently owned by the applicant, and semi-trailers.

At this time, it is unlikely that Tri-tri B-doubles, with a maximum payload of 53.5 tonnes, will be used, and the largest vehicle will be a B-double, with a payload of 43.5 tonnes. However, the majority of trips are likely to be undertaken by truck & dogs. It is also likely that many of the truck & dogs bringing unprocessed waste INTO the facility will also be used to haul processed waste OUT of the site. If this is the case, then heavy vehicle volumes will be reduced significantly. It is also likely that some waste will be transported by 10m tipper trucks to the facility as well as a small number of light vehicles (i.e. utilities and car & trailers).

The break-up of future haulage vehicles is unknown at this stage. However, for the purposes of this assessment, StreetWise have adopted the following:

Unprocessed waste in:

Semi- trailer (15%), Truck & dog (65%), 10m tipper (15%), Utes & trailers (5%)

Therefore, to determine the number of trips required to haul revised 200,000 tonnes of unprocessed waste to the site, the following has been adopted:

200,000 tonnes per annum = 3846 tonnes per week = 700 tonnes per day (10 hrs)

Vehicle	Max payload (tonnes)	% use	Total Tonnes per day	Laden Trips per day	Return Trips per day	Return Trips per hour
<i>Semi trailer</i>	42.5	15	105	3	6	1
<i>Truck & dog</i>	33	65	455	14	28	3
<i>10m tipper</i>	12.5	15	105	8	17	2
<i>Light vehicles</i>	1	5	35	35	70	7
		100	700	60	120	12

As can be seen from the table above, the adopted mix of haulage vehicles will generate approximately 25 laden heavy vehicle trips a day, and a total of 120 trips per day.

Processed waste out:

Semi-trailer (15%), Truck & dog (85%)

200,000 tonnes per annum = 3846 tonnes per week = 700 tonnes per day (10 hrs)

Vehicle	Max payload (tonnes)	% use	Total Tonnes per day	Laden Trips per day	Return Trips per day	Return Trips per hour
<i>Semi trailer</i>	42.5	15	105	3	6	0.6
<i>Truck & dog</i>	33	85	595	18	36	3.6
		100	700	21	42	5

As can be seen from the table above, the adopted mix of haulage vehicles will generate approximately 42 heavy vehicle trips a day to haul processed waste from the site, and approximately 5 trips per hour.

Total trip generation

The updated trip generation from the proposed Recycling & Resource Recovery Facility in Torrens Road is shown in the table below.

	Daily (7am -6pm)		AM Peak Hr		PM Peak Hr	
	Light	HV	Light	HV	Light	HV
Staff Commute	80	0	6	0	3	0
Unprocessed Waste In	70	50	7	5	7	5
Processed Waste Out	0	42	0	5	0	5
Sub total	150	92	13	10	10	10
Total	242		23		20	

As can be seen from the table above, the estimated total number of trips per day to be generated by the proposed Recycling & Resource Recovery Facility is 242 trips per day, which includes 92 heavy vehicle movements (of which 46 are laden), 80 staff commuter trips and 70 other light vehicle movements. From the above table, heavy vehicles account for only 38% of all future traffic movements to be generated. If the same heavy vehicles are utilised to bring waste in and also haul waste out, the total number of heavy vehicle movements will be further reduced.

The number of additional peak hour trips will be approximately 23 in the morning (10 HV) and 20 in the afternoon (10 HV), which is between 43 – 50% of future generated movements, and almost identical to the volumes estimated in the original StreetWise traffic assessment. Therefore, the number of additional trips shown distributed through the local road network in the previous StreetWise report are still valid.

It should be noted that the volumes shown above are a 'worst case' scenario, and the numbers are likely to be significantly lower, given:

- The trip generation rates are based on processing the maximum annual tonnage of waste per year (200,000 tonnes)
- The trip generation rates are based on ALL heavy vehicles entering the site laden with unprocessed waste, and exiting empty; or entering the site empty and hauling away processed waste
- The applicant owns a fleet of truck & dogs, and plans to utilise these vehicles , as well as other contractor trucks, to haul waste to and from the proposed Recycling & Resource Recovery Facility. It is likely that these trips will be scheduled for maximum efficiency i.e. laden in and laden out, resulting in a significant reduction in the number of heavy vehicle trips to & from the site.
- A maximum of 8 contracted truck drivers utilised on the one day

The following compares the estimated number of heavy vehicle haulage movements (semi-trailers and truck & dogs) generated by the original proposal (250,000 tonnes p.a.) and the current proposal (200,000 tonnes p.a.). As can be seen from the table, the proposed 20% reduction waste processed will result in a 20% reduction in HV trips generated. It should be noted that the worst case shown above involves haulage in one direction, with the HV empty for the return trip. The right hand columns are the more likely scenario, with efficient scheduling of truck movements i.e. ensuring at least 50% of heavy vehicle return trips are also used for hauling waste.

Annual (tonnes)	Empty one-way			Empty one-way			50% re-use		
	250,000			200,000			200,000		
	In	Out	Total	In	Out	Total	In	Out	Total
Semi trailer	8	8	16	6	6	12	4	4	8
Truck & dog	18	18	36	14	14	28	7	7	14
Total			52			40			22

Comparison of estimated daily heavy vehicle movements generated by proposal

“The assessment must consider movements of hazardous and non-conforming waste which would be removed more frequently / in smaller loads. If this is reflected in Figure 11.3 please provide an updated description.”

The development has been modified so that we will not be accepting or processing any restricted, contaminated or toxic waste. If any arrives onsite, it will be rejected and sent back to its place of origin.

“The quantity surveyor report states the project will involve 56 construction and 18 operational staff. The traffic assessment considers only 11 staff arriving and departing the site each day. Please update the TIA to reflect the proposed staff numbers.

The proposed waste facility requires a TOTAL of 18 staff per day, but the hours of operation (7am – 5pm) require a number of the activities to be split between morning & afternoon shifts. The actual number of staff required at any time during the day will generally be 11, with 8 operational staff and 3 admin (including 1 environmental officer). Therefore, the estimated staff traffic volumes and movements to be generated by the proposed development, and shown in the StreetWise traffic report are satisfactory.

The original traffic assessment was prepared 3 years ago, with preliminary staff numbers. The proposed number of staff has since been amended to 18 on-site staff, which includes existing workshop and admin. The future staff at the site will likely comprise:

Weighbridge: 4 staff on split shift. (Each shift: 1 to weigh in/weigh out, 1 to do visual inspections/paperwork)
Admin: 2 staff (invoicing, reporting, compliance)
Enviro: 1 (Compliance, reporting)
Trommel: 2 staff on split shift (Early start/early finish, late start/late finish)
Loaders: 2
Shed staff: 4 staff on split shirt (Early start/early finish, late start/late finish)
Yard staff: 2
Shed Supervisor: 1

As noted above, a number of the future positions will require split shifts (i.e. early shift 7:00 – 1:00pm & late shift 12:00 – 6:00pm), while other roles may be performed by existing staff. A total of 12 additional staff has been adopted for this assessment, plus up to 12 extra truck drivers. The estimated start and finish times (i.e. commute times) of the future Recycling & Resource Recovery Facility staff are:

7:00am 8 operational staff in + 12 truck drivers in
8:00am 2 admin staff in + 2 operational staff in
12:00pm 4 operational staff in (late shift)

1:00pm	4 operational staff out (early shift)
3:00pm	1 admin staff out
4:00pm	1 admin staff out + 2 operational staff out
5:00pm	4 operational staff + 6 truck drivers out
6:00pm	4 operational staff out + 6 truck drivers out

The estimated number of staff commuter movements above include 28 movements in and 28 movements out, for a total of 56 (generally light vehicle) trips. If we also allow additional staff trips for lunch and other activities, and include trips generated by couriers and other deliveries, the total number of staff movements will be approximately 80 per day, or an average of 8 per hour (4 in and 4 out).

StreetWise on-site manual traffic counts undertaken for the previous traffic assessment indicated peak hour traffic in the local road network occurred at 7:45 – 8:45am and 2:45 – 3:45pm on weekdays. As can be seen from the estimated trips to be generated by the Recycling & Resource Recovery Facility (above), the majority of commuter (light vehicle) trips will not conflict with existing peak hours. Allowing for an average of 1 courier or delivery per hour, the estimated number of staff commuter trips and other ‘non-haulage’ movements at peak times are:

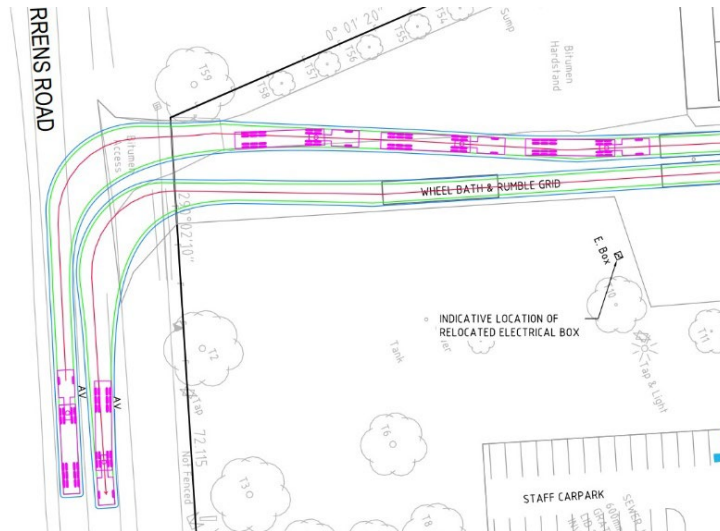
8:00 – 9:00am	5 in & 1 out
2:45 – 3:45pm	1 in & 2 out

Therefore, the estimated number of staff commuter movements during peak hours to be generated by the proposed Recycling & Resource Recovery Facility are higher than those adopted in the original traffic report, but the am & pm peak hour movements are similar.

"Confirm the largest vehicle expected to enter the site and provide swept paths for this vehicle. Please provide swept path diagrams showing vehicles exiting the site onto Torrens Road."

The applicants expect a mix of vehicles to deliver unprocessed waste to the site. As shown in a table above, the largest amount of waste is expected to be hauled by truck & dog, with semi-trailers/B-doubles and single unit trucks also transporting significant amounts.

The design plans for the future Recycling & Resource Recovery Facility have been updated. The amended plans show details of the upgraded driveway / access from Torrens Road into the site, as well as turnpaths for B-double vehicles. As can be seen from the image below, and the swept-paths provided by Martens & Associates, the widened driveway provides adequate width for all heavy vehicles to turn safely in and out of the site, without the need to cross the Torrens Road centreline.



B-double turnpath assessment – Upgraded Torrens Rd access (Martens & Assoc)

"Describe how site traffic will be managed when a B double or B triple (as shown in swept path diagrams) is turning right to enter the site as other vehicles would not be able to exit simultaneously based on the current width of the driveway."

See swept turnpath by Martens & Associates above. Also, when the Waste Facility is approved and completed, the operators will prepare a Traffic Management Plan, Vehicle Movement Plan and Driver's Code of Conduct for the site and related activities. This will show the safe access in & out of the site, as well as required movements within the site. The traffic plans & documents will provide directions for safe movements, parking and activities for all drivers, and is likely to include signage, linemarking, scheduling of all heavy vehicle movements and instructions for 2-way radio operations.

"Confirm how waste will be moved from the unloading shed to the processing shed. Assuming a front-end loader is used, please confirm how will you manage these movements and potential conflicts with vehicles which are collecting and dispatching."

As per above, it is assumed a Vehicle Movement Plan will be prepared to manage vehicle movements on the site when the facility is operational (to be confirmed by operators).

"Describe contingency measures for equipment and vehicle breakdowns."

To be confirmed by operators. It is planned a Vehicle Movement Plan will be prepared to manage vehicle movements on the site when the facility is operational.

"Provide an assessment of stacking spaces available and how the site will avoid vehicles queuing in the public road network."

The swept turnpath diagrams indicate the future site will cater for up to 3 B-doubles entering the site at the same time, with 1 on the weighbridge and 2 queued within the entry road. At the same time, there will be adequate width to allow heavy vehicles to exit via the same driveway without conflict.

Also, it is proposed that a Vehicle Movement Plan will be prepared to manage vehicle movements on the site when the facility is operational, including drivers being in radio communication with the site and other drivers.

"Clarify whether the secondary access to Allgayer drive is only for emergency access during a fire. Please confirm how site traffic be stopped from using this access during daily operations."

All future waste haulage in and out of the site is to be via the upgraded access from Torrens Road. Access will also be available from two access points off Allgayer Drive for other vehicles, including access for fire fighting vehicles.