

Memorandum

To: Sam Coles

From: Santi Botross

Date: 3 September 2021

TTPP REF: 20202

CC: Wayne Johnson

**RE: 25 DUNHEVED CIRCUIT, ST MARYS
RESPONSE TO SUBMISSIONS**

On behalf of reDirect Recycling, The Transport Planning Partnership (TTPP) has prepared this memorandum to address Department of Planning's (DPIE's) traffic query as follows:

8. The Department notes that the swept path analysis (Appendix G of the RtS) shows that 19m articulated vehicles require the whole driveway width for the property when entering and exiting the site, and therefore only one vehicle could enter or exit the site at one time.

Please provide further details on how the movement of vehicles in/out of the site will be managed to ensure safe and efficient access to the site.

In response to the above traffic query, this memo contains further detail on the following aspects:

- The probability of conflict by two opposing vehicles meeting at the site access driveway, and
- Mitigation measures proposed as part of the development to manage and ameliorate the potential impact of vehicles entering and exiting the site concurrently.

Proposed Development

The Proposal is for the operation of a Resource Recovery Facility that will process 150,000 tonnes per annum of waste material. The subject site is located at 25 Dunheved Circuit, St Marys. An existing approved Resource Recovery Facility is currently located on site.

The site currently has approval for the sorting and processing of 18,000 tonnes of waste per annum (DA01/1034 as approved by Penrith Council). It is proposed to increase this throughput to 150,000 tonnes per annum, consisting of:

- 110,000 tonnes wood/timber waste.
- 30,000 tonnes of plasterboard.
- As a result of processing the timber materials, a small amount of waste metals (10,000 tonnes) will be collected on site and transferred elsewhere for recycling.

Processing of timber and wood waste and plasterboard will be conducted in the existing building by way of compaction and shredding/grinding. The majority of the processed wood waste will be transferred to the Borg Manufacturing site in Oberon to be used in the manufacture of particle board and MDF products or will be used in the production of animal bedding or mulch.

Future Traffic Generation

The majority of waste originates from within Sydney by hook bins, front lifts trucks, semi-trailers. The majority of processed material is picked up by larger fleet vehicles including 19 m truck and dogs and 19 m walking floors (95% of the time) while the remaining material is collected by hook bin trucks, and transported back to Oberon.

Delivery of waste for processing will occur over a 24-hour 7-day period, with the majority of small-medium deliveries (by rigid trucks) expected to occur during the day between 7am-4pm and larger deliveries (by articulated trucks) at night between 6pm-3am. The majority of processed material collection (around 80%) will be dispatched from the site after 6pm.

Day-to-day operation of the facility is estimated to generate 46 heavy vehicles and 17 light vehicles (staff) per day. Staff are employed across three shifts across the day/night of which there would be 5-6 staff per shift.

On an hourly basis, there would be an average of 2 trucks per hour accessing the site, either to deliver waste or to collect processed material.

Probability of Conflict Analysis

A probability of conflict analysis has been undertaken for the proposed development in accordance with Austroads Guide to Traffic Management Part 2: Traffic Theory. The analysis is based on a single lane ramp or roadway with two-way traffic flow in the opposing direction.

To estimate the probability of conflict, the following inputs are required:

1. Number of vehicles arriving in a peak hour from each direction.
2. The distance of the conflict area.
3. Average vehicle speed through the conflict area.

These inputs are discussed in further detail herein.

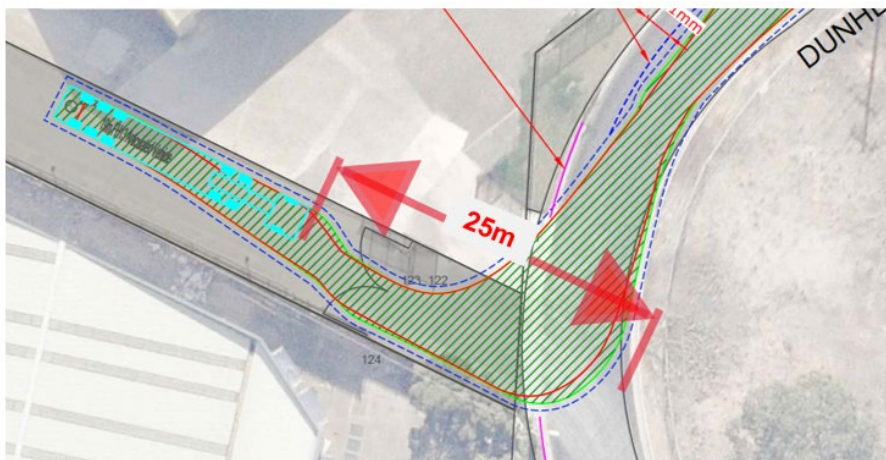
1. Number of Vehicle Arrivals

As assessed in the Traffic Impact Assessment, Table 4.3, the proposed development is expected to generate up to 9 inbound vehicle trips and 9 outbound vehicle trips in any one hour across a 24-hour period. The breakdown of these trips are as follows:

- 2 heavy vehicles inbound plus 2 heavy vehicles outbound.
- 6 light vehicles inbound plus 6 light vehicles outbound (at staff shift change over time).

2. Distance of the Conflict Area

The “conflict area” is defined as the area where only one vehicle is able to travel at a time. In this case, the conflict area would be the length of the driveway and area in front of the driveway where the 19m semi-trailer swept path occurs which is measured as 25m (see below).



3. Vehicle Speed through Conflict Area

The average vehicle speed whilst turning has been assessed at 10 km/h.

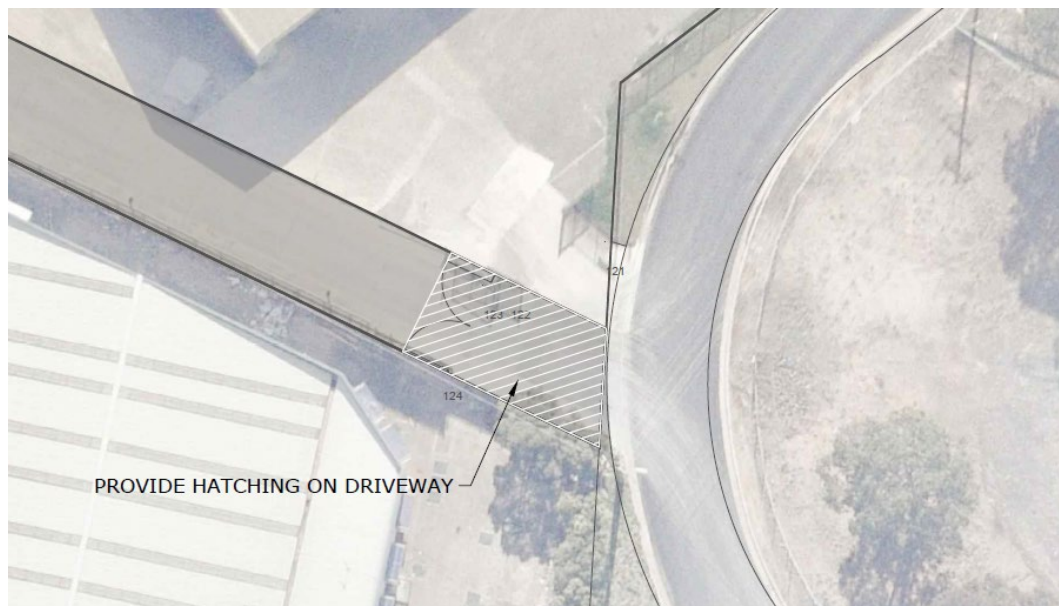
Based on 9 vehicle trips per direction during the operational peak hour, the probability of a vehicle arriving when another vehicle is within the conflict area is calculated to be 0.050% (1 in 2000 chance). Hence, there would be a very low probability of opposing vehicles meeting at the site access driveway.

Should such a conflict occur, the driver would need to wait for the driveway to be clear before proceeding. Under these conditions, the driver would wait up to 9 seconds for the opposing vehicle to clear the driveway.

Mitigation Measures

Notwithstanding the very minor probability and implications due to a conflict at the site access driveway, mitigation measures are proposed to be implemented to manage and ameliorate the potential impacts. A Traffic Control Plan has been prepared illustrating these measures (see Attachment One), while the measures are described in further detail below.

- Provide hatched line marking on the driveway to delineate the conflict area which is used for turning by large vehicles, as shown below.



- Install a STOP sign for the exit movement from the site. The STOP sign would be located prior to the conflict area, as shown below.



In the event that there are two vehicles travelling in the opposite direction, this would allow the drivers of both vehicles time to observe each other before entering the conflict area. At the site access driveway, there is adequate driver visibility between entering and exiting vehicles as shown below.



- Install a convex mirror on a post opposite the site access driveway to enhance driver visibility between a vehicle exiting the site and a vehicle approaching the driveway from the south of Dunheved Circuit. The location of the proposed convex mirror is shown below. An example showing the application of a convex mirror on a local street is shown further below.



- Site induction staff training for truck drivers and operations staff, and implementation of a Driver Code of Conduct that is to be read and signed by internal and external truck operators. The Driver Code of Conduct provides instructions on the nominated travel route to/from site, namely, all heavy vehicles and light vehicles are to enter from the south and exit to the north of Dunheved Circuit. In this manner, vehicles would enter the site by turning left-in and exit by turning left-out. As calculated above, there is a very low probability of two opposing vehicles meeting at the driveway. However, in the case where this would occur, a heavy vehicle that is exiting the site while another vehicle approaches the driveway, is able to exit the driveway fully without impediment.

A further measure for heavy vehicles is that truck operators are required to radio on approach to the site to inform the tip floor staff of the truck's arrival. This would provide staff on-site advance warning prior to the vehicle's arrival to site.

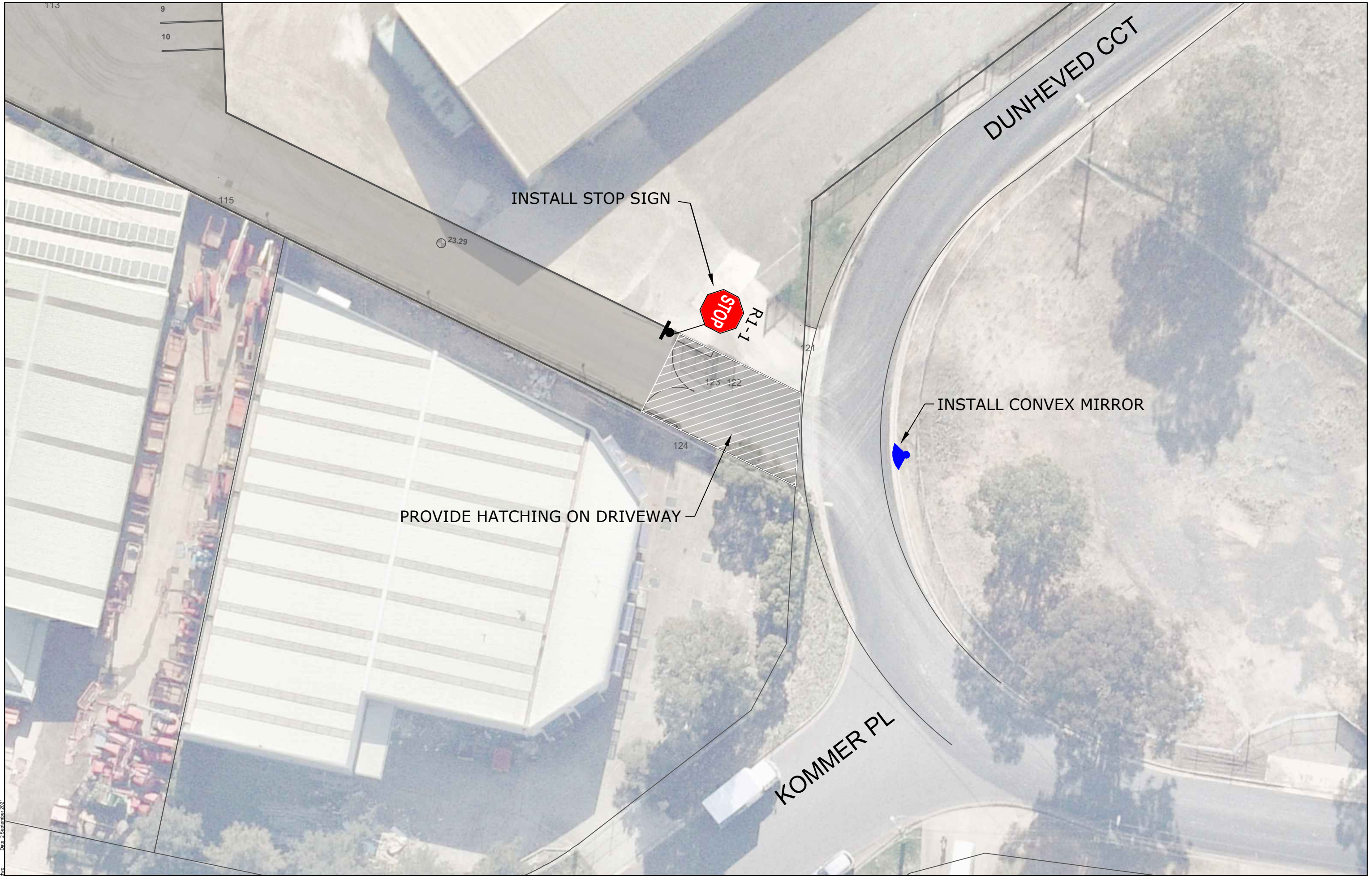
Conclusion

As demonstrated by the further analysis presented by this memorandum, there is a minor probability for a conflict caused by opposing vehicle movements in the site's operational peak period.

Notwithstanding this, mitigation measures will be provided at the site access driveway to manage and ameliorate the potential impact of vehicles travelling in the opposing direction.

Attachment One

Traffic Control Measures at Site Access Driveway



REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	02/09/21



PROJECT	25 DUNHEVED CIRCUIT, ST MARYS		
TITLE	TRAFFIC CONTROL PLAN		

DWG No.		20202CAD006	
		FIGURE 1	
DATE STAMP			
02 SEPTEMBER 2021			
PROJECT No.	SCALE	REV.	
20202	1:300 @A3	A	

Filename: 20202CAD006-210902-CP.dwg Date: 2 September 2021