

Appendix 5 – Traffic assessment

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To Roger Winders

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Subject **Australian Paper Energy from Waste (EfW) - Preliminary Traffic Assessment**

1. Introduction

The aim of this preliminary transport assessment is to identify the current traffic constraints and assess the level of traffic generated by the proposed development of the EfW plant at the Australian Paper - Maryvale Paper Mill site. The assessment will also explore whether traffic impacts of the proposed EfW will have significant impacts on the amenity of local residents.

The following data was obtained by Jacobs to assist in this assessment:

- VicRoads Open Data - traffic volume data, August 2017
- High level vehicle movement summary supplied by Australian Paper Mill (December 2017)

2. Existing site traffic generation

2.1 Existing truck generation

The current Paper Mill site comprises of an established internal road network made up of roads and access points already suitable for heavy freight operations. The proposed EfW site location is on the southern edge of the main site and therefore has good access to the principle entrance/ exit locations, including the access road that leads to Alexanders Road and then towards the Princes Freeway (M1).

All freight traffic passes through a weighbridge at the Paper Mill site. Table 2.1 shows the average number of daily truck movements across the weighbridge (entry or exit) for the months from November 2016 and June 2017.

Table 2.1: EfW Construction Traffic on an average day

Month-Year	Trucks per average day
November 2016	329
December 2016	290
January 2017	311
February 2017	0
March 2017	302
April 2017	0
May 2017	362
June 2017	311

Most logging deliveries are on working days and often the peak period for deliveries is during the early morning. Note that during winter months, wood deliveries are reduced due to the logging activities being affected by the weather.

2.2 Existing truck routing

The majority of trucks to the Paper Mill arrive via an internal haul road as an extension of Alexanders Road to the south. The alignment of this haul road follows the train line into Maryvale.

3. Traffic impacts of construction and operation of the EfW plant

3.1 Impact of construction phase

Based on the available information provided, high level estimates of the traffic accessing the site during construction are detailed below in Table 3.1.

Table 3.1: EfW Construction Traffic on an average day

Vehicle Type	Vehicles per average day	Origin / Destination
Cars	780-800	Numerous
Trucks	25	Melbourne
Over-dimensional truck	1	Melbourne

The routes taken by construction vehicles are estimated above, however much of the traffic generated will be cars driven by construction workers. It is assumed that most workers will drive in their own car to the site each day. There are likely to be peak periods at the start and end of shifts.

Given the large number of cars predicted to be driven to the site by employees during the construction period, this could have a moderate impact on the local road network. The main access route to the site is via Alexanders Road which is a large road with significant spare capacity as highlighted in Section 4.1.2. This will need to be confirmed during the next design stage.

The impact of construction worker traffic would be determined by the volumes by each route and by how concentrated the peak period for traffic is. It would also depend upon how the peak period for local traffic interacts with peak periods for the arrival and departure of construction workers.

3.2 Impact of site at operation

Table 3.2 shows an estimated number of vehicles using the site on an average day once the EfW site is operational.

Table 3.2: Traffic on an average day – operational site

Vehicle Type	Vehicles per average day	Origin / Destination
Cars – Visitors/Employees	13	Melbourne (55%) / Traralgon (5%) Gippslands (40%)
Garbage Composter Trucks	15	Traralgon (20%) / Gippsland (80%)
20-25t Trucks	15	Gippsland
A-Double Trucks	23	Melbourne
20t-25t Trucks	6	Melbourne
Chemical Tray Trucks	2	Melbourne
Miscellaneous Deliveries	5	Melbourne
TOTAL VEHICLES	79	

Figure 3.1 shows the total number of trucks on key roads as Average Annual Day Traffic (AADT) with the estimated additional vehicles generated by the site during operation shown in brackets.

Figure 3.2 shows the total traffic numbers (all vehicles) on key roads as Average Annual Day Traffic (AADT) with the estimated additional vehicles generated by the site during operation shown in brackets. The destination / origins of cars has been assumed to be similar to that of trucks.

This demonstrates that the number of vehicles added by this development will have a minimal traffic impact upon the local road network. The EfW project would add small amounts of truck traffic to roads in the local area relative to current volumes. The only location at which site volumes would be significant is Alexanders Road where the site would increase trucks volumes by 13%, and overall traffic by 2%.

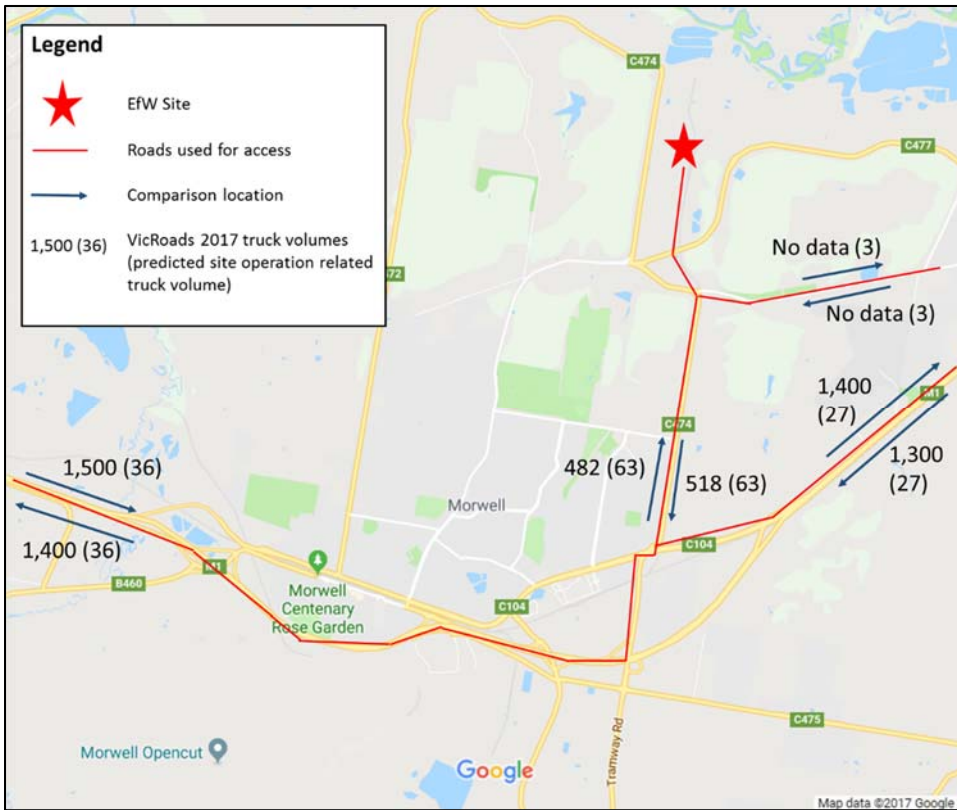


Figure 3.1 : Number of generated trucks during operation compared to existing trucks on key local roads

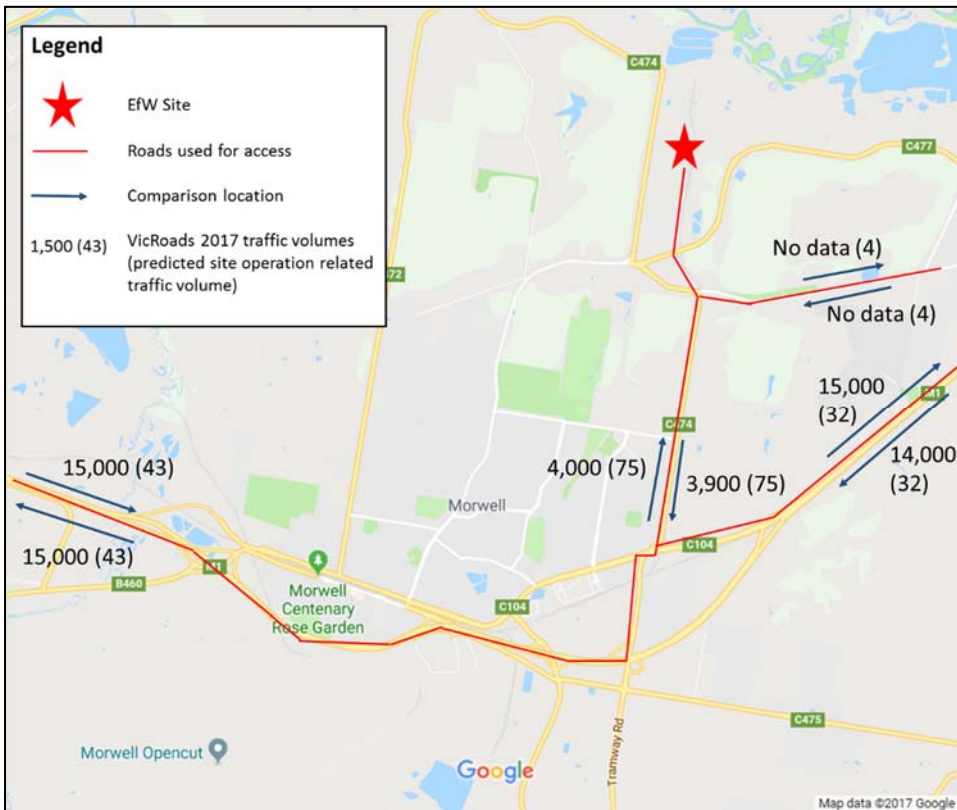


Figure 3.2 : Number of generated total vehicles during operation compared to existing vehicles on key local roads

4. Traffic Impacts upon key local roads and upon resident amenity

4.1.1 Princess Freeway (M1)

The Princess Freeway is the major road that connects the La Trobe Valley with Melbourne as well as regional towns in East Gippsland. Through the township of Morwell, the M1 is fully grade separated and consists of two lanes in each direction, the speed limit is 110 kilometres per hour. The M1 is a key strategic road that provides access to jobs and services for residents in the La Trobe Valley.

East of Princes Drive in Morwell, the M1 carries 29,000 vehicles on an average day across both directions according to the VicRoads Open Data website. Trucks make up 9% of this volume. To the west of Morwell, 30,000 vehicles travel on the road daily across both directions and trucks make up 10% of this number.

Figure 3.1 and Figure 3.2 clearly show that the traffic impacts of the scheme are minimal on the Princes Freeway. It would be expected that this level of increase in traffic would not impact upon local resident amenity, in terms of access, noise or other impacts.

4.1.2 Alexanders Road and Tramway Road

Alexanders Road is a local road that provides access to the Paper Mill site from the Princes Freeway. It is also a key access route for local businesses that are located along Alexanders Road and Centre Road that runs parallel to it. Residents rely on Alexanders Road for access to properties situated to the west, with access provided via Airlie Bank Road and Crinigan Road.

Based on a desktop review, it appears that this road is built to a high standard. It has a permanent lane for on-street parking along the length where there are businesses and along the same stretch contains a wide central lane which can be utilised for right-turning movements.

Tramway Road follows on from Alexanders Road to the south and connects to the Princes Freeway. It provides some local access to local businesses. The road is built to a high standard with dedicated right-turn lanes. There is a level crossing situated on Tramway Road just south of Princes Drive.

Alexanders Road carries 7,900 vehicles per day across both directions, whilst Tramway Road carries 10,200 vehicles per day. 16% of vehicles on Alexanders Road are trucks and 15% are trucks on Tramway Road. Both roads are not considered to have midblock traffic volumes that are close to the capacity of the road.

Consequently, it is not expected that the level of traffic generated by the proposed EfW plant will significantly impact on local traffic conditions during the construction or operation phases. Construction traffic generated by temporary workers will need to be further assessed once more information is available about shift patterns and where workers will be travelling to/ from. This will help confirm that the impact of this traffic will be negligible.

4.1.3 Local intersection constraints

Intersection of Alexanders Road, Princes Drive and Tramway Road

The intersection of Alexanders Road, Princes Drive and Tramway Road will be used by all vehicles heading towards the Princes Freeway, for accessing Melbourne and wider Gippsland. It is therefore essential that this intersection can cope with all trucks predicted to pass through these routes. In particular, it is forecast that during construction an 'over-dimensional' vehicle will be required to use this route.

Currently there is a warning sign and speed restriction for heavy vehicles who wish to turn into Alexanders Road heading north towards the site. This is shown in Figure 4.1. The intersection layout is shown in Figure 4.2, with the location of the sign circled in red.



Map data ©2017 Google

Figure 4.1 : Speed restriction sign on left-turn into Alexanders Road from Princes Drive, Morwell



Map data ©2017 Google

Figure 4.2 : Layout of intersection of Alexanders Road, Princes Drive and Tramway Road

Westbound on-ramp to Princess Freeway from Tramway Road

Figure 4.3 shows the approach ramp to the Princes Freeway westbound towards Melbourne from Tramway Road. The left-turn from Tramway Road and the ramp itself is steep, and further analysis may be required to check its suitability for 'over-dimensional' vehicles.



Map data ©2017 Google

Figure 4.3 : Westbound on-ramp to Princess Freeway from Tramway Road, Morwell

4.1.4 Effects upon the amenity of local residents

Traffic accessing the proposed EfW site during both construction and operation will be routed along roads that have only a minor residential access role. There are no points along the access routes proposed where heavy vehicles will be passing local residencies.

Alexanders Road provides local access to residencies to the west via Airlie Bank Road and Crinigan Road. It also provides access to businesses located along the southern section of Alexanders Road between Princes Drive and Crinigan Road.

From the analysis carried out for both the construction and operation phases, the estimated additional traffic generated will not be significant enough to result in negative traffic impacts. No significant reduction in travel times along Alexanders Road or any other local road is expected, however this will need to be confirmed during the next design stage.

5. Next Steps

The information provided in this memo is a high level assessment of the proposed traffic generation and traffic impacts of the proposed EfW plant at the Australian Paper - Maryvale Paper Mill site.

Based on this high level assessment, it is assumed that the traffic impacts of the proposed EfW plant will be minimal and will not impact on the overall viability of the site.

It is recommended that the development site investigations proceed to the next stage and that a traffic impact assessment report be undertaken to identify the impacts of the existing road network and to identify proposed road network upgrades, in particular for heavy trucks and over-dimensional vehicles.

The next steps that will be required to better assess the potential impacts of the project should include:

- Establish the existing conditions for the surrounding road network
- Confirm the traffic generated by the site, during both the construction and operation phases
- Develop a better understanding of the likely characteristics of construction worker traffic
- Confirm the distribution of traffic to/ from the site based on known origin-destination paths
- Assess the site access points to determine if they are suitable to accommodate the largest vehicle types that will be required to access the site
- Undertake intersection capacity analyses to confirm if affected intersections and access roads are able to cater for the predicted increases in traffic volumes, particularly during construction
- Undertake swept-path checks for affected intersections to confirm that the intersections can accommodate the proposed largest vehicle type
- Investigate the impact to local traffic based on proposed heavy vehicle origin-destination paths