



Waste Management Facility, North St Marys NSW

Nassif Civil Pty Ltd

Traffic Impact Assessment

July 2024

SECAsolution >>>

Resource recovery facility – Proposed Expansion to existing facility, North St Marys

Traffic Impact Assessment

Author: Sean Morgan/Cathy Thomas

Client: Nassif Civil Pty Ltd

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Newcastle Ph (02) 4032 7979
PO Box 570, Toronto NSW 2283
www.secasolution.com.au

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1 Introduction

1.1 Background

Seca Solution was commissioned through Jackson Environment Planning on behalf of Nassif Civil Pty Ltd to prepare a Traffic Impact Assessment for the proposed expansion of the existing waste management facility at St Marys, Sydney. This report will form part of the supporting documentation for the Environmental Impact Assessment and Development Application for the project.

The project will be reviewed by Penrith City Council as part of their approval process for the project development application.

The site is located at 29-37 Plasser Crescent, North St Marys NSW 2760 within an existing light industrial estate and is across two sites (Lots 15 & 16 DP263353). Penrith City Council are the road authority for the project site. For the project site, vehicle access will be maintained via the existing driveways on Plasser Crescent only. Access to the greater road network is then via the traffic signals at Kurrajong Road and Glossop Road.

This traffic impact assessment has been prepared in accordance with Austroads Guidelines and the Guide to Traffic Generating Developments and supplements published by TfNSW.

Seca Solution previously completed the traffic impact assessment for the current resource recovery facility located at 33-37 Plasser Crescent including traffic data collection, assessment of the traffic generation and an assessment of the impacts of the traffic demands associated with that project on the local road network. Traffic data has been updated to undertake this assessment.

1.2 Scope of Report

The scope of this report is to review the traffic and access impacts associated with the proposed development and to assess the access arrangements for the development. The report provides advice on road network capacity, access issues and a safety review.

Nassif Civil proposes to operate a best practice construction and demolition (C&D) Resource Recovery Facility (RRF) at 29-37 Plasser Crescent North St Marys (Lots 15 & 16 DP263353). The RRF will have an annual waste throughput of up to 99,000 tonnes per annum. Waste received at the RRF will consist of construction and demolition waste in skip bin collects from the Greater Metropolitan region. Waste will be received in skip bins collected by Nassif Civil and other collection contractors servicing building sites. The general community will not have access to the Site and the facility will not accept waste from the public. All waste receipt and processing will occur inside the warehouse. There will be no outdoor storage of waste.

The existing facility operating at this location processes 30,000 tonnes per annum.

1.3 Issues and Objectives of the study

The issues relevant to the development proposal are to:

- Determine the future traffic generation for the development;
- Assess impact on the local road network due to the additional flows;
- Review the access arrangements for the development;
- Assess any other transport impacts associated with the development including a safety review.

The objective of the report is to document the impacts of the proposed development and provide advice on any infrastructure work required on the external road network as part of the development.

1.4 Planning Context

In preparing this document, the following guides and publications were used:

- The Guide to Traffic Generating Developments, Version 2.2 Dated October 2002 published by TfNSW.
- RMS TDT 2013/04 "Update Traffic surveys August 2013" published by TfNSW.
- Penrith City Council Development Control Plan (DCP).

1.5 Response to SEARS and Authority Requests

Transport for NSW (TfNSW) has requested that following matters be addressed in the future Environment Impact Statement (EIS) for this transport and traffic impact assessment has been prepared.

ISSUE	RESPONSE
Details of all traffic types and volumes likely to be generated by the proposed development during construction and operation, including a description of haul route origins and destinations, including:	
a. Daily inbound and outbound vehicle traffic profile by time of day and day of week (if travel patterns differ across the week).	Sec 4 Transportation Analysis
b. Site and traffic management plan on how to manage number of vehicles likely to be generated during construction and operation and awaiting loading, unloading, or servicing can be accommodated on the site to avoid queuing in the surrounding road network.	Separate Report - Operational Management Plan
c. Detailed plan of proposed layout of internal road network to demonstrate that the site will be able to accommodate the most productive vehicle types and parking on site in accordance with the relevant Australian Standard and Council's Development Control Plan.	Appendix A – Site Plan
d. Plans detailing how the proposed development connects to adjoining sites to facilitate their future development for their intended purposes.	Appendix A – Site Plan
e. Swept path diagrams to demonstrate vehicles entering, exiting, and manoeuvring throughout the site.	Appendix B – Swept Paths
f. details of road upgrades, infrastructure works, or new roads or access points required for the development.	No upgrades or infrastructure works required. Sec 3.2 Access – widening of existing driveways
g. details of travel demand management measures to minimise the impact on general traffic and bus operations, including details of a location-specific sustainable travel plan (Green Travel Plan) and the provision of facilities to increase the non-car mode share for travel to and from the site.	Sec 4.6 Public Transport Car sharing shall be encouraged through the provision of on site parking for participants. Staff will be encouraged to use public transport although the frequency of services (some bus services run only hourly) does not support shift operations.
h. details of the adequacy of existing public transport or any future public transport infrastructure within the vicinity of the site, pedestrian and bicycle networks and associated infrastructure to meet the likely future demand for the proposed development; and	Sec 2.6 Existing Public Transport Staff numbers are low with two shift per day. Infrequency of bus services does not support shifts operations.
i. an assessment of traffic and safety impacts of the proposed development on public transport pedestrian and cyclists.	Sec 4.4 Impact on Road Safety
j. Identify the existing and future transport infrastructure and any possible impacts of the construction and operation of the proposal on this infrastructure and associated mitigation measures.	The site is existing with minimal changes on site associated with the increase in capacity. As such the construction and operation of the proposal sees no impact on existing or future transport infrastructure. The proposal is not expected to impact the works associated with the Sydney Metro-Western Sydney Airport.

k. opportunities to improve public and active transport and promote sustainable transport initiatives, including through the preparation of a Green Travel Plan.	The small number of staff do not create opportunities for changes to public transport services. Staff will be encouraged to use public transport and to car share. Car sharing will be supported through the provision of priority parking on site.
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2 Existing Situation

2.1 Site Description and Proposed Activity

2.1.1 Site Location and Access

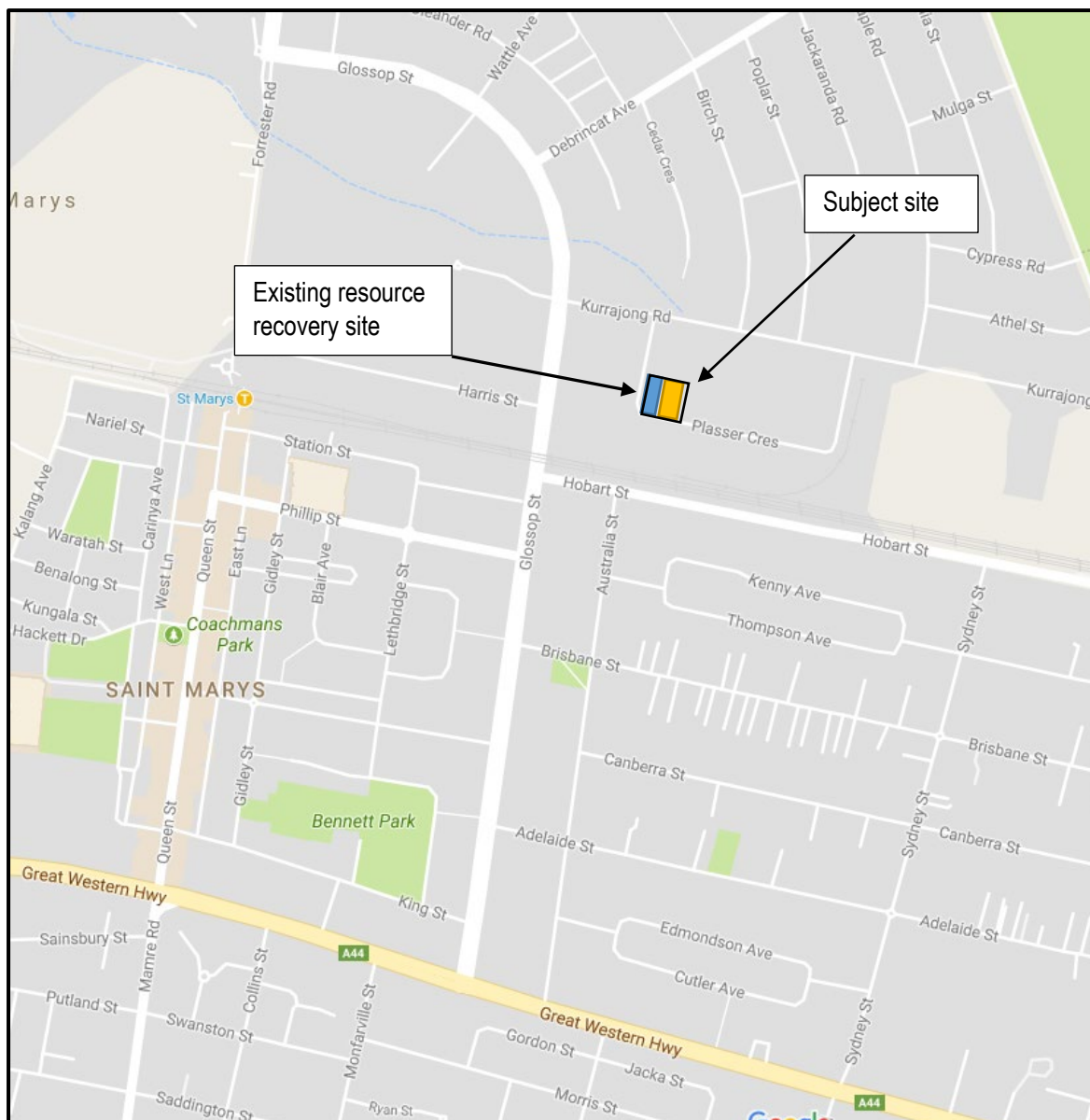
The proposed development site is located in the E4 General Industrial zoned area of St Marys within the Penrith City Council region. The site is easily accessible from the Kurrajong Road to the North and Glossop Street to the West. The site is in the vicinity of a Low-Density Residential Zone to the North and Medium Density Residential Zone to the South. St Marys Public school is located at approximately 700 m north-west of the site. The site is accessed by trucks via Kurrajong Road and Glossop Street, connecting the site to the Great Western Highway.

The total site area of the combined lots is 4295m², with Lot 15 making up approximately 2015m² and Lot 16 making up 2280m². Each lot has a shed with office facilities, bin storage areas, car parking area and truck parking area.

Concrete hardstand surrounds the sheds with some gravel areas and limited landscaping along the western fence line. A fence also borders the south and west site boundaries whilst buildings form the northern and eastern boundaries. A stormwater network consisting of down pipes, pits covered with grate filters and non-woven geotextile membrane and underground piping is connected to municipal stormwater network.

Additionally, 33-37 Plasser Crescent has a weighbridge and wheel wash system installed on-site for the existing operations of a 30,000 tonne/year RRF.

The location of the site is shown below in Figure 2-1.



Source: Googlemaps

■ Figure 2-1 - Site Location within context of local road network

2.2 Existing Traffic Conditions

2.2.1 Road Hierarchy

The major road through the immediate locality is **Glossop Street** which runs in a predominantly north-south direction to the west of the subject site. It provides an important road link through the locality, providing a connection between the Great Western Highway to the south (approximately 1.3 kms from site) and the increasing development to the north in St Marys and Marsden Park. Glossop Street forms part of the regional road network in Sydney (Regional Road 7167). In the vicinity of the subject site, it provides two lanes of travel in both directions and provides access over the main railway line to the south of the site. There are additional turn lanes provided to allow for right turns into the side roads and the major intersections are controlled by traffic signals. It connects with the Great Western Highway to the south via a 3-way signal-controlled intersection, operating under the posted speed limit of 60 km/h.

The **Great Western Highway** to the south provides a high standard of road access between Penrith to the west and Parramatta to the east. It generally provides three lanes of travel in both directions with additional lanes at the major intersections to maintain capacity. The major intersections are all controlled by traffic signals to ensure capacity is maintained as well as road safety. The Great Western Highway provides access to the greater road network allowing for access across the greater Sydney metropolitan area. These include connections to the M7 and the M4 further south of the Great Western Highway.

Access to the subject site is via Kurrajong Road and Plasser Crescent. **Kurrajong Road** connects with Glossop Street via a 4-way signal controlled intersection. Kurrajong Road provides a single lane of travel in both directions with parking permitted to both sides along most its length. There are non-continual pedestrian footpaths provided along its length and it provides access to the light industrial area along its southern side (where the subject site is located) and residential land to the north. It operates under the posted speed limit of 50 km/h.

Plasser Crescent provides access to the subject site and the adjacent light industrial area. It runs in a semi-circular pattern, connecting with Kurrajong Road at both ends. It provides a single lane of travel in both directions and provides for kerb side parking to both sides. There are no footpaths provided along its length and it operates under the posted speed limit of 50 km/h. It intersects with Kurrajong Road via simple give way control with Kurrajong Road being the priority road.

2.2.2 Roadworks and Traffic Management Works

As at March 2024 there were no road works occurring within the immediate vicinity of the subject site.

To the south-west of the site, works are being undertaken as part of the future Sydney Metro-Western Sydney Airport service.

2.2.3 Pedestrian and Cycling Facilities

There are no pedestrian footpaths or cycling facilities on the local streets in the vicinity of the subject site. Cyclists are able to ride on road as required whilst pedestrians are able to walk on the edge of the road where possible or on the verge as required. There are footpaths to both sides of Glossop Street allowing for pedestrian access locally which would allow for pedestrian access to St Marys Station. There are no cycling facilities on Glossop Street and its environment does not encourage cycling use, due to the high traffic volumes, high percentage of heavy vehicles and the traffic speeds. No cyclists were observed using this road during the site work and less than 20 pedestrians were observed using Glossop Street.

2.3 Traffic Flows

2.3.1 Peak Hour Flows

As part of the traffic study work Seca Solution engaged Matrix to completed traffic surveys at the 4-way signal-controlled intersection of Glossop Street and Kurrajong Road. These surveys were completed during the morning and afternoon peak periods on Wednesday 10th April 2024. The surveys are provided (Appendix C) and summarised below along with data collected by Seca Solution during the morning and afternoon peak periods on Friday 26th May 2017.

Table 2-1 2017 and 2024 Traffic Data

Road		AM northbound	AM southbound	Two-way	PM northbound	PM southbound	Two-way
Glossop St south of Kurrajong Rd	2017	1,195	1,338	2,533	1,456	1,664	3,120
	2024	1,132	1,030	2,162	1,539	1,793	3,332
Road		AM eastbound	AM westbound	Two-way	PM eastbound	PM westbound	Two-way
Kurrajong Road	2017	282	279	561	287	429	716
	2024	209	146	355	253	369	622

Given the mature nature of the road network in the locality of the site, and the high traffic flows observed along Glossop Street, it can be seen that the current traffic flows at this intersection are similar to past flows. Observations on site show that the intersection continues to operate as it has previously.

2.3.2 Daily Traffic Flows

Normal traffic engineering practice allows for peak hour traffic flows to typically represent 10% of daily traffic flows. Based upon the data collected above this would indicate that the daily traffic flows on Glossop Street would be in the order of 28,000 vehicles per day whilst on Kurrajong Road the daily traffic flows would be in the order of 5,000 vehicles per day, at its western end.

2.3.3 Daily Traffic Flow Distribution

The daily traffic volumes would be reasonably balanced in both directions, although the above data indicates a slight bias in traffic movements southbound in both the morning and afternoon periods on Glossop Street. The flows on Kurrajong Road show a bias eastbound in the morning and westbound in the afternoon peak associated with commuter trips heading to work or home at the end of the working day.

2.3.4 Vehicle Speeds

No speed surveys were completed as part of the study work. The volume of traffic on Glossop Street combined with the horizontal alignment of the road would seem to encourage drivers to travel at or above the posted speed limit and the heavy vehicles could be seen to be travelling at a reasonable speed to maintain momentum due to a slight up-grade in both directions on Glossop Street on both approaches. A review of the crash data for the area showed that there has been no accidents on Plasser Crescent and the 2 accidents on Kurrajong Road did not indicate speeding was a factor.

2.3.5 Existing Site Flows

The site at 29-31 Plasser Crescent was previously used as a warehouse type facility for the supply of render and textures with heavy vehicle access for deliveries for semi-trailer sized vehicles with access via the existing single driveway. The layout of the site required these large vehicles to reverse into the site off Plasser Crescent. This use generated light vehicle movements associated with 10 staff movements as well as truck access requirements across the normal working day.

2.3.6 Heavy Vehicle Flows

Heavy vehicle movements in the vicinity of the subject site on Glossop Street are high, reflective of its importance in the road network and on-going construction work north of the area. Heavy truck movements included large semi-trailers associated with deliveries to industrial users in this area and beyond to the north, allowing for connection from the Great Western Highway or the M4 Motorway.

Heavy vehicles along Kurrajong Road were much lower and relate to the existing light industrial users off Plasser Crescent.

2.3.7 Current Road Network Operation

Observations on site during the peak periods showed that the road network currently operates well with no significant delays and congestion at the key intersection of Glossop Street and Kurrajong Road. These traffic signals operate reasonably well and provide priority to the heavy through traffic movements along Glossop Street. Queues developed at the red signals but generally disperse in each cycle and no congestion was noted during either the AM or PM peak periods.

Kurrajong Road operates very well with minimal delays and no congestion. The intersections of Plasser Crescent and Kurrajong Road both operate very well with no delays or congestion noted. It was noted that access to the various existing users along Plasser Crescent require reversing of heavy vehicles into or out of the sites, however the low traffic flows on Plasser Crescent mean that this can occur with minimal congestion for road users and be undertaken in a safe manner.

2.4 Traffic Safety and Accident History

Accident data for the intersection of Glossop Street and Kurrajong Road, including to the intersection with Plasser Crescent, for the five year period 2018 to 2022 is shown below. During this period 5 accidents occurred at the intersection of Glossop Street and Kurrajong Road. Of these 2 involved opposing right turning movements, one a rear end. A single accident in the hours of darkness involved a pedestrian with serious injuries noted. Two accidents have occurred over the same reporting period along Kurrajong Road involving right turns at driveways, one resulting in a serious injury.

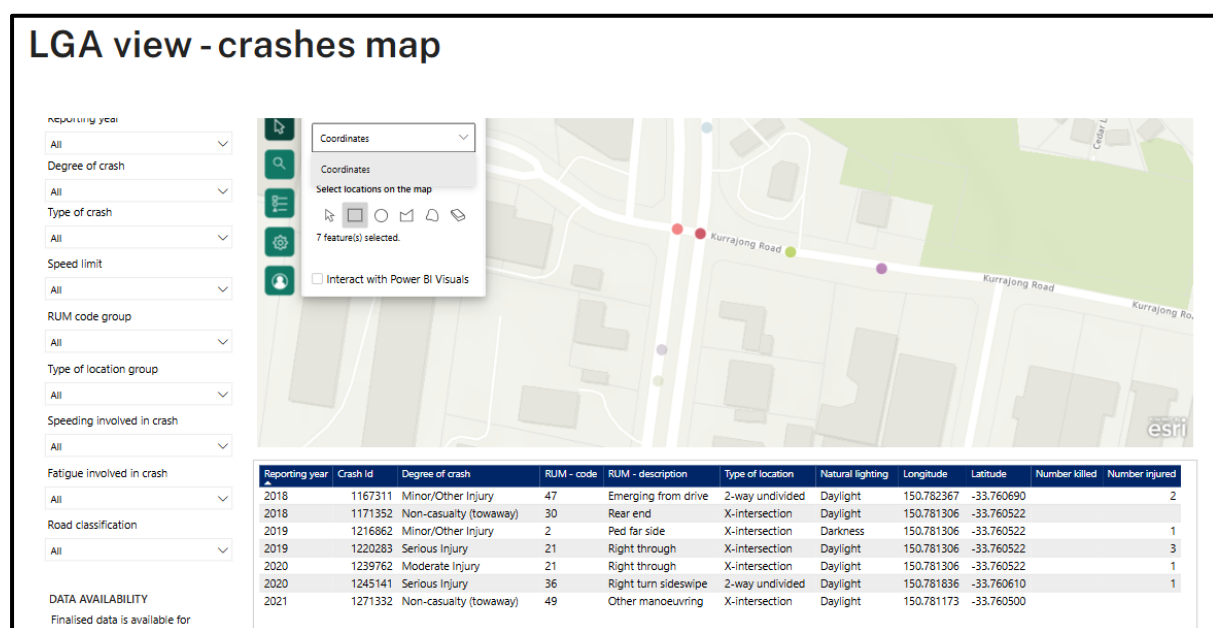


Figure 2-2 Crash Data on Kurrajong Road and Glossop Street (Source: TfNSW)

The intersection of Glossop Street and Kurrajong Road is reasonably well laid out and allows for all turning movements. There are sheltered right turn lanes on Glossop Street to cater for the right turns and whilst it is noted that the phasing allows for leading right turns, the design also permits drivers to turn right from Glossop Street in both directions without a dedicated right turn arrow. These improve the capacity of the intersection and observations show that these right turns can occur in a safe manner, due to the good visibility available for drivers.

2.5 Parking Supply and Demand

2.5.1 On-street Parking Provision

Parking is permitted along both sides of Plasser Crescent and Kurrajong Road. No kerb side parking is permitted along the length of Glossop Street.

2.5.2 Off-Street Parking Provision

There is parking provided within the various lots in the general vicinity of the subject site on Plasser Crescent which caters for the individual needs of the lots.

2.5.3 Parking Demand and Utilisation

During the site work, it was noted that there was a high demand for parking on-street, along both Plasser Crescent and Kurrajong Road. This is associated with the various users along these roads including staff parking and parking of vehicles associated with the operations on these sites e.g. car repair shops with vehicles parked on street awaiting repair work.

2.5.4 Set down or pick up areas

No set-down or pick-up zones noted in the area.

2.6 Public Transport

2.6.1 Rail Station Locations

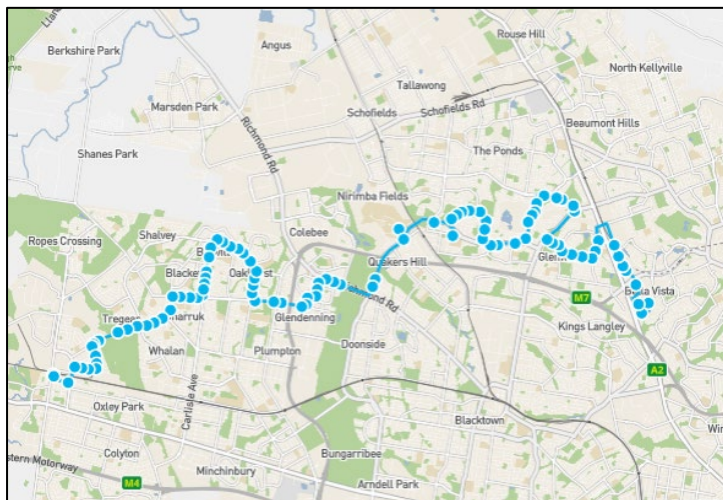
The subject site is approximately 1200 metres from St Marys train station allowing for pedestrian access. St Marys train station is located on the western train line and allows for connections to the Blue Mountains to the west and the centre of Sydney to the east, as well as a connection to the other Sydney train lines and the future Sydney Metro line. This train station provides access to a high frequency of trains which appeal to commuters and potentially workers associated with the light industrial area off Plasser Crescent.

2.6.2 Bus Stops and Associated Facilities

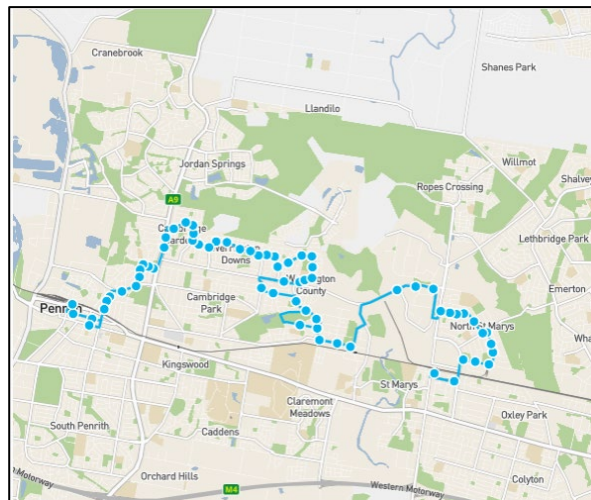
There are bus stops located on both Glossop Street and Kurrajong Road which allow for access to buses for the staff associated with the project site. These bus stops are within 500 metres of the subject site. These stops provide a sign only with no seats or shelter.

Route 745 Norwest Private Hospital to St Marys via Stanhope Gardens	Hourly service 6:49-19:00
Route 782 St Marys to Penrith via Werrington	Services to St Marys only between 9:21-14:05
Route 758 St Marys to Mt Druitt	Half hourly Mon-Sat (last service 22:53 M-F), Hourly Sunday and Public Holidays
Route 759 St Marys to Mt Druitt via Ropes Crossing	Hourly services Mon- Sat, half hourly in peak periods (last service 21:22)

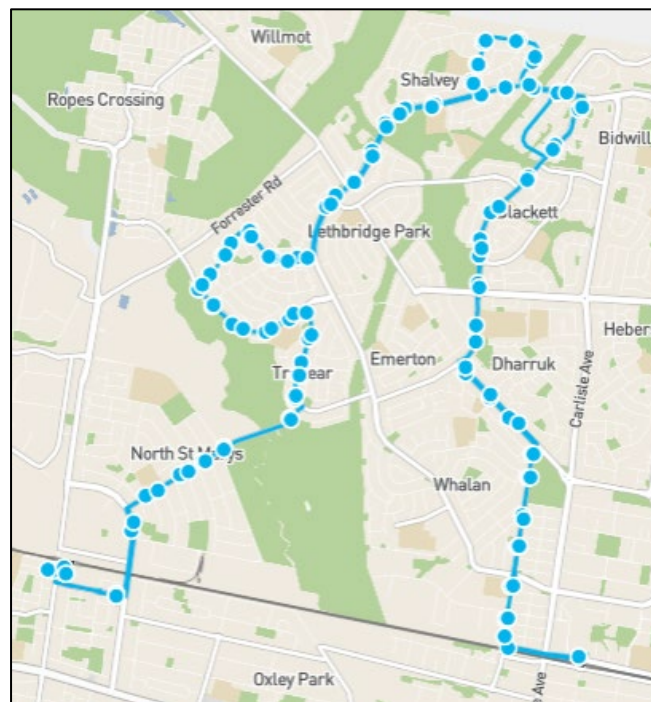
Route 745 Norwest Private Hospital to St Marys via Stanhope Gardens



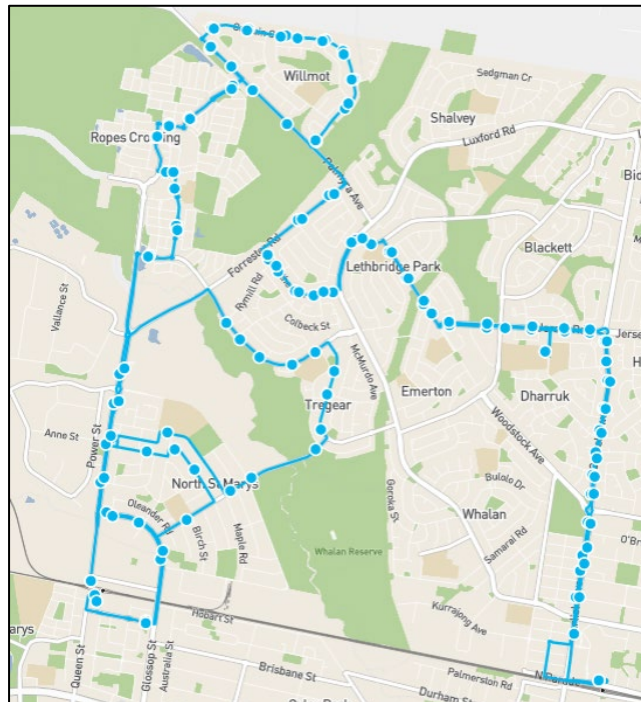
Route 782 St Marys to Penrith via Werrington



Route 758 St Marys to Mt Druitt



Route 759 St Marys to Mt Druitt via Ropes Crossing



2.7 Other Proposed Developments

There are no other major developments currently occurring in the immediate vicinity of the subject site. A review of the aerial photograph for the immediate locality shows that the area is well developed and there is limited opportunity for new development except by increasing dwelling density.

3 Proposed Development

3.1 The Development

To ensure that the development complies with contemporary standards for waste and transfer stations, a number of site upgrades are proposed as part of the development application.

These include:

- Partial demolition of the existing structure on Lot 15, DP263353;
- Construction of a new shed on Lot 15, DP263353;
- Installation of an additional 20 m pit style weighbridge inside the site entrance of Lot 15, DP263353;
- Installation of processing equipment, including:
 - o A vibratory finger screen;
 - o Two elevated manual picking stations;
 - o Density separator;
 - o Magnetic separator; and
 - o Timber shredder.
- Installation of conveyor belts to transfer materials between sorting equipment and storage bays;
- Conveyor belts will traverse both indoors and outdoors, and where outdoors, conveyors will be enclosed to avoid dust generation and reduce noise levels;
- Separate waste storage bays to separate and store sorted waste prior to being loaded onto trucks for off-site recycling and reuse;
- Upgrades to site office, lunchroom, and amenities for staff, truck drivers and visitors; and
- Improvements to landscaping provided to the site.

Nassif Civil proposes to operate the facility from 6am - 11pm Monday to Friday, and 7am - 3pm Saturday. There are no proposed operations on Sundays or public holidays.

Skip bin deliveries will be scheduled throughout the day between 6am and 11pm (Monday to Friday), and 7am to 2pm on Saturdays.

Bulk load out of processed waste materials will regularly occur during the week as bays / bins fill up and required off-site recovery or disposal. Bulk loadout of processed waste will be scheduled around collection runs to avoid congestion on site.

The existing facility in this location has an approval for processing up to 30,000 tonnes per annum with this proposal seeking to increase this to 99,000 tonnes per annum. The site will operate in a similar manner to the existing facilities with access to remain off Plasser Crescent.

Maximum staff on site will be 14, 10 operational staff and 4 administration. This is an increase of 4 over current daytime staff numbers. There shall also be an afternoon shift (10) as well a similar number on Saturday.

The operations shall allow for the use of 12.5 m long heavy rigid trucks that carry waste bins to and from the site. Outgoing sorted waste will be removed with 19.0 metre semi-trailers.

3.1.1 Phasing and Timing

The development will be established in a single phase to allow for full processing of 99,000 tonnes per annum. No staging of the project has been allowed for in this assessment, although it is considered that the development may not generate full capacity at the commencement of the project.

The development will be staged so that 33-37 Plasser can continue to operate while all construction associated with 29-31 Plasser is completed. Then the whole facility will be temporarily closed while 33-37 Plasser is refitted.

3.1.2 Access and Circulation Requirements

All vehicles are to enter and exit the site in a forward direction.

No trucks are to queue or hold on street.

In accordance with AS2890.2 Clause 3.4.1 Access Driveways on a minor public road, vehicles shall be able to enter and leave the access driveway without infringing the boundaries of the roadway. Whenever practicable, vehicles entering the access driveway should be able to turn entirely from the kerbside lane. Per Clause 3.4.3 Actual driveway design will depend on the design vehicle, the desired speed of turn and the condition imposed on the turning manoeuvre in Clause 3.4.1. Designs based on Figure 3.1 and 3.2 shall be checked by application of turning path templates.

3.2 Access

The access to the site will remain as per the existing site access points on Plasser Crescent and will operate in a manner consistent with the existing situation.

The existing driveways are in the order of 10-10.6 metres wide. Some widening is to be provided at the south-east access on Lot 15 to allow for the swept path requirements for the semi-trailer to enter and exit the site in a forward direction. The western driveway shall operate as one-way only with all trucks approaching from the north (left into the site) and so the width is considered appropriate.

Vehicles will access the Site via Plasser Crescent on the western side of the existing building on Lot 16 DP263353.

Vehicles will pass over the weighbridge for inspection of non-compliant waste and for assessing the net weight of materials before reversing into the warehouse via the western roller door for tipping of waste.

Vehicles (including semi-trailers) collecting sorted waste will access the Site via the eastern driveway on Plasser Crescent on the south side of the new shed on Lot 15 DP263353. They will enter and exit in a forward direction having turned within the site (refer **Appendix B**)

All trucks accessing the site do so via the traffic signal-controlled intersection of Glossop Street and Kurrajong Road. Semi-trailers will then enter Plasser Crescent from the eastern intersection of Plasser Crescent and Kurrajong Road, turning right at the roundabout, whilst the balance of vehicles shall turn right at the western intersection of Plasser Crescent and Kurrajong Road (refer haulage route Figure 4-1).

Light vehicle access will be able to use the existing driveways as required, with parking provided in front of the building on site. The staff arrive on site prior to any trucks having to access the site.

There is no general public access to the site. All staff vehicle movements will be managed via an on-site work safe plan that will be implemented for the site.

3.2.1 Driveway Location

The existing driveway locations will be retained as part of the project with minor adjustments to the width of the south eastern driveway.



Photo 1 – Existing south-east driveway to the subject

3.2.2 Service Vehicle Access.

All service vehicle access will be from the existing driveway to Plasser Crescent as per the current servicing requirements. Servicing will be associated with vehicle and plant maintenance on site only. There will also be a requirement for fuel deliveries to the site for operating the machinery.

3.2.3 Access to Public Transport

The site has limited access to public transport and is approximately 1200 metres from St Marys railway station. Buses are available on Kurrajong Road but provide limited access. Due to the site's location and the normal hours of work, it is considered that the proposed development will generate limited demand for public transport use.

3.3 Circulation

3.3.1 Pattern of circulation

Once inside the warehouse, vehicles will be directed to the dedicated “tip and spread area” and inspected for non-compliant waste in accordance with the Standards For Managing Construction Waste In NSW (NSW EPA, 2019).

Rejected waste will be re-loaded for off-site transport and disposal at an appropriate licensed facility.

Upon tipping of waste (or in the case of rejected load – after being re-loaded), vehicles will exit the warehouse and exit the site in a forward direction using the western driveway on the south side of the existing building on Lot 16 DP263353. Vehicles exiting the Site will turn right on to Plasser Crescent.

Vehicles collecting sorted waste will reverse into the warehouse via the eastern roller door for loading of waste / products. After loading, vehicles will pass over the weighbridge for assessing net weight.

Upon being loaded with waste, vehicles will exit the warehouse through the eastern roller door in the forward direction and return to the weighbridge. Following weighing, vehicles will exit the Site in the forward direction and turn right on to Plasser Crescent.

An Autoturn simulation has been prepared to confirm the operations (**Appendix B**).

3.3.2 Road width

The layout of the area to the front of the site allows for the staff vehicles to park within marked spaces at the front of the building and for trucks to enter then reverse to the shed for unloading and loading operations.

The width of this area has been determined based on the swept path requirements for the largest vehicle accessing the site (19.0 metres semi-trailer).

3.3.3 Internal Bus Movements

No internal bus movement required for this development.

3.3.4 Service Area Layout

No dedicated service area is provided. The delivery trucks for inbound and outbound material will generally be serviced off site (unless an issue occurs on site) and there will be no requirement for a dedicated service bay on the site. The machinery on site will require regular servicing and the existing building or hardstand area around the site will allow for this work to be undertaken.

3.4 Parking

Parking for the development is provided for the staff located on site with access via the existing driveway on Plasser Crescent. A new parking area will be provided on the southern side of the building for staff that will allow for a total of 10 cars to be parked on site.

Under the Council DCP the parking rate for this type of development is 1 space per 2 employees or based upon the floor area. The site has a low number of employees and as such, the provision of 1 space per 2 employees is considered appropriate. For 8 staff on site the parking requirement is 4 spaces with 10 provided across the consolidated lots, the parking requirements therefore meet the requirements of the DCP.

3.5 Pedestrian and Bicycle Facilities

The site has poor access for pedestrians and observations on site showed that there are very few pedestrians in this area. The length of Glossop Street does not encourage cycling. Staff cycling to the site will be able to park their bikes within the site. Pedestrian access is available via the driveway off Plasser Crescent as required.

4 Transportation Analysis

4.1 Traffic Generation

It is anticipated that the Proposed Development will result in a total average of 222 truck movements (111 inbound and 111 outbound) per day (Monday to Friday 6am-11pm) and 142 truck movements (71 inbound and 71 outbound) per day on Saturdays.

Incoming waste will occur via skip bins delivered on 12.5m heavy rigid vehicles (skip bin / hook lift bin trucks). Skip bin sizes will vary between 2m³ and 12m³ and hook lift bins between 15m³ and 30m³. Incoming waste will account for an average of 196 truck movements (98 inbound and 98 outbound) per day (Monday to Friday 6am-11pm) and 126 truck movements (63 inbound and 63 outbound) per day on Saturdays.

Waste sorted for further off-site processing / recovery will be stored in bay after sorting and then collected daily in 19m semi-trailers.

Outgoing product and residual waste will account for an average of 26 truck movements (13 inbound and 13 outbound) per day (Monday to Friday) and 20 truck movements (10 inbound and 10 outbound) per day on Saturdays.

Up to 24 employee vehicles may access the Site on a daily basis across two shifts. This is 4 additional staff during the day and 2 of an evening shift.

INCOMING WASTE: Mon-Fri							
(Product Collections) Vehicle Type	Maximum Regulatory Mass under GML	Average loads per truck	Trucks/ day	Trucks /week	Incoming weight (tonnes/day)	Total Weight (tonnes/year)	
12.5m HRV	26.5 tonnes	3.50	98.0	490.0	343	89,180	
Total						89,180	90%
INCOMING WASTE: Sat							
(Product Collections) Vehicle Type	Maximum Regulatory Mass under GML	Average loads per truck	Trucks/ day	Trucks /week	Incoming weight (tonnes/day)	Total Weight (tonnes/year)	
12.5m HRV	26.5 tonnes	3.50	63.0	63.0	221	9,812	
Total						9,812	10%
TOTAL INCOMING WASTE		98,992					
ASSUMPTIONS							
Operations	6 days per week						
Waste deliveries	91% of incoming waste received 6am to 11pm Mon-Fri						
	9% of incoming waste received 7am to 3pm Sat						
Product bulk loadout	100% of outgoing waste transported on 19 m semi-trailer						

OUTGOING WASTE: Mon - Fri							
(Sorted materials delivery) Vehicle Type	Maximum Regulatory Mass under GML	Average loads per truck	Trucks /day	Trucks /week	Outgoing weight (tonnes/day)	Total Weight (tonnes/year)	
19 m Semi-trailer	35.0 tonnes	26	13.2	66.0	345	89,736	
Total						89,736	91%
OUTGOING WASTE: Sat							
(Sorted materials delivery) Vehicle Type	Maximum Regulatory Mass under GML	Average loads per truck	Trucks /day	Trucks /week	Outgoing weight (tonnes/day)	Total Weight (tonnes/year)	
19 m Semi-trailer	35.0 tonnes	26	8.0	8.0	208	9,256	
Total						9,256	9%
TOTAL OUTGOING WASTE		98,992					
Total daily truck movements		111.2					
Total daily truck movements		71.0					

This compares with the existing operation which sees around 8 truck movements per hour (4 in and 4 out) to allow for the transfer of 30,000tpa. When fully operational and running at peak operation the project could generate in the order of 222 truck movements per day (111 inbound/111 outbound) Monday to Friday.

Staff movements will all be inbound in the morning with operational staff arriving prior to the first truck arriving on site and then all departing at the end of the day when the last truck delivery has occurred. Four administration staff, 2 more than current, would also arrive through the morning and leave at the end of the working day. This would give an additional 4 inbound cars across the morning and a corresponding 2 extra outbound cars and 2 inbound cars at shift change (2 PM Monday to Friday) with 2 extra departures (10 in all) at 11 PM.

4.1.1 Daily and Seasonal Factors

The nature of the development will create some daily variation in operations, dependent upon the demands of the sites being serviced by the facility. There would also be quiet times over Christmas due to limited construction work occurring. The weekend flows on a Saturday will be lower with the bulk of the activity occurring Monday to Friday.

4.1.2 Sight Distances

The site access points operate as simple driveways and the entry to the site is located on a straight section of road. Drivers can observe the driveway on the approach to the driveway.

For the exit movement from the driveway on to Plasser Crescent, the driveway is located close to a 90-degree bend which significantly reduces vehicle speeds below the posted speed limit of 50 km/h. Drivers exiting the site at this location can see a distance of approximately 60 metres for a vehicle approaching from the west of the site exit point. From AS2890 this distance equates to a speed of 40 km/h which is considered appropriate in this location as vehicle speeds in this location are low. For visibility to the left (east) the distance exceeds 120 metres and therefore satisfies the requirements of AS2890.

It is noted that this section of the road has a large number of vehicles parked on it which can impact sight lines. However, the trucks have a raised seating position which allow the driver to see over the top of parked cars in this location. Drivers of the facility are also regular drivers and as such will be fully familiar with the site layout and the access options.



Photo 2 – View to left for a driver exiting subject site onto Plasser Crescent. Note the sight line for a truck driver is improved due to the seat height



Photo 3 – View to right for a driver exiting the subject site onto Plasser Crescent



Photo 4 – View at driveway for a driver entering the subject site

The trucks associated with the development will turn right out of the site and travel along Plasser Crescent to then turn left onto Kurrajong Road. This intersection is well laid out and offers good visibility for drivers using this intersection.



Photo 5 – View to right for driver exiting Plasser Crescent onto Kurrajong Road

4.1.3 Queuing at entrance to site

There are no vehicle queues expected at site entry / exit points. The low hourly traffic demands associated with the project (upper limit of 10 trucks arriving per hour with an average of 13 truck movements per hour or 1 truck arriving every 6-9 minutes) together with on-site management to provide for a maximum of four vehicles on site at any one time (one on weighbridge, one unloading and one within the site prior to the weighbridge plus one loading outbound product) shall ensure there are no queues associated with entry and exit movements to the site. The operations on site is controlled by the Traffic Controller/Scheduler to avoid more than one truck at a time arriving to the site and to ensure there is no demand for trucks to stand within the street.

4.1.4 Comparison with existing site access

There is no change to the existing site access arrangements other than the need to increase the width to allow for a semi-trailer to enter and exit the site in a forward direction at the south eastern driveway.

4.1.5 Pedestrian Movements

The development is not expected to be a generator of pedestrian movements as public access is not required.

4.2 Traffic Distribution and Assignments

Given the location of the site and based on discussions with the project team, all trucks accessing the site do so via the traffic signal-controlled intersection of Glossop Street and Kurrajong Road. This gives the most direct access to the greater road network. From here trucks can head north or south along Glossop Street to access all areas across greater Sydney as required. (Figure 4-1).

4.2.1 Origin / destinations assignment

All traffic is expected to have an origin/destination via the signal controlled intersection of Glossop Street and Kurrajong Road. Based upon current operations it is expected that 2/3 of the trucks will have an origin / destination to the south along Glossop Street with 1/3 heading north.

Trucks heading south can then either use the Great Western Highway or connect to the M4 Motorway as required.

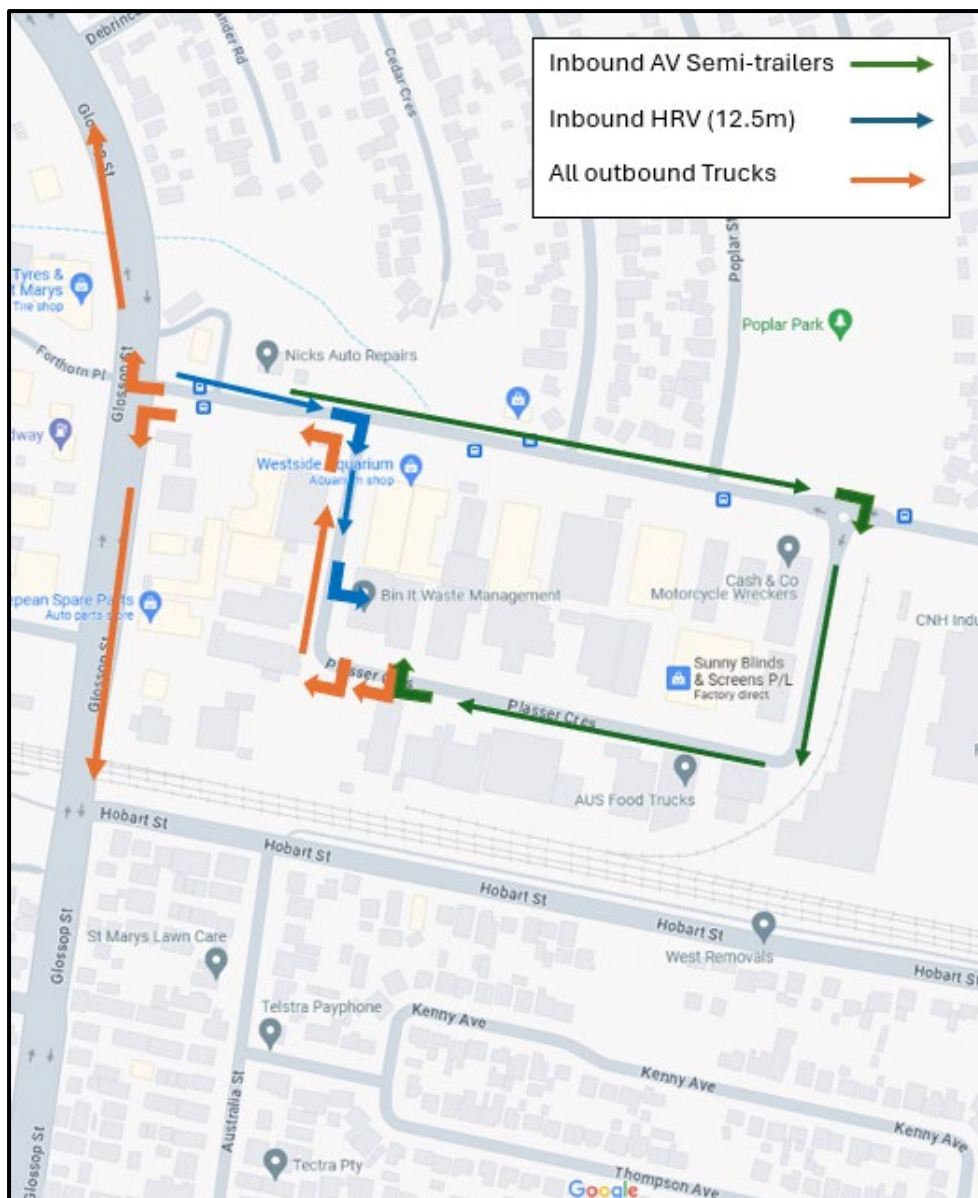


Figure 4-1 Haul routes to and from the site

4.3 Impact of Generated Traffic

4.3.1 Impact on Daily Traffic Flows

It can be seen that the development will have a relatively low impact upon the overall daily traffic movements in the general locality of the subject site. At peak operations, there could be 20 truck movements (10 in and 10 out) for the site per in an hour, an **increase of 12 trips per hour** over the existing situation. This makes no allowance however for the current operation of the subject site that is the basis for the expansion. The daily traffic flows could be 222 truck movements combined in and out over the 17 hours the site is operational per day Monday to Friday and less of a Saturday being 102 additional truck movements per day.

From Section 2.3.2 above, the daily traffic flows on Glossop Street are in the order of 28,000 per day. It is considered that the additional 102 truck movements across the day associated with the total operation (51 in and 51 out) will have a minimal and acceptable impact upon the overall operation of this road. This represents less than 0.5% increase in traffic flows per day.

4.3.2 Peak Hour Impacts on Intersections

The peak hour traffic volumes associated with the development have been determined based upon peak hour flows being 29 vehicles per hour (16 light and 13 heavy) combined in and out, at shift change between 2 and 3 PM, which is outside of the road peak traffic demands in this location. During the road network peak between 7 and 9 AM, the hourly combined flow is a maximum of 13 whilst in the PM road network peak between 3 and 5 PM the hourly flow combined would be similar.

The key intersection that could be impacted upon by the proposed additional traffic movements associated with development would be the signal controlled intersection of Glossop Street and Kurrajong Road. The operation of the intersection has been assessed with Sidra to confirm the operation and the impact of the additional trucks on the intersection.

The Sidra assessment is presented below.

Table 2 – 2024 AM / PM base flows including existing development.

Approach	Degree of saturation	Average delay (seconds)	LoS	Back of queue (metres)
Glossop St south	0.486 / 0.600	7.9 / 8.5	A / A	54.9 / 90.7
Kurrajong Road	0.182 / 0.583	18.5 / 41.5	B / C	14.9 / 91.4
Glossop Street north	0.836 / 0.810	25.2 / 28.1	B / B	111.3 / 245.9
Forthorn Place	0.038 / 0.512	25.0 / 56.8	B / E	1.3 / 15.1

NOTE: AM / PM results

The above results confirm the site observations, with the overall level of operation very good for the intersection with no significant delays or congestion.

Table 3 – 2034 AM / PM base flows

Approach	Degree of saturation	Average delay (seconds)	LoS	Back of queue (metres)
Glossop St south	0.476 / 0.802	7.4 / 26.7	A / B	68.1 / 143.9
Kurrajong Road	0.215 / 0.623	25.0 / 59.8	B / E	23.9 / 148.4
Glossop Street north	0.742 / 0.816	22.5 / 32.5	B / C	134.2 / 375.2
Forthorn Place	0.055 / 0.845	34.6 / 83.5	C / F	2.1 / 25.7

NOTE: AM / PM results

The above results show that with background growth of 1% per annum over the 10 year growth horizon, the intersection will suffer from delays in the PM peak (although the overall operation shall remain at LoS of C) which will need to be addressed by the road authority.

Table 4 – 2024 AM / PM base flows plus development traffic

Approach	Degree of saturation	Average delay (seconds)	LoS	Back of queue (metres)
Glossop St south	0.486 / 0.605	7.8 / 9.1	A / A	54.9 / 94.6
Kurrajong Road	0.196 / 0.596	18.5 / 45.1	B / D	16.3 / 104.4
Glossop Street north	0.836 / 0.806	25.2 / 29.3	B / C	111.3 / 261.5
Forthorn Place	0.039 / 0.563	25.0 / 62.2	B / E	1.3 / 16.7

NOTE: AM / PM results

Table 5 - 2034 AM / PM base flows plus development traffic

Approach	Degree of saturation	Average delay (seconds)	LoS	Back of queue (metres)
Glossop St south	0.480 / 0.690	7.5 / 20.7	A / B	68.1 / 115.2
Kurrajong Road	0.224 / 0.783	24.5 / 65.2	B / E	25.6 / 167.0
Glossop Street north	0.766 / 0.832	24.7 / 32.5	B / C	141.3 / 361.5
Forthorn Place	0.057 / 0.789	35.2 / 80.1	C / F	2.1 / 23.8

NOTE: AM / PM results

It can be seen from the above results that a further **12 traffic movements associated with the expansion** of the facility will have a minimal impact upon the operation of this intersection during the peak periods. The current traffic flows through this intersection are in the order of 2600 vehicles in the AM peak and 4000 in the PM peak hour. The additional 12 truck movements per hour associated with the development represent an increase of less than 0.5% in the AM peak and 0.3% in the PM peak.

Outside of the peak hour the traffic flows decrease significantly, and the intersection operation improves with reduced delays and congestion. Beyond 6 PM through to 11 PM the traffic flows on Glossop Street are significantly lower and as such the signal-controlled intersection will operate very well with delays and congestion lower than those occurring in the peak hours.

Overall, it is concluded that the operation of the intersection will not alter considerably due to the additional 12 truck movements per hour in the road network peaks associated with the expansion of the subject site. The impact during the peak hours is minimal and acceptable and no restriction in time is required for trucks accessing the subject site.

4.3.3 Background traffic and other developments

Normal TfNSW requirements allow for 10 years background growth for traffic. However, it is considered that the traffic movements in this area are mature and that there is limited opportunity for growth. Whilst traffic flows will increase in time, it is considered that the peak hour flows will remain similar as demonstrated in the traffic surveys between 2017 and 2024 and that the peak hour will expand beyond one hour. It can also be seen that as the traffic flows increase through this intersection, the development flows will remain at the same level and as such the impact will become relatively less.

No direct developments are noted in the immediate locality of the subject site that will impact upon the operation of this signal-controlled intersection.

4.3.4 Impact of Construction Traffic

There will be minimal construction activity on site associated with the proposed development, with installation and operation of waste processing plant and equipment including feed hopper, conveyors, overhead magnet, ballistics separator, and picking stations on Lot 16/DP 263353. The works include relocation of offices and demolition of part of the existing building, installation of product and residual waste material bays, a new covered loading bay, and an additional weighbridge on Lot 15/DP 263353. The boundary fence and width of the driveway is also to be amended to suit the swept path requirements for the design vehicles.

This work is internal to the site and shall have a minor impact on the external road network.

4.4 Impact on Road Safety

The additional traffic flows associated with the project will have a low impact upon traffic safety. The site entry point currently operates in a safe manner and the low traffic speeds in this location ensure that the entry and exit movements can occur safely. There have been no recorded incidents associated with the current entry and exit movements and the low increase in hourly flows will not alter the overall safe operations.

As part of the redesign internal to the site, the trucks accessing the site shall be able to enter and exit the site in a forward direction. This will improve road safety over the existing situation on this site, which requires trucks to reverse into the previous use on the subject site.

There are minimal demands for pedestrians noted along the site frontage with pedestrian sight lines available at each of the crossings. The forward movement of all vehicles exiting the site shall allow for the safety of pedestrians and cyclists within the road reserve.

The intersections in the general locality of the subject site all offer a safe movement for all vehicles and currently cater for trucks associated with the subject site as well as other trucks that access this area. The intersection offers good visibility on Kurrajong Road and allows for safe movements. The key intersection impacted by the project is the signal-controlled intersection of Kurrajong Road and Glossop Street and this intersection is well laid out and also operates in a safe manner. For work beyond 6 PM through to 11 PM, there are street lights along Plasser Crescent, Kurrajong Road and Glossop Street that ensure road safety is maintained.

Bus services operate along Kurrajong Road and Glossop Street. The proposed development shall not impact the safe operation of buses along this route. No buses operate along Plasser Crescent in the immediate vicinity of the site.

4.5 Parking Analysis

The parking for the proposed development can all be accommodated on site. Whilst the DCP indicates the parking to be provided at a rate of 1 per 2 staff or based on floor area, the nature of the development allows for low staffing levels compared with the floor area and hence the provision of parking at a rate of 1 per 2 staff is considered appropriate. Allowing for a total of 10 staff plus 4 office staff, the provision of 10 spaces on site will cater for the parking demands consistent with the DCP requirements and allow for the turn over of staff at shift change.

4.6 Public Transport

4.6.1 Options for improving services

It can be seen that while the site has access to buses (500+m from the site) and train services (1200m), the frequency of buses and shift times does not always support public transport use. No improvements to public transport are considered necessary for the project.

Daytime staff will be encouraged to use public transport where possible and staff who share car travel will have access to parking on site.

5 Improvement Analysis

5.1 Improvements to Accommodate Existing Traffic

The existing road network in the immediate vicinity of the subject site is well developed and there are no road network upgrades currently occurring within the immediate vicinity of the subject site. It is considered that no upgrades to the capacity are required to accommodate the current traffic flows.

5.2 Improvements to Accommodate Background Traffic

Given the constrained nature of the road corridor along Glossop Street it is considered that no road upgrades can be provided along this road corridor and any increased demand will mean that the peak hour will need to spread in this location as no road upgrades can be provided.

5.3 Additional Improvements to Accommodate Development Traffic

Based on site observations and the Sidra assessment there are no road upgrades required to accommodate the additional traffic flows associated with the expansion of the subject site.

5.4 Alternative Improvements

No alternative improvements are put forward for the project.

6 Summary and Recommendations

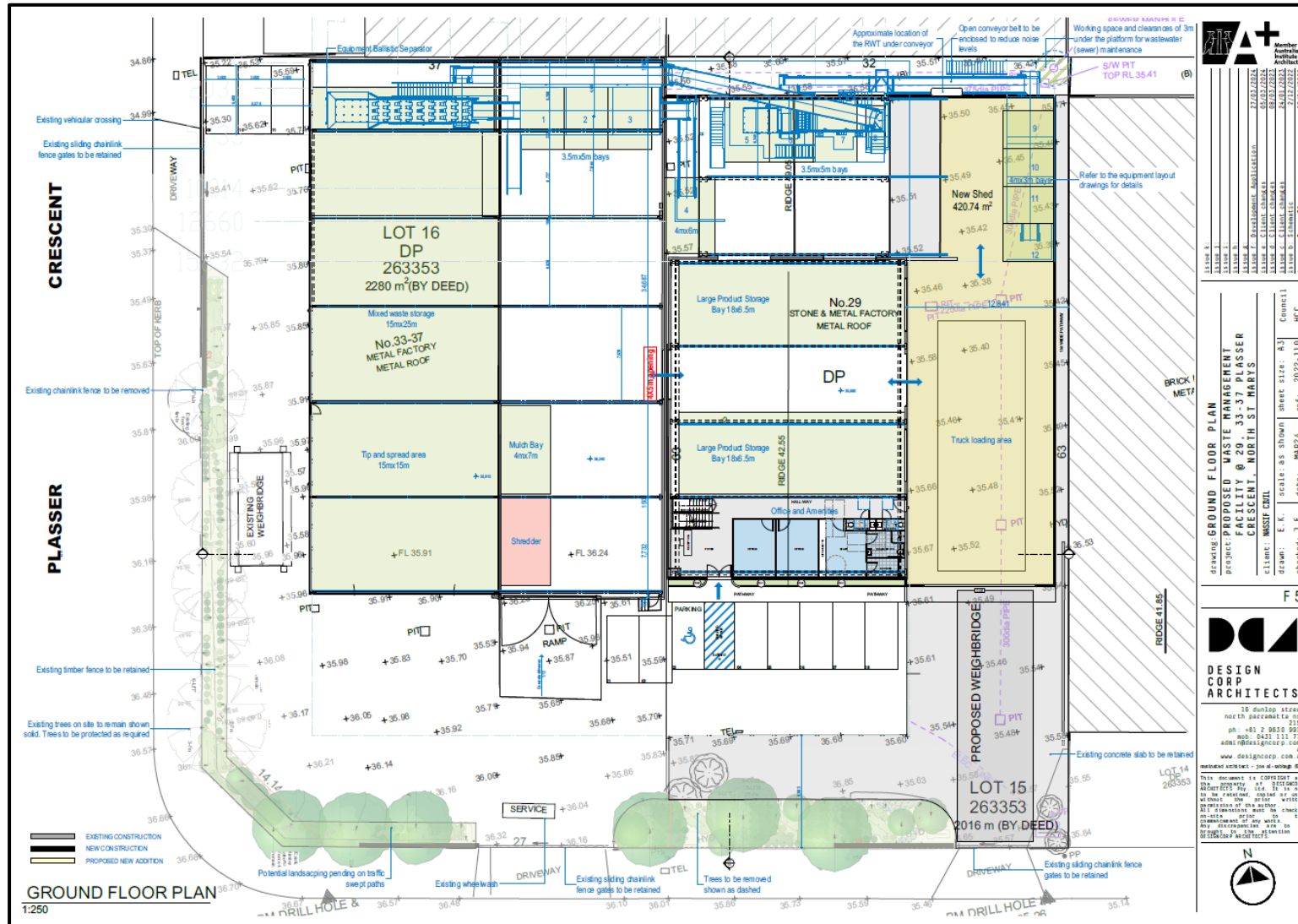
6.1 Summary

The following conclusions are drawn from the investigations into the proposed expansion of the waste management facility off Plasser Crescent, North St Marys:

1. The proposal allows for the expansion of the current facility from 30,000 tonnes per annum to 99,000 tonnes per annum, with the hours of operation to remain at 6 AM to 11 PM Monday to Friday and 7 AM to 3 PM on a Saturday. All access will remain as per the existing driveways on Plasser Crescent with the south eastern one to be widened along with the internal changes on site to allow a truck to enter and exit the site in a forward direction.
2. The site is located within North St Marys and the major access route is via the signal-controlled intersection of Glossop Street and Kurrajong Road.
3. All trucks will access the site from this intersection with 2/3 approaching from the south and 1/3 from the north. Trucks will travel along Kurrajong Road and access the site via Plasser Crescent. Semi-trailers will use the eastern connection to Plasser Crescent whilst other trucks will use the western connection.
4. Traffic data has been collected at the signal-controlled intersection of Glossop Street and Kurrajong Road during a typical morning and afternoon peak period and the operation of the intersection has been confirmed with Sidra modelling to include the existing approved use. This intersection currently operates reasonably well.
5. It is anticipated that the impact of up to 12 additional trucks movements per hour associated with the absolute peak throughput for the subject site will be acceptable and that the intersection will continue to operate to a similar level and standard with minimal increases in delays or congestion. Average demands will be less with typical truck movements increasing by 5 extra truck movements per hour.
6. Accident data provided by TfNSW shows that there have been 5 recorded accidents at this intersection over a 5 year timeframe. This intersection provides a good layout and can accommodate the additional trucks associated with the development.
7. Parking is provided in accordance with the DCP which has a parking requirement of 1 space per 2 employees. With 14 employees (10 + 4 office staff) on site the parking requirement is 7, which compares with the 10 spaces provided on site. This will allow for the turnover of parking during shift change.

The overall conclusion from the investigations is that traffic and access arrangements for the project are satisfactory and that there are no traffic or access impediments to the development. The trucks access route has been reviewed based upon impacts for other road users and road safety and the proposed access route can operate in a safe and efficient manner with minimal delays for other road users.

Appendix A Site Plan



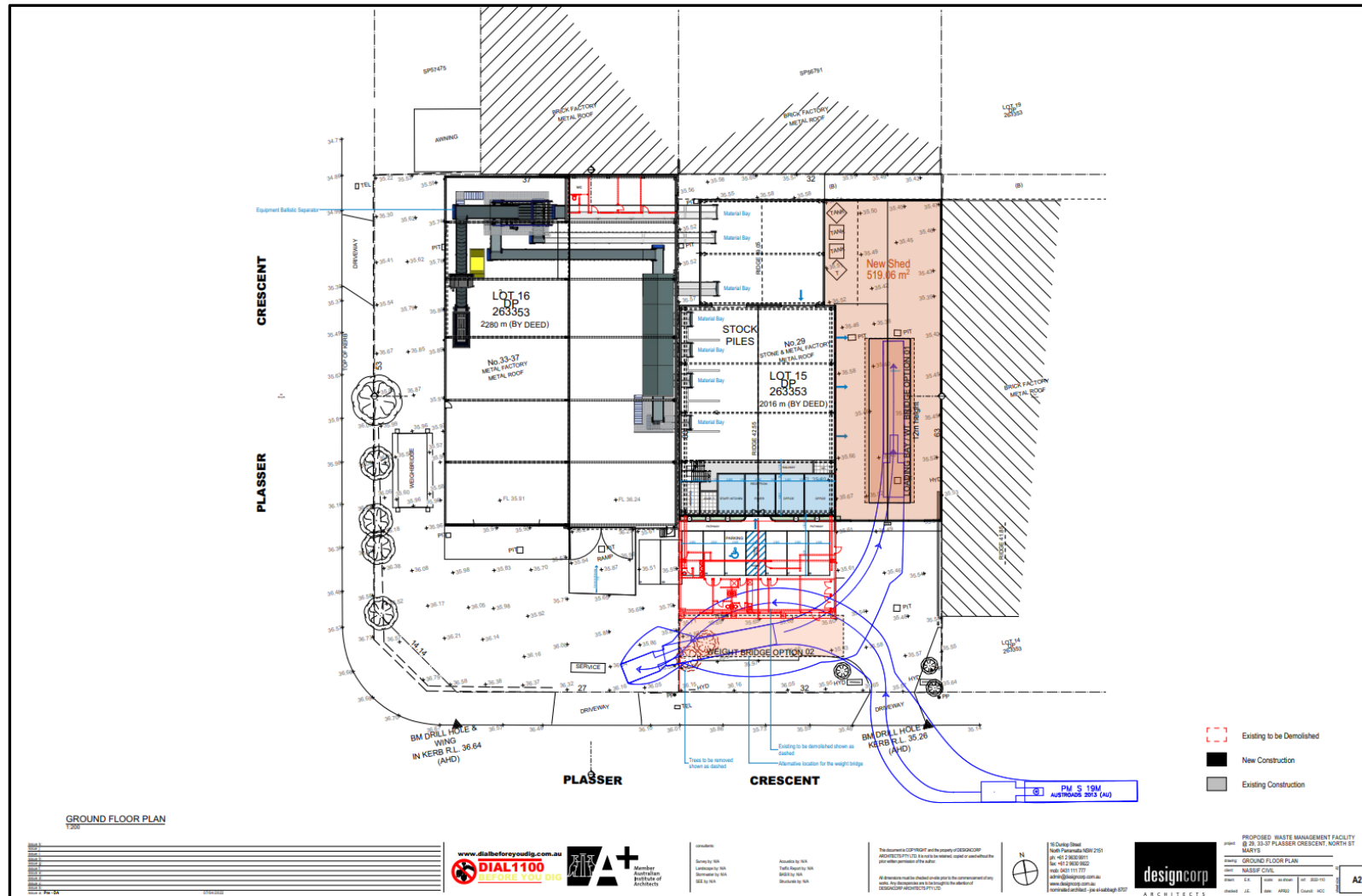
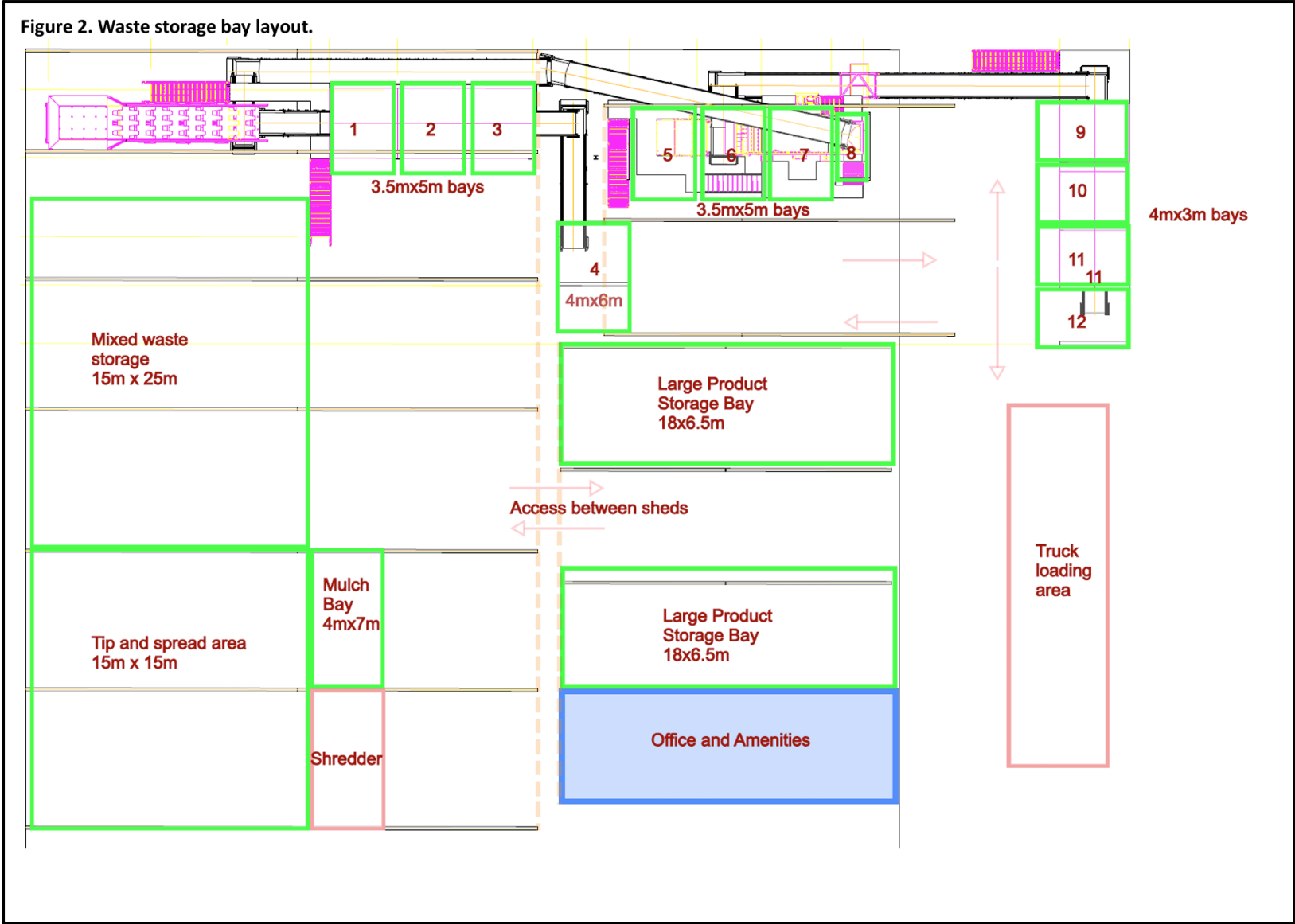
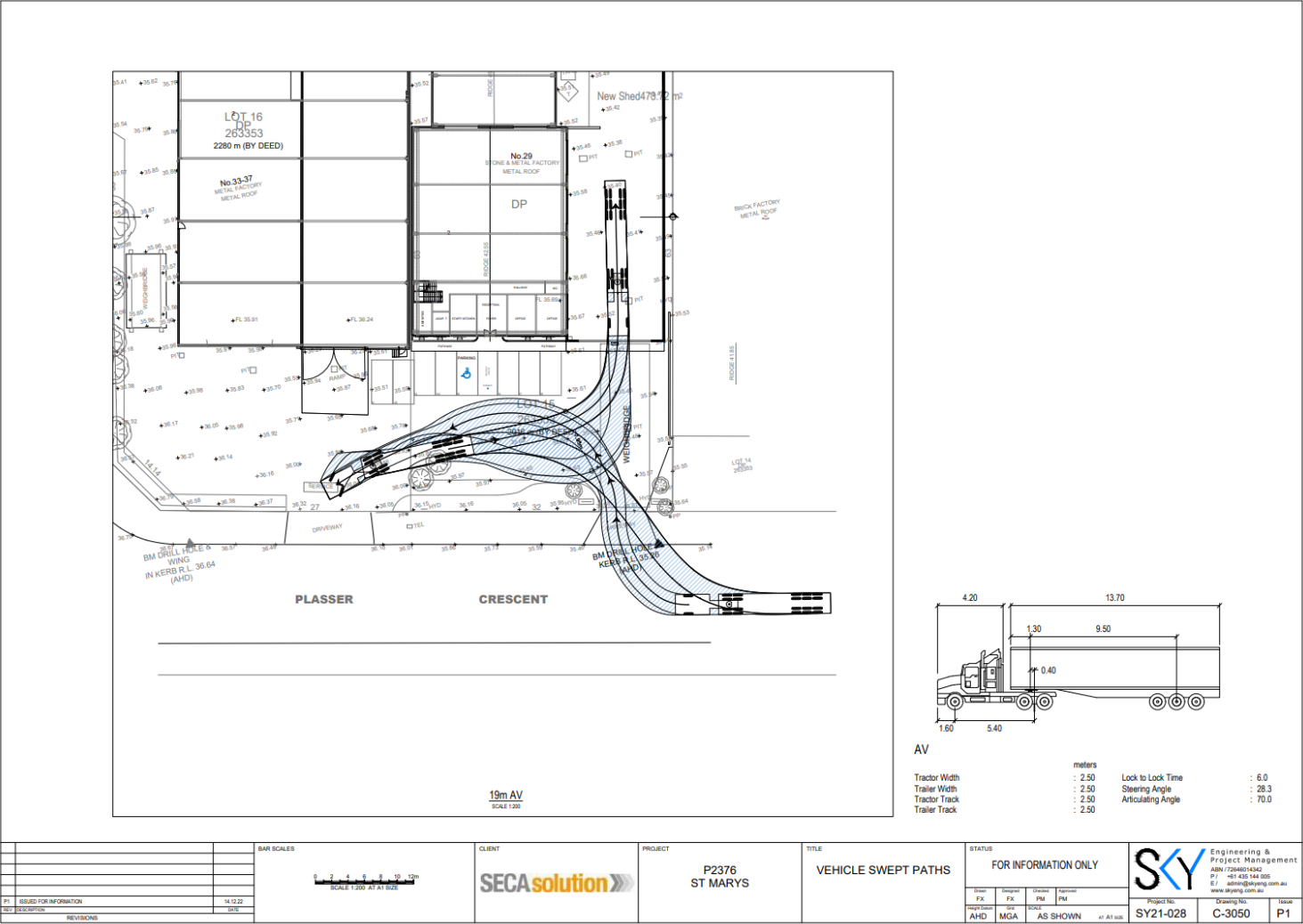
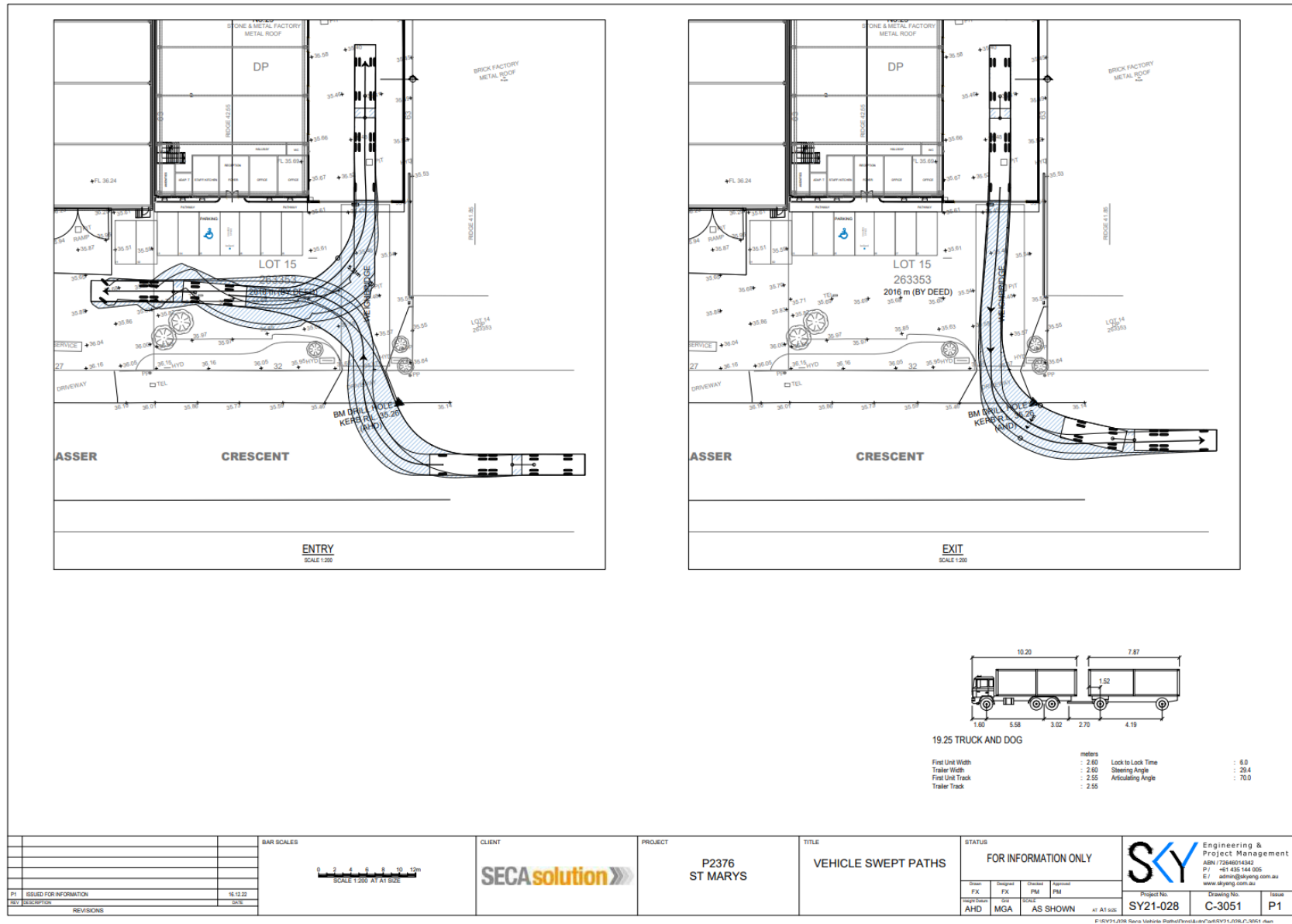


Figure 2. Waste storage bay layout.







Appendix C – 2024 Traffic Data

