ACOUSTICS AND AIR

RESOURCE CO, WETHERILL PARK

EXTENSION OF OPERATING HOURS

REPORT NO. 15278-N1
VERSION B

MAY 2019

PREPARED FOR

RESOURCECO PTY LTD
WINGFIELD & HINES ROAD
ADELAIDE SA 5013

WILKINSON MURRAY

DOCUMENT CONTROL

Version	Status	Date	Prepared By	Reviewed By
A	Final	20 May 2019	Jeff Robinson	Neil Gross
B	Final	27 May 2019	Jeff Robinson	Neil Gross

Note
All materials specified by Wilkinson Murray Pty Limited have been selected solely on the basis of acoustic performance. Any other properties of these materials, such as fire rating, chemical properties etc. should be checked with the suppliers or other specialised bodies for fitness for a given purpose. The information contained in this document produced by Wilkinson Murray is solely for the use of the client identified on the front page of this report. Our client becomes the owner of this document upon full payment of our **Tax Invoice** for its provision. This document must not be used for any purposes other than those of the document's owner. Wilkinson Murray undertakes no duty to or accepts any responsibility to any third party who may rely upon this document.

Quality Assurance
Wilkinson Murray operates a Quality Management System which complies with the requirements of AS/NZS ISO 9001:2015. This management system has been externally certified by SAI Global and Licence No. QEC 13457 has been issued.

AAAC
This firm is a member firm of the Association of Australasian Acoustical Consultants and the work here reported has been carried out in accordance with the terms of that membership.

Celebrating 50 Years in 2012
Wilkinson Murray is an independent firm established in 1962, originally as Carr & Wilkinson. In 1976 Barry Murray joined founding partner Roger Wilkinson and the firm adopted the name which remains today. From a successful operation in Australia, Wilkinson Murray expanded its reach into Asia by opening a Hong Kong office early in 2006. Today, with offices in Sydney, Newcastle, Wollongong, Orange, Queensland and Hong Kong, Wilkinson Murray services the entire Asia-Pacific region.

TABLE OF CONTENTS

Page

GLOSSARY OF ACOUSTIC TERMS

1 INTRODUCTION 1

2 SITE DESCRIPTION 2

2.1 Site Location 2

2.2 Site Operations & Operating Hours 3
2.2.1 Site Operations 3
2.2.2 Operating Hours 4

3 OPERATIONAL NOISE EMISSIONS 5

3.1 Existing Noise Environment 5

3.2 Noise Emission Criteria – Operational Noise 5
3.2.1 EPA Noise Policy for Industry 5

3.3 Summary of Noise Emission Criteria 6

3.4 Measurement of Existing Operational Noise on Site 7

3.5 Measurement of Existing Operational Noise at Residences 8

3.6 Calculation of Operation Noise 10

4 TRAFFIC NOISE ON PUBLIC ROADS 11

4.1 Noise Emission Criteria – Noise on Public Roads 11

4.2 Prediction of Additional Traffic Noise Levels 11

5 CONCLUSION 14

GLOSSARY OF ACOUSTIC TERMS

Most environments are affected by environmental noise which continuously varies, largely as a result of road traffic. To describe the overall noise environment, a number of noise descriptors have been developed and these involve statistical and other analysis of the varying noise over sampling periods, typically taken as 15 minutes. These descriptors, which are demonstrated in the graph below, are here defined.

Maximum Noise Level (L_{Amax}) – The maximum noise level over a sample period is the maximum level, measured on fast response, during the sample period.

L_{A1} – The L_{A1} level is the noise level which is exceeded for 1% of the sample period. During the sample period, the noise level is below the L_{A1} level for 99% of the time.

L_{A10} – The L_{A10} level is the noise level which is exceeded for 10% of the sample period. During the sample period, the noise level is below the L_{A10} level for 90% of the time. The L_{A10} is a common noise descriptor for environmental noise and road traffic noise.

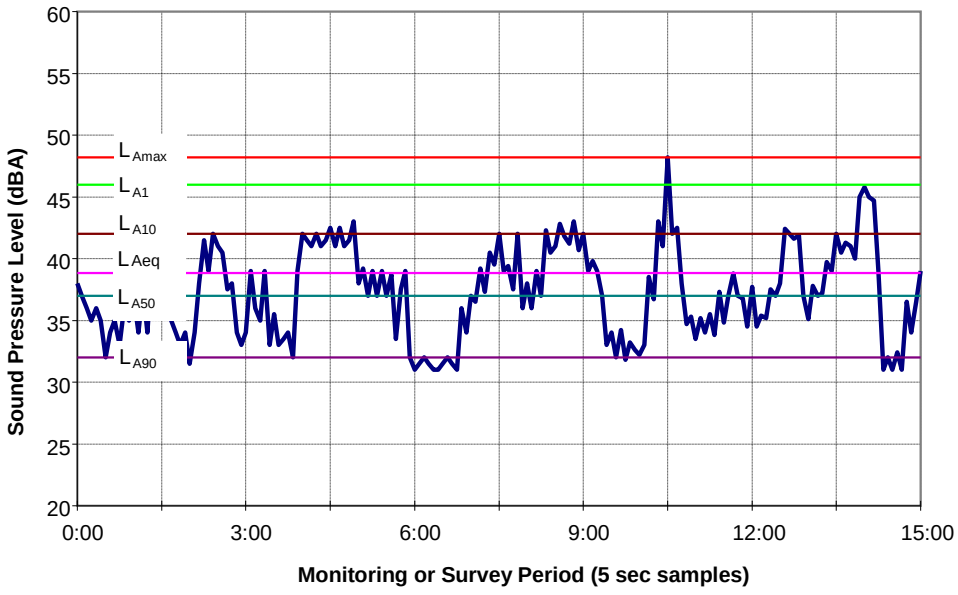
L_{A90} – The L_{A90} level is the noise level which is exceeded for 90% of the sample period. During the sample period, the noise level is below the L_{A90} level for 10% of the time. This measure is commonly referred to as the background noise level.

L_{Aeq} – The equivalent continuous sound level (L_{Aeq}) is the energy average of the varying noise over the sample period and is equivalent to the level of a constant noise which contains the same energy as the varying noise environment. This measure is also a common measure of environmental noise and road traffic noise.

ABL – The Assessment Background Level is the single figure background level representing each assessment period (daytime, evening and night time) for each day. It is determined by calculating the 10th percentile (lowest 10th percent) background level (L_{A90}) for each period.

RBL – The Rating Background Level for each period is the median value of the ABL values for the period over all of the days measured. There is therefore an RBL value for each period – daytime, evening and night time.

Typical Graph of Sound Pressure Level vs Time



1 INTRODUCTION

This document presents an assessment of operational noise emissions from the site and associated traffic noise on the surrounding road network during the proposed extended hours of operation period at the ResourceCo Pty Ltd resource recovery facility located at 35-37 Frank Street, Wetherill Park.

Specifically, it is proposed to change the operating hours to allow for 24-hour use of the facility and to extend operations to allow for delivery and removal of waste products on Sundays.

Noise emissions from the facility have been compared with the Environmental Protection Authority (EPA) noise emission guidelines nominated in the Development Application (DA) acoustic assessment prepared by this office, titled *"Frank Street, Wetherill Park – Waste Resource Management Facility"* dated January 2016 (ref: 15278-N Ver: A).

Measurements of operational noise associated with the use of the facility have been conducted at the site and have been used to assess the level of operational noise impacting the nearest noise sensitive receivers in the proposed extended operation period after 10.30pm.

A detailed review of the site and all specific operational noise sources, noise levels and expected noise emissions is presented in the following sections.

2 SITE DESCRIPTION

2.1 Site Location

The ResourceCo facility is located at 35-37 Frank Street, Wetherill Park. The site is located within the *"IN1 – General Industrial"* zone as indicated on map 10 of the Fairfield City Council Local Environmental Plan (LEP) 2013 land zoning map (Ref: Sheet LZN_10).

We note that all surrounding development directly adjacent to the 35-37 Frank Street site are also located within the *General Industrial* zone including a *"Vallex"* warehousing and distribution facility lining the eastern boundary of the site and a *"Border Express"* warehousing and distribution facility along the western boundary.

The nearest noise sensitive residential receivers identified in the DA noise impact assessment are listed below:

- Maugham Crescent, Wetherill Park approximately 840m south (RES1);
- Hassel Street, Wetherill Park approximately 1,450m east (RES2);
- Chifley Street & Galton Street, Wetherill Park approximately 1,100m south-east (RES3), and;
- Horsley Drive, Wetherill Park approximately 1,250m south-west (RES4)

In addition to the industrial and residential receivers discussed above, the Gipps Road Sporting Complex is located approximately 1,150m to the north-east (REC1).

A detailed aerial image is shown below in Figure 2-1 indicating the location of the RecourceCo facility and all surrounding noise sensitive receivers.

Figure 2-1 - ResourceCo Site Location

2.2 Site Operations & Operating Hours

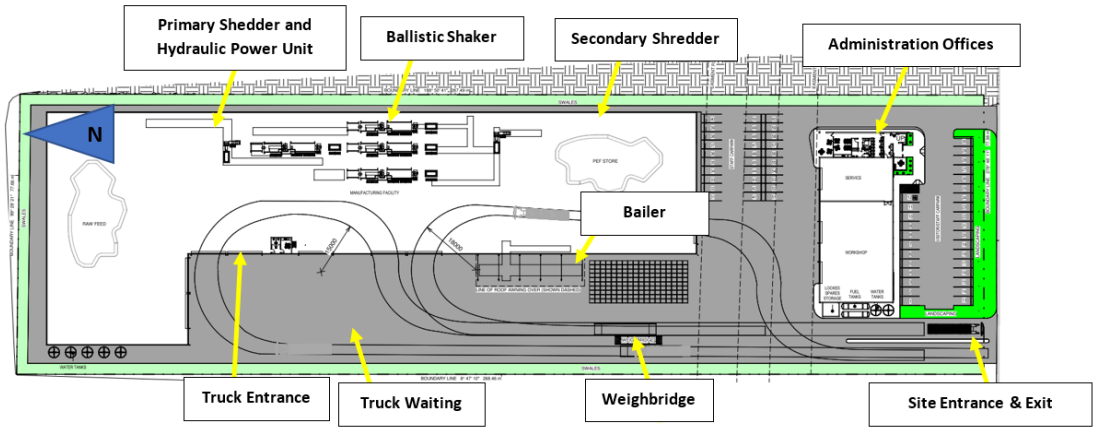
2.2.1 Site Operations

The ResourceCo resource recovery facility receives waste from Construction and Demolition (C&D) sites, Commercial and Industrial (C&I) waste and pre-processed Municipal Solid Waste (MSW). The waste is separated, processed and reconstituted to produce Processed Engineering Fuel (PEF) and other reusable commodities including aggregates, metal, timber and soil.

The facility is divided into two main structures including a large steel framed building at the northern end of the site housing all processing plant and machinery and a smaller structure containing administration offices and some material storage areas.

See Figure 2-2 below for general building layout.

Figure 2-2 ResourceCo Facility Layout



Trucks enter the site at the south-western corner of the site via Frank Street and travel along the western boundary to a weighbridge located approximately a third of the way along the length of the property. Trucks would then typically wait to be directed to enter the facility via the openings along the western façade.

Once trucks have unloaded, they exit the facility and are then weighed once more before leaving the site along the western boundary to the exit at the south-west corner of the site.

In addition to truck movements, there is a bailing system in operation at the south-western corner of the main facility building. The bailer is serviced by two fork-lifts.

The main noise producing plant within the main facility building is as below (see Figure 2-2):

- Primary shredder
- Hydraulic power pack (producing power for primary shedder)
- Ballistic separator
- Secondary shredder

The access route along the eastern boundary is used only for access for staff or maintenance vehicles and is not used for delivery of waste by heavy vehicles or machinery.

2.2.2 Operating Hours

The approved hours of operation from the consent (as modified) for the development is as below:

Existing Operating Hours

Earthworks and Construction

Monday – Friday	7.00am – 6.00pm
Saturday	8.00am – 1.00pm

Operation – Waste Receival

Monday – Saturday	4.00am – 5.00pm

Operation – Waste Process (Internal Plant Operation)

Monday – Friday	6.00am – 10.30pm
Saturday	6.00am – 5.00pm
Sunday	8.00am – 6.00pm

Operation – Removal of Materials

Monday – Friday	4.00am – 10.30pm	'Loose' PEF only
	5.00am – 10.30pm	Baled PEF for export
	5.00am – 5.00pm	Recyclable material and residual waste
Saturday	5.00am – 12.00pm	Loose' PEF only, No removal of Baled PEF for export, recyclable materials and/or residual waste
Sunday	Any time	No PEF, recyclable material and/or residual waste removal

The proposed change to the operation hours at the facility is as below:

Proposed Operating Hours

Operation Waste Receival

Monday – Sunday	24 hours a day / 7days per week

Operation Waste removal of materials

Monday – Sunday	24 hours a day / 7days per week

24-hour operation is proposed to be conducted over 3 shifts each day as below:

- Day Shift: 5.00am – 1.00pm
- Afternoon Shift: 1.00pm – 9.00pm
- Night Shift: 9.00pm – 5.00am

3 OPERATIONAL NOISE EMISSIONS

3.1 Existing Noise Environment

Background noise monitoring was conducted at the location of the nearest potentially affect residential receiver in 2015 in the Noise Impact Assessment conducted by this office at DA phase as referenced in section 1.

The Rating Background Noise Level (RBL) recorded at the Maugham Crescent receiver (RES1) are presented in the table below.

Table 3-1 Measured RBL & $L_{Aeq,\ period}$ Values

Location	RBL (dBA)			$L_{Aeq,\ period}$[1] (dBA)		
	Day	Evening	Night	Day	Evening	Night
RES1 – 15 Maugham Crescent	47	44	40	55	55	49

Note: 1. Daytime 7.00am-6.00pm, Evening 6.00pm-10.00pm, Night 10.00pm-7.00am.

For the other residential areas which are all located closer to major roads (when compared with Maugham Crescent) the criteria for RES1 are conservatively adopted. Therefore, if compliance is achieved at RES1, compliance would be expected at all surrounding residential receivers.

3.2 Noise Emission Criteria – Operational Noise

Noise emission guidelines for the site were discussed in the noise impact assessment submitted at DA.

Previously, the noise emission guidelines of the EPA *Industrial Noise Policy* (INP) were adopted at the site. Since 2016 however, the EPA INP has been superseded by the EPA *Noise Policy for Industry* (NPfI). The noise emission guidelines applicable at the site as presented in the NPfI are presented in the following section.

3.2.1 EPA Noise Policy for Industry

The EPA's *Noise Policy for Industry*, like the preceding *Industrial Noise Policy*, seeks to control noise from newly introduced industrial noise sources by means of its *"intrusiveness"* and *"amenity"* noise criteria. These are discussed below.

Intrusiveness Criteria

The intrusiveness criteria require that the $L_{Aeq,15min}$ noise level from any new source should not exceed the existing RBL for that 15-minute period by more than 5dBA. Therefore, to satisfy the intrusiveness criteria at the location of the nearest residential receiver at 15 Maugham Crescent, the $L_{Aeq,15\text{-}minute}$ noise level must not exceed 45dB(A) in the night-time period.

Amenity Criteria

In addition to the intrusiveness criteria, Table 2.2 of the NPfI, nominates recommended amenity noise levels (RANL) for various receiver types. The amenity criteria is designed to limit the combined ambient noise level from all industrial noise sources, existing *and* new.

To ensure the noise emission contribution from all industrial noise sources remain within the levels presented in Table 3-2 below a *Project Amenity Noise Level* (PANL) applies for each new source of industrial noise by subtracting 5dBA from the emission levels shown in Table 3-2.

Table 3-2 Amenity Noise Levels

Receiver Type	Noise Amenity Area	Time of Day[1]	L_{Aeq} dBA
Residential	Suburban	Day	55
		Evening	45
		Night	40
Industrial	All	When in use	70
Active Recreation	All	When in use	55

Note: 1. Daytime 7.00am-6.00pm, Evening 6.00pm-10.00pm, Night 10.00pm-7.00am.

To standardise the noise emission levels to account for the effect of short-term noise events that may skew the noise levels measured over a 15-minute period, the NPfI nominates that an additional 3dBA must be added to the amenity $L_{Aeq,\ period}$ noise levels listed above.

In summary, after applying all changes to noise emission levels discussed above the project amenity nose level should be calculated as below:

$$PANL = RANL - 5dBA + 3dBA$$

Therefore, the project amenity noise level applicable at the nearest noise sensitive residential receivers is 38dBA during the night-time period and 53dBA for active recreation areas in any time-period.

3.3 Summary of Noise Emission Criteria

The noise emission criteria applicable at the development based on the NPfI intrusiveness and Amenity guidelines have been summarised in the table below.

Table 3-3 Summarised Noise Emission Goals

Location	Assessment Parameter	Criterion (dBA)		
		Day	Evening	Night
RES1 – Maugham Crescent	$L_{Aeq,15min}$	52	43	38
Active recreation	$L_{Aeq,\ period}$		53	
Industrial	$L_{Aeq,\ period}$		70	

3.4 Measurement of Existing Operational Noise on Site

The previous assessment of noise emissions from the site at DA phase were based on assumed sound levels. The assumed noise levels used in the assessment were as below:

Table 3-4 Assumed Operation Noise Levels (DA Phase)

Plant	Nº	SWL $L_{Aeq,15min}$ (dBA)
Manufacturing Facility, including trucks tipping, front end loaders, excavators and fixed plant		SPL 89 internal at openings
Workshop Building, including grinding / welding		SPL 87 internal at openings
Forklift	1	100
10 Trucks per 15 minutes on site (412 per 11-hour day)	Line	78/m
Air-Conditioning Plant	Total	90

Attended measurements were conducted at the facility to confirm the suitability of the assumed noise levels shown in Table 3-4.

All measurements were conducted using a Brüel & Kjær Type 2250 sound level meter (SLM). This SLM is a type approved system, offering Class 1 performance according to IEC 61672-1:2013 *Electroacoustics – Sound level meters – Part 1: Specifications* and has current calibration with National Association of Testing Authorities, Australia requirements (NATA). It is calibrated in accordance with IEC 61672-3:2013 *Electroacoustics – Sound level meters – Part 3: Periodic tests.* The A-weighting filter of the meter was selected, and the time weighting was set to "Fast". The field calibration of the meter was checked before and after the measurements with a Brüel & Kjær Type 4231 sound level calibrator (SLC) and no significant drift was noted. This SLC is a Class 1 calibrator according to AS IEC 60942-2004 *Electroacoustics – Sound calibrators* and has been calibrated to the same Standard.

The Brüel & Kjær Type 2250 and Brüel & Kjær Type 4231 hold current laboratory calibrations in accordance with NATA and our in-house Quality Assurance Procedures.

The measurements were conducted between 1.45pm and 2.45pm on Thursday 7 March 2019 in fair conditions while typical operations were being conducted within the ResourceCo facility.

The following plant items and activities were in operation during the attended measurements:

- Primary shredder
- Hydraulic power pack
- Ballistic separator
- Secondary shredder
- 2 x 20T Excavators
- 2 x trucks operating internally
- 1 x 18T front end loader

It was found that the internal sound pressure level (SPL) at the façade openings was approximately 9dBA lower than noise levels assumed in the DA report. Nevertheless, the higher assumed sound levels utilised in the DA phase (Table 3-4) have been used to assess noise emissions from the site in the night-time period to present a *"worst case"* assessment of noise emission.

In addition to the measured internal sound pressure levels, measurements of trucks entering the site were also conducted.

The resulting sound pressure level measured at the building opening along the western façade of the Resource Co facility and of trucks entering and exiting the site is as below:

Table 3-5 Measured Operational Noise Levels on Site

Location	Measured Noise Level $L_{Aeq\ (15\ min)}$
ResourceCo Facility Internal SPL at Façade Opening (Western Façade)	80dB
Trucks Entering/Exiting Site @10m	69dB

Measurements were also conducted along the eastern boundary of the site, in-line with the nearest industrial receiver. The measurements were conducted on the ResourceCo side of the large 4-5m high barrier fence lining the eastern boundary of the site. It would be expected that noise levels would be reduced by a minimum 10dBA across the 4-5m barrier fence.

Noise from the ResourceCo facility was measured to be 75dBA at the loudest point along the nearest industrial boundary. Once including the expected reduction from the boundary fence, a noise level of 65dBA would be expected which is compliant with the criteria for the surrounding industrial receivers at all times in the day and night period.

3.5 Measurement of Existing Operational Noise at Residences

Noise emissions from the facility, while operating in the day-time period, were also measured at the nearest noise sensitive receivers at 15 Maugham Crescent (RES1) to confirm compliance with the noise emission criteria.

The measurements were conducted at the residential receivers while typical louder works were operating at the ResourceCo facility including operation of the primary and secondary shredder, bailer system, forklifts and multiple trucks entering/exiting the site.

The measured noise levels at the nearest residential receiver is as below:

Table 3-6 Measured Noise Emissions from ResourceCo Facility

Location	Noise Emission Goal (Day Period) $L_{Aeq\ (15\ min)}$	Measured Noise Level at Receiver $L_{Aeq\ (15\ min)}$	Comment
RES1	52 dB	51 dB	Complies: Noise from operations inaudible in 51dBL_{Aeq} noise environment

It was noted that noise from the facility was inaudible at the location of the RES1 receiver in a 51dB ambient noise environment. It is commonly accepted that if a noise source is inaudible, the contribution of noise from that source cannot be more than 10dBA below the measured ambient level, therefore noise emissions from the site are expected to be below 41dB which supports the assessment of noise emissions at DA phase.

3.6 Calculation of Operation Noise

The internal operational noise levels measured on site (see Table 3-5) and the assumed sound levels adopted in the DA noise impact assessment (Table 3-4) have been used to calculate noise emissions to the nearest residential receivers in the night-time period.

Given the distances to the nearest noise-sensitive receivers are in excess of 700m and there is shielding by surrounding buildings in all directions, then noise levels have been predicted based on geometric spreading and a conservative allowance of 10dB in relation to shielding from buildings.

Approximately 10 trucks are assumed to be arriving and departing during a busy 15-minute period during the night-time shift, which represents a conservative estimate of truck arrivals during a busy 15-minute period.

The calculated noise level at the nearest residential receiver is shown in Table 3-7 below.

Table 3-7 Calculated Noise Emissions from ResourceCo Facility – Night Period

Location	Noise Emission Goal (Night Period) $L_{Aeq\ (15\ min)}$	Calculated Noise Level at Receiver $L_{Aeq\ (15\ min)}$	Comment
RES1	38 dB	27 dB	Complies with noise Emission Goal

The calculated noise emission level at the nearest residential receiver (RES1) indicates compliance with the noise emission goals for the project.

Given RES1 is significantly closer to the ResourceCo facility and is in a significantly quieter ambient noise environment, compliance with the remaining receivers surrounding the site will also be achieved.

4 TRAFFIC NOISE ON PUBLIC ROADS

The proposed 24-hour operation of the facility introduces an increased number of traffic movements in the night-time period. The expected increase in noise on public streets and the noise emission criteria applicable for additional noise on public streets is detailed in the following sections.

4.1 Noise Emission Criteria – Noise on Public Roads

For existing residences affected by additional traffic on existing freeways / arterial roads generated by land use developments, the appropriate noise assessment criteria are set in the EPA Road Noise Policy (*RNP*). The appropriate daytime assessment criterion is $L_{Aeq,15hr}$ 60dBA at 1m in front of the façade. The night-time criterion is $L_{Aeq,9hr}$ 55dBA. Where existing traffic noise levels already exceed these noise levels, the *RNP* deems an increase of up to 2dB represents a minor impact that is considered barely perceptible to the average person.

Trucks will access via Frank Street from either the east or west and then typically via Redfern Street / Hassall Street or Elizabeth Street and then the Horsley Drive or Gipps Road, dependent on size and RMS requirements.

The nearest residences / noise sensitive receivers to the facility, likely to be affected by additional traffic are located on Hassall Street south of Gipps Road or along The Horsley Drive.

In accordance with the definitions outlined in the *Road Noise Policy (RNP)* all these roads would be classified as arterial.

4.2 Prediction of Additional Traffic Noise Levels

Truck movements are expected to reduce through the day-time period by approximately 30% under 24-hour operation. Therefore, noise from truck movements on public streets is expected to reduce through the daytime period. The expected increase in noise level in the night-time period is discussed below.

The existing traffic volumes on the surrounding roads was referenced in the Noise Impact Assessment conducted by this office dated 6 February 2017 (ref: 15278-N Ver C) and is summarised below:

Table 4-1 Summary of Existing Traffic Volumes

Location	Day (7am-10pm)		Night (10pm-7am)	
	Volume	%HV	Volume	%HV
Frank St (east of site)	3623	35.7	830	22.5
Frank St (west of site)	3623	35.7	830	22.5
Hassall St (south of Gipps Rd)	19548	20 est.	4467	-
The Horsley Dr (east of Hassall St)	18230	20 est.	4165	-
The Horsley Dr (west of Elizabeth St)	18530	20 est.	4240	-

Current output at the facility accounts for a maximum of 250,000 tonnes of waste intake per annum. The existing number of trucks arriving and departing the facility has been detailed in the traffic impact statement provided by TRAFFIX Traffic and Transport Planners dated 13 May 2019 (ref: 19.103r01v02) and is presented in the table below:

Table 4-2 Existing Daily Truck Movements

Product	Existing Truck Movements for Weekdays		Existing Truck Movements for Saturdays	
	In	Out	In	Out
Raw waste and Materials	146 loaded	146 empties	102 loaded	102 empties
Processed PEF from site	25 empties	25 loaded	-	-
Other processed materials (aggregates/timber/metal/soil)	25 empties	25 loaded	-	-
Residual Waste	6 empties	6 loaded	-	-
Total	202	202	102	102

Output at the facility will not increase with 24-hour operation of the facility. Therefore, it is expected that total number of weekly truck movements will not increase at the site, however, the distribution of trucks across the day is expected to change, with less truck movements expected through the day period between 7am and 10pm and an increased number of movements is expected in the night-time period between 10pm and 7am.

The total number of trucks expected to enter and exit the facility is as below:

Table 4-3 Expected Daily Truck Movements - 24Hr Operation

Product	Proposed Truck Movements for Weekdays		Proposed Truck Movements for Saturdays		Proposed Truck Movements for Sundays	
	In	Out	In	Out	In	Out
Raw waste and Materials	104 loaded	104 empties	84 loaded	84 empties	45 loaded	45 empties
Processed PEF from site	20 empties	20 loaded	16 empties	16 loaded	6 empties	6 loaded
Other processed materials (aggregates/timber/metal/soil)	13 empties	13 loaded	7 empties	7 loaded	-	-
Residual Waste	2 empties	2 loaded	empty	1 loaded	-	-
Total	139	139	108	108	51	51

The distribution of vehicles entering and exiting the facility across the day, afternoon and night-time shifts at the facility is expected to be as below:

Table 4-4 Proposed Truck Movements Per Shift

Days	Shift	Time	Number of Trucks (In and Out)	Total (In and Out
Weekdays	Day	5.00am – 1.00pm	170	278
	Afternoon	1.00pm – 9.00pm	50	
	Night	9.00pm – 5.00am	58	
Saturdays	Day	5.00am – 1.00pm	124	216
	Afternoon	1.00pm – 9.00pm	38	
	Night	9.00pm – 5.00am	54	
Sundays	Day	5.00am – 1.00pm	60	102
	Afternoon	1.00pm – 9.00pm	16	
	Night	9.00pm – 5.00am	24	

Based on the projected movements, the highest truck movement in any one night-time period during the proposed extension of operating hours period is expected to be approximately 58 truckloads on a weekday night.

Given the change in operating hours at the facility, a night shift has been added to the work schedule. The expected staff vehicle numbers arriving and departing for each shift, as presented in the TRAFFIX traffic impact statement, is as below:

Table 4-5 - Staff Vehicle Numbers

Days	Shift	Arrive	No. of arriving vehicles	Depart Time	No. of departing vehicles
Weekdays	Day	4.30am – 5.00am	30	5.00am – 5.30am	19
	Afternoon	12.30pm – 1.00pm	20	1.00pm – 1.30pm	30
	Night	8.30pm – 9.00pm	19	9.00pm – 9.30pm	20
Saturdays and Sundays	Day	4.30am – 5.00am	24	5.00am – 5.30am	19
	Afternoon	12.30pm – 1.00pm	20	1.00pm – 1.30pm	24
	Night	8.30pm – 9.00pm	19	9.00pm – 9.30pm	20

The maximum number of staff vehicle movements over a 30-minute period before or after a shift change in the night-time period is 20 vehicles.

Given the existing high traffic volumes on all the roads where residences are located, existing traffic noise levels are likely to exceed the RNP base criterion discussed in section 4.1. The increased noise level due to traffic from the recycling facility in the night period based on the expected vehicle numbers has been calculated to be less than 0.1dB along the roads that impact the nearest residential dwellings.

We note this is significantly below the 2dB increase which is described as *barely perceptible* and negligible impact is therefore expected.

5 CONCLUSION

An assessment of operational noise emissions in the proposed extended hours of operation period at the ResourceCo Pty Ltd resource recovery facility has been conducted.

Industrial noise has been assessed in accordance with the NSW EPA *Noise Policy for Industry (NPfI)*. The predicted noise levels indicate compliance with the criteria at the location of the nearest noise sensitive residential receiver and the nearest commercial receiver adjacent to the site for operational noise emissions in the night-time period.

Potential noise impacts from additional traffic on the surrounding road network has also been conducted based on 24-hour operation of the facility in accordance with the NSW EPA *Road Noise Policy (RNP)*. The results show the increase in noise level of less than 0.1dB in the night-time period which represents a negligible increase in noise level.

Noise from 24-hour use of the facility is not expected to have any impacts at the nearest noise sensitive residential receivers. Compliance with criteria is achieved at adjoining industrial receivers.