

ENVIRONMENTAL ASSESSMENT
Proposed minor changes to approved
Erskine Park Resource Management Facility (SSD 7075)
Stage 1 Waste Transfer Station

Report Number 630.11948.00000-R01

10 July 2017

Cleanaway Waste Management Limited
85 - 87 Quarry Road
Erskine Park, NSW, 2759

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Erskine Park Resource Management Facility (SSD 7075)

Stage 1 Waste Transfer Station

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DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
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1 INTRODUCTION

1.1 BACKGROUND

The Planning Assessment Commission (PAC), acting as delegate of the Minister for Planning, approved an application for the Erskine Park Waste and Resource Management Facility (WRMF) Staged Development Application (SSD 7075) on the 5 October 2016, comprising:

- A concept proposal for a Waste and Resource Management Facility with a maximum processing capacity of 300,000 tpa. All waste received at the WRMF shall enter the Waste Transfer Station (Stage 1), up to 150,000 tpa of this waste may be recycled at the Resource Recovery Facility (Stage 2)
- Construction and operation of the Stage 1 Waste Transfer Station with a maximum processing capacity of 300,000 tpa.

The WRMF will be developed in two stages, the first being a Waste Transfer Station (WTS) and the second being a Resource Recovery Facility (RRF). An Environmental Impact Statement (EIS) was prepared to support the application for the WRMF Concept Proposal and the Stage 1 WTS. A separate EIS for the Stage 2 RRF will be developed at a later date.

The WTS will receive commercial and household waste from the Western Sydney region which would subsequently be transported to a licenced waste management facility off site. A proportion of the waste received at the WTS would be diverted to the RRF for recycling and recovery of saleable products. The design capacity of the completed WRMF is 300,000 tonnes per annum, inclusive of both stages.

1.1.1 SITE LOCATION AND CONTEXT

The site is located approximately 11 kilometres south-east of Penrith, as shown by **Figure 1**, in western Sydney, NSW. The site is located at 85 – 87 Quarry Road, Erskine Park and identified as Lot 1 in Deposited Plan (DP) 1140063 in the Penrith Local Government Area (LGA) (refer to **Figure 2**). The title comprises approximately 3 hectares.

1.1.2 SITE DESCRIPTION

The site is currently utilised by Cleanaway to support the existing Erskine Park Landfill that is located adjacent to the site (Lot 4, DP 1094504). Current site infrastructure includes buildings, car parks, sheds, laydown areas, a weighbridge, and sealed roads. Some vegetation is also located around the site.

The topography of the site is relatively flat, sloping gently to the west, with an elevation of approximately 60 metres Australian Height Datum (AHD). South Creek, which is part of the Hawkesbury-Nepean catchment, is located approximately 1.5km to the west of the site.

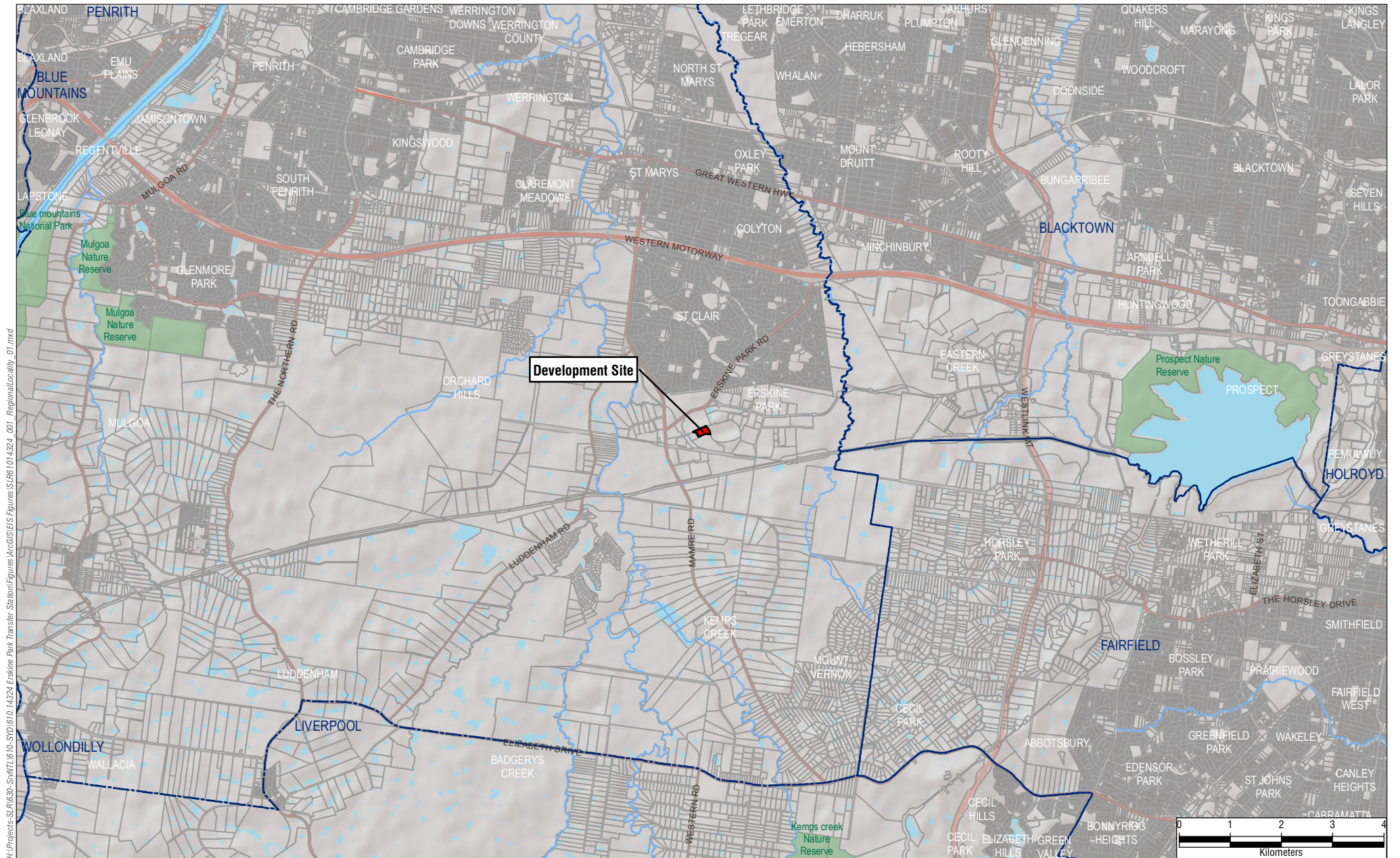
The site gains vehicular access from the adjoining Quarry Road. As can be seen in **Figure 3** the area surrounding the site is primarily industrial land uses, including Stramit Building Products and Hasbro to the north, Dutt Transport, Viscount Plastics, Dincel Construction Systems, Devondale Dairy and Stockland to the south, Cleanaway Depot to the west, and the Cleanaway Erskine Park Landfill to the east.

The nearest residential dwellings are located within the suburb of St. Clair, approximately 0.7 km to the north of the site, and rural-residential properties located in Orchard Hills, approximately 0.7 km to the west of the site.

1.1.2.1 THE MODIFICATION

This Environmental Assessment (EA) supports an application to modify development consent SSD 7075. The application is made under Section 96(1A) of the *Environmental Planning and Assessment Act, 1979* (EP&A Act).

The modification covers a number of proposed minor modifications to the approved Stage 1 WTS infrastructure, modifications to the Concept Proposal, administrative modifications and two clarifications of aspects of the Development included in the Erskine Park Concept Plan and Stage 1 WTS EIS (SLR, 2015).



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Notes:

1. All features are approximate only and subject to detailed survey.
2. Aerial Imagery courtesy Nearmap.
3. DCDB courtesy NSW LPI.

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Erskine Park Waste Transfer Facility

Site Location in Regional Context

FIGURE 1

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LEGEND

Development Site

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Erskine Park Waste Transfer Facility

Development Site

FIGURE 2



LEGEND

Existing Erskine Park Landfill

Development Site

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Erskine Park Waste Transfer Facility

Site Location and Surrounding Environment

FIGURE 3

1.2 The Applicant

The Erskine Park development site is owned by Cleanaway Waste Management Ltd (Cleanaway).

Cleanaway is the applicant for the Modification. The relevant postal address is:

Attn: Paul Antony
NSW Engineering Manager
Cleanaway
85-87 Quarry Road, Erskine Park, NSW, 2759
PO Box 804, St Marys, NSW, 1790

1.3 Document Purpose

This EA has been prepared on behalf of the applicant Cleanaway Waste Management Limited (Cleanaway) by SLR Consulting Pty Ltd (SLR). The EA supports an application under Section 96(1A) of the *Environmental Planning and Assessment Act, 1979* (EP&A Act) to modify development consent for SSD 7075. The application is being made to the consent authority, the Minister for Planning. The application has been prepared in accordance with the provisions of the EP&A Act and the *Environmental Planning and Assessment Regulation 2000* (EP&A Reg.).

This EA provides:

- The name and address of the applicant;
- A description of the development to be carried out under the consent;
- A brief description of the site and locality, including the address and particulars of title;
- A description of the approvals process;
- Details regarding consultation undertaken for this DA Modification;
- A description of the proposed modifications to the development consent;
- A description of the expected impacts of the modification;
- A comparison of the proposed modification with the approved development including any changes to environmental impacts;
- A statement of who the application is being made to;
- An assessment of relevant environmental planning considerations under Sections 96(1A) and 79C of the EP&A Act, including compliance with relevant planning instruments and controls, environmental impacts, site suitability and the public interest; and
- Summary and conclusions.

Table 1 lists all the requirements that are addressed by the EA and identifies where in the assessment these are addressed. These include requirements of Acts/Regulations and requirements identified by consultation with regulatory bodies.

Table 1 Requirements and where addressed in the EA

Requirement No	Source	Requirement	Where Addressed
1.	DPE Consultation Meeting held on 19 January 2017	A copy of the draft DA Modification be submitted to DPE prior to on-line submission	This EA
2.	DPE Consultation Meeting held on 19 January 2017	Numbers of corporate staff to be accommodated at the offices*	N/A*
3.	DPE Consultation Meeting held on 19 January 2017	Provide revised elevations plans	Appendix B
4.	DPE Consultation Meeting held on 19 January 2017	Indicate that reduced truck parking can take minimum truck volume	Section 3.4.3 and 3.4.4
5.	DPE Consultation Meeting held on 19 January 2017	Details of the Contractor to be hired to remove waste	Section 3.4.1
6.	DPE Consultation Meeting held on 19 January 2017	Include revised water modelling	Section 5.2
7.	DPE Consultation Meeting held on 19 January 2017	Designate heavy vehicle parking on plans	Appendix B
8.	DPE Consultation Meeting held on 19 January 2017	Revised plans	Appendix B
9.	DPE Consultation Meeting held on 19 January 2017	Updated traffic movement plan	Appendix B
10.	DPE Consultation Meeting held on 19 January 2017	Make a case that B30(f) is not practicable and propose new wording of condition	Section 3.12
11.	Email from DPE dated 24 January 2017	A detailed description of the proposed modification	Section 3
12.	Email from DPE dated 24 January 2017	Justification for the proposed modification taking into consideration Section 96 of the EP&A Act 1979	Section 6
13.	Email from DPE dated 24 January 2017	A detailed set of revised plans showing the proposed modifications and revised staging	Appendix B
14.	Email from DPE dated 24 January 2017	Revised stormwater plans	Appendix C
15.	Email from DPE dated 24 January 2017	Revised floor plans and swept path diagrams / analysis for the transfer station should you propose to reduce the floor area Also, provide a rationale for decreasing the floor area of the transfer station based on the operational requirements and approved tonnages of the facility	N/A**
16.	Email from DPE dated 24 January 2017	Details of the conditions to be modified and proposed wording of conditions of consent	Section 3
17.	Email from DPE	Detail how the use of the offices is proposed to be	N/A*

Requirement No	Source	Requirement	Where Addressed
	dated 24 January 2017	amended to include corporate employees and how this will change the potential impacts of the development (traffic, parking etc.)	
18.	Email from DPE dated 24 January 2017	Updated assessment of parking requirements of the facility	N/A*
19.	Email from DPE dated 24 January 2017	Rationale for removing truck parking (both in the south-east corner of the site and adjacent to the north-western boundary of the site)	Section 3.4
20.	Email from DPE dated 24 January 2017	Provide details of the contractor to be hired to remove waste	Section 3.4
21.	Email from DPE dated 24 January 2017	Detail how the operations of the facility will change based on the use of the contractor	Section 3.4
22.	Email from DPE dated 24 January 2017	Describe how the use of a contractor to remove waste will impact the traffic assessment submitted with the application	Section 3.4
23.	Email from DPE dated 24 January 2017	A revised visual impact assessment	Section 5.3
24.	Email from DPE dated 24 January 2017	Any other information you believe to be relevant to the proposed modification.	Throughout EA
25.	Email from DPE dated 4 July 2017	Detail why trucks are now required to reverse into the loading bays	Section 3.7
26.	Email from DPE dated 4 July 2017	Detail how site manoeuvrability will be impacted	Section 3.7
27.	Email from DPE dated 4 July 2017	Clarify how site manoeuvrability will be impacted from the additional landfill ramp	Section 3.9
28.	Email from DPE dated 4 July 2017	Provide detail on how movements between heavy vehicles, light vehicles and pedestrians will be managed	Section 3.7
29.	Email from DPE dated 4 July 2017	Provide additional information regarding the landfill access points	Section 3.9
30.	Email from DPE dated 4 July 2017	Provide details regarding what the what the landfill access points will look like	Section 3.9
31.	Email from DPE dated 4 July 2017	Provide 3D rendering of the landfill access points	Appendix B
32.	Email from DPE dated 4 July 2017	Provide swept path diagrams for the landfill access points	Appendix B
33.	Email from DPE dated 4 July 2017	Provide details regarding the interaction between landfill operations and Waste Transfer Station operations	Section 4.2
34.	Email from DPE dated 4 July 2017	Detail any noise impacts associated with the reversing beepers from trucks reversing into the loading bays	Section 5.5.1.4
35.	Email from DPE dated 4 July 2017	Detail what the architectural treatment on the west side of the temporary office (screen) would look like	Section 3.3 Appendix B
36.	Email from DPE dated 4 July 2017	Detail what materials the screen will be made out of	Section 3.3
37.	Email from DPE	Detail the purpose of the screen	Section 3.3

Requirement No	Source	Requirement	Where Addressed
	dated 4 July 2017		
38.	Penrith City Council Consultation Meeting held on 19 April 2017	Assessment under 75W	N/A***
39.	Penrith City Council Consultation Meeting held on 19 April 2017	Include contour levels over the top of plans	Appendix B
40.	Penrith City Council Consultation Meeting held on 19 April 2017	The extent to which 'substantially the same development' is achieved. That basic resource recovery is not replacing Stage 2 of the Development.	Section 4.1
41.	EP&A Act 1979 Section 79C (1)	Evaluation Matters for consideration—general In determining a development application, a consent authority is to take into consideration such of the following matters as are of relevance to the development the subject of the development application:	Section 7
42.	(a)	the provisions of:	Section 7
43.	(i)	any environmental planning instrument, and	Section 7.1
44.	(ii)	any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Director-General has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and	Section 7.2
45.	(iii)	any development control plan, and	Section 7.3
46.	(iia)	any planning agreement that has been entered into under section 93F, or any draft planning agreement that a developer has offered to enter into under section 93F, and	Section 7.4
47.	(iv)	the regulations (to the extent that they prescribe matters for the purposes of this paragraph), and	Section 7.5
48.	(v)	any coastal zone management plan (within the meaning of the <i>Coastal Protection Act 1979</i>), that apply to the land to which the development application relates,	Section 7.6
49.	(b)	the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,	Section 7.7
50.	(c)	the suitability of the site for the development,	Section 7.8
51.	(d)	any submissions made in accordance with this Act or the regulations,	N/A
52.	(e)	the public interest.	Section 7.9
53.	EP&A Regulation 2000 Section 115 (1)	Application for modification of development consent (cf clause 71A of EP&A Regulation 1994) An application for modification of a development consent under section 96 (1), (1A) or (2) or 96AA (1) of the Act must contain the following information:	The EA
54.	(a)	the name and address of the applicant,	Section 1.2

Requirement No	Source	Requirement	Where Addressed
55.	(b)	a description of the development to be carried out under the consent (as previously modified),	Section 1
56.	(c)	the address, and formal particulars of title, of the land on which the development is to be carried out,	Section 1.1.1
57.	(d)	a description of the proposed modification to the development consent,	Section 3
58.	(e)	a statement that indicates either:	-
59.	(i)	that the modification is merely intended to correct a minor error, misdescription or miscalculation, or	Section 3
60.	(ii)	that the modification is intended to have some other effect, as specified in the statement,	Section 3
61.	(f)	a description of the expected impacts of the modification,	Section 5
62.	(g)	an undertaking to the effect that the development (as to be modified) will remain substantially the same as the development that was originally approved,	Section 6
63.	(h)	if the applicant is not the owner of the land, a statement signed by the owner of the land to the effect that the owner consents to the making of the application (except where the application for the consent the subject of the modification was made, or could have been made, without the consent of the owner),	N/A
64.	(i)	a statement as to whether the application is being made to the Court (under section 96) or to the consent authority (under section 96AA),	Section 1.3
65.	EP&A Regulation 2000 Section 115	and, if the consent authority so requires, must be in the form approved by that authority.	The EA

Note: *Corporate staff are no longer being accommodated at the site's offices.

** No longer proposing to reduce the floor area of the WTS

*** SLR determined assessment under 75W was not required

2 CONSULTATION

2.1 CONSULTATION WITH NSW DEPARTMENT OF PLANNING AND ENVIRONMENT

The applicant and SLR met with DPE on 19 January 2017 to discuss the proposed modifications to the development consent. During this meeting the following proposed modifications were discussed:

- Revised “terraced” car parking layout;
- Removal of truck/trailer parking (and retaining wall changes);
- Reduced hardstand area and subsequently revised storm water management system;
- Deferred construction of third load-out lane;
- Office to house corporate staff¹;
- Reduced floor area and span of Waste Transfer Station (Stage 1)¹; and
- Altering development consent condition B30(f).

During the meeting DPE confirmed that an application under Section 96(1A) of the *Environmental Planning and Assessment Act, 1979* was an appropriate pathway to modify the development consent.

DPE also advised during this meeting that a pre-lodgment meeting would not be required. Instead, they requested that a copy of the draft EA be submitted to the Department prior to it being submitted on-line. The modification document was emailed to the DPE on 27 June 2017. Additional information has been included in this document as a result of feedback received from the Department’s review.

SLR also consulted with DPE via phone and email correspondence. During these consultations additional modifications to the DA were discussed and covered:

- A modified load-out area and deferred construction of additional load-out lanes;
- Alterations to site levels;
- Use of a temporary office; and
- Relocated Stage 1 car park.

Basic sorting & recovery of recyclable materials with mobile plant in the WTS was also discussed.

In addition, in email correspondence dated 24 January 2017 DPE requested to “*Please ensure that all the issues discussed in the meeting (from 19 January 2017) are addressed in your Section 96 (1A) modification proposal. I have provided some further requirements which should be provided with the application.*” These requested details, justifications, plans and assessments are described in Table 1 and provided in this DA modification document.

2.2 CONSULTATION WITH PENRITH CITY COUNCIL

On 19 April 2017 Penrith City Council was consulted regarding the proposed modifications to the development consent. During the meeting the City Council were provided details regarding the proposed modifications, approval pathway to be used and DA Modification assessment timeframes.

A copy of the DA Modification Application will be provided to the City Council for review and feedback, as part of the exhibition of the document.

¹ This is no longer proposed

3 DESCRIPTION OF THE PROPOSED MODIFICATION

This modification under Section 96(1A) of the EP&A Act seeks approval from the consent authority for a number of minor changes to the Concept Proposal / Staged Development Application and the Stage 1 Waste Transfer Station.

An explanation and justification for these proposed modifications is provided in the sections below. The proposed changes are also illustrated on the proposed site layout plan – Stage 1 and the elevation plans included in **Appendix B**. These Plans are intended to replace the plans included in Appendix 1 of development consent SSD 7075. The modifications are also shown on the Site Layout – Concept Plan which shows the proposed changes compared to the approved project. Additional Plans showing the proposed screen for the temporary office, the proposed equipment to be installed in the load-out lane, the proposed landfill ramps and swept paths for these access points are included in **Appendix B**.

The proposed changes are minor when considered in the overall context of the project, which is substantially the same project as that for which consent was originally granted. The proposed modifications to the Stage 1 WTS are:

- Tiered car park (future);
- Relocated car park;
- Temporary (relocated and modified existing) Office;
- Remove and defer truck parking;
- Revise stormwater management system;
- Defer construction of two load-out bays;
- Modify site levels;
- Change movement of trucks into the load-out bay; and
- Construction of entry/exit ramps to the landfill.

As per Section 115 (1) (e) of the Regulation, the proposed modifications are required to improve the efficiency of the overall site layout and operation of the Development. The proposed modifications also make the construction of the Development viable for Cleanaway, with less upfront capital expenditure required, while maintaining the environmental management and mitigation measures committed through the EIS and conditions of approval.

Proposed modifications to the Concept Proposal include the following elements:

- Car parking;
- Office;
- Truck parking;
- Truck movement;
- Stormwater management system; and
- Site levels.

Per EP&A Regulation 2000 Section 115 (1)e)(ii) these modifications are required to improve the efficiency and operation of the Development, and make the construction of the Development financially viable.

The application also seeks approval for four administrative changes to the development consent conditions. It seeks to modify:

- Schedule C Part B Condition B30(a);

- Schedule C Part B Condition B30(b);
- Schedule C Part B Condition B30(f); and
- Schedule C Part C Condition C8.

The EA also includes two clarifications regarding:

- Basic resource recovery; and
- Continued operation of the adjacent Erskine Park landfill.

3.1 Extent of modification

The following table provides details regarding the proposed modifications compared with what has been approved i.e. the extent of the modification. The table also demonstrates that the proposed modified development is substantially the same Development as what was approved by development consent SSD 7075, as required by S 115(1)(g) of the Regulation.

Further details regarding the proposed modifications are included in the sections below.

Table 2 Extent of Modification

Modification	Component of approved project being modified	Modification proposed	Extent of Modification proposed	Conclusions on Modification
1.	Car parking	Tiered car parking (Deferred to Stage 2)	• Tiered car park - 5 x 2 m high tiers instead of a 5.5 m high retaining wall) • Larger footprint (increase from 925 m² to 1560 m²) • Constructed of the same material • 55 car parking spaces instead of 10 car parking spaces provided over Stage 1 and Stage 2.	• Car parking arrangement modified but it will still function as a car park. • The modified car park will not affect the approved use of the land; a resource management facility. • Substantially the same development.
2.	Car parking	Relocated car park	• Relocated car park to be constructed during Stage 1 of the development. • Relocated car park to be relocated to the Stage 2 development area. • The footprint of the relocated car park is smaller than the approved carpark, covering an area of 580 m², compared to 925 m² of the approved car park. • 20 car parking spaces instead of 10 car parking spaces (with a further 35 to be provided in Stage 2 as above). • Car park will be sealed, as was the permanent carpark.	• Interim measure only. • Will not affect the approved use of the development in the long term. • Substantially the same development.

Modification	Component of approved project being modified	Modification proposed	Extent of Modification proposed	Conclusions on Modification
3.	Office	Temporary Office (modified and relocated existing)	- Temporary office constructed for operations during Stage 1. - Permanent office to be constructed during Stage 2. - Temporary office constructed of existing demountable buildings. The office modules will be reconfigured. - One storey high instead of 2 stories. - Footprint of temporary office is smaller than the footprint of the approved office (360m² compared to 472.3m²)	- Will not affect the approved use of the development in the short term and long term. - Substantially the same development.
4.	Truck Parking	Remove and defer truck parking	- Truck parking area to the south-east of the site removed completely. - Hardstand area replaced with landscaped area and exit ramp. - Deferred truck parking adjacent to inbound ramp would be constructed in Stage 2, when it is required. - Deferred truck parking dimensions would not change	- The modifications would not affect the approved use of the development in the long term. - Substantially the same development.
5.	Stormwater management system	Revised stormwater management system	- Smaller detention basin; 710 m³ compared to 740 m³. - Revised stormwater management system would	- Stormwater system would still manage stormwater effectively. - Would not affect the approved use of the

Modification	Component of approved project being modified	Modification proposed	Extent of Modification proposed	Conclusions on Modification
			perform the same function	development. Substantially the same development.
6.	Load-out bays	Defer construction of load-out bays	- Construction of lane 2 and 3 of the waste transfer facility deferred. - The lane(s) would be constructed when they are required. - Dimensions of the load-out bays would remain the same. - Reduction in size of the WTS building from 4,250 m² to 3,800 m².	- Modification would not affect the approved use of the development. - Substantially the same development.
7.	Site elevations	Modify site levels	Site levels (elevations) leading to an overall reduction in the extent of excavation.	- Would not affect the approved use of the development. - Substantially the same development.
8.	Truck movement	Modify truck movement into load-out lane	- Trucks would reverse into the load-out lane - Eastern approach to the load-out lane would be blocked off.	- Would not affect the approved use of the development. - Substantially the same development.
9.	Concept Proposal	Modify Concept Proposal	Refer to modification 1, 2, 3, 5, 6 and 8 above	Refer to modification 1, 2, 3, 5, 6 and 8 above
10.	Administrative Change	Modify Schedule C Part B Condition B30(a)	Refer to modification 1 above	Refer to modification 1 above
11.	Administrative Change	Modify Schedule C Part B Condition B30(b)	Administrative change	Substantially the same development
12.	Administrative Change	Modify Schedule C Part B Condition B30(f)	Administrative change	Substantially the same development

Modification	Component of approved project being modified	Modification proposed	Extent of Modification proposed	Conclusions on Modification
13.	Administrative Change	Modify Schedule C Part C Condition C8	Administrative change	Substantially the same development

3.2 CAR PARKING

Cleanaway propose to relocate and construct an employee and visitor car park in the Stage 2 Development area. The site layout plan shows the proposed location of this car parking area (see **Appendix B**). This car park would be used until the Stage 2 Development is constructed. This parking area would provide 20 bays for the WTS. This would provide enough on-site parking for all employees (including those operating the landfill) and visitors while the WTS & landfill are operational.

Additional parking is available at Erskine Park Depot, if needed for any staff working longer than standard hours. All other additional staff parking will only be required in Stage 2 of the application.

During Stage 2 Cleanaway propose to construct a tiered car park within the same location and similar footprint of the car park approved by the development consent. The revised car park would provide 55 bays for visitors and employees, including 1 bay for disabled parking.

The car park presented in the Erskine Park RMF Stage 1 EIS (SLR, 2015) provides 22 bays for parking by Waste Transfer Station (WTS) staff. The approved car park was to be constructed of asphalt.

3.2.1 Justification of Proposed Change

3.2.1.1 Tiered Car Park

The terraced parking area softens the view of the parking area from Quarry Road. The original parking area was designed with one retaining wall that stepped the parking area down from 50.45 RL to 44.9 RL. A revised parking arrangement with a car park made out of multiple tiers removes this 5.55 m high retaining wall. A revised Visual Impact Assessment of the site was prepared, which considers the impacts of the tiered car parking arrangement. The results of the visual impact assessment are discussed in further detail in **Section 5.3** of this document.

The tiered parking arrangement maximises parking bays, providing an additional 33 parking bays for staff and visitors. The extra parking space is required to accommodate the higher numbers of employees and shift change-over for Stage 2 RRF operations. By providing additional parking bays Cleanaway avoids the possibility of visitors and employees having to park off-site.

3.2.1.2 Relocated Car Park

The construction of the car parking area included in the RMF EIS (SLR, 2015) would require excavation to subgrade level with a compacted granular capping layer placed above the subgrade. The relocated car park area would require less excavation work than the approved car park and therefore less up-front capital expenditure by Cleanaway.

The relocated parking area would be constructed in Stage 1 and would not prevent the construction of other elements of Stage 1 WTS.

Planting of trees along the western boundary of the site would screen this area from the roadway.

3.3 TEMPORARY OFFICE

Cleanaway propose to defer the construction of the permanent two storey office until Stage 2 of the development. Instead, the existing transportables (modular buildings) on the site will be re-used and re-located, as an interim measure. The temporary office would be located within the footprint of the office approved by the development consent. The office would be painted and would receive an architectural treatment on the west side of the building (a screen). The purpose of the screen is to create a more visually appealing office, on the side of the building where staff and visitors would be approaching from. The screen would be 3 m high and 12.7 m wide, and would be constructed from powder coat aluminium panels. The screen would be painted with the blue Cleanaway logo. The positioning and design of the screen is shown in the left hand bottom corner of the west elevation plan and also on the proposed modified modular office building elevation plan² provided in **Appendix B**. The screen would be located within the approved footprint of the office.

The temporary office would be code compliant by incorporating disabled access; a ramp will be fitted to the south side of the building. Amenities, including toilets, showers, change-rooms, locker space etc would be fitted to the transportable office to accommodate up to 20 workers. The dimension of this office would be 12.7 m by 30 m, with a height of 3.0m. The office's elevation would be 49.3 m RL. In addition, the temporary office would incorporate a weighbridge kiosk / office in the northwest corner of the building.

The office described in the EIS consists of a two storey office and amenity complex that has been designed to abut up to the northern elevation of the waste transfer building. This structure was proposed to be fixed to the side of the transfer building and cover a footprint of the 23.5m by 12.5m. The remaining ground floor was designed as mess facilities and amenities for site operational staff. The upper storey would be the site reception, open office space, meeting rooms enclosed offices.

3.3.1 Justification of Proposed Change

By initially re-using the existing office at the site Cleanaway would reduce upfront capital cost, making the development commercially viable. In addition, by deferring the construction of the permanent office Cleanaway should be better able to determine design requirements for the permanent office once the scope and timing of Stage 2 are clearer.

The relocated office would be large enough to accommodate staff working at the WTS and is an interim measure.

The use of an interim office at the site has been considered in the revised visual impact assessment. This revised visual impact assessment is discussed further in **Section 5.3**.

3.4 REMOVE AND DEFER TRUCK PARKING

Cleanaway propose to remove the truck parking area in the south east corner of the project site. This parking area is no longer required as contractors will be hired to remove waste from the site. The parking area would be replaced with a stabilised embankment. Part of this area would also be used as an exit ramp for the landfill (see **Section 3.8**, below).

Cleanaway also propose to defer the construction of the truck parking adjacent to the north-western boundary of the site. This deferred development area has been omitted from the proposed Stage 1 site layout plan and is shown as "Deferred to Stage 2" on the Site Layout – Concept Plan.

In email correspondence dated 24 January 2017 DPE requested specific details regarding the removal of the truck parking area (refer to **Section 1.1**). This additional detail is provided in the sections below.

² 'Decorative Screens Direct' notation on the plan is a specification reference

3.4.1 Details of the Contractor to be hired to Remove Waste

The transport contractor has not yet been selected. The contracting of this work will follow a competitive tender for the services, with the tender to be conducted during construction of the WTS. A registration of interest was conducted in 2016 to assess and pre-qualify potentially acceptable and suitably experienced contractors that will be invited to tender for this work.

Cleanaway has experience in outsourcing bulk waste transport activities. A successful subcontract operation has been established in Western Australia for bulk waste transport from a Waste Transfer Station in Perth (see **Figure 4**) to Cleanaway's Banksia Road landfill near Dardanup, around 180 km southwest of Perth. The transport contractor provides all transport equipment, labour, supervision, truck parking (at a depot), maintenance (including vehicle washing) and continuity of transport services.

It is intended that the contractor will provide their services through their own facility without relying on any aspect of the WRMF.

3.4.2 Operations Changes Based on the use of a Contractor

There will be no change to the planned operational practices at the facility, other than off-site parking of transfer trucks and trailers that cannot be parked either in the load-out tunnels or in designated parking bays at the Development Site.

3.4.3 Impact to the Traffic Assessment Submitted with the Application from the use of a Contractor to Remove Waste

There will be no change to traffic impacts associated with the outsourcing of bulk waste transport services as the total number of vehicle movements will not change. The only effective change will be the total time the transfer vehicles spend on site, since on-site parking will be limited and off-site parking will be the norm.

3.4.4 Justification of Proposed Change

Inclusion of a truck and transfer trailer parking area in the south-east corner of the site was originally based on an expectation that Cleanaway would undertake transfer haulage activities in-house, and the parking area would therefore be required to facilitate continuity of load-out since Cleanaway did not have truck parking space available at a suitable site in close proximity to the proposed WTS. Deletion of the truck and transfer trailer parking area in the southeast corner of the Development Site has been driven by Cleanaway's desire to rationalise development costs and a decision to sub-contract the waste transfer transport operation and require the subcontractor to provide suitable truck and trailer parking as part of the sub-contracted services. The deletion of the truck/trailer parking area reduces the total hardstand area and associated stormwater runoff, further reducing development costs.

The construction of the truck parking area on the north-west side of the development would be delayed until this parking area is required i.e. when the amount of waste processed at the WTS ramps up and truck traffic increases.

At no point before construction of the north-west parking area would queuing or parking of trucks occur on Quarry Road.

3.5 REVISE STORMWATER MANAGEMENT SYSTEM

Cleanaway propose a revised storm water management system for the site. The revised stormwater management system incorporates a smaller retention basin and reflects the revised site levels that are described in **Section 3.8** and reduced hardstand area (refer to **Section 3.6**). Revised stormwater plans showing this revised stormwater management system are provided in **Appendix C**.

3.5.1 Justification of Proposed Change

Following the removal of the truck parking area and hardstand areas there will be a subsequent reduction to stormwater runoff, with the hardstand and parking areas being replaced with permeable stabilised embankment. With a reduced volume of stormwater generated at the site a smaller retention basin will be adequate to manage surface water runoff.

A revised Stormwater Assessment has been prepared for the site, to ensure the revised stormwater management system is adequate for the site. This assessment is discussed further in **Section 5.2** of this Application.

3.6 DEFER CONSTRUCTION OF LOAD-OUT BAYS AND HARDSTAND AREAS

The construction of lane 2 and lane 3 of the WTS load-out area (the most southern lanes) are proposed to be deferred to Stage 2. These lanes have been omitted from the Proposed Layout Plan and Elevations Plans. They are also shown as “Deferred to Stage 2” on the Site Layout Concept plan.

Portions of hardstand areas on the eastern side of the WTS building and to the south and west of the RRF will also be deferred to Stage 2.

With the deferment of lane 2 and lane 3 the Stage 1 building dimension footprint will be reduced from 4,250 m² to 3,800 m². The size of the floor in the reception and transfer building would stay the same.

The load-out lane that will remain would have an increased width of 4.9 m. The lane would still remain within the approved footprint of the “Reception and Transfer” area, as shown on the Proposed Site Layout Plan. The lane would also remain fully enclosed.

3.6.1 Justification of Proposed Change

The deferred construction of load-out bays doesn't affect the site operationally. There would be adequate bays for load-out of waste. No putrescible waste would be retained on-site for longer than the period already approved.

Deferring the construction of load-out bays and hardstand areas would save upfront construction costs, making the Development financially viable to build.

In addition, there would be enough hardstand areas (roadway) retained at the site that would allow for site vehicles (in particular trucks) to manoeuvre around the site safely and in accordance with AUSROADS Guide to Road Design.

3.7 MODIFY TRUCK MOVEMENT INTO LOAD-OUT LANE

The approved Site Layout – Concept Plan indicates trucks entering and exiting the loading lanes in a forward motion. The proposed half-depth load-out bay (refer to **Section 3.8**) would now require trucks to reverse into the loading bay. Trucks that enter the half-depth load-out bay would need to be loaded with waste over a load wall when top-loaded. For trailers to be loaded via end-compaction, waste would be tipped into a hopper via wheel loader from the WTS floor. The waste would drop through the hopper and into a compactor, where it would be progressively compacted into transfer trailers. This equipment would block off the eastern end of the load-out lane, requiring trucks to reverse into the bay. This equipment is shown on a Plan included in **Appendix B**.

The change in the direction of movement of trucks into the load-out lane is reflected on the Proposed Site Layout Plan. Trucks would be able to manoeuvre into this lane as the concrete roadway to the west of the load-out tunnel would be modified to enable trucks to perform a turn in and reverse manoeuvre. Other trucks would be able to manoeuvre around the reversing vehicles, as shown by the swept path diagram.

Movements between heavy vehicles, light vehicles and pedestrians would be managed appropriately during the operation of the development. Light vehicles would enter the site and park at the carpark. Pedestrians would then enter the office and WTS on designated pathways, without crossing any internal roadways. Heavy vehicle movement would be monitored by persons manning the weighbridges. Heavy vehicle truck interactions between the WTS and landfill would be controlled by a stop sign installed at the bottom of the landfill exit ramp, with landfill traffic stopping for WTS traffic. This is an appropriate measure as the outbound landfill truck drivers would have better line of sight than the drivers coming down the WTS ramp, landfill traffic volume should be lower than the WTS traffic volume and the landfill will close within the next two years.

3.7.1 Justification of Proposed Change

The change in movement of trucks into the load-out lane doesn't affect the site operationally. Waste would still be able to be loaded into trucks.

The change in truck movement into the load-out lane is required to accommodate new site levels. By having a half depth load-out lane Cleanaway save on construction, therefore making the Development commercially viable to build.

3.8 SITE LEVELS

Cleanaway propose to modify the elevation of the site. The modified elevations are shown on the Proposed Site Layout Plan. The tip floor level (the elevation of the "Reception and Transfer" area) would be reduced from 51.5 RL to 49.5 RL. In addition, the Stage 2 area is proposed to be raised from 46.2 RL to 48.0 RL.

Other modifications to site levels that are proposed are:

- A half-depth load-out area with a floor level of 46.5 RL;
- Modification of the existing retaining wall, shown in pink dashed line on the Proposed Site Layout Plan;
- Change in grade for the ramp coming into the site from 1:10 to 1:12;
- Change in elevations and grade of roadway and ramps to north, east and south of the Stage 1 Reception and Transfer building.

All of these altered elevations are reflected on the site plans.

3.8.1 Justification of Proposed Change

These modifications would enable Cleanaway to save up-front capital expenditure making the development feasible to construct. Such modifications would reduce retaining wall heights, depth of foundation and would reduce the amount of material that would require earthworks, by leaving material in place.

The main impact from the modifications of site levels is surface water movement and management. A revised Surface Water Assessment has been prepared that considers impacts to surface water movement from changes to levels of the site. This Assessment is discussed further in **Section 5.2** of this document.

3.9 LANDFILL ENTRY AND EXIT RAMPS

The adjacent Erskine Park landfill will still be operating during the construction and potentially during operation of the Development. To allow for the continued operation of the landfill and future closure of this area an exit ramp for trucks would require construction during Stage 1 of the Development. The exit ramp would be constructed where the truck parking would be removed; to the south-east of the site utilising the existing wheel wash facility.

The existing service access entry ramp to the landfill, located to the immediate south of the leachate treatment plant (LTP) on the eastern boundary of the Development would be used but slightly modified. The modified ramp is shown on the Site Layout – Concept Plan provided in **Appendix B**.

The location and design of both ramps is shown on the Proposed Site Layout plan and 3D renderings included in **Appendix B**. Swept path diagrams for these access points are also provided in **Appendix B**. These indicate how B-Double trucks would be able to manoeuvre along these access points. Site manoeuvrability would not be impacted by these access points.

Interactions between WTS and landfill truck traffic would be managed appropriately. Trucks entering / exiting the landfill would be required to do so via the WTS weighbridge, enabling weighbridge staff to monitor the traffic. In addition, trucks exiting the landfill would be required to stop at a stop sign installed at the bottom of the landfill exit ramp, and give way to WTS truck traffic on their right hand side.

The landfill entry and exit ramps would be constructed from salvaged asphalt road base.

The access point to the north of the LTP would only be used to access the LTP and would not be used for access to the landfill.

3.9.1 Justification of Proposed Change

Ongoing settlement of the landfill and revised contours (EPA approval pending) for the final landform has resulted in extension of landfill operating duration.

MODIFICATION TO THE CONCEPT PROPOSAL

The proposed modifications described in the sections above require a modification to the Waste and Resource Management Facility Concept Proposal (Concept Proposal). The aspects of the concept proposal that require modification are the:

- The site layout of the Stage 2 Resource Management Facility incorporating layouts and elevations, internal road and hard standing and related ancillary infrastructure;
- Car parking (refer to **Sections 3.1 and 3.2**);
- Office (refer to **Section 3.3**);
- Truck parking (refer to **Section 3.5**);
- Stormwater management system (refer to **Section 3.6**); and
- Site levels (see **Section 3.8**).

The following elements of the Concept Proposal do not require modification:

- Design capacity of the WTS; 300,000 tonnes per annum of putrescible waste; and
- The Resource Recovery Facility (Stage 2) with a design capacity of 150,000 tonnes per annum.

All aspects of the Concept Proposal that require modification are described in the sections above and are shown on the revised site layout (**Appendix B**).

3.9.2 Justification of Proposed Change

The proposed modifications described in the sections above require a modification to the ancillary infrastructure described in the Concept Proposal. The design capacity of the WTS and Stage 2 will not change, nor any of the design characteristics of the Resource Recovery Facility described in the Concept Proposal.

3.10 SCHEDULE C PART B CONDITION B30(A)

Cleanaway proposes revising the wording of DA Schedule C Part B Condition B30(a) from *“a total of 10 car parking spaces, including one disabled car space are provided;”* to *“a total of 20 car parking spaces, including one disabled car space”*. The tiered and relocated car parks are described in Sections 3.1 and 3.2, respectively.

3.10.1 Justification of Proposed Change

An additional 10 car parks are required as additional staff would be working at the site. If these additional bays are not provided then staff may be required to park on Quarry Road.

3.11 SCHEDULE C PART B CONDITION B30(B)

Propose modifying the wording of DA Condition Schedule C Part B B30(b) from *“trucks shall only be parked in the designated truck parking areas as identified in Appendix A,”* to *“trucks shall only be parked in the designated truck parking areas as identified in Appendix 1,”*.

3.11.1 Justification of Proposed Change

This is an administrative change as the Appendix was incorrectly referred to as “Appendix A” instead of “Appendix 1” in the development consent.

3.12 SCHEDULE C PART B CONDITION B30(F)

Modify DA Schedule C Part B Condition B30(f) *“unless such deliveries are via Erskine Park Road, truck deliveries and pickups are scheduled to avoid busy morning and afternoon peak hours”* to *“The scheduling of truck movement will be managed to avoid peak times, where possible”*.

3.12.1 Justification of Proposed Change

The wording of the Condition constrains the Development and would be difficult to implement as Cleanaway would be receiving incoming waste from various commercial customers and subcontracting the bulk waste transport operation for outgoing waste to a third party. This Condition also doesn't reflect Cleanaway's permitted access to their Commercial and Industrial (C&I) depot across the road from the Development. In addition, Cleanaway do not intend going through residential areas for load-out trucks.

Cleanaway would request customers, suppliers and contractors to consider using alternative routes and avoid peak times, where possible.

3.13 SCHEDULE C PART C CONDITION C8

Modify DA Schedule C Part C Condition C8 from *“Within 1 year of the date of this consent, and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the Development”* to *“Within 1 year of commencement of operation, and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the Development”*.

3.13.1 Justification of Proposed Change

Cleanaway understand the intention of the condition is to undertake an audit to assess the environmental performance of the Development whilst in operation. As the WTS is not currently operating and construction on the Development has not commenced, the audit is requested to be undertaken once the Development is operational, to provide meaningful assessment.

4 CLARIFICATION

The following sections provide further information to clarify various aspects of the approved development described in the EIS (SLR, 2015a). These aspects are not proposed as modifications. Instead they are presented as clarifications.

4.1 BASIC RESOURCE RECOVERY

The original EIS contemplated some basic resource recovery in the Stage 1 WTS area and this EA report clarifies what this would entail. The Erskine Park RMF EIS (page 58) discusses a basic resource recovery process and how it would be incorporated in the Stage 1 reception and transfer area; *“Waste deemed suitable would be sorted by a floor sorting process, with mobile plant only such as a wheeled excavator/material handler for picking out recyclable materials”*. This element was also contemplated in the Concept Proposal presented in the EIS.

Cleanaway would incorporate basic resource recovery (processing) of dry (non-putrescible) waste from commercial and industrial waste received in the Stage 1 Reception and Transfer area. Mobile plant would be used to sort through the waste and select and separate dry material suitable for processing. Mobile machinery that would be used for the sorting process may include wheeled excavator/s and/or material handlers. Recyclables would be stored in separate designated bins or product bunkers, located against the south-west wall of the Reception and Transfer area. Non-putrescible recyclables would be stored on site for approximately 2 – 3 days until sufficient product is accumulated for efficient transport off-site.

Nominally 60,000 tpa³ of waste is expected to be segregated within the Reception and Transfer area to process via resource recovery. The recovered material would nominally consist of;

- metals - 1,500 tpa³
- wood - 6,700 tpa³;
- cardboard - 2,100 tpa³;
- rigid plastics - 700 tpa³; and
- masonry / inert fines - 8,000 tpa³.

4.1.1 Justification

Justification for basic resource recovery:

- The approved EIS (SLR, 2015) includes a basic resource recovery process.
- The concept of a waste management facility doesn't change by incorporating an element of processing into Stage 1. DPE advised on 5 April 2017 sorting and storage is consistent with the terminology of a waste transfer station.
- Enables the waste stream to be characterised, in preparation for the Stage 2 development.
- By processing the incoming waste stream less residual waste will be sent to landfill. This is consistent with NSW EPA's *Waste Less, Recycle More initiative*.
- No additional odour or noise impacts as the same equipment that will be used for waste transfer will be used for resource recovery, the same types of waste will be processed and the "Reception and Transfer" area will continue to be fully enclosed.
- There is room in the transfer station to sort waste.

³Note: These values are indicative and would be subject to variable waste input composition.

The incorporation of basic resource recovery in the WTS does not replace the Highly Automated RRF. Cleanaway still intends to develop a RRF as Stage 2 of the RMF and an EIS will be submitted for assessment at a later date.

4.2 CONTINUED OPERATION OF LANDFILL

The operation/closure of the landfill wasn't part of the WRMF approval. The landfill operates under a separate approval. The EIS prepared by SLR completed on October 2015 discussed the landfill to the extent that its continued operation would impact on the layout and operations of the WTS.

The RMF EIS (dated October 2015) indicates that the landfill has approximately two years of commercial operations remaining i.e. would cease operations in October 2017. At the time of the preparation of this EA the landfill was still operating and the landfill had an indicative closure date of June 2019.

There would be little interaction between the operation of the WTS and landfill. The only interactions would be vehicles moving through the Development site to access the landfill. In addition, staff employed at the landfill would work in the WTS office. Both of these interactions would be for a relatively short period of time, until the landfill is permanently closed.

Trucks entering / exiting the landfill would be required to do so via the weighbridge, therefore this traffic will be monitored by weighbridge staff. Outgoing truck traffic from the landfill would also be controlled by stop signs installed at the bottom of the landfill exit ramp.

4.2.1 Justification

The extended operation of the landfill would allow suitable non-putrescible waste and site-generated construction related excess fill to be disposed of at the adjacent Cleanaway landfill. Therefore less waste would need to be transferred from the site to external landfill sites.

Maximum traffic is not expected at the site until several years after the Development becomes operational. With the landfill expected to close within 2 years combined construction traffic and landfill traffic would not exceed maximum traffic volumes, as estimated by Traffix's Traffic Impact Assessment (TIA) included in the EIS (SLR, 2015).

5 ENVIRONMENTAL IMPACT ASSESSMENT OF THE PROPOSED MODIFICATIONS

5.1 Identification of Issues

5.1.1 Key Issues

The key potential impacts from the modifications are:

- Surface water impacts; and
- Visual amenity impacts.

Specialist studies have been prepared for these impacts. These studies are discussed in further detail in **Section 5.2** and **Section 5.3** below.

5.1.2 Other Issues

Other potential impacts caused by the proposed modifications include:

- Odour impacts;
- Noise and vibration impacts;
- Air quality impacts (including Greenhouse Gas [GHG]);
- Traffic and transport impacts;
- Indigenous and non-Indigenous impacts;
- Soils, geology and contamination;
- Flora and fauna; and
- Cumulative impacts.

These impacts have been assessed to demonstrate there is either no or minimal impact from the proposed modifications.

5.2 Surface Water

5.2.1 Background

5.2.1.1 Previous Assessment

A surface water assessment was prepared for the Stage 1 EIS by SLR in October 2015 (SLR, 2015). The purpose of this Surface Water Assessment was to specifically meet the Secretary's Environmental Assessment Requirements (SEARs) for the Development which relate to surface water as well as the recommendations of other consulted agencies and relevant stakeholders. The assessment determined that the Development of the site meets local stormwater management targets for water conservation, water quantity and water quality targets and is therefore considered to be consistent with best practice stormwater management standards. The impacts were determined to be generally beneficial and any negative impacts were not considered to pose a significant impact to the environment.

5.2.1.2 Management and Monitoring

Approved stormwater management measures for the development include:

- The Development will comply with section 120 of the POEO Act, which prohibits the pollution of waters, except as expressly provided in an EPL.
- A stormwater management scheme will be prepared for the development and will be implemented in consultation with the EPA.
- An Erosion and Sediment Control Plan (ESCP) will be prepared as part of the CEMP setting out detailed measures for the management of erosion and sediment.
- Storage of hazardous materials during construction such as oils, chemicals and refuelling activities will occur in bunded areas.
- Water quality monitoring of water within the sediment basins will be carried out during the construction phase in accordance with the CEMP.
- A minimum of 740 m³ of onsite detention (OSD) will be provided within an underground tank and above ground storage within the detention basin.
- Rainwater harvesting tanks will be implemented, which will provide water storage for supplying greywater for toilet flushing in the buildings.
- Cleanaway will develop a detailed maintenance and operations plan for the entire stormwater system in accordance with Penrith Councils WSUD Policy (PCC, 2013) and will be included within the OEMP.

5.2.1.3 Environmental Review

At the request of the DPE a revised stormwater assessment was prepared by SLR (2017) (refer to **Appendix C**). The revised stormwater assessment considered any changes to stormwater impact and management as a result of the modifications and included:

- Hydrological modelling to determine onsite detention storage requirements;
- Stormwater quality modelling to assess the performance of the proposed stormwater quality improvement measures in terms of reducing pollutant loads;
- Quantitative assessment of stream erosion index;
- Rainwater harvesting assessment; and
- Detailed site water balance for two scenarios (existing and post development).

The revised assessment determined that with the proposed modifications the Development would still meet local targets for stormwater management in the areas of water conservation, water quantity and water quality. The Development was therefore still considered to comply with best practice stormwater management standards. The impacts from the Development were still determined to be positive overall and given the context of the Development within the wider South Creek catchment, any adverse impacts were deemed not likely to cause a significant impact to the environment.

5.2.1.4 Mitigation Measures

Mitigation measures included in **Section 5.2.1.2** would be implemented for the modified development. The following measures would also be implemented to manage storm water resulting from the modifications:

- Minimum of 710 m³ of OSD would be provided within an Atlantis Flow-Tank system and above ground storage within the bio-retention basin; and
- Rainwater harvesting tanks would be installed to provide a minimum of 159 kL of water storage for supplying greywater for toilet flushing in the buildings and for use within the wheel wash facility. Based upon the space available, two 79.64 kL, 4.3 m high, 4.86 m diameter corrugated commercial tank would be required.

The OSD has been reduced from 740 m³ as included in the EIS (SLR, 2015) to 710 m³. The reduction in detention size is due to a reduced area of hardstand at the modified Development site and a subsequent reduction in stormwater volume.

The volume of the rainwater harvesting tanks has increased from 56 kL (as included in the EIS) to 159 kL due to altered operational water demands, and a modified catchment and stormwater design. In addition, the proposed modification includes the wheel wash in the calculations.

5.2.1.5 Conclusion

The proposed modifications do not lead to any change to impacts compared to those assessed in the EIS (SLR, 2015). Opportunities to further enhance water management have been incorporated in the modified Development.

5.3 Visual Amenity

5.3.1 Background

5.3.1.1 Previous Assessment

A visual amenity assessment (VIA) was prepared for the Stage 1 EIS (Green Bean Design, 2015). The assessment determined that overall the key Development activities and operations would have a negligible visual impact.

5.3.1.2 Management and Monitoring

Mitigation measures approved for the Development by the development consent include:

- The Applicant shall install any new signage in consultation with Council and shall comply with the State Environmental Planning Policy 64 – Advertising and Signage.
- Lighting will be designed and installed in accordance with AS 4282-1997 to avoid obtrusive effects to surrounding residents.
- Disturbed areas will be rehabilitated on completion of construction.
- Mature trees that do not need to be removed will be fenced and protected for the duration of construction.
- Landscape works will be implemented as part of the Development.
- Further detail on the architectural treatment of the facility will be provided as the detailed design progresses.
- Black palisade fencing located behind landscaping fronting on to Quarry Road will be provided.
- Upon completion of the WTS, the undeveloped RRF area will be grassed until such time as construction can commence on the second stage.
- All external lighting associated with the Development shall be mounted, screened, and directed in such a manner so as not to create a nuisance to the surrounding environment, properties and roadways.
- Prior to the commencement of construction, the Applicant shall prepare a Building and Material Schedule and a Landscape Plan for the development to the satisfaction of the Secretary.

5.3.1.3 Environmental Review

A revised VIA for Stage 1 Erskine Park was prepared by Green Bean Design (refer to **Appendix D**). The revised VIA was prepared to:

- Identify and describe the proposed Modification works;

- Assess the potential visual impacts associated with the Modification works and any changes to the impacts assessed in the EIS; and
- Determine the significance of visual effects.

The assessment determined that overall the Erskine Park Stage 1 WTS modification would not lead to any change to impacts assessed in the EIS and would have a negligible visual impact on people living in or travelling through the landscape within and surrounding the Development Area. Views toward the modified Project would be predominantly contained by existing development within the Erskine Business Park as well as modified landforms associated with the adjoining landfill facility.

5.3.1.4 Mitigation Measures

Additional mitigation measures that will be implemented by Cleanaway to further enhance the visual amenity of the Development construction and operation include:

- Construct a screen on the side of the office that would be visible by staff / visitors on their approach to the office; and
- Plant trees and shrubs on the western edge of the Development site.

5.3.1.5 Conclusion

The proposed modifications do not cause any change to visual amenity impacts as assessed in the 2015 EIS (SLR, 2015). Opportunities to further enhance visual amenity have been included in the modified Development.

5.4 Odour

5.4.1 Background

5.4.1.1 Previous Assessment

The potential impacts from odour from the operation of the WTS were assessed by SLR in 2015 (SLR, 2015). The assessment determined that the operation of the WTS achieved the standards required under NSW legislation.

5.4.1.2 Odour Limits

According to the conditions of consent offensive odours (as defined in the POEO Act) must not be emitted from the site.

5.4.1.3 Management and Monitoring

Approved odour management measures for the development include:

- Cleanaway will ensure that any waste vehicles parked on the Site will not emit offensive odours.
- Cleanaway will operate the Development so that odour emissions are minimised during all meteorological conditions.
- Cleanaway will implement best management practice, including all reasonable and feasible odour emission mitigation measures to minimise emissions from the Development, including but not limited to an Air Pollution Control System.
- Cleanaway will ensure regular maintenance of the air pollution control system.
- Prior to acceptance of any waste at the WTS, the Air Pollution Control System will be installed and operational. The wet scrubber technology will be sized with an appropriate level of contingency to enable the level of control to be able to be scaled up if necessary.

- Prior to commencement of construction Cleanaway will prepare an Odour Management Plan to the satisfaction of the Secretary.
- Within 6 months of operation or as otherwise directed by the Secretary, Cleanaway will carry out an Odour Audit of the Development.
- Within two months of commissioning the Odour Audit, Cleanaway will submit a copy of the audit report to the Secretary, the EPA and Penrith City Council, together with its response to any recommendations contained in the audit report.
- Cleanaway will comply with any requirement(s) of the Secretary arising from the Odour Audit.
- Cleanaway will notify, at the earliest opportunity, the Secretary and any other relevant agencies including the EPA and Penrith City Council of any incident that has resulted in offensive odour at sensitive receivers.
- Within the first 12 months of operations, monitoring of odour will be undertaken to perform efficiency trials on the scrubber system to demonstrate optimal performance. Cleanaway will also undertake follow-up monitoring during the operational lifetime of the WTS, on a basis to be agreed with the relevant authorities.

5.4.1.4 Environmental Review

The odour assessment prepared for the EIS (SLR, 2015) was not revisited as part of this EA as the proposed modifications should cause minimal or no additional odour.

Basic Resource Recovery

Sorted non-putrescible waste would be stored on-site for a maximum of 3 days until sufficient product is accumulated for efficient transport off-site. Storage of sorted waste for this period of time would not change the outcomes of the air quality impact assessment for the EIS (SLR, 2015) as the waste will be dry waste and therefore not odorous. The sorted non-putrescible waste would also be stored inside the WTS.

5.4.1.5 Mitigation Measures

Cleanaway considers through the implementation of approved mitigation measures odour limits established by the consent conditions would be met.

5.4.1.6 Conclusion

The proposed modifications do not lead to any change to odour impacts compared to those assessed in the 2015 EIS (SLR, 2015).

5.5 Noise and Vibration

5.5.1 Background

5.5.1.1 Previous Assessment

The potential noise impacts of the approved development were assessed by SLR in 2015 (SLR, 2015). The assessment considered construction and operational noise impacts, including cumulative impacts, on surrounding land and sensitive receptors. No exceedances of relevant noise criteria were predicted for the development.

The EIS (SLR, 2015) determined that there would be no unacceptable construction and operational noise impacts as a result of the Development and no specific noise mitigation measures or monitoring was required.

5.5.1.2 Noise Limits

Construction and future operations at the site must be undertaken in accordance with SSD 7075 conditions that relate to noise. Noise limits have not been set for the site, although vibration limits have been set. The vibrations limits are continuous or impulsive vibration criteria included in EPA's *Assessing Vibration: A Technical Guideline* (February 2006) at residential receivers.

5.5.1.3 Management and Monitoring

Approved noise management measures for the development include:

- Noise mitigation will be achieved by the enclosed nature of the building design.
- All mobile plant operation will occur inside the WTS building and will be fitted with low frequency white noise reversing alarms.
- Regularly assess noise emissions and relocate, modify and/or stop operations to ensure compliance with the relevant consent conditions.
- Noise impacts of the Development will be minimised during adverse meteorological conditions.
- Best management practice will be implemented including all reasonable and feasible noise management and mitigation measures to prevent and minimise operational, low frequency and traffic noise generated by the Development.
- Noise suppression equipment on plant will be maintained effectively at all times.
- Defective plant will not be used operationally until fully repaired.
- All Cleanaway owned vehicles operating on the site will be fitted with the High and Low Buzzer system.
- All potentially affected residents will be informed of the nature of the works, the expected noise level and duration.
- Construction activities will be undertaken within the construction hours specified in the development consent, or as subsequently modified (if applicable).
- Prior to operations commencing at the Waste Transfer Station, Cleanaway will obtain an Environmental Protection Licence (EPL) for the facility, which will set out the noise limits applying to the facility. Cleanaway will comply with all EPL conditions.

5.5.1.4 Environmental Review

A noise assessment was not prepared for this DA Modification Application as it was considered minimal noise impacts would result from the proposed modifications.

The proposed modifications will result in changes in the assessed noise impacts as result of changes to the extent and quantity of earthworks and the extent of infrastructure such as car parking and office. These changes will result in reduced noise impacts as a result of the reduced magnitude of construction compared to the approved EIS.

Noise impacts resulting from trucks reversing into the load-out lane are expected to be negligible. Only one truck will reverse into the load-out lane at any one time and trucks will only reverse for a relatively short distance. All Cleanaway owned vehicles operating on the site will be fitted with High and Low Buzzer system, designed to minimise noise associated with reversing alarms in accordance with the Australian Vehicle Standard (Australian Design Rule 42/04) and *Heavy Vehicle National Law Act 2012*. In addition, any noise emitted from reversing trucks would be reduced by the acoustic barrier to be constructed on the southern perimeter of the Development site, closest to the load-out tunnels.

The approved mitigation measures provided in **Section 5.5.1.3** would be implemented for the modified development. In addition, the following mitigation measure would be implemented for the Modification to further enhance noise management:

- Construction of the relocated car park and ramps during approved construction hours.

Cleanaway considers these mitigation measures to be reasonable and feasible for the Modification.

5.5.1.5 Conclusion

The proposed modifications do not result in any change to noise impacts as assessed in the 2015 EIS (SLR, 2015).

5.6 Air Quality

5.6.1.1 Previous Assessment

The potential air quality impacts were assessed by SLR in 2015 (SLR, 2015). The assessment considered emissions due to:

- Dust from construction phase activities;
- Odour from operation of the waste transfer station (discussed in **Section 5.4** above);
- Dust and bio-aerosol emissions from the operation of the waste transfer station; and
- Road traffic exhaust emissions from operational vehicles.

The assessment determined that due to the distance between the Development site and the local residential areas and the mitigation measures proposed through the Construction Environmental Management Plan, there will be no unacceptable air quality impacts associated with construction.

5.6.1.2 Air Quality Limits

The conditions of consent set odour limits for the site, which are discussed in further detail **Section 5.4**. No other air quality limits have been established for the site.

5.6.1.3 Management and Monitoring

Approved air quality management measures for the Development include:

- All vehicles on site will not exceed a speed of 10 kilometres per hour.
- All construction vehicles leaving the site will be cleaned of dirt, sand and other materials before they leave the site, to avoid tracking the materials on public roads.
- The premises will be maintained in a condition which minimises or prevents the emission of dust from the premises.
- Trucks entering and leaving the premises that are carrying loads will be covered at all times.
- A program of construction air quality monitoring will be implemented.
- Discuss with EPA/Council and agree on air quality monitoring locations. Where possible commence baseline monitoring.
- Site layout will be planned so that machinery and dust causing activities are located away from receptors, where possible.

- Barriers will be erected around the Development site boundary which are at least as high as any stockpiles on the Development site.
- Where there is a high potential for dust production and the site is active for an extensive period the site will be enclosed with a suitable barrier.
- Site fencing, barriers and scaffolding will be kept clean using wet methods.
- Long-term stockpiles will be seeded or fenced.
- The use of diesel or petrol powered generators will be avoided where practicable and mains electricity or battery powered equipment will be used. .
- Cutting, grinding or sawing equipment will only be used in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.
- Adequate water supply will be provided on site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.
- Dust-generating construction activities will be amended during adverse wind conditions blowing in the direction of sensitive receptors.
- Earthworks and exposed areas/soil stockpiles will be re-vegetated as soon as practicable to stabilise surfaces.
- Hessian, mulches or tackifiers will be used where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.
- Coverings will only be removed in small areas during work (not all at once).
- Sand and other aggregates will be stored in bunded areas and not allowed to dry out.
- Bags of smaller volume supplies of fine powder materials will be sealed after use and stored appropriately to prevent dust.
- Dry sweeping of large areas will be avoided.
- On-site haul routes will be inspected for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
- All inspections of haul routes and any subsequent action will be recorded in a site log book.
- A wheel washing system will be implemented.
- There will be adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.
- Operate the Development so that air emissions are minimised during all meteorological conditions.
- Implement best management practice, including all reasonable and feasible air emission mitigation measures to minimise emissions from the Development.
- Seal on-site surfaces and regularly maintain them to prevent dust re-entrainment from vehicle movements and other equipment use.

5.6.1.4 Environmental Review

The proposed modifications will lead to changes in the assessed air quality impacts as result of changes to the extent and quantity of earthworks and the extent of infrastructure such as car parking. Overall, these changes will lead to reduced air quality impacts as a result of the reduced construction extents compared to the approved EIS.

5.6.1.5 Mitigation Measures

No additional mitigation measures are proposed as Cleanaway considers the approved mitigation measures for the development are adequate to manage the impacts associated with the modifications.

5.6.1.6 Conclusion

The proposed modifications do not result in any change to air quality impacts as assessed in the 2015 EIS (SLR, 2015).

5.7 Traffic and Transport

5.7.1 Background

5.7.1.1 Previous Assessment

The potential traffic impacts related to the Development were assessed by Traffix in 2015 (Traffix, 2015). Traffix assessed traffic impacts associated with the operation of the Development. The assessment predicted traffic generation of the facility during the critical road network peak hours is to be very low, with less than one vehicle movement every two minutes on average during the AM and PM peak hours.

5.7.1.2 Management and Monitoring

Approved mitigation measures for traffic management at the site include:

- Site access, driveways and parking areas will be designed, constructed and maintained in accordance with the latest versions of Australian Standards AS 2890.1, AS 2890.2, AS 2890.6 and AS 1428.1.
- The swept path of the longest vehicle entering and exiting the subject site, as well as manoeuvrability through the site, is in accordance with AUSTROADS Guide to Road Design.
- The Construction Traffic Management Plan has been updated in response to pre-construction approvals required as part of the Conditions of Approval and will be implemented for the duration of construction activities.
- Designated pedestrian access will be provided from Quarry Road to the offices.
- Any existing unnecessary property access will be removed, the kerb reinstated to suit the existing kerb, and the verge area reinstated with grass seeded topsoil or turf, which will be addressed in further designed stages.
- All vehicles will turn off their engines when stationary (no idling), where practicable.
- Trucks will only be parked in the designated truck park areas or within the WTS building.
- At least one load compliance inspection parking area will be provided.
- The egress of Restricted Access Vehicles (RAV) (i.e. waste transfer trucks) from the WTS will be confined to Lenore Drive/Erskine Park Link Road.
- The Development will not result in any vehicles parking or queuing on the public road network.
- All vehicles will be wholly contained on-site before being required to stop.

- All loading and unloading of heavy vehicles will occur inside the Waste Transfer Station.
- The proposed turning areas in the car park are kept clear of any obstacles, including parked cars, at all times.
- All vehicles enter and leave the Site in a forward direction.

5.7.1.3 Environmental Review

The proposed modifications will not lead to changes to the traffic impacts assessed by Traffix (Traffix, 2015). The number of truck movements from/to the site will not change as a result of the proposed modifications. Traffic will reverse into the load-out lane however this will be for a short period of time. All other truck movement for the development site will remain the same. Manoeuvrability through the site will remain in accordance with *AUSTROADS Guide to Road Design*.

5.7.1.4 Mitigation Measures

The approved mitigation measures for the development would be implemented for the Development incorporating the Modification. No other management measures are proposed.

5.7.1.5 Conclusion

The proposed modifications do not lead to any change to traffic impacts compared to those assessed by Traffix (Traffix, 2015).

5.8 Indigenous and non-Indigenous Heritage impacts

Indigenous and non-Indigenous heritage impacts have not been included in this EA as the proposed modifications will not change the potential impacts already assessed in the EIS (SLR, 2015).

5.9 Soils, Geology and Contamination Impacts

Impacts to soil, geology and contamination have not been considered by this EA as the proposed modifications will not alter the potential impacts assessed in the 2015 EIS (SLR, 2015).

5.10 Flora and Fauna impacts

Impacts to flora and fauna have not been considered by this EA as the proposed modifications will not change the potential impacts already assessed in the EIS (SLR, 2015).

5.11 Cumulative Impacts

5.11.1 Background

5.11.1.1 Previous Assessment

This section of the DA Modification addresses cumulative impacts caused by the operation of the landfill during the construction and operation of the Development.

5.11.2 Environmental Review

The operation and closure of the landfill during the construction and operation of the WTS will not lead to changes to cumulative impacts as assessed by the EIS (SLR, 2015). The greatest potential to cause cumulative impacts are traffic and air quality. Maximum traffic is not expected at the Development site until several years after the site commences operation. With the landfill expected to close within 2 years, combined construction traffic and landfill traffic will not exceed maximum traffic volumes, estimated by the Traffix's Traffic Impact Assessment (TIA) (Traffix, 2015).

In accordance with Environmental Protection Licence (EPL) 4865 dust monitoring is undertaken at the Erskine Park landfill. Average dust levels experienced at the site over the past year, based on dust deposition data (TSP), is 1.18 g/m²/month, with an average of 628 trucks per month. The EPA goals for allowable dust deposition are provided in **Table 3**. The site complies with maximum total allowable deposited dust levels.

Table 3 EPA Goals for Allowable Dust Deposition

Averaging Period	Maximum Increase in Deposited Dust Level	Maximum Total Deposited Dust Level
Annual	2 g/m ² /month	4 g/m ² /month

Source: (NSW DEC, 2005)

SLR (SLR, 2015) prepared a risk-based assessment of dust impacts for the Stage 1 Development EIS. The assessment determined the category of risk associated with construction activities and proposed a comprehensive set of mitigation measures. With the implementation of these mitigation measures it is expected that the EPA goals for allowable dust deposition will not be exceeded.

Beneficial impacts will be result from the continued operation of the landfill as a reduced amount of waste will be going to off-site disposal. The continued operation of the landfill also has beneficial socio-economic impacts as the landfill will continue to employ staff.

5.11.2.1 Mitigation Measures

Cumulative site impacts would be managed by mitigation measures proposed for air quality (dust) included in the Development site's Construction Environmental Management Plan (CEMP) (Cleanaway, 2017). Additional mitigation measures to enhance management of cumulative impacts would include:

- All loads to the landfill will be enclosed or covered,
- A speed of 10 kilometres or less will maintained through the Development construction site and at the landfill; and
- The landfill will only operate between 7am to 4:30pm Monday through to Friday, and Saturday's in accordance with relevant approvals.

5.11.2.2 Conclusion

The proposed modifications do not cause any change to cumulative impacts as assessed in the 2015 EIS (SLR, 2015). Opportunities to further enhance management of cumulative impacts have been included in the modified Development.

6 ASSESSMENT UNDER SECTION 96(1A) ASSESSMENT

For the purposes of this assessment it is understood the nature of changes would be considered by the Minister (as the consent authority) under Section 96(1A) of the EP&A Act. As mentioned in **Section 2.1** above, this was discussed and agreed with the DPE on 19 January 2017.

Section 96(1A) states:

(1A) Modifications involving minimal environmental impact A consent authority may, on application being made by the applicant or any other person entitled to act on a consent granted by the consent authority and subject to and in accordance with the regulations, modify the consent if:

(a) it is satisfied that the proposed modification is of minimal environmental impact, and

(b) it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which the consent was originally granted and before that consent as originally granted was modified (if at all), and

Table 2 in **Section 3.1** demonstrates the proposed modification is substantially the same development. **Table 4** demonstrates the proposed modification is of minimal environmental impact and.

Table 4 Demonstration that the Proposed Modification is of Minimal Environmental Impact

Modification	Component of Approved Project being Modified	Modification Proposed	Change to Environmental Impact	Any Additional Mitigation Measures Required	Conclusions on Impact
1.	Car parking	Tiered car park (deferred to Stage 2)	- Negligible visual amenity impact – tiered instead of 5.5 m high retaining wall - Larger footprint but site is already heavily modified	Plant trees along western boundary of site. Include measure in Landscape Plan	Reduced impact as site more visually appealing
2.	Car parking	Relocated car park	- Smaller footprint therefore less disturbance - Site already heavily modified - Additional car parking spaces (20 bays instead of 10) ensures no off-site parking by employees and visitors, and no traffic impacts	Plant trees on western boundary of site. Include measure in Landscape Plan	Reduced impact with less disturbance at the site
3.	Office	Temporary Office	- Reduced impact: - Reduced amount of construction waste; reuse existing buildings - Negligible visual amenity impacts; 1 story building - Minimal civil works to construct office; reduced noise and dust impacts	- External colour scheme of office to match that of the main transfer station - A 3 m high screen would be installed on the western side of the building	Reduced impact with less construction waste and reduced noise and air quality impacts. Negligible visual amenity impact.
4.	Truck Parking	Remove and defer truck parking	- Reduced impact: - Reduced stormwater generated - Less earthworks (reduced disturbance) required therefore reduced noise and dust	- Hydroseed areas - Revised stormwater management system	Reduced environmental impact with less stormwater generated and less disturbance at the site

Modification	Component of Approved Project being Modified	Modification Proposed	Change to Environmental Impact	Any Additional Mitigation Measures Required	Conclusions on Impact
5.	Stormwater management system	Revise stormwater management system	- Reduced impact: - Reduced stormwater generated	Reduced size of detention basin	Reduced environmental impact with less stormwater generated
6.	Load-out bays	Defer construction of load-out bays	- Reduced impact: - Reduced construction material used	- Trucks waiting to load are to park at the truck parking along the entrance road or adjacent to the load-out bay to avoid queuing traffic backing up onto Quarry Road - Revised stormwater management system	Reduced environmental impact with less construction material used
7.	Site elevations	Modify site levels	- Reduced impact: - Less earthworks (reduced disturbance) required therefore reduced noise and dust	Revised stormwater management system	Reduced impact with reduced noise and air quality impacts
8.	Truck movement	Modify truck movement into load-out lane (reverse into the load-out lane)	- Minimal noise impact from reversing beepers - Reduced impact: - Less earthworks (reduced disturbance) required to construct half depth load-out lane therefore reduced noise and dust	N/A (trucks would already be fitted with High and Low reversing Beeper system and southern boundary acoustic barrier)	Reduced air quality impacts. Minimal noise impacts.
9.	Concept Proposal	Modify Concept Proposal (Modify car parking, office, truck parking, stormwater management system)	Refer to modification 1, 2, 3, 5, 6 and 8 above	Refer to modification 1, 2, 3, 5, 6 and 8 above	Refer to modification 1, 2, 3, 5, 6 and 8 above

Modification	Component of Approved Project being Modified	Modification Proposed	Change to Environmental Impact	Any Additional Mitigation Measures Required	Conclusions on Impact
		and site levels)			
10.	Administrative Change	Modify Schedule C Part B Condition B30(a)	Refer to modification 1 above	Refer to modification 1 above	Refer to modification 1 above
11.	Administrative Change	Modify Schedule C Part B Condition B30(b)	None.	N/A	No change to environmental impact
12.	Administrative Change	Modify Schedule C Part B Condition B30(f)	No change to environmental impacts	Truck movement will be managed to avoid peak times, where possible	No change to environmental impact
13.	Administrative Change	Modify Schedule C Part C Condition C8	No change to environmental impacts	N/A	No change to environmental impact

7 SECTION 79C OF THE EP&A ACT – EVALUATION

In accordance with the requirements of Section 96 of the EP&A Act an evaluation based on the requirements of Section 79C has been undertaken.

7.1 SECTION 79C(1)(A)(I) – ENVIRONMENTAL PLANNING INSTRUMENTS

The key matters under Section 79C(1)(a)(i) of the EP&A Act are Local Environmental Plans (LEPs) Regional Environmental Plans (REPs)(now known as SEPPs) and State Environmental Policies (SEPPs).

7.1.1 State Environmental Planning Policies (SEPPs)

The following SEPPs were evaluated:

- SEPP No. 33 Hazardous and Offensive Development (SEPP 33);
- SEPP (Western Sydney Employment Area) 2009 (WSEA SEPP) – zoning;
- State Environmental Planning Policy (Infrastructure) 2007;
- SEPP No. 55 - Remediation of Land;
- SEPP (State and Regional Development) 2011;
- SEPP No. 33 Hazardous and Offensive Development;
- SEPP No.64 - Advertising and Signage Explanatory Information;

From this review it was determined the DA Modification application does not trigger any new assessable consideration under any SEPP, which was considered acceptable in the EIS and issuing of development consent SSD 7075.

7.1.2 Regional Environmental Plans (REPs)

The Sydney Regional Environmental Plan No. 20 – Hawkesbury-Nepean River (No. 2 – 1997) is relevant to the Development. This SEPP integrates planning with catchment management to protect the river system, so that the impact of future land use can be considered in a regional context. The results of the revised water assessment are included in **Section 5.2**.

7.1.3 Local Environmental Plans (LEPs)

Local Environment Plans (LEPs) were not considered relevant for this evaluation. The WSEA SEPP prevails over relevant Local Environment Plans (LEP) and therefore the Penrith LEP is not relevant to the Development.

7.2 Section 79C (1)(a)(ii) – Draft Environmental Planning Instruments

The application is not considered to trigger any new assessable consideration under any draft environmental planning instruments that were deemed acceptable in the EIS assessment.

7.3 Section 79C (1)(a)(iii) – Development Control Plans

Section 18 of the WSEA SEPP states that a development proposal for a specific site, whether lodged with the NSW Government or the local council, may only be lodged once a Development Control Plan (DCP) is in place for the land. Although the Penrith 2010 DCP exists for the area, Clause 11 of the SRD SEPP states that DCPs do not apply to SSD Projects. Clause 7 of the SRD SEPP also states that in the event of an inconsistency between the SRD SEPP and another environmental planning instrument, the SRD SEPP prevails to the extent of the inconsistency. Consequently a DCP is not relevant to the Development not the DA Modification application.

Notwithstanding, the development has been designed to take into consideration the requirements of the Penrith Council DCP (2014).

7.4 Section 79C (1)(a)(iia) – Planning Agreements

There is no Voluntary Planning Agreement (VPA) or other arrangement under EP&A Act Section 93F or in relation to the project site or SSD 7075.

7.5 Section 79C (1)(a)(iv) – Any matter Prescribed by the Regulations

The application is not considered to trigger any new assessable consideration under the Environmental Planning and Assessment Regulation 2000 (EP&A Regs) which was considered acceptable in the EIS and issuing of SSD 7075.

7.6 Section 79C (1)(a)(v) – Coastal Zone

The site is not impacted by the *Coastal Protection Act 1979* and this DA Modification application will not alter this.

7.7 Section 79C (1)(b) Impact on the Environment

An assessment of environmental impacts of the modified Development is provided in **Section 4**, above.

7.8 SECTION 79C(1)(C) SITE SUITABILITY

The site is suitable for the proposed modifications. Only minor modifications are proposed to the development's ancillary infrastructure. The site would remain suitable for these proposed modifications.

7.9 SECTION 79C(1)(E) THE PUBLIC INTEREST

The proposed modifications are in the public interest. If the modifications are not made then Cleanaway can no longer afford to build the Development. The modifications that cut back initial capital expenditure and make the Development economically feasible are:

- Relocated car park;
- Temporary office;
- Altered site levels;
- Remove and defer truck parking;
- Defer construction of load-out bay(s); and
- Modify site levels (elevations).

The modifications improve the feasibility of the project from Cleanaway's perspective, but also have been done in a way that does not change impacts compared to what was assessed in the EIS, and in some cases provides greater environmental benefit.

Without the Development being constructed the Development would not provide the following benefits to the public:

- It gives job certainty to 120 local Cleanaway workers and will provide approximately 30 new jobs in the future; and
- Provides affordable waste management on the future. The Development is vital to sustainably manage the waste of an extra 1.3 million Sydneysiders by 2031.

8 CONCLUSION

This DA Modification represents a modification to Stage 1 Erskine Park WTS approval (SSD 7075) under Section 96(1A) of the EP&A Act. The proposed modifications include:

- Tiered car park (future);
- Relocated car park;
- Temporary (relocated and modified existing) Office;
- Remove and defer truck parking;
- Revise stormwater management system;
- Defer construction of two load-out bays;
- Modify site levels;
- Modify direction of truck movement into load-out bay;
- Inclusion of entry/exit ramps to the landfill;
- Modify Schedule C Part B Condition B30(a);
- Modify Schedule C Part B Condition B30(b);
- Modify Schedule C Part B Condition B30(f);
- Modify Schedule C Part C Condition C8; and
- Modify the Concept.

This EA also includes two clarifications regarding:

- Basic resource recovery; and
- Continued operation of the adjacent Erskine Park landfill.

The modifications proposed to development consent SSD 7075 are minor. The modifications are to ancillary infrastructure of the project and do not affect the core reason for the Development; a Waste and Resource Management facility. The proposed modifications do not lead to changes in environmental impact and in some cases lead to enhancements compared to what was assessed in the EIS. With the modifications the project is substantially the same project as the project originally approved, as it retains its core function as a Waste and Resource Management Facility, is within the same development site and has minor changes to environmental impacts. Without several of the modifications the Development would not be commercially viable.

The modifications cause minimal environmental impact and risk, which would be manageable through approved and proposed additional mitigation measures.

The modifications were assessed against the requirements of Section 79C. The modifications were determined not to impact on any Planning Instruments, Development Control Plans, Planning Agreements or matters prescribed by the EP&A Regulations.

9 REFERENCES

Cleanaway, 2017, *Construction Environmental Management Plan (CEMP). Erskine Park Resource Management Facility Stage 1 – Waste Transfer Station.*

Green Bean Design, 2015, *Erskine Park Waste Transfer Station - Visual Impact Assessment.*

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SLR, 2015, *Erskine Park Resource Management Facility, Stage 1 Waste Transfer Station. Surface Water Assessment.* Report Number 630.11948.00000.

Planning Assessment Commission (PAC), 2016, *NSW Planning Assessment Commission Determination Report Erskine Park Resource Management Facility.*

Traffix, 2015, *Traffic Impact Assessment. Proposed Waste Transfer Station.* Reference: 14.394r01v5.

Appendix A

Report Number 630.11948.00000-R01

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DEVELOPMENT CONSENT SSD 7075

Development Consent

Section 89E of the *Environmental Planning and Assessment Act 1979*

As delegate of the Minister for Planning under delegation executed on 14 September 2011, the Planning Assessment Commission (the Commission) of New South Wales, approve the Staged Development Application referred to in Schedule A subject to the concept proposal conditions in Schedule B and Stage 1 Waste Transfer Station conditions in Schedule C.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts including economic and social impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the development.



Member of the Commission

Member of the Commission

Member of the Commission

Sydney

4 October 2016

SCHEDULE A

Application No.:

SSD 7075

Applicant:

Cleanaway Pty Ltd

Consent Authority:

Minister for Planning

Land:

85-87 Quarry Road, Erskine Park (Lot 1 DP 1140063)

Development:

Erskine Park Waste and Resource Management Facility Staged Development Application, comprising:

- A concept proposal for a Waste and Resource Management Facility (WRMF) with a maximum processing capacity of 300,000 tpa. All waste received at the WRMF shall enter the Waste Transfer Station (Stage 1), up to 150,000 tpa of this waste may be recycled at the Resource Recovery Facility (Stage 2).
- Construction and operation of the Stage 1 Waste Transfer Station with a maximum processing capacity of 300,000 tpa.

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DEFINITIONS

Applicant	Cleanaway Pty Ltd, or anyone else entitled to act on this consent
Construction	The demolition of buildings or works, the carrying out of works, including bulk earthworks, and erection of buildings and other infrastructure covered by this consent
Council	Penrith City Council
Department	Department of Planning and Environment
Development	The development that is approved by this development consent and as generally described in Schedule A
DPI	Department of Primary Industries
EIS	Staged Development Application, Environmental Impact Statement, Erskine Park Resource Management Facility prepared by SLR Consulting Australia Pty Ltd dated October 2015
EP&A	<i>Environmental Planning and Assessment Act 1979</i>
EPA	Environment Protection Authority
EPL	Environment Protection Licence under the <i>Protection of the Environment Operations Act 1997</i>
Feasible	Feasible relates to engineering considerations and what is practical to build
Heavy vehicle	Any vehicle with a gross vehicle mass of 5 tonnes or more
Heritage Item	An item as defined under the <i>Heritage Act 1977</i> , and assessed as being of local, State and/ or National heritage significance, and/or an Aboriginal Object or Aboriginal Place as defined under the <i>National Parks and Wildlife Act 1974</i> .
Incident	A set of circumstances that: • causes or threatens to cause material harm to the environment; and/or • breaches or exceeds the limits or performance measures/criteria in this consent
Material harm to the environment	Actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial
Mitigation	Activities associated with reducing the impacts of the development prior to or during those impacts occurring
OEH	Office of Environment and Heritage
Operation	The receipt or processing of waste
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
Reasonable	Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements
Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
Response to Submissions (RTS)	Erskine Park Resource Management Facility, Response to Submissions prepared by SLR Consulting Australia Pty Ltd dated 24 February 2016
RMS	Roads and Maritime Services
Secretary	Secretary of the Department of Planning, or nominee
Site	Land referred to in Schedule A
Stage 1	Stage 1 includes: i. demolition of existing structures; ii. bulk earthworks; iii. construction of infrastructure including hardstand areas, stormwater, car parks, weighbridges and sealed roads;

	iv.	operation of a Waste Transfer Station with a processing capacity of up to 300,000 tpa including an air pollution control system;
	v.	a two storey office building and amenities to service the Waste Transfer Station;
	vi.	construction of ancillary components including security fencing, security gates, rain water harvesting, fire suppression system, signage, landscaping and services.
Stage 2		Resource Recovery Facility designed to process 150,000 tpa of recyclable material from the Waste Transfer Station (Stage 1)
tpa		Tonnes per annum
Waste		As defined under the POEO Act
WMP		Waste Management Plan

SCHEDULE B

PART A CONDITIONS OF CONSENT FOR CONCEPT PROPOSAL (STAGES 1 AND 2)

STAGED DEVELOPMENT DESCRIPTION

- A1. Consent is granted to the Concept Proposal as described in:
- a) Schedule A;
 - b) Staged Development Application (SSD 7075);
 - c) EIS;
 - d) RTS;
 - e) Site layout plan as identified in Appendix 1; and
 - f) conditions contained in this development consent.
- A2. If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this consent shall prevail to the extent of any inconsistency.

CONSENT LIMITS

- A3. This consent does not permit the construction and operation of the Stage 2 Resource Recovery Facility.
- A4. All waste received at the Site must enter at the Waste Transfer Station for initial processing. The Waste Transfer Station must not process more than 300,000 tpa of waste (as identified in the EPL), up to 150,000 tpa of this waste may be recycled at the Resource Recovery Facility (Stage 2).
- A5. The Applicant shall carry out the development of the Waste Transfer Station in accordance with the conditions outlined in Schedule C.

ADMINISTRATIVE CONDITIONS

Determination of Future Development Applications

- A6. In accordance with section 83B(3) of the EP&A Act, Stage 2 is to be subject of a future development application.
- A7. The determination of the future development application(s) are to be consistent with the terms of this development consent as described in Schedule A, and subject to the conditions in Schedule B.
- A8. As per Clause 12(b) of the *State Environmental Planning Policy State and Regional Development 2011*, any future development application(s) shall be classified State Significant Development.

Obligation to Minimise Harm to the Environment

- A9. The Applicant shall implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction or operation of the development.

Statutory Requirements

- A10. The Applicant shall ensure that all licences, permits, and approvals/consents are obtained as required by law and maintained as required throughout the life of the Development. No condition of this consent removes the obligation for the Applicant to obtain, renew or comply with such licences, permits or approvals/consents.

Inconsistency between Documents

- A11. If there is any inconsistency between the plans and documentation referred to above, the most recent document shall prevail to the extent of the inconsistency. However, conditions of this consent prevail to the extent of any inconsistency.

Lapsing of Approval

A12. This consent lapses five years after the date from which it operates, unless the Stage 1 works have physically commenced on the land to which the consent applies before the date on which the consent would otherwise lapse under Section 95 of the Act.

Dispute Resolution

A13. In the event that a dispute arises between the Applicant, Council or a public authority, in relation to an applicable requirement in this consent or relevant matter relating to the development, either party may refer the matter to the Secretary for resolution. The Secretary's determination of any such dispute shall be final and binding on the parties.

Legal Notices

A14. Any advice or notice to the consent authority shall be served on the Secretary.

SCHEDULE C

CONDITIONS OF CONSENT FOR STAGE 1 - WASTE TRANSFER STATION

PART A ADMINISTRATIVE CONDITIONS

DEVELOPMENT IN ACCORDANCE WITH PLANS AND DOCUMENTS

A1. The Applicant shall carry out the Development in accordance with the:

- a) Staged Development Application (SSD 7075);
- b) EIS;
- c) RTS;
- d) Conditions in Schedule B;
- e) Site and elevation plans as identified in Appendix 1 and 2.
- f) management and mitigation measures as identified in Appendix 3.

A2. If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this consent shall prevail to the extent of any inconsistency.

A3. The Applicant shall comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of:

- a) any reports, plans, strategies, programs or correspondence that are submitted in accordance with this consent; and
- b) the implementation of any actions or measures contained in these reports, plans, strategies, programs or correspondence.

LIMITS OF CONSENT

Waste Limits

A4. The Applicant shall not receive or process on the Site more than 300,000 tonnes of waste per calendar year.

A5. The Applicant must record the amount of waste (in tonnes) received at the Site on a daily basis.

STAGED SUBMISSION OF PLANS OR PROGRAMS

A6. With the approval of the Secretary, the Applicant may:

- a) submit any strategy, plan or program required by this consent on a progressive basis; and/or
- b) combine any strategy, plan or program required by this consent.

A7. If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program shall clearly describe the specific stage to which the strategy, plan or program applies, the relationship of the stage to any future stages and the trigger for updating the strategy, plan or program. A clear relationship between the strategy, plan or program that is to be combined shall be demonstrated.

EVIDENCE OF CONSULTATION

A8. Where consultation with any public authority is required by the conditions of this consent, the Applicant shall:

- a) consult with the relevant public authority prior to submitting the required documentation to the Secretary or the PCA for approval, where required;
- b) submit evidence of this consultation as part of the relevant documentation required by the conditions of this consent; and
- c) include the details of any outstanding issues raised by the relevant public authority and an explanation of disagreement between any public authority and the Applicant or any person acting on this development consent.

METEOROLOGICAL MONITORING

A9. Prior to commencement of operations, the Applicant shall ensure that there is a suitable meteorological station on the Site that complies with the requirements in the latest version of the *Approved Methods for Sampling of Air Pollutants in New South Wales*. The Applicant shall operate the meteorological station, and maintain continuous, auditable records of meteorological data, for the life of the Development.

DEMOLITION

A10. The Applicant shall ensure that all demolition work is carried out in accordance with *Australian Standard AS 2601:2001: The Demolition of Structures*, or its latest version.

BUILDING CODE OF AUSTRALIA

A11. The Applicant shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures are constructed in accordance with the relevant requirements of the *Building Code of Australia*.

OPERATION OF PLANT AND EQUIPMENT

A12. The Applicant shall ensure that all plant and equipment used for the Development is:

- a) maintained in a proper and efficient condition; and
- b) operated in a proper and efficient manner.

PROTECTION OF PUBLIC INFRASTRUCTURE

A13. The Applicant shall:

- a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the Development; and
- b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the Development.

PART B ENVIRONMENTAL PERFORMANCE

WASTE MANAGEMENT

- B1. The Applicant shall not cause, permit or allow any materials or waste (as defined by the POEO Act) generated outside the Site to be received at the Site for storage, treatment, processing, reprocessing, or disposal on the Site, except as expressly permitted by an EPL.
- B2. From the commencement of operation, the Applicant shall implement a Waste Monitoring Program for the Development. The program must:
- a) be prepared by a suitably qualified and experienced person(s) prior to the commencement of operation;
 - b) include suitable provision to monitor the:
 - (i) quantity, type and source of waste received on-site; and
 - (ii) quantity, type and quality of the outputs produced on-site.
 - c) ensure that:
 - (i) all waste that is controlled under a tracking system has the appropriate documentation prior to acceptance at the Site; and
 - (ii) staff receive adequate training in order to be able to recognise, handle and report any hazardous or other prohibited waste, including asbestos.

AIR QUALITY

Construction Mitigation

- B3. During construction, the Applicant shall ensure that:
- a) all vehicles on-site do not exceed a speed of 30 kilometres per hour;
 - b) all loaded construction vehicles entering or leaving the Site have their loads covered; and
 - c) all construction vehicles leaving the Site are cleaned of dirt, sand and other materials before they leave the Site, to avoid tracking the materials on public roads.

Dust Management

- B4. The premises shall be maintained in a condition that minimises or prevents the emission of dust from the premises.
- B5. Trucks entering and leaving the premises that are carrying loads must be covered at all times, except during loading and unloading within the Waste Transfer Station.

Odour

- B6. The Applicant shall ensure the Development does not cause or permit the emission of any offensive odour (as defined in the POEO Act).
- B7. The Applicant shall ensure that any waste vehicles parked on the Site do not emit offensive odours.

Air and Odour Emissions Mitigation

- B8. The Applicant shall:
- a) operate the Development so that air and odour emissions are minimised during all meteorological conditions;
 - b) implement best management practice, including all reasonable and feasible air and odour emission mitigation measures to minimise emissions from the Development, including but not limited to an Air Pollution Control System comprising of:
 - (i) a wet scrubber, or an alternative air filtration system, approved by the Secretary, that can achieve an equivalent or better level of odour control to a wet scrubber;
 - (ii) dilution stacks;
 - (iii) fast acting roller doors;
 - (iv) dust suppression through the use of water sprays/misters;
 - c) seal on-site surfaces and regularly maintaining them to prevent dust re-entrainment from vehicle movements and other equipment use; and
 - d) ensure regular maintenance of the air pollution control system.
- B9. Prior to acceptance of any waste at the Waste Transfer Station, the Air Pollution Control System identified in condition B8b) must be installed and operational. The wet scrubber technology or

similar must be sized with an appropriate level of contingency to enable the level of control to be able to be scaled up if necessary.

Odour Management Plan

- B10. Prior to commencement of construction, the Applicant shall prepare an Odour Management Plan to the satisfaction of the Secretary. The Plan must:
- a) be prepared by a suitable qualified and experienced person(s) in consultation with the EPA;
 - b) describe the measures that would be implemented on-site to ensure:
 - (i) all reasonable and feasible measures are employed to minimise odour emissions, including details of the air pollution control device(s) and all other operational odour mitigation measures;
 - (ii) compliance with the relevant conditions of this consent;
 - (iii) contingency measures are deployed to minimise impacts should adverse odour emissions occur or appear likely to occur;
 - c) include an ongoing monitoring program;
 - d) include well defined triggers for the deployment of odour mitigation and contingency measures;
 - e) include a protocol to determine the occurrence of an exceedance of any criteria in the EPL should an exceedance occur; and
 - f) include contingency measures for design or system failure.
- B11. The Applicant shall carry out the Development in accordance with the Odour Management Plan approved by the Secretary (as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.

Odour Audit

- B12. Within 6 months of operation or as otherwise directed by the Secretary, the Applicant shall carry out an Odour Audit of the Development. The timing of the audit shall coincide with the receipt of putrescible waste at the Waste Transfer Station. The audit must:
- a) be carried out by a suitably qualified and experienced expert whose appointment has been endorsed by the Secretary;
 - b) audit the Development whilst it is in full operation;
 - c) include a summary of air and odour emission related complaints and any actions that were carried out to address the complaints;
 - d) validate the Development against the odour predictions in the RTS;
 - e) if, as part of the Odour Audit, or as the result of any other odour monitoring, the odour predictions are demonstrated to be inaccurate, initiate an action plan as per B12 (h).
 - f) if odour complaints are received, the Applicant must review the meteorological data for the Site and the region to establish the likelihood that the source of the odour originated from the Site. If it is likely that the odour originated from the site it must be reported in accordance with condition C6.
 - g) review design and management practices of the Development against industry best practice for air emissions and odour management; and
 - h) include an action plan that identifies and prioritises additional air and odour emission mitigation measures that may be necessary to reduce air and odour emissions.

Note: the aim of the odour audit is to validate the odour predictions in the RTS and therefore the audit should be conducted when large amounts of putrescible waste are present on the Site.

- B13. Within two months of commissioning this audit, the Applicant shall submit a copy of the audit report to the Secretary, the EPA and Penrith City Council, together with its response to any recommendations contained in the audit report.
- B14. The Applicant shall comply with any requirement(s) of the Secretary arising from the Odour Audit.

SOIL AND WATER

Pollution of Waters

B15. The Development shall comply with section 120 of the POEO Act, which prohibits the pollution of waters, except as expressly provided in an EPL.

Stormwater

B16. A stormwater management scheme must be prepared for the development and must be implemented in consultation with the EPA. Implementation of the scheme must mitigate the impacts of stormwater run-off from and within the premises following the completion of construction activities. The scheme should be consistent with the Stormwater Management Plan for the catchment.

Leachate Management System

B17. Prior to operation, the Applicant shall prepare a Leachate Management System for the Site, the system must:

- a) be designed by a suitably qualified and experienced person(s) in consultation with the EPA;
- b) provide a management protocol for leachate (including firewater);
- c) control leachate (including firewater) so that it does not mix with any stormwater on the Site; and
- d) include water quality monitoring to determine the performance of the leachate management system.

B18. The Applicant shall carry out the Development in accordance with the Leachate Management System approved by the Secretary (as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.

B19. Should the Waste Transfer Station no longer be able to utilise the adjacent Landfill Leachate Treatment System, no further waste shall be received at the Site until an alternative strategy for leachate management is provided in accordance with Condition B17. The system shall be designed and installed in consultation with the EPA and subject to the Secretary's approval prior to the facility receiving or processing any further waste.

Erosion and Sediment Control

B20. The Applicant shall implement erosion and sediment control measures on-site in accordance with *Managing Urban Stormwater: Soils and Construction Vol. 1* (Landcom, 2004).

Bunding

B21. The Applicant shall store all chemicals, fuels and oils used on-site in appropriately banded areas in accordance with the requirements of all relevant Australian Standards, and/or the EPA's *Storing and Handling Liquids: Environmental Protection – Participant's Manual 2007*.

Imported Soil

B22. The Applicant shall:

- a) ensure that only VENM, or ENM, or other material approved in writing by the EPA is used as fill on the Site;
- b) keep accurate records of the volume and type of fill to be used; and
- c) make these records available to the Department upon request.

Compliance Certificate

B23. A Section 73 Compliance Certificate under the *Sydney Water Act 1994* must be obtained from Sydney Water prior to the commencement of construction.

Groundwater Interception and Extraction

B24. The Applicant shall obtain any necessary water related approvals from DPI in the event that groundwater is likely to be intercepted or extracted during construction.

CONTAMINATION

- B25. Prior to commencing any excavation works, the Applicant shall prepare a protocol for the management of unexpected contamination finds which details the procedures for testing, classifying, handling, storing and disposing of contaminated water, soils and/or groundwater if encountered in excavations, in particular during excavation of the stormwater detention basin.
- B26. The Applicant shall notify the Department detailing any contamination investigation carried out. This report shall be provided to the Department on completion of construction earthworks.

NOISE AND VIBRATION

Vibration Criteria

- B27. The Applicant shall ensure that vibration resulting from the Development does not exceed the continuous or impulsive vibration criteria in the EPA's *Assessing Vibration: A Technical Guideline* (February 2006) at residential receivers.

Construction and Operation Hours

- B28. The Applicant shall comply with the construction and operation hours in Table 3 unless otherwise agreed to in writing by the Secretary.

Table 3: Hours of Construction and Operation

Activity	Day	Hours
Construction	Monday – Friday	7 am to 6 pm
	Saturday	8 am to 1 pm
	Sunday & Public Holidays	Nil
Operation	24 hours a day, seven days a week	

Noise Mitigation

- B29. The Applicant shall:
- implement best practice, including all reasonable and feasible noise management and mitigation measures to prevent and minimise operational, low frequency and traffic noise generated by the Development;
 - minimise the noise impacts of the Development during adverse meteorological conditions;
 - maintain the effectiveness of any noise suppression equipment on plant at all times and ensure defective plant is not used operationally until fully repaired; and
 - regularly assess noise emissions and relocate, modify and/or stop operations to ensure compliance with the relevant conditions of this consent.

TRAFFIC AND ACCESS

- B30. The Applicant shall ensure that:
- a total of 10 car parking spaces, including one disabled car parking space are provided;
 - trucks shall only be parked in the designated truck park areas as identified in Appendix A;
 - at least one load compliance inspection parking area is provided;
 - Site access, driveways and parking areas are constructed and maintained in accordance with the latest versions of Australian Standards AS 2890.1, AS 2890.2, AS 2890.6 and AS 1428.1;
 - the swept path of the longest vehicle entering and exiting the Site, as well as manoeuvrability through the Site, is in accordance with *AUSTROADS Guide to Road Design*;
 - unless such deliveries are via Erskine Park Road, truck deliveries and pickups are scheduled to avoid busy morning and afternoon peak hours;
 - the egress of B-double waste transportation trucks from the Erskine Park Industrial Estate is confined to Lenore Drive/Erskine Park Link Road;
 - the Development does not result in any vehicles parking or queuing on the public road network;
 - all vehicles are wholly contained on-site before being required to stop;
 - all loading and unloading of heavy vehicles occurs inside the Waste Transfer Station;

- k) the proposed turning areas in the car park are kept clear of any obstacles, including parked cars, at all times; and
- l) all vehicles enter and leave the Site in a forward direction.

FIRE MANAGEMENT

B31. The Applicant shall:

- a) implement suitable measures to minimise the risk of fire on-site including but not limited to the recommendations in the EIS;
- b) extinguish any fires on-site promptly; and
- c) maintain adequate fire-fighting capacity on-site.

VISUAL AMENITY

Building Materials and Landscaping

B32. Prior to the commencement of construction, the Applicant shall prepare a Building and Material Schedule and a Landscape Plan for the development to the satisfaction of the Secretary. The Schedule and Plan must:

- a) be prepared in consultation with Council;
- b) be consistent with the Penrith City Council Development Control Plan 2014;
- c) include a building materials list for the Waste Transfer Station;
- d) provide details on boundary fences which shall generally have a maximum height of 2.1 m and have an "open" nature, e.g. decorative metal and coloured dark grey or black, or complement the adjacent fencing type, other than the southern boundary fence which may be higher than 2.1m and impermeable, as agreed with the adjacent property owner; and
- e) include details on landscaping, in particular how the area allocated for the Resource Recovery Facility will be grassed and stabilised prior to commencement of operation of the Waste Transfer Station to prevent any run-off and erosion.

B33. The Applicant shall carry out the Development in accordance with the approved Building and Material Schedule and Landscape Plan (as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.

Lighting

B34. All external lighting associated with the Development shall be mounted, screened, and directed in such a manner so as not to create a nuisance to the surrounding environment, properties and roadways. The lighting shall be the minimum level of illumination necessary and shall comply with *Australian Standard AS 4282 1997*.

Signage

B35. The Applicant shall install any new signage in consultation with Council and shall comply with the *State Environmental Planning Policy 64 – Advertising and Signage*, as relevant.

Note: This condition does not apply to signage identified as exempt or complying development in State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

HERITAGE

B36. The Applicant shall cease all works on-site in the event that any Aboriginal cultural object(s) or human remains are uncovered. If human remains are uncovered, you must immediately stop work, not further disturb the remains and notify NSW Police. OEH and the Aboriginal community must be contacted if the remains are suspected to be of Aboriginal origin. If other Aboriginal objects are discovered, you must immediately stop work, not further disturb the objects and notify OEH by calling Environment Line on 131 555. Works must not resume in the designated area until the relevant written consent is received from NSW Police and/or OEH. Any Aboriginal objects discovered must be registered on the Aboriginal Heritage Management Information System (AHIMS), in accordance with section 89A of the *National Parks and Wildlife Act 1974*.

SECURITY

B37. The Applicant shall:

- a) install and maintain a perimeter fence and security gates on the Site; and
- b) ensure that the security gates on-site are locked whenever the Site is unattended.

PEST, VERMIN & NOXIOUS WEED MANAGEMENT

B38. The Applicant shall:

- a) implement suitable measures to manage pests, vermin and declared noxious weeds on-site; and
- b) inspect the Site on a regular basis to ensure that these measures are working effectively, and that pests, vermin or noxious weeds are not present on-site in sufficient numbers to pose an environmental hazard, or cause the loss of amenity in surrounding areas.

PART C ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING

ENVIRONMENTAL MANAGEMENT

Construction Environmental Management Plan

- C1. Prior to the commencement of construction of the Development, the Applicant shall prepare a Construction Environmental Management Plan to the satisfaction of the Secretary. The Plan must:
- a) be prepared by a suitably qualified and experienced person(s);
 - b) describe all activities to be undertaken on the Site during construction, including a clear indication of construction stages;
 - c) identify the statutory approvals that apply to the Development;
 - d) outline all environmental management practices and procedures to be followed during construction (e.g. construction traffic management, dust management and construction noise and vibration management), including all reasonable and feasible mitigation measures to protect the amenity of the surrounding environment;
 - e) detail how the environmental performance of construction will be monitored, and what actions will be taken to address identified adverse environmental impacts;
 - f) describe the roles and responsibilities for all relevant employees involved in construction;
 - g) include arrangements for community consultation and complaints handling procedures during construction; and
 - h) consolidate the construction related parts of any management plans and monitoring programs required in the conditions of this consent.
- C2. The Applicant shall carry out the development in accordance with the Construction Environmental Management Plan approved by the Secretary (as revised approved by the Secretary from time to time), unless otherwise agreed by the Secretary.

Operational Environmental Management Plan

- C3. The Applicant shall prepare an Operational Environmental Management Plan for the Development to the satisfaction of the Secretary. This strategy must:
- a) be prepared by a suitably qualified and experienced person(s);
 - b) provide a strategic framework for environmental management of the Development;
 - c) identify the statutory approvals that apply to the Development;
 - d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the Development;
 - e) describe in detail how the environmental performance of the Development would be monitored and managed; and
 - f) describe the procedures that would be implemented to:
 - (i) keep the local community and relevant agencies informed about the operation and environmental performance of the Development;
 - (ii) receive, handle, respond to, and record complaints;
 - (iii) resolve any disputes that may arise;
 - (iv) respond to any non-compliance; and
 - (v) respond to emergencies.

The Applicant shall carry out the Development in accordance with the Operational Environmental Management Plan approved by the Secretary (as revised approved by the Secretary from time to time), unless otherwise agreed by the Secretary

Management Plan Requirements

- C4. The Applicant shall ensure that the environmental management plans/strategies required under this consent are prepared in accordance with any relevant guidelines and include:
- a) detailed baseline data;
 - b) a description of:
 - (i) the relevant statutory requirements (including any relevant approval, licence or lease conditions);
 - (ii) any relevant limits or performance measures/criteria;

- (iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the Development or any management measures;
 - (iv) the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;
 - c) a program to monitor and report on the:
 - (i) impacts and environmental performance of the Development;
 - (ii) effectiveness of any management measures;
 - (iii) a contingency plan to manage any unpredicted impacts and their consequences;
 - (iv) a program to investigate and implement ways to improve the environmental performance of the Development over time;
 - d) a protocol for managing and reporting any:
 - (i) incidents;
 - (ii) complaints;
 - (iii) non-compliances with statutory requirements;
 - (iv) exceedances of the impact assessment criteria and/or performance criteria; and
 - (v) a protocol for periodic review of the plan.
- C5. The Secretary may waive some of the requirements in Condition C4 if they are unnecessary or unwarranted for particular management plans/strategies.

REPORTING AND AUDIT

Incident Reporting

- C6. The Applicant shall notify, at the earliest opportunity, the Secretary and any other relevant agencies including the EPA and Penrith City Council of any incident that has caused, or threatens to cause, material harm to the environment or result in offensive odour at sensitive receivers. For any other incident (including complaints) associated with the Development, the Applicant shall notify the Secretary and any other relevant agencies as soon as practicable after the Applicant becomes aware of the incident. Within 7 days of the date of the incident, the Applicant shall provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.

Regular Reporting

- C7. The Applicant shall provide regular reporting on the environmental performance of the Development on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent.

Independent Environmental Audit

- C8. Within 1 year of the date of this consent, and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the Development. This audit must:
- a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;
 - b) led by a suitably qualified auditor, and include experts in fields specified by the Secretary;
 - c) include consultation with the relevant agencies;
 - d) assess the environmental performance of the Development and assess whether it is complying with the requirements in this consent, and any other relevant approvals and relevant EPL/s (including any assessment, plan or program required under the approvals);
 - e) review the adequacy of any approved strategy, plan or program required under the abovementioned consents; and
 - f) recommend measures or actions to improve the environmental performance of the Development, and/or any strategy, plan or program required under the consents.
- C9. Within three months of commissioning this audit, or as otherwise agreed by the Secretary, the Applicant shall submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report.

Annual Review

- C10. Within 1 year of the date of this consent, and every year thereafter, the Applicant shall review the environmental performance of the Development. This review must:

- a) describe the activities associated with the Development that were carried out in the previous calendar year, and the activities proposed to be carried out over the next year;
- b) include a comprehensive review of the monitoring results and complaints records of the Development over the previous calendar year, which includes a comparison of the results against the:
 - (i) the relevant statutory requirements, limits or performance measures/criteria;
 - (ii) requirements of any plan or program required under this consent;
 - (iii) the monitoring results of previous years; and
 - (iv) the relevant predictions in the EIS;
- c) identify any non-compliance over the previous year, and describe what actions were (or are being) taken to ensure compliance in the upcoming year;
- d) identify any trends in the monitoring data over the life of the Development;
- e) identify any discrepancies between the predicted and actual impacts of the Development, and analyse the potential cause of any significant discrepancies; and
- f) describe what measures will be implemented over the next year to improve the environmental performance of the Development.

Revision of Strategies, Plans and Programs

C11. Within 3 months of the submission of an:

- a) annual review under Condition C10 above;
- b) incident report under Condition C6 above;
- c) audit under Condition C8 above; or
- d) any modification to this consent,

the Applicant shall review, and if necessary revise, the strategies, plans, and programs required under this consent.

Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the Development.

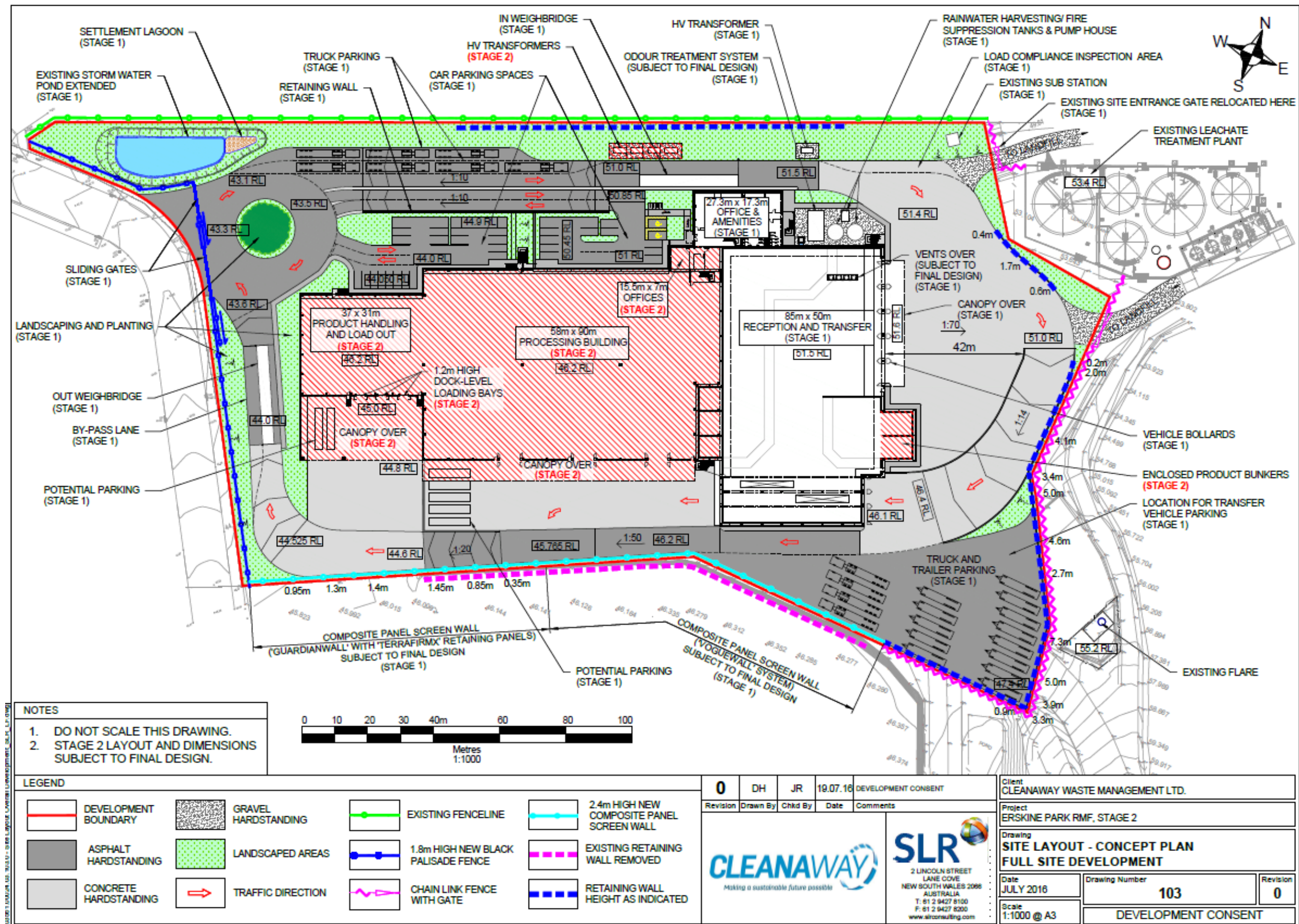
C12. The Applicant shall ensure that the operation of the Development is undertaken in accordance with all relevant updated and/or amended strategies, management plans and programs approved by the Secretary (or as revised and approved by the Secretary), unless otherwise agreed by the Secretary.

Access to Information

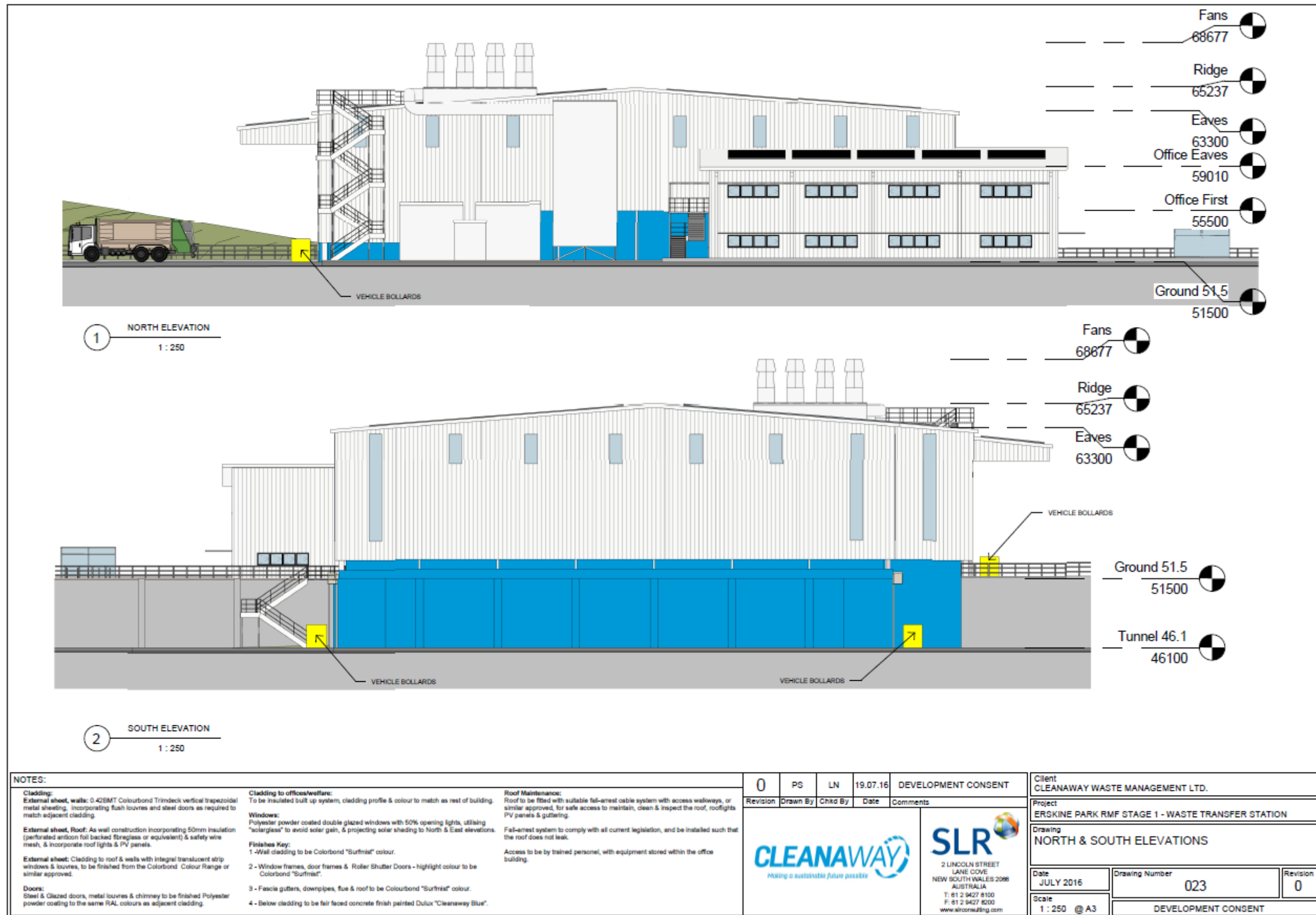
C13. The Applicant shall:

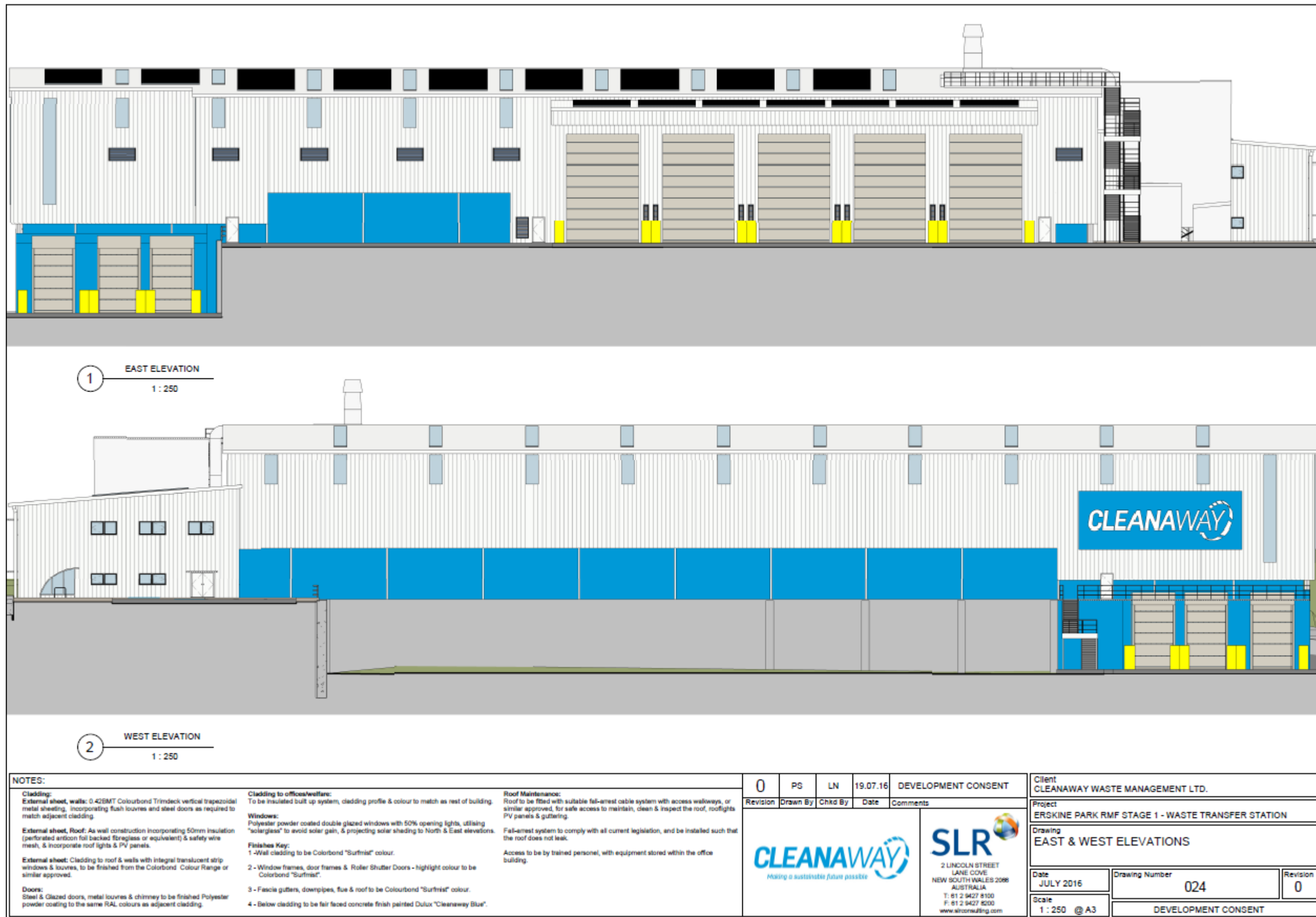
- a) make copies of the following publicly available on its website:
 - (i) the documents referred to in Condition A1;
 - (ii) all current statutory approvals for the Development;
 - (iii) all approved strategies, plans and programs required under the conditions of this consent;
 - (iv) a comprehensive summary of the monitoring results of the Development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs;
 - (v) a complaints register, updated on a monthly basis;
 - (vi) the annual reviews of the Development;
 - (vii) any independent environmental audit of the Development, and the Applicant's response to the recommendations in any audit;
 - (viii) any other matter required by the Secretary; and
- b) keep this information up to date.

APPENDIX 1 – SITE LAYOUT PLAN – CONCEPT PROPOSAL WASTE AND RESOURCE MANAGEMENT FACILITY



APPENDIX 2 – ELEVATION PLANS - WASTE TRANSFER STATION





APPENDIX 3 – MANAGEMENT AND MITIGATION MEASURES

Cleanaway commits to the implementation of the operational mitigation measures, monitoring activities and management strategies outlined in **Section 7** of the EIS for all activities associated with the Development (SSD 7075). The table below presents the key commitments proposed in this EIS, in order to effectively mitigate and/or manage the potential environmental and socio-economic impacts of the Development. Additional commitments identified in the Response to Submissions are also included (highlighted in italics).

Statement of Commitments

Aspect/Commitment	Section
General	
A Construction Environmental Management Plan (CEMP) will be prepared for the Development, with sub-plans for specific environmental risk areas, including but not limited to noise, dust and traffic issues.	Section 7.11.5
A site-specific Operational Environmental Management Plan (OEMP) will be developed and submitted to DP&E for approval. The OEMP will ensure that the commitments made within the EIS, along with the conditions imposed by the development consent and EPL, are fully implemented and complied with. The OEMP will establish the framework for managing and mitigating the potential environmental impacts of the Development over the life of the operation.	Section 7.11.5
Air Quality and Odour	
A program of construction air quality monitoring will be implemented.	Section 7.1.5
An air pollution control system will be implemented to provide multiple levels of control and an integrated solution for emission control. The system will include: • Containment: containment of dust and odour within the building using fast acting doors and an air extraction system; • Internal air management: the installation of a dust suppression system to control internal dust concentrations; • Air pollution control: the operation of a wet scrubber, required to achieve the 'design standard' with the plant operating at full capacity in the 'normal operations' scenario, or during the 'emergency operations' scenario; and • Emission control: the use of dilution fans to maximise the dispersion and dilution of the extracted, and scrubbed, air.	Section 7.1.5
Within the first 12 months of operations, monitoring of odour will be undertaken to perform efficiency trials on the scrubber system to demonstrate optimal performance. Cleanaway will also undertake follow-up monitoring during the operational lifetime of the WTS, on a basis to be agreed with the relevant authorities.	Section 7.1.5
Noise and Vibration	
Other than the noise mitigation achieved by the enclosed nature of the building design, no additional noise mitigation measures are warranted.	n/a

Aspect/Commitment	Section
<i>Cleanaway owned vehicles operating on the site will be fitted with the High and Low Buzzer system, designed to minimise noise associated with reversing alarms in accordance with the Australian Vehicle Standard (Australian Design Rule 42/04) and Heavy Vehicle National Law Act 2012.</i>	RTS ¹ Section 3.4
<i>All mobile plant operation will occur inside the WTS building and will be fitted with low frequency white noise reversing alarms.</i>	RTS Section 3.4
Traffic and Transport	
The Construction Traffic Management Plan will be updated in response to pre-construction approvals required as part of the Conditions of Approval. This will be implemented for the duration of construction activities.	Section 7.3.5
Cleanaway will schedule its delivery and transfer trucks to avoid the busy morning and afternoon peak hours.	Section 7.3.5
Transfer trucks departing the site will use the Erskine Park Link Road connection to the M7 rather than the Mamre Road or Erskine Park Road routes to the M4.	Section 7.3.5
<i>Designated pedestrian access will be provided from Quarry Road to the offices.</i>	RTS Section 3.4
<i>Any existing unnecessary property access will be removed, the kerb reinstated to suit the existing kerb, and the verge area reinstated with grass seeded topsoil or turf, which will be addressed in further designed stages.</i>	RTS Section 3.4
Visual Amenity	
Lighting will be designed and installed in accordance with AS 4282-1997 to avoid obtrusive effects to surrounding residents.	Section 7.4.5
Disturbed areas will be rehabilitated on completion of construction.	Section 7.4.5
Mature trees will be fenced and protected for the duration of construction.	Section 7.4.5
Landscape works will be implemented as part of the Development.	Section 7.4.5
<i>Further detail on the architectural treatment of the facility will be provided as the detailed design progresses.</i>	RTS Section 3.4
<i>Black palisade fencing located behind landscaping fronting on to Quarry Road will be provided.</i>	RTS Section 3.4
<i>Upon completion of the WTS, the undeveloped RRF area will be grassed until such time as construction can commence on the second stage.</i>	RTS Section 3.4
Indigenous Heritage	
Should any Aboriginal artefact be uncovered during construction or operation all works will cease in that locale and the OEH will be notified. Works will only recommence when an appropriate and approved management strategy has been agreed to by all of the relevant stakeholders.	Section 7.5.3
Soils and Geology	
Cut and fill slopes will be battered or retained for stability and to reduce the risk of erosion.	Section 7.6.4

¹ RTS - Response to Submissions

Aspect/Commitment	Section
An Erosion and Sediment Control Plan (ESCP) will be prepared as part of the CEMP setting out detailed measures for the management of erosion and sediment.	Section 7.6.4
A program of groundwater monitoring would be undertaken, building on the ongoing groundwater monitoring program undertaken for the landfill.	Section 7.6.4
In the event that unexpected contaminated material is encountered during construction excavations: • An environmental management plan will be developed and implemented; and • A suitably qualified environmental consultant will be consulted to assess any unexpected conditions or subsurface facilities discovered during the proposed earthworks.	Section 7.6.4
In the event that salinity is identified during construction the following measures will be considered: • minimisation of exposure of saline and sodic soils in temporary faces or stockpiles during site preparation works; and • the collection and controlled discharge of stormwater from hard surfaces such that the potential for localised ponding or waterlogging is minimised.	Section 7.6.4
Surface Water	
An Erosion and Sediment Control Plan (ESCP) will be prepared as part of the CEMP setting out detailed measures for the management of erosion and sediment.	Section 7.7.5
Storage of hazardous materials during construction such as oils, chemicals and refuelling activities will occur in bunded areas.	Section 7.7.5
Water quality monitoring of water within the sediment basins will be carried out during the construction phase in accordance with the CEMP.	Section 7.7.5
A minimum of 740 m ³ of OSD will be provided within an underground tank and above ground storage within the detention basin.	Section 7.7.5
Rainwater harvesting tanks will be implemented, which will provide a minimum of 56 KL of water storage for supplying greywater for toilet flushing in the buildings.	Section 7.7.5
Cleanaway will develop a detailed maintenance and operations plan for the entire stormwater system in accordance with Penrith Councils WSUD Policy (PCC, 2013) and will be included within the OEMP.	Section 7.7.5
Flora and Fauna	
Given the highly disturbed and artificial nature of the subject site at Erskine Park, there is no requirement for the implementation of any species specific impact amelioration or environment management measures with respect to threatened or other native biota.	n/a
Greenhouse Gas	
The building will be designed to comply with all National Construction Code and Council requirements and a Section J Energy Efficiency Assessment will be performed prior to construction.	Section 7.9.4
The following points would be considered to reduce the emissions caused from on-site electricity usage:	Section 7.9.4

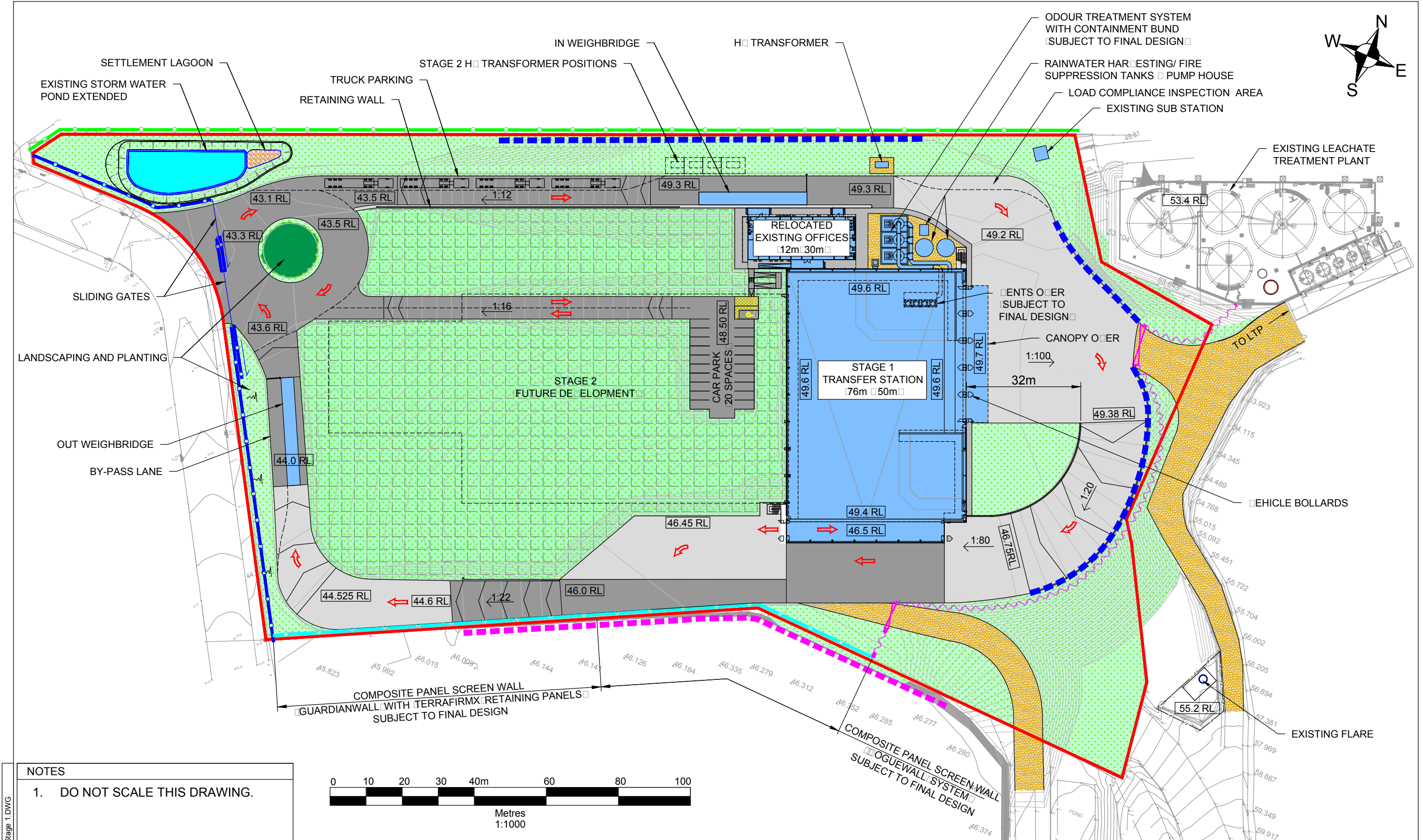
Aspect/Commitment	Section
• A percentage of electricity could be generated on-site through the use of photovoltaic cells, for example; • Use of light sensors minimise lighting related electricity usage; and • Where possible, high efficiency lighting should be used.	
The following points should be considered to reduce the overall energy use from vehicles and stationary equipment: • Variable frequency drive motor controls will be used on stationary equipment to minimise electricity consumption; • Waste transfer vehicles should leave the site with full loads to reduce the number of traffic movements required; • Waste transfer vehicle configuration should be designed to maximise waste transport efficiency; • All vehicles/plant and machinery should be turned off when not in use and regularly serviced to ensure efficient operation; and • Truck routes and loading capacity should be designed and optimised to reduce the distance and effort required by the vehicles.	Section 7.9.4
Hazard and Risk	
The SEPP 33 screenings for storage and transportation of dangerous goods indicates that the development is below the SEPP thresholds and therefore is not considered a hazardous or offensive development in accordance with the guidelines. As such a Preliminary Hazard Assessment is not required.	n/a
Socio-Economic	
A Community Information Strategy will be implemented throughout construction.	Section 7.11.5
Waste Management	
All received waste will be transported off-site to an appropriately licensed waste management facility in accordance with relevant waste management regulations.	Section 6.12
A Construction Waste Management Plan will be prepared setting out specific measures for the management of waste during the construction period.	Section 7.12.4
An operation WMP will be implemented throughout the life of the operation and will be updated on a regular basis (e.g. annually) to ensure the Plan remains applicable.	Section 7.12.4

Appendix B

Report Number 630.11948.00000-R01

Page 1 of 1

PLANS



NOTES

1. DO NOT SCALE THIS DRAWING.

LEGEND			
	DEVELOPMENT BOUNDARY		GRAVEL HARDSTANDING
	ASPHALT HARDSTANDING		LANDSCAPED AREAS
	CONCRETE HARDSTANDING		TRAFFIC DIRECTION
	EXISTING FENCELINE		1.8m HIGH NEW BLACK PALISADE FENCE
	2.4m HIGH NEW COMPOSITE PANEL SCREEN WALL		EXISTING RETAINING WALL REMOVED/ MODIFIED
	EXISTING RETAINING WALL REMOVED/ MODIFIED		PROPOSED BOUNDARY RETAINING WALL
	EXISTING RETAINING WALL REMOVED/ MODIFIED		EXISTING RETAINING WALL REMOVED/ MODIFIED
	EXISTING RETAINING WALL REMOVED/ MODIFIED		EXISTING RETAINING WALL REMOVED/ MODIFIED

7

DH

LN

02.06.17

DEVELOPMENT CONSENT

Revision

Drawn By

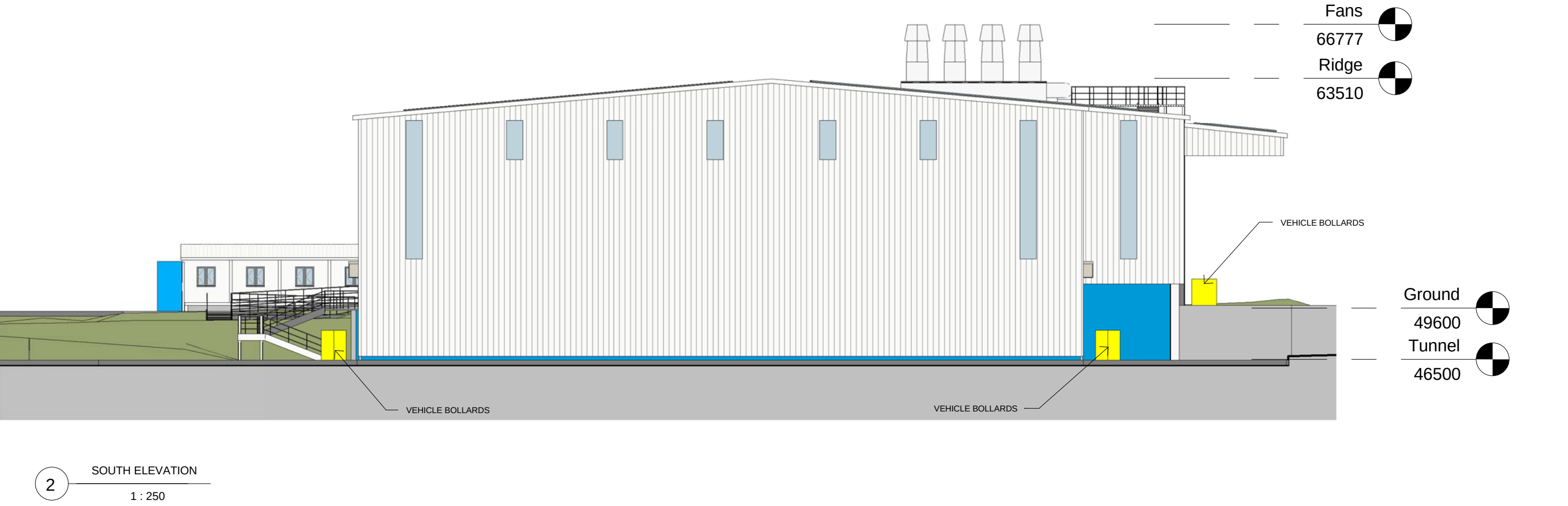
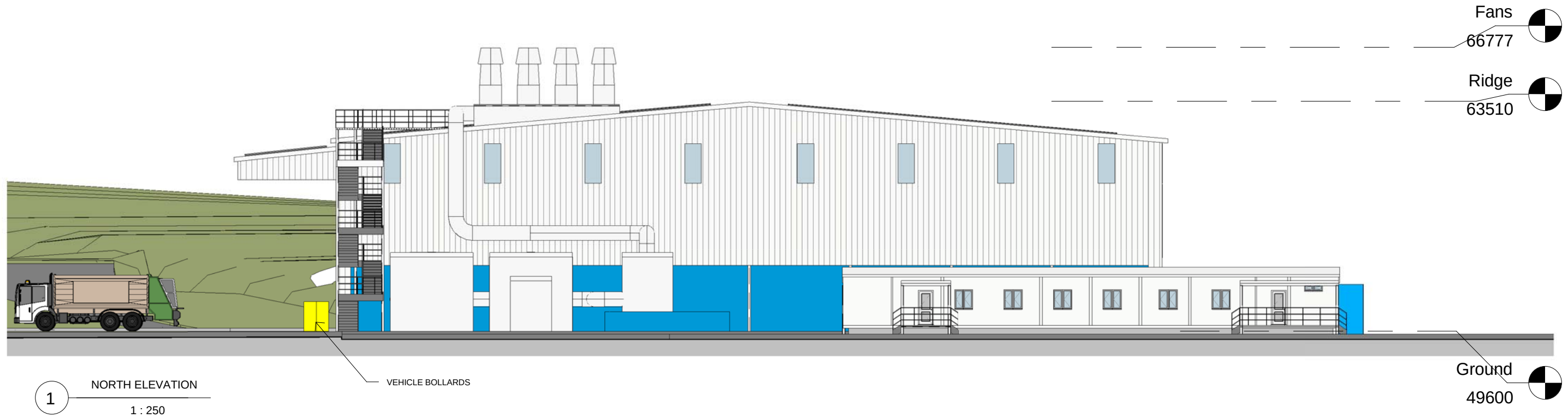
Chkd By

Date

Comments

2 LINCOLN STREET
LANE COVE
NEW SOUTH WALES 2066
AUSTRALIA
T: 61 2 9427 8100
F: 61 2 9427 8200
www.slrconsulting.com

Client CLEANAWAY WASTE MANAGEMENT LTD.		
Project ERSKINE PARK RMF, STAGE 1 - WASTE TRANSFER STATION		
Drawing PROPOSED SITE LAYOUT - STAGE 1		
Date MAY 2016	Drawing Number 003	Revision 7
Scale 1:1000 A3	DEVELOPMENT CONSENT	



NOTES:

Cladding:
External sheet, walls: 0.42BMT Colourbond Trimdeck vertical trapezoidal metal sheeting, incorporating flush louvres and steel doors as required to match adjacent cladding.

External sheet, Roof: As wall construction incorporating 50mm insulation (perforated anticon foil backed fibreglass or equivalent) & safety wire mesh, & incorporate roof lights & PV panels.

External sheet: Cladding to roof & walls with integral translucent strip windows & louvres, to be finished from the Colorbond Colour Range or similar approved.

Doors:
Steel & Glazed doors, metal louvres & chimney to be finished Polyester powder coating to the same RAL colours as adjacent cladding.

Cladding to offices/welfare:
To be insulated built up system, cladding profile & colour to match as rest of building.

Windows:
Polyester powder coated double glazed windows with 50% opening lights, utilising "solarglass" to avoid solar gain, & projecting solar shading to North & East elevations.

Finishes Key:
1 - Wall cladding to be Colorbond "Surfmist" colour.
2 - Window frames, door frames & Roller Shutter Doors - highlight colour to be Colorbond "Surfmist".
3 - Fascia gutters, downpipes, flue & roof to be Colourbond "Surfmist" colour.
4 - Below cladding to be fair faced concrete finish painted Dulux "Cleanaway Blue".

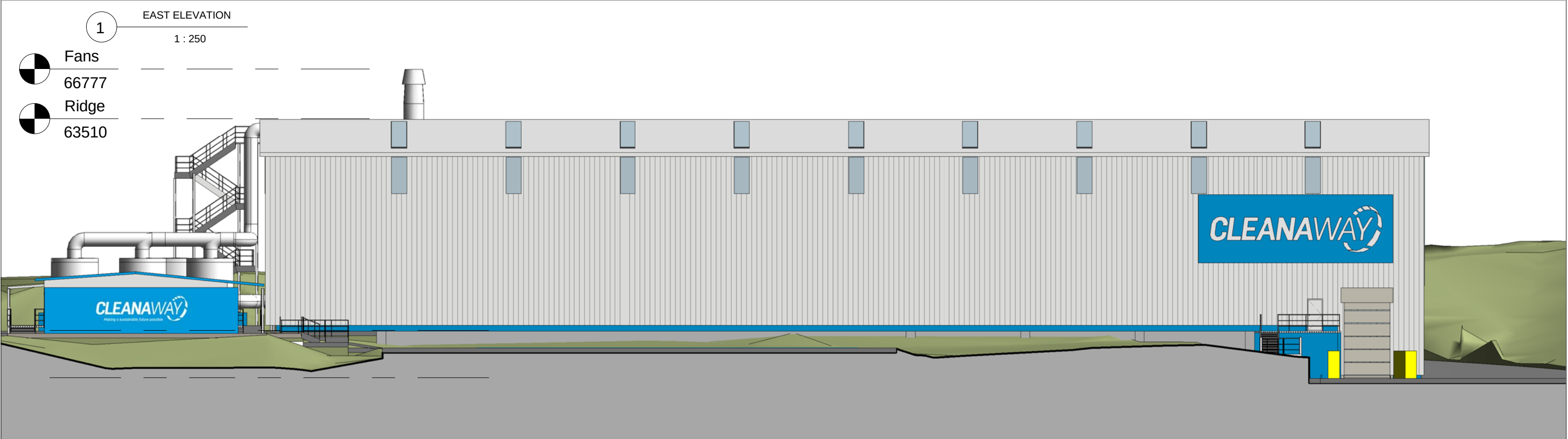
Roof Maintenance:
Roof to be fitted with suitable fall-arrest cable system with access walkways, or similar approved, for safe access to maintain, clean & inspect the roof, rooflights PV panels & guttering.

Fall-arrest system to comply with all current legislation, and be installed such that the roof does not leak.

Access to be by trained personnel, with equipment stored within the office building.

2	PS	LN	02.06.17	DEVELOPMENT CONSENT
Revision	Drawn By	Chkd By	Date	Comments
		 2 LINCOLN STREET LANE COVE NEW SOUTH WALES 2066 AUSTRALIA T: 61 2 9427 8100 F: 61 2 9427 8200 www.slrconsulting.com		

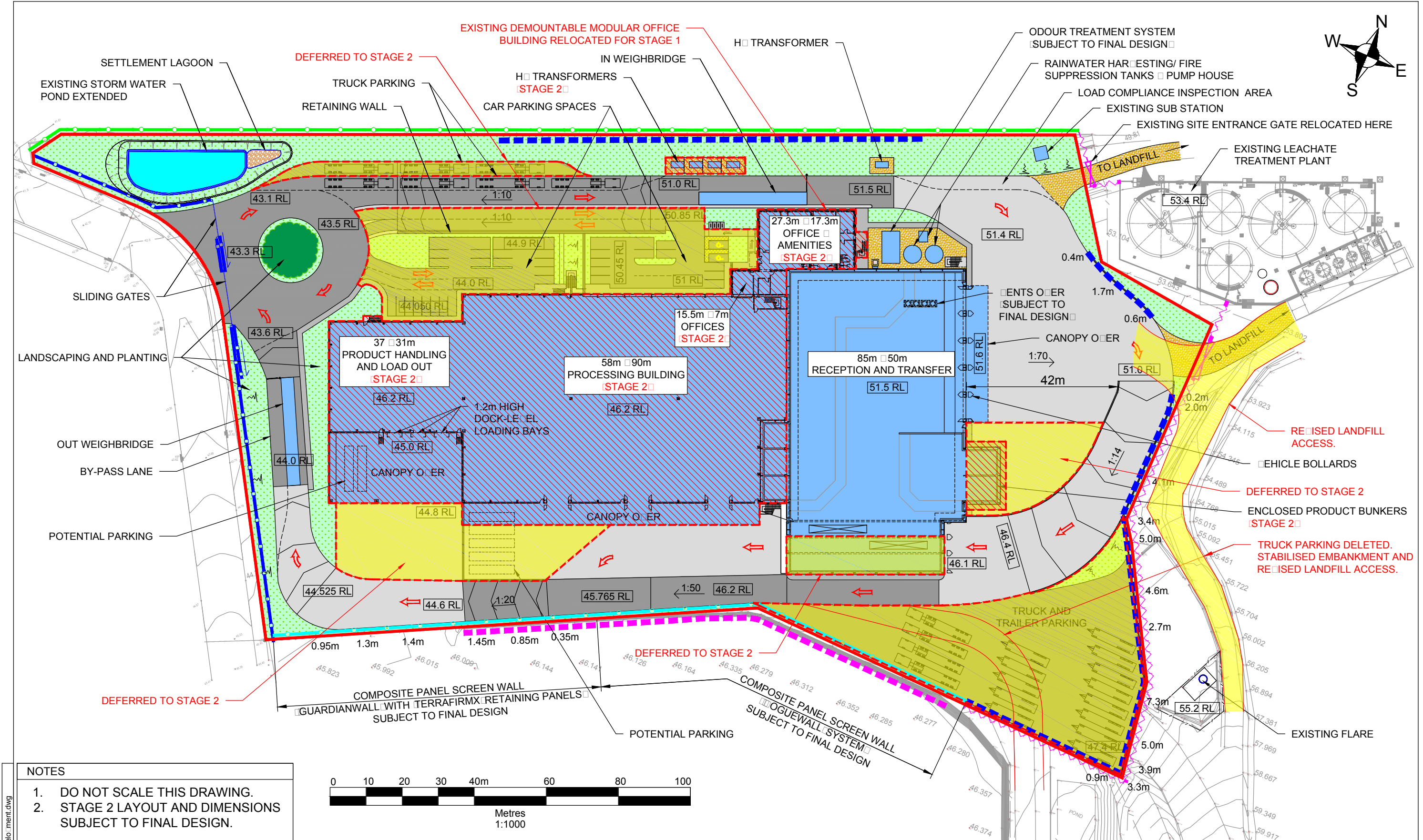
Client CLEANAWAY WASTE MANAGEMENT LTD.		
Project ERSKINE PARK RMF STAGE 1 - WASTE TRANSFER STATION		
Drawing NORTH & SOUTH ELEVATIONS		
Date MAY 2016	Drawing Number 023	Revision 2
Scale 1 : 250 @ A3	DEVELOPMENT CONSENT	



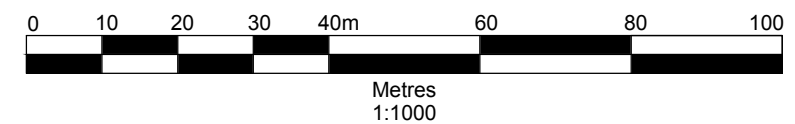
2 WEST ELEVATION
1 : 250

NOTES:				
Cladding: External sheet, walls: 0.42BMT Colourbond Trimdeck vertical trapezoidal metal sheeting, incorporating flush louvres and steel doors as required to match adjacent cladding. External sheet, Roof: As wall construction incorporating 50mm insulation (perforated anticon foil backed fibreglass or equivalent) & safety wire mesh, & incorporate roof lights & PV panels. External sheet: Cladding to roof & walls with integral translucent strip windows & louvres, to be finished from the Colorbond Colour Range or similar approved. Doors: Steel & Glazed doors, metal louvres & chimney to be finished Polyester powder coating to the same RAL colours as adjacent cladding.				
Cladding to offices/welfare: To be insulated built up system, cladding profile & colour to match as rest of building. Windows: Polyester powder coated double glazed windows with 50% opening lights, utilising "solarglass" to avoid solar gain, & projecting solar shading to North & East elevations. Finishes Key: 1 - Wall cladding to be Colorbond "Surfmist" colour. 2 - Window frames, door frames & Roller Shutter Doors - highlight colour to be Colorbond "Surfmist". 3 - Fascia gutters, downpipes, flue & roof to be Colourbond "Surfmist" colour. 4 - Below cladding to be fair faced concrete finish painted Dulux "Cleanaway Blue".				
Roof Maintenance: Roof to be fitted with suitable fall-arrest cable system with access walkways, or similar approved, for safe access to maintain, clean & inspect the roof, rooflights PV panels & guttering. Fall-arrest system to comply with all current legislation, and be installed such that the roof does not leak. Access to be by trained personnel, with equipment stored within the office building.				

2	PS	LN	02.06.17	DEVELOPMENT CONSENT		
Revision	Drawn By	Chkd By	Date	Comments		
 Making a sustainable future possible  2 LINCOLN STREET LANE COVE NEW SOUTH WALES 2066 AUSTRALIA T: 61 2 9427 8100 F: 61 2 9427 8200 www.slrconsulting.com				Client CLEANAWAY WASTE MANAGEMENT LTD.		
				Project ERSKINE PARK RMF STAGE 1 - WASTE TRANSFER STATION		
				Drawing EAST & WEST ELEVATIONS		
				Date MAY 2016	Drawing Number 024	Revision 2
				Scale 1 : 250 @ A3	DEVELOPMENT CONSENT	



- NOTES**
- DO NOT SCALE THIS DRAWING.
 - STAGE 2 LAYOUT AND DIMENSIONS SUBJECT TO FINAL DESIGN.



LEGEND			
	DEVELOPMENT BOUNDARY		GRAVEL HARDSTANDING
	ASPHALT HARDSTANDING		LANDSCAPED AREAS
	CONCRETE HARDSTANDING		TRAFFIC DIRECTION
	EXISTING FENCELINE		1.8m HIGH NEW BLACK PALISADE FENCE
	2.4m HIGH NEW COMPOSITE PANEL SCREEN WALL		EXISTING RETAINING WALL REMOVED/ MODIFIED
	EXISTING RETAINING WALL REMOVED/ MODIFIED		PROPOSED BOUNDARY RETAINING WALL
	EXISTING RETAINING WALL REMOVED/ MODIFIED		PROPOSED BOUNDARY RETAINING WALL
	EXISTING RETAINING WALL REMOVED/ MODIFIED		PROPOSED BOUNDARY RETAINING WALL

0

DH

LN

07.06.17

DEVELOPMENT CONSENT

Revision

Drawn By

Chkd By

Date

Comments

2 LINCOLN STREET

LANE COVE

NEW SOUTH WALES 2066

AUSTRALIA

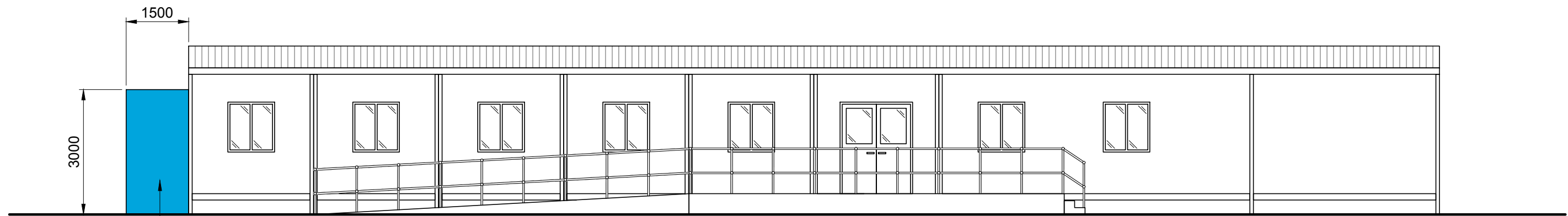
T: 61 2 9427 8100

F: 61 2 9427 8200

www.slrconsulting.com

Client CLEANAWAY WASTE MANAGEMENT LTD.		
Project ERSKINE PARK RMF, STAGE 2		
Drawing SITE LAYOUT - CONCEPT PLAN FULL SITE DEVELOPMENT		
Date JUNE 2017	Drawing Number 103	Revision 0
Scale 1:1000 A3		DEVELOPMENT CONSENT

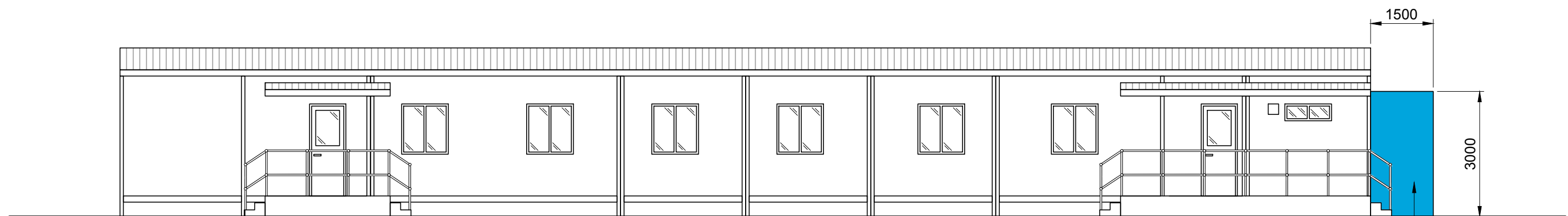
03561 00024 03.103.0 - Site Layout Overall Development.dwg



New Screen Wall
Powdercoat aluminium panels
3m high x 1.5m wide equal to
Decorative Screens Direct

SOUTH ELEVATION

1:100

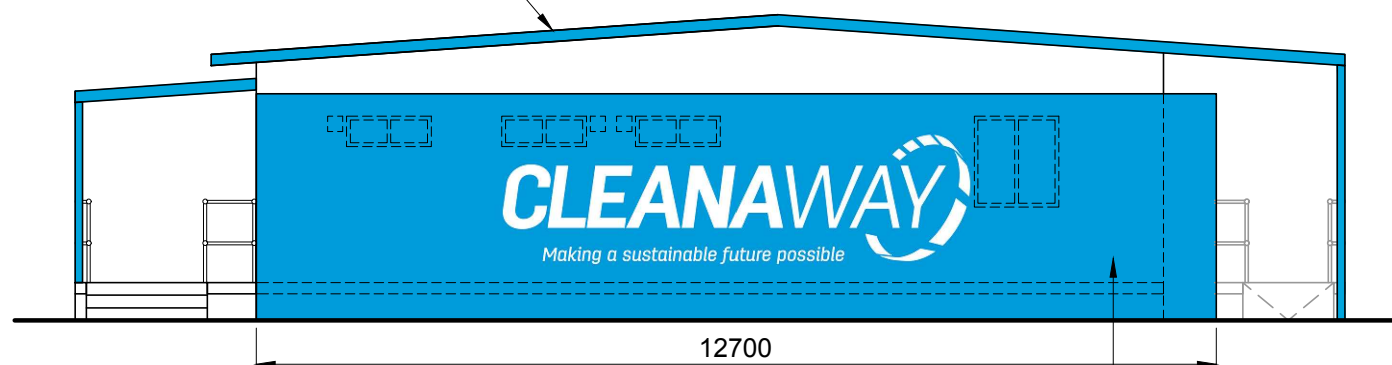


New Screen Wall
Powdercoat aluminium panels
3m high x 1.5m wide equal to
Decorative Screens Direct

NORTH ELEVATION

1:100

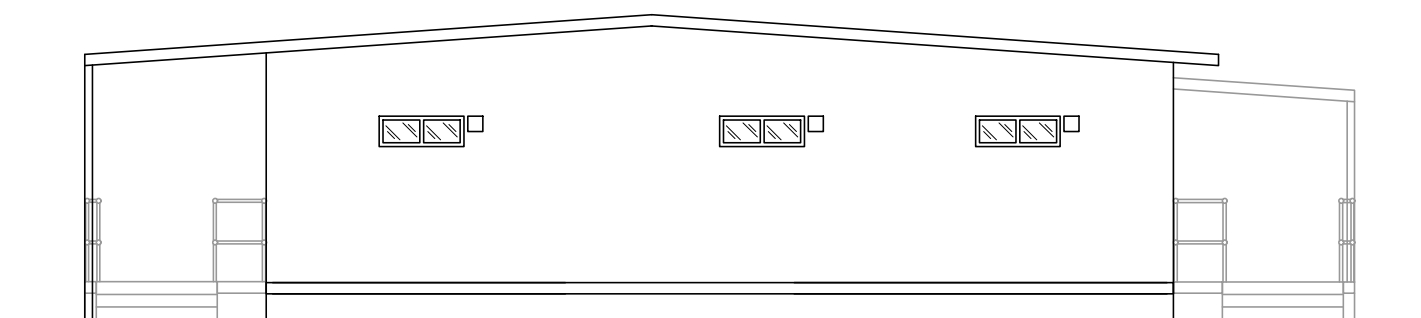
Existing offices to be re-painted
in Cleanaway corporate colours.



WEST ELEVATION

1:100

New Screen Wall
Powdercoat aluminium panels
3m high x 1.5m wide equal to
Decorative Screens Direct



EAST ELEVATION

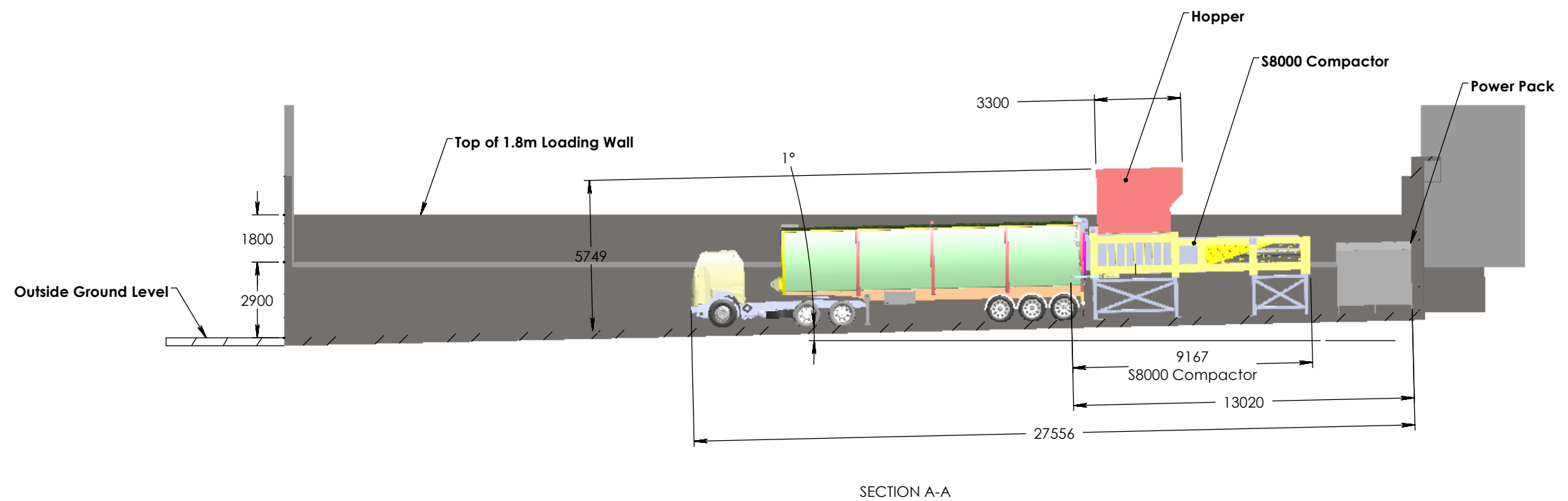
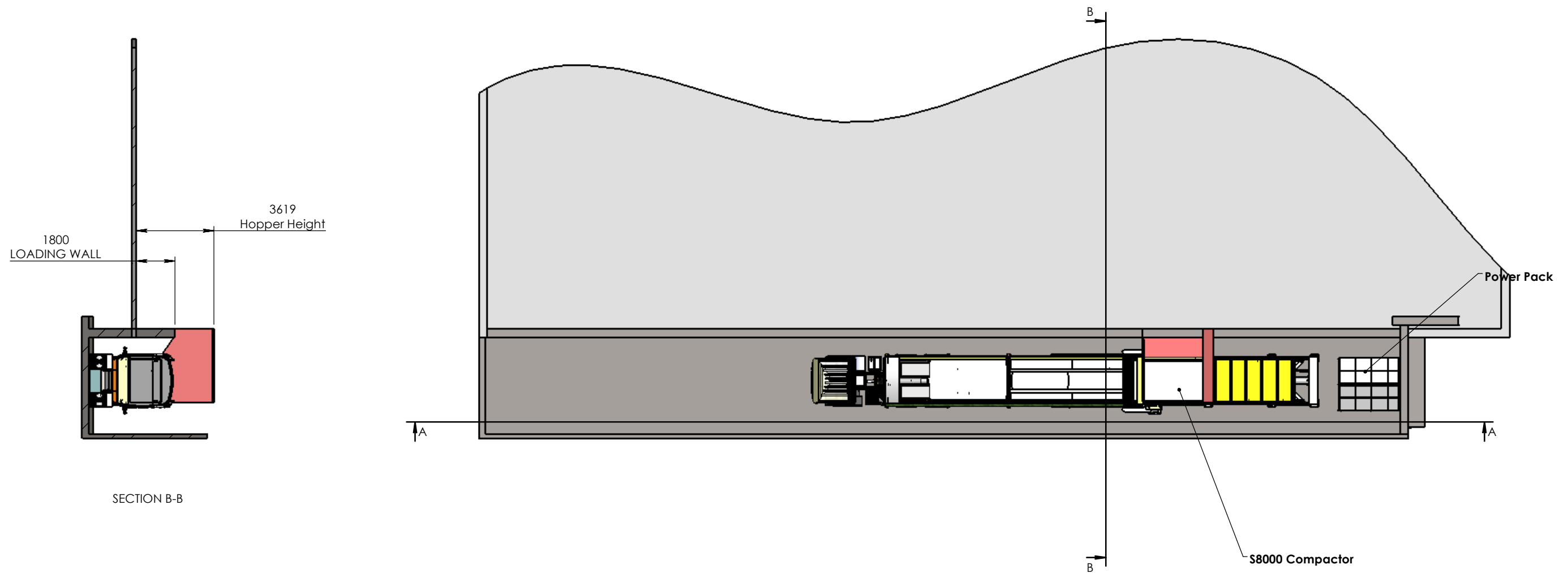
1:100

NOTES

1. This drawing is to be read in conjunction with all Architects and Engineers drawings and Specifications.
2. Do not scale this drawing. All dimensions should be site checked by the Contractor or relevant Sub-Contractor.
3. Existing modular office building information taken from record drawings of Australian Portable Buildings Ltd ref P3833-05/E.
4. Any deviation from the design assumptions is to be reported to the Architect/ Engineer prior to commencement of works.
5. The works are to be carried out to the approval and satisfaction of the relevant authorities. All permits and approvals should be obtained before work commences on site.
6. The Contractor is to remain responsible for the temporary stability of the building and surrounding ground throughout the construction.

0	DH	LN	21.06.17	TENDER ISSUE
Revision	Drawn By	Chkd By	Date	Comments
		 2 LINCOLN STREET LANE COVE NEW SOUTH WALES 2086 AUSTRALIA T: 61 2 9427 8100 F: 61 2 9427 8200 www.slrconsulting.com		

Client CLEANAWAY WASTE MANAGEMENT LTD.		
Project ERSKINE PARK RMF, STAGE 1 - WASTE TRANSFER STATION		
Drawing PROPOSED MODIFIED MODULAR OFFICE BUILDING - ELEVATIONS		
Date MAY 2017	Drawing Number 019	Revision 0
Scale 1:1000 x A3		



TOLERANCES UNLESS OTHERWISE SPECIFIED:
UP TO 10 ± 0.25
OVER 10 UP TO 100 ± 0.5
OVER 100 ± 1
ALL ANGLES ± 1°

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33 Wedgewood Rd,
Hallam, Victoria, Aust, 3803
Ph: +61 3 8787 1600
Fax: +61 3 8787 1670



DRAFTING STANDARD
AS1100 - 1992

MATERIAL: -

-

FINISH: -

.

All Welds to A.S. 1554

DRAWN: W.L.

CHECKED: L.R. / S.F.

DATE: 18/05/2017

MASS: 15474805.08

TITLE:

Cleanaway - Erskine

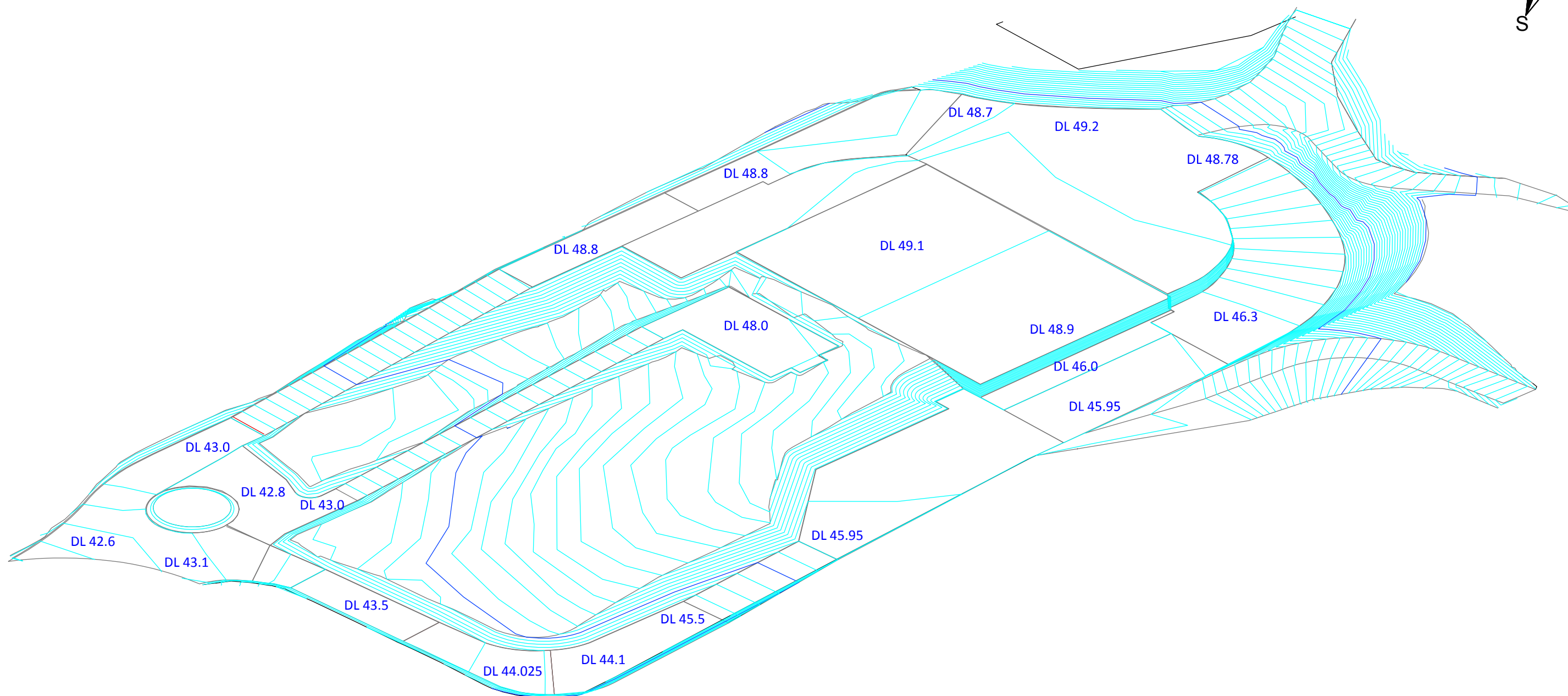
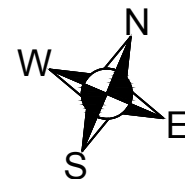
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REV. 4

SHEET. 2 OF 4

A3

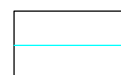


NOTES

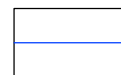
SITE SURVEY BASED ON ORIGINAL TRIANGULATED SURVEY DATA SUPPLIED, MANUALLY COMBINED WITH ADDITIONAL SURVEY INFORMATION SUPPLIED 13.04.2015 CONTAINED IN "2220DWG3.DWG". NORTHERN BUND INCLUDED.

CUT VOLUME = 53,650m³
FILL VOLUME = 2,835m³
BALANCE = 50,815m³ CUT
CUT AREA = 31,060m²
FILL AREA = 3,420m²
TOTAL AREA = 34480m²

LEGEND



PROPOSED
CONTOURS AT
250mm INTERVALS



PROPOSED
CONTOURS AT 5m
INTERVALS

0

MS

LN

21.06.17

TENDER ISSUE

Revision Drawn By Chkd By Date Comments



Client
CLEANAWAY WASTE MANAGEMENT LTD.

Project
ERSKINE PARK RMF, STAGE 1 - WASTE TRANSFER STATION

Drawing
**STAGE 1 - SITE LAYOUT
APPROXIMATE FORMATION LEVEL**

Date
MAY 2016

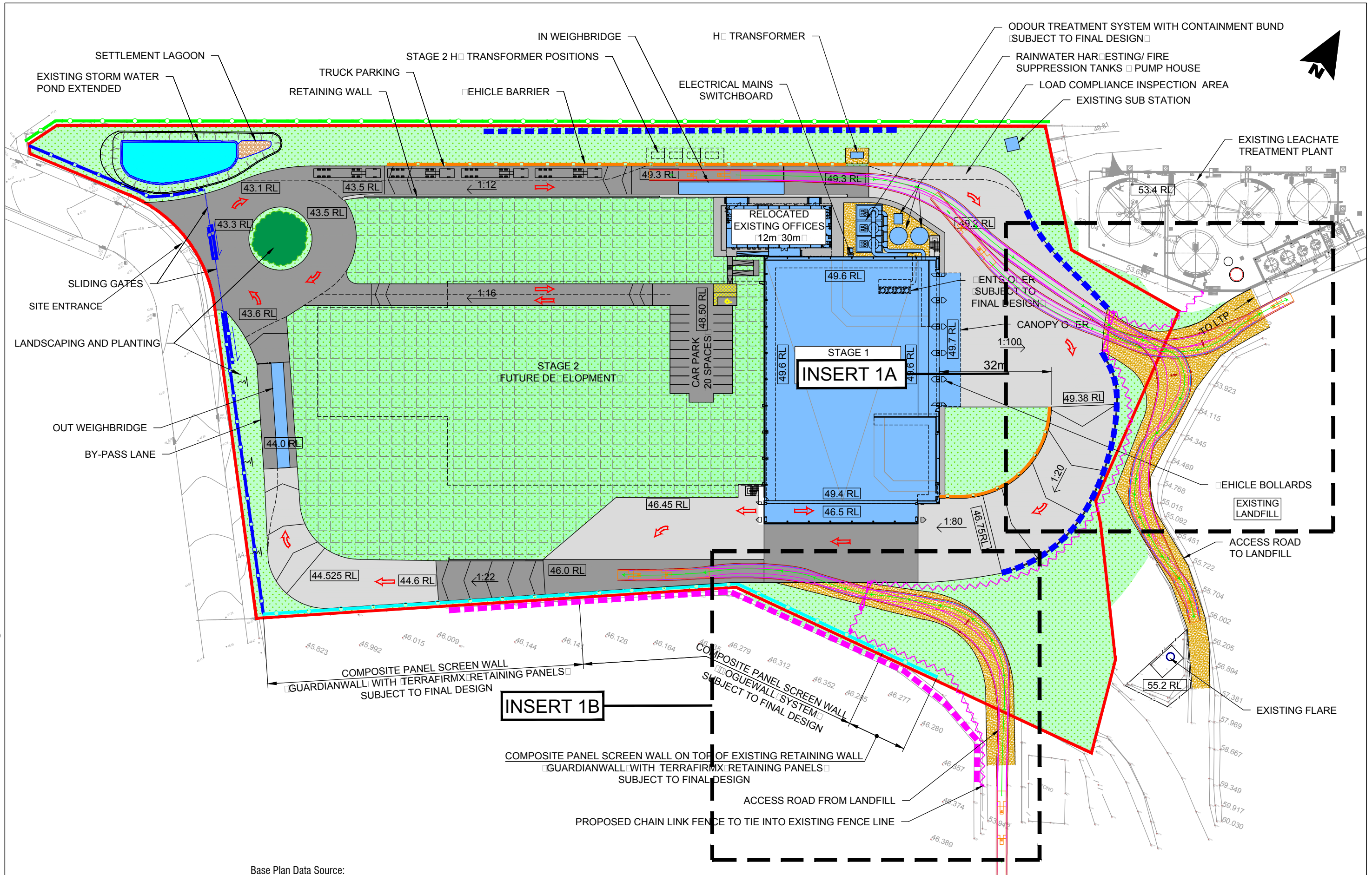
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Revision
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Scale
NTS @ A3

03561.00024.FIG A - SWEEP PATH PLAN.dwg



Base Plan Data Source:

SLR

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NEW SOUTH WALES 2305
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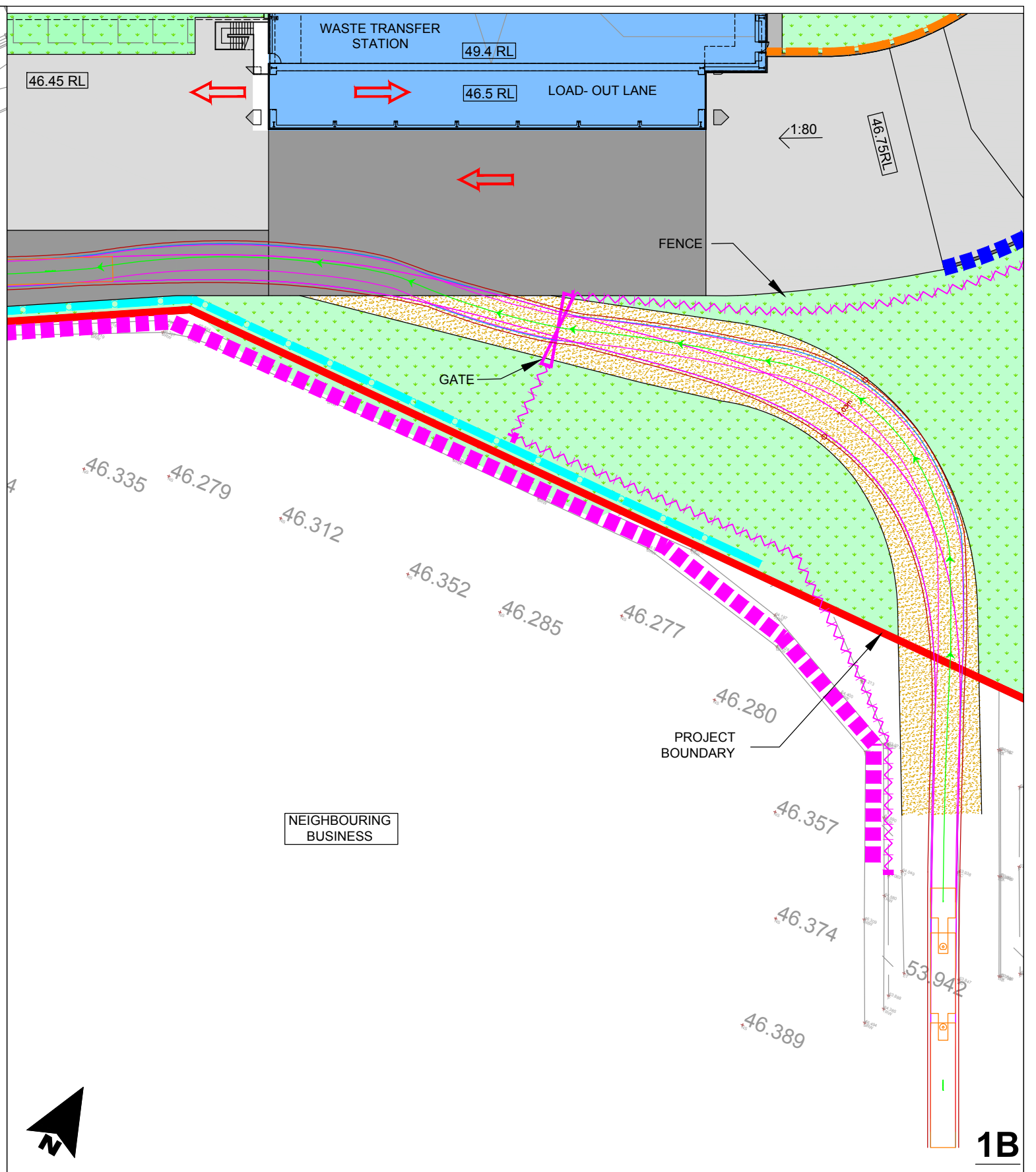
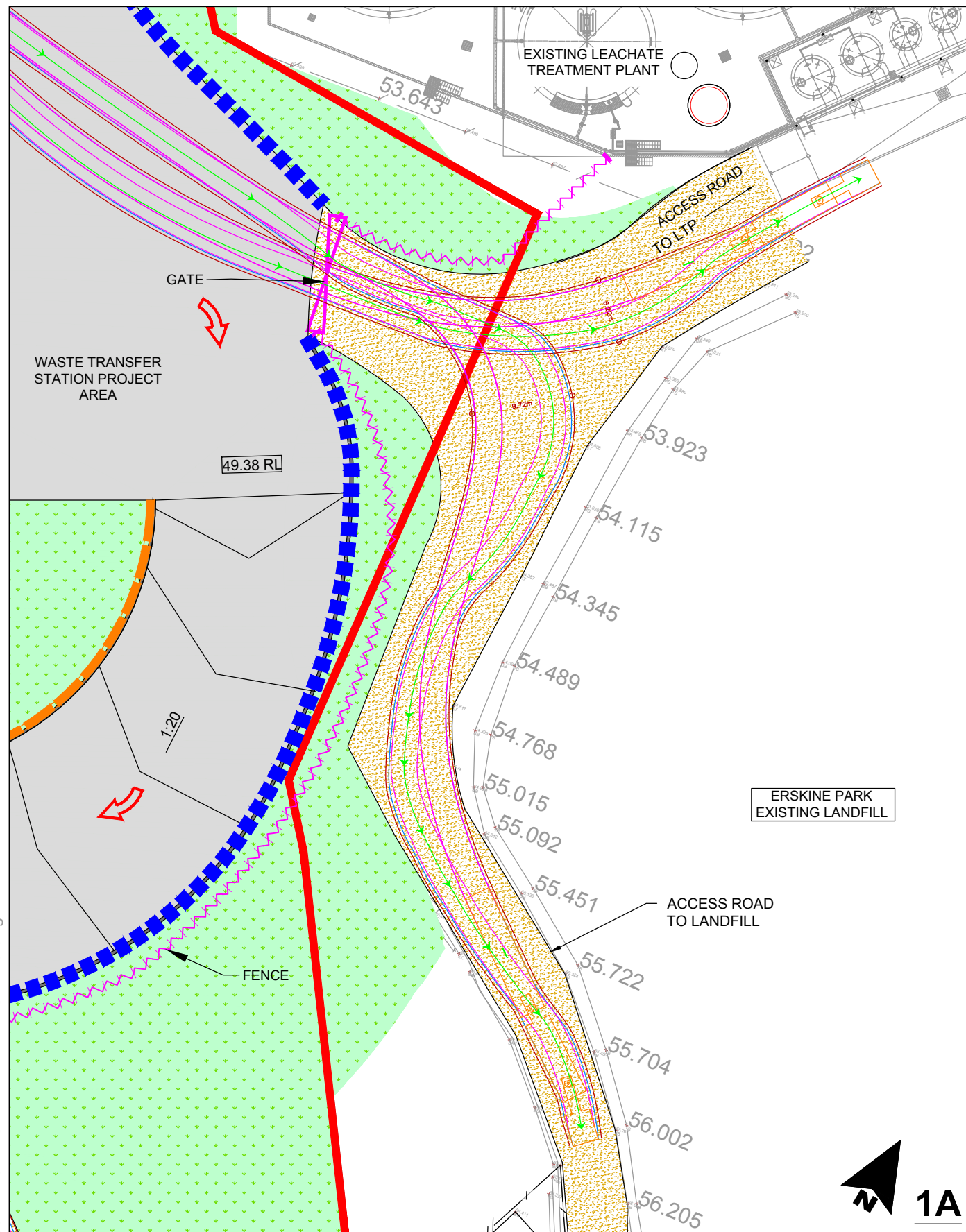
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CLEANAWAY WASTE MANAGEMENT LTD.

ERSKINE PARK, STAGE 1
WASTE TRANSFER STATION

**SWEPT PATH
SITE PLAN
FIGURE**

03561.00024.FIG B - SWEEP PATH INSERTS.dwg



ENTRY SWEEP PATH

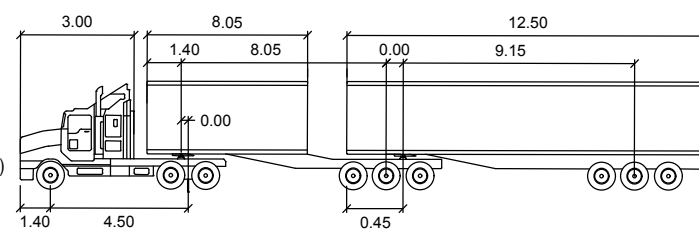
EXIT SWEEP PATH

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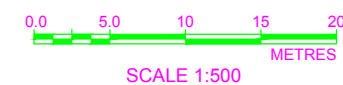
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SWEEP PATH LEGEND

- VEHICLE BODY
- VEHICLE PATH
- FRONT TYRES
- VEHICLE CLEARANCE (300mm)
- VEHICLE



B-DOUBLE 26M	metres
Tractor Width	: 2.50
Trailer Width	: 2.50
Tractor Track	: 2.50
Trailer Track	: 2.50
Lock to Lock Time	: 6.0 sec
Steering Angle	: 23.4°
Articulating Angle	: 70.0°



CLEANAWAY WASTE MANAGEMENT LTD.

ERSKINE PARK, STAGE 1
WASTE TANSFER STATION

B-DOUBLE SWEEP PATH FOR LANDFILL ACCESS POINTS FIGURE



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Appendix C

Report Number 630.11948.00000-R01

Page 1 of 1

REVISED SURFACE WATER ASSESSMENT



global environmental solutions

ENVIRONMENTAL ASSESSMENT
Proposed minor changes to approved
Erskine Park Resource Management Facility (SSD 7075)
Stage 1 Waste Transfer Station
Surface Water Assessment

Report Number 610.14324

21 June 2017

Cleanaway Waste Management Ltd
85 - 87 Quarry Road
Erskine Park
NSW 2759

Version: FINAL Rev B

Erskine Park Resource Management Facility

Stage 1 Waste Transfer Station

Surface Water Assessment

PREPARED BY:

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SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

DOCUMENT CONTROL

Reference	Status	Date	Prepared	Checked	Authorised
610.14324	FINAL Rev B	21 June 2017	Duncan Barnes	Tracey Ball	Martin Gravett

Executive Summary

Development Consent was granted to Cleanaway Waste Management Ltd (Cleanaway) by the Planning Assessment Commission, acting under delegation from the Minister for Planning, on 5 October 2016 for a Concept Proposal for a Waste and Resource Management Facility (WRMF) and a Stage 1 Waste Transfer Station (WTS) and associated infrastructure. The Stage 1 WTS can receive up to 300,000 tonnes per annum (tpa) of putrescible waste. Cleanaway will seek development consent for the construction and operation of a Stage 2 Resource Recovery Facility (RRF) to receive up to 150,000 tpa of selected recyclable material from the WTS for processing into a number of saleable commodities (Stage 2).

The Development site is located approximately 11 kilometres south-east of Penrith. It is addressed to 85 - 87 Quarry Road, Erskine Park NSW, and is identified as Lot 1 in Deposited Plan (DP) 1140063 in the Penrith Local Government Area (LGA).

Cleanaway (formerly known as Transpacific) are now seeking to modify a number of aspects of the Stage 1 development consent through a Section 96(1A) Modification. The purpose of this Surface Water Assessment is to support the modification application. It assesses any changes to surface water impacts resulting from the proposed modification when compared to impacts assessed in the EIS and approved through the development consent, including any changes to mitigation measures. It also addresses recommendations of agencies and relevant stakeholders identified during consultation.

The surface water assessment includes details of changes relating to the proposed modification and the following:

- Hydrological modelling to determine onsite detention storage requirements;
- Stormwater quality modelling to assess the performance of the proposed stormwater quality improvement measures in terms of reducing pollutant loads;
- Quantitative assessment of stream erosion index;
- Rainwater harvesting assessment;
- Detailed site water balance for two scenarios (existing and post development); and
- Recommendation of surface water management and mitigation measures for the construction and operational phase of the development.

Best practice management techniques will be used to manage impacts to the downstream water environment during the construction phase.

The approach to water quality and stormwater management incorporates Water Sensitive Urban Design (WSUD) principles to minimise impacts on the existing hydrologic regime. Water management measures including onsite detention (OSD), rainwater harvesting and stormwater quality improvement measures will be integrated into the drainage system to meet Penrith City Council (PCC) targets for OSD and WSUD.

The proposed modifications to the development will continue to meet local stormwater management targets for water conservation, water quantity and water quality targets and is therefore considered to be consistent with best practice stormwater management standards. The impacts are generally beneficial and given the context of the Development within the wider South Creek catchment, any negative impacts are not considered to pose a significant impact to the environment.

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1 INTRODUCTION

1.1 Background

This Surface Water Assessment (SWA) has been prepared by SLR Consulting Australia (SLR) on behalf of Cleanaway Waste Management Pty Ltd (Cleanaway) to accompany a modification (DA Mod 1) to Development Consent (SSD 7075) under Section 96(1A) of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The modification relates to Stage 1 of the Erskine Park Waste Transfer Station (herein referred to as the Development), located approximately 11 kilometres south-east of Penrith in western Sydney, New South Wales (NSW), as shown on **Figure 1**.

Cleanaway own and operate the Erskine Park Landfill which is located adjacent to the proposed Development site. The Erskine Park Landfill was opened in 1994 and involves rehabilitation of a former quarry through non-putrescible waste disposal. The landfill currently accepts commercial and industrial waste, general solid waste, low level contaminated soils, construction and demolition waste, and clean fill.

The Planning Assessment Commission (PAC), acting under delegation from the Minister for Planning approved an application for the Erskine Park Waste and Resource Management Facility (WRMF) (SSD 7075) on the 5 October 2016, comprising:

- A concept proposal for a Waste and Resource Management Facility with a maximum processing capacity of 300,000 tpa. All waste received at the WRMF shall enter the Waste Transfer Station (Stage 1), up to 150,000 tpa of this waste may be recycled at the Resource Recovery Facility (Stage 2)
- Construction and operation of the Stage 1 Waste Transfer Station with a maximum processing capacity of 300,000 tpa.

The WRMF will be developed in two stages, the first being a WTS and the second being a RRF.

An Environmental Impact Statement (EIS) was prepared to support an application for the WRMF Concept Proposal and the Stage 1 WTS. A separate EIS for the Stage 2 RRF will be developed at a later date.

1.2 Development Description

Development consent was previously granted for a 300,000 tonnes per annum (tpa) putrescible Waste Transfer Station (WTS) and associated infrastructure (Stage 1). Cleanaway are now seeking a modification (DA Mod 1) to Development Consent (SSD 7075) for the Erskine Park Stage 1 Waste Transfer Station, due to a number of design changes. These changes include:

- Removal of truck parking area in south east corner of the project site;
- Defer truck parking to the north-west of the site;
- A revised storm water management system, including a reduction in retention basin size following the removal of the truck parking area and subsequent reduction to stormwater runoff;
- Revised “terraced” car parking layout to allow for parking for additional staff (future);
- Defer construction of load out bays;
- Temporary (relocated and modified existing) office;
- Modify site levels (elevations);
- Relocated car park to be constructed in the Stage 2 area; and
- Construction of entry and exit ramps from the landfill.

Stage 2 of the development includes the construction and operation of a Resource Recovery Facility (RRF) to receive up to 150,000 tpa of selected recyclable material from the WTS for processing into a number of saleable commodities.

The Development Site is located approximately 11 kilometres south-east of Penrith, as illustrated on **Figure 1**, in western Sydney, NSW. It is addressed to 85 - 87 Quarry Road, Erskine Park NSW, and is identified as Lot 1 in Deposited Plan (DP) 1140063 in the Penrith Local Government Area (LGA) (refer to **Figure 2**). The title comprises approximately 3 hectares. As evident on **Figure 3** the site is currently utilised by Cleanaway to support the existing Erskine Park Landfill that is located adjacent to the site (Lot 4, DP 1094504). Current site infrastructure includes buildings, car parks, sheds, laydown areas, a weighbridge, and sealed roads. Some vegetation is also located around the site.

The site gains vehicular access from the adjoining Quarry Road. The area surrounding the site is primarily industrial land uses, including Stramit Building Products and Hasbro to the north, Viscount Plastics, Dincel Construction Systems and Devondale Dairy to the south, Cleanaway to the west, and Cleanaway's Erskine Park Landfill to the east.

The nearest residential dwellings are located within the suburb of St Clair, approximately 0.7km to the north of the site, and rural-residential properties located in Orchard Hills, approximately 0.7 km to the west of the site.

1.3 Purpose of this document

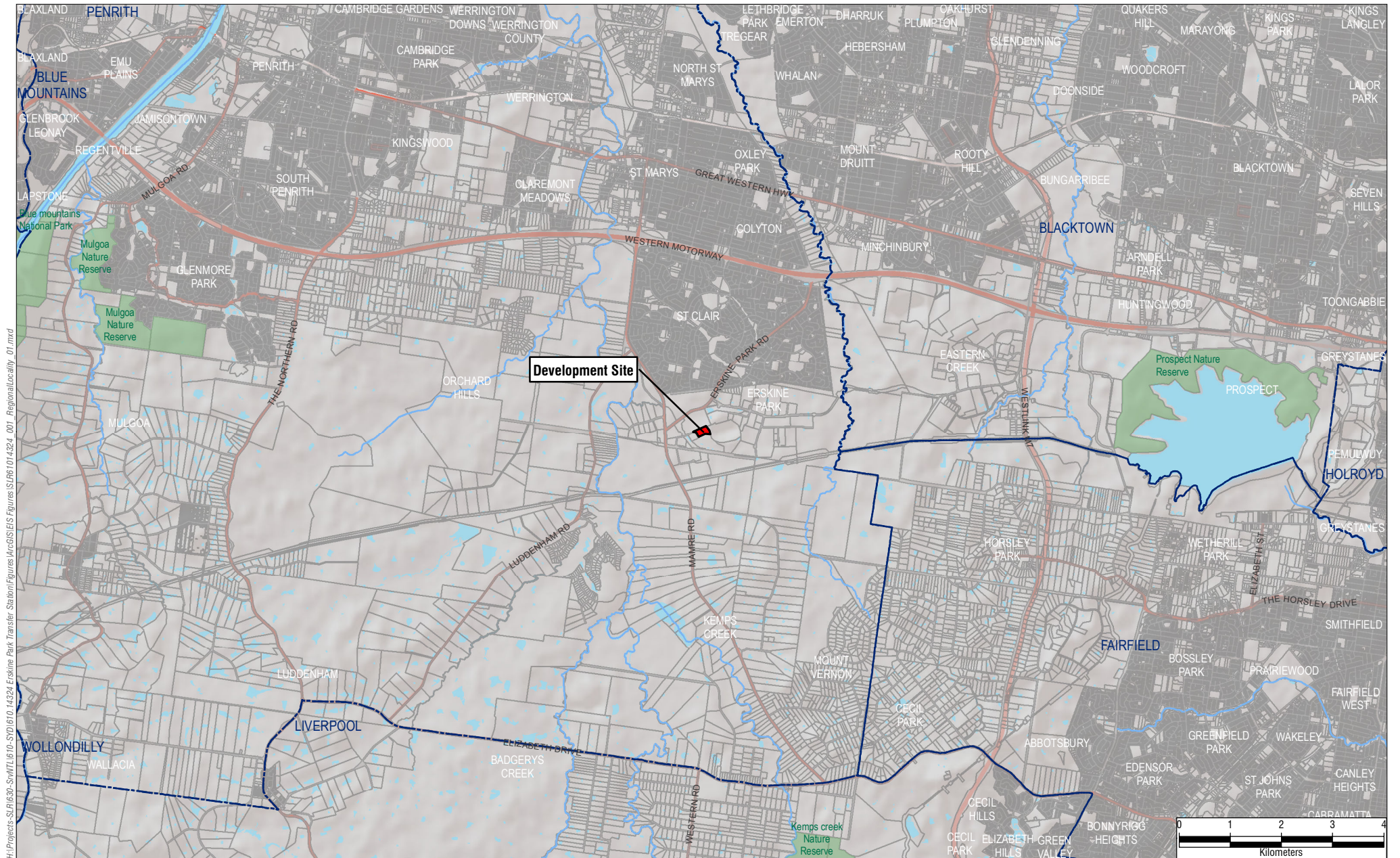
The purpose of this Surface Water Assessment (SWA) is to accompany an application to modify development consent SSD 7075 and to meet the Secretary's Environmental Assessment Requirements (SEARs) for the Stage 1 Development which relate to surface water (refer **Section Error! Reference source not found.**), as well as the recommendations of other consulted agencies and relevant stakeholders.

1.4 Scope of Works

The revised Surface Water Assessment considers the what changes, if any, the proposed modifications would have on the surface water impacts assessed in the EIS and approved through the development consent, and any related changes to surface water infrastructure and management and mitigation measures. The proposed scope of work for the revised SWA is outlined below:

- Hydrological modelling to determine changes to onsite detention storage requirements;
- Stormwater quality modelling to assess implications on the performance of the proposed stormwater quality improvement measures in terms of reducing pollutant loads;
- Updated quantitative assessment of stream erosion index;
- Updated rainwater harvesting assessment;
- Updated Detailed site water balance for two scenarios (existing and post development);
- Preparation of a revised Surface Water Assessment Report including:
 - **Section 1** provides a background to the Development and lists the SEARs;
 - **Section 2** lists the relevant policies, guidelines and licensing requirements;
 - **Section 3** presents the relevant data, including meteorological (rainfall events), catchment characteristics, surface water features and surrounding land uses;
 - **Section 4** presents the findings of the conceptual site water balance, and quantitative assessments of onsite detention and stream erosion index;
 - **Section 5** presents the findings of a rainwater harvesting and reuse quantitative assessment;
 - **Section 6** presents the findings of the stormwater quality modelling and outlines the development of stormwater quality improvement measures;

- **Section 7** outlines the proposed stormwater management measures;
- **Section 8** details the potential surface water impacts for the construction and operational phase of the development as a result of the proposal;
- **Section 9** outlines the proposed mitigation and management measures; and
- **Section 10** presents the conclusions of the surface water assessment.



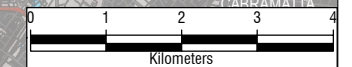
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- Notes:**
1. All features are approximate only and subject to detailed survey.
 2. Aerial Imagery courtesy Nearmap.
 3. DCDB courtesy NSW LPI.



Cleanaway Waste Management Ltd

Erskine Park Waste Transfer Facility

Site Location in Regional Context

FIGURE 1

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LEGEND

- Existing Erskine Park Landfill
- Development Site
- Indicative Overland Flow Route



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Cleanaway Waste Management Ltd

Erskine Park Waste Transfer Facility

**Site Location and
Surrounding Water Environment**

FIGURE 3

2 RELEVANT LEGISLATION, POLICY AND GUIDELINES

2.1 Legislation

2.1.1 Water Management Act 2000 and Water Act 2012

The *Water Act 1912* and *Water Management Act 2000* (WM Act 2000) contain provisions for the licensing of water capture and use. If any dams are proposed as part of the water management infrastructure, consideration must be given to whether the storages onsite need to be licensed. If the storages are not within the harvestable right of the property, or are not specifically exempt storages, it is likely that they will need to be licensed.

The Development site is located within an area covered by a water sharing plan. Therefore volumetric licensing applies.

However, the proposal is State Significant Development (SSD) and is therefore exempt from requiring water use approvals, water management works approvals and controlled activity approvals under the *Environmental Planning and Assessment Act 1979* (EP&A Act).

2.1.2 Water Sharing Plan

The proposal is located within the area covered by the Water Sharing Plan for the Greater Metropolitan Region Unregulated River Water Sources 2011 (the Water Sharing Plan). This Plan aims to provide the water supply to approximately 70% of the NSW population and ensure healthy and enhanced water sources and water dependent ecosystems for equitable sharing among users.

As a means of achieving the objectives of the Water Sharing Plan, total daily extraction limits are in place to protect the water held under access licences for the purpose of providing water to the environment and protecting flow. Extraction limits and environmental flow protection rules are used to protect, preserve, maintain and enhance the region's water. Planned environmental water provisions are in place to achieve this and relate to water that is committed by management plans for fundamental ecosystem health or other specified environmental purposes, and that cannot to the extent committed be taken or used for any other purpose. Adaptive environmental water conditions may be imposed on the whole or part of an access licence as another way to ensure the environmental water supply is protected.

The Development site is located within the Upper South Creek Management Zone. In highly urbanised management zones where current flows exceed natural flows the Urban Stormwater Harvesting Policy applies whereby the difference between the current flows and the natural flows may be made available for urban stormwater harvesting.

Some roof runoff will be collected in rainwater harvesting tanks with overflows diverted to the stormwater management system. Water reuse is discussed further in **Section 4.4**.

2.2 Policies and Guidelines

The following relevant policies and guidelines were considered as part of this SWA:

- Sydney Regional Environmental Plan No. 20 – Hawkesbury-Nepean River (No. 2 – 1997);
- Managing Urban Stormwater: Soils & Construction (NSW Government, 2004);
- Penrith City Council's Stormwater Drainage for Building Developments (Working Draft);
- Penrith City Council, 2013, Water Sensitive Urban Design (WSUD) Policy, December 2013;
- Penrith City Council, 2014, WSUD Technical Guidelines, Version 2, July 2014;
- National Water Quality Management Strategy, Department of Environment, Australian Government, 1992;

- NSW State Rivers and Estuaries Policy, NSW Government 1993;
- State Water Management Outcomes Plan (WM Act, 2000); and
- Controlled Activities – Riparian Corridors (WM Act, 2000).

These policies and guidelines are outlined below.

2.2.1 Sydney Regional Environmental Plan No. 20 – Hawkesbury-Nepean River (No. 2 – 1997)

As of July 2009, Regional Environmental Plans (REPs) are no longer part of the hierarchy of environmental planning instruments in NSW. All existing REPs are now deemed State Environmental Planning Policies (SEPPs), including the *Sydney Regional Environmental Plan No. 20 – Hawkesbury-Nepean River*.

This SEPP integrates planning with catchment management to protect the river system, so that the impact of future land use can be considered in a regional context. The plan covers water quality and quantity, environmentally sensitive areas, riverine scenic quality, agriculture, and urban and rural residential development. It controls development that has the potential to impact on the river environment.

The proposed surface water management associated with the Development should be consistent with the policy principles and objectives. The key aspect of this will be to demonstrate that there is no significant degradation of South Creek as a result of the Development.

2.2.2 Managing Urban Stormwater: Soils and Construction

In NSW, the most relevant and comprehensive guidelines for the design of stormwater controls are contained within the Landcom document, 'Managing Urban Stormwater: Soils and Construction', Vol. 1, 4th ed. (Landcom, 2004) commonly known as the 'Blue Book'. The Blue Book is utilised as guidance for broader industries and contains prescriptive guidelines for what should be included in an Erosion and Sediment Control Plan (ESCP) and a Soil and Water Management Plan (SWMP).

The principles of erosion and sediment control have been adopted in developing the proposed management and mitigation measures in this SWA.

2.2.3 Penrith City Council's Stormwater Drainage for Building Developments (Working Draft)

This document (PCC 2013a) sets out Council's minimum requirements for the provision of stormwater drainage and onsite detention storage.

2.2.4 Penrith City Council's Water Sensitive Urban Design Policy (Working Draft) and Guidelines

Council's Water Sensitive Urban Design (WSUD) policy (PCC, 2013b) and associated WSUD Technical Guidelines (PCC, 2014) provide guidance to ensure developments are designed to mitigate their stormwater impacts on the natural environment, and that stormwater systems are designed in a holistic manner integrated into the development.

2.2.5 National Water Quality Management Strategy

The National Water Quality Management Strategy (NWQMS) provides a national approach to improving water quality in Australia's waterways. Development has progressed since 1992, with the Australian Government working in cooperation with state and territory governments to produce the Strategy. The Strategy incorporates a number of key guidelines concerning management and monitoring of water including the following:

- Australian Guidelines for Fresh and Marine Water Quality (ANZECC/ARMCANZ, 2000); and

- Australian Guidelines for Water Quality Monitoring and Reporting (ANZECC/ARMCANZ, 2000);
Direction for the application of the guidelines is provided in the following document:
- Using the ANZECC Guideline and Water Quality Objectives in NSW (DEC, 2006).

The ANZECC (2000) guidelines for protection of freshwater ecosystems have been considered in assessing the water quality impacts of current and future discharges to South Creek.

2.2.6 NSW State Rivers and Estuaries Policy

The NSW State Rivers and Estuaries Policy, originally published in 1993, contains State-wide objectives for the protection and enhancement of watercourses. Though the institutional arrangements and legislation have changed since then, the overarching objectives remain valid. The overall objectives of the policy are “to manage the rivers and estuaries of NSW in ways which slow, halt or reverse the overall rate of degradation in their systems, ensure the long-term sustainability of their essential biophysical functions, and maintain the beneficial use of these resources” (NSW Water Resources Council, 1993).

The proposed surface water management associated with the Development should be consistent with the policy objectives. This SWA demonstrates there is no degradation of South Creek as a result of the Development.

2.2.7 State Water Management Outcomes Plan (WM Act)

The WM Act includes the State Water Management Outcomes Plan, a statutory document which sets the overarching policy, targets and strategic outcomes of the WM Act. This document expired in 2007 however, the content of the document remains an important reference with regard to water management objectives for proposed developments.

2.2.8 Guidelines for Controlled Activities – Riparian Corridors (WM Act)

The WM Act includes guidelines for Controlled Activities – Riparian Corridors which outline the required buffer zones required to be maintained between watercourses and proposed developments including Core Riparian Zone, a Vegetated Buffer and an Asset Protection Zone. The required size of these buffer zones depends upon the conservation significance of the stream, with larger buffer zones required for more significant streams.

No riparian corridors are located within the Development site boundary.

2.3 Licencing

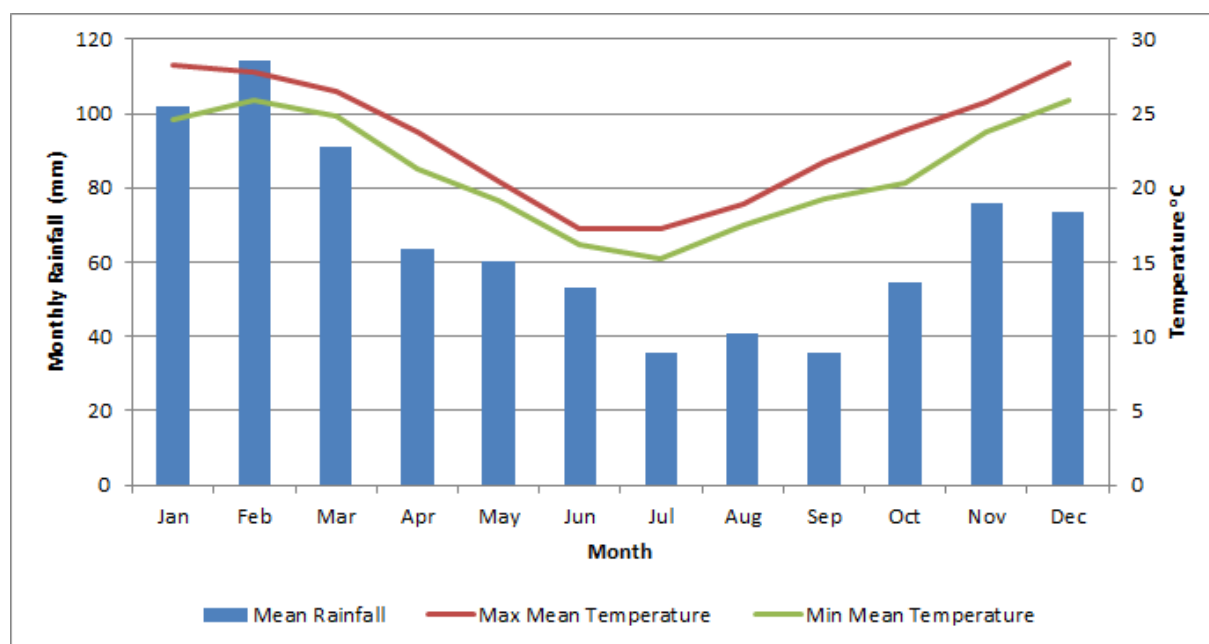
There are currently no licenced discharge points within the Development site under the existing Environment Protection Licence 4865 which covers the wider Erskine Park landfill.

3 EXISTING SURFACE WATER ENVIRONMENT

3.1 Climate

A summary of the mean rainfall and temperature statistics for the local area, obtained from the Bureau of Meteorology climate station at Orchard Hills Treatment works (Site Number 067084), is provided in **Figure 4**. Data was available between 1970 and 2014 for rainfall and 1970 and 1989 for temperature.

Figure 4 Local Rainfall and Temperature Data Summary



3.2 Regional Hydrology

The Development site is located within the South Creek catchment. South Creek is a major tributary of the Hawkesbury-Nepean River that runs for 64 kilometers in a generally northerly direction from where it rises in low hills near Narellan through the Western Cumberland Plain to Windsor (Rae, 2007).

3.3 Catchment environmental condition

The South Creek catchment is currently regarded as one of the most seriously degraded subcatchments in the Sydney region (DEC 2004, HNCMA 2007). Long term clearing of vegetation, increased proportions of impervious surfaces as a result of urbanisation and high pollution loads have resulted in dramatic alterations to the hydrology, geomorphology and ecology of the watercourses (HNCMA 2007). Water quality is impacted by both point and diffuse sources of pollution (Rae, 2007).

3.4 Flooding

SLR contacted Penrith City Council to confirm whether the site was affected by mainstream or overland flooding. Council advised that the site is not flood affected by mainstream or overland flow flooding. Council correspondence is provided in Appendix B.

3.5 Surrounding land use

The site is located within the Erskine Business Park, therefore the surrounding land uses are all industrial, including Stramit Building Products and Hasbro to the north, Viscount Plastics, Dincel Construction Systems and Devondale Dairy to the south, Cleanaway to the west, and Cleanaway's Erskine Park Landfill to the east.

Figure 5 South Creek catchment



Image extracted from Rae (2007)

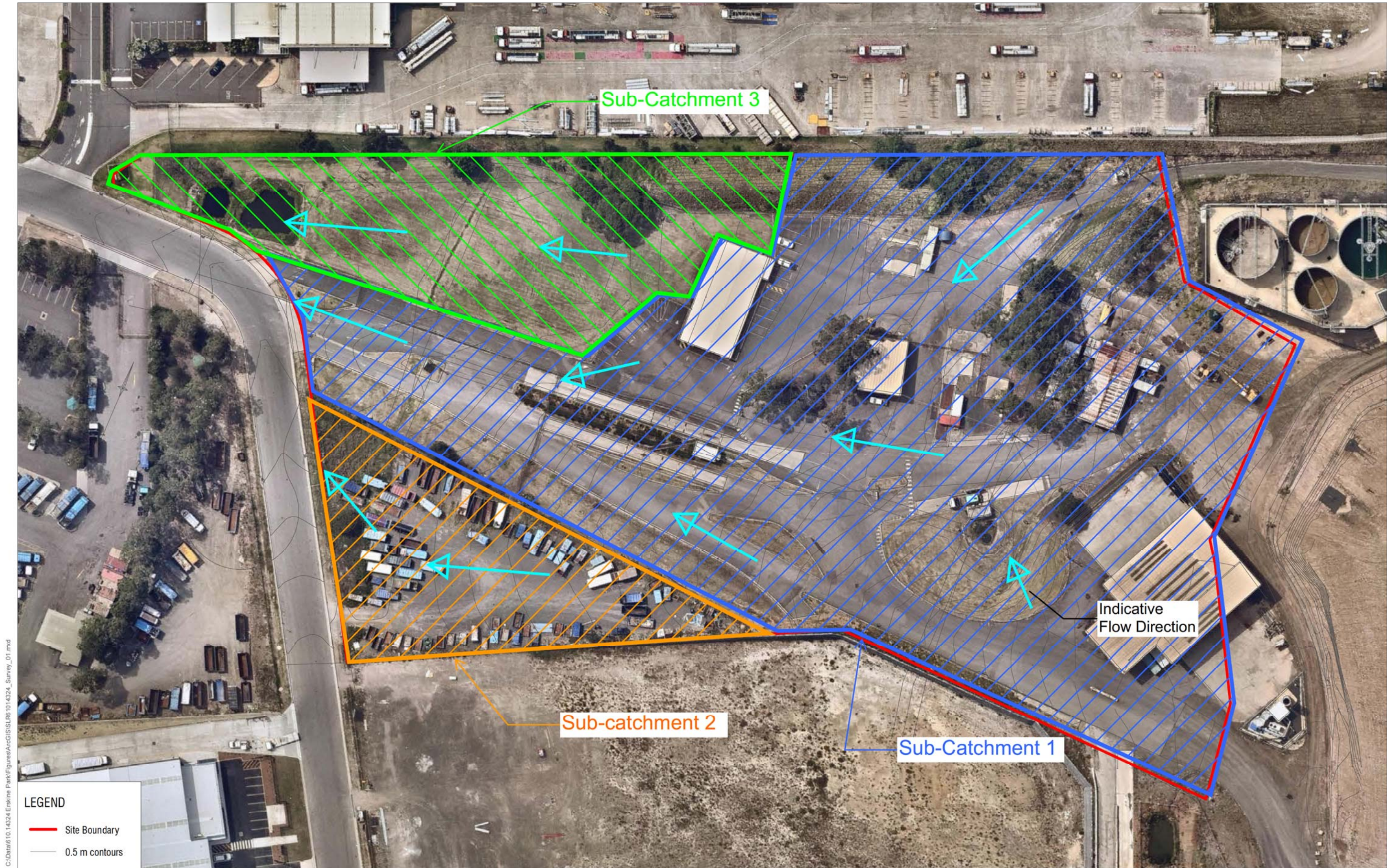
3.6 Landform

The northern portion of the site generally falls in a westerly direction from approximately 55 mAHD in the south eastern corner of the site to approximately 41.5 mAHD in the north western corner of the site. The south eastern fringes of the site falls south easterly from approximately 50mAHD to 45mAHD before falling north easterly within the eastern fringes.

A topographic survey of the site is provided within Appendix A.

3.7 Existing stormwater management

The site currently drains via a series of pits and pipes in a westerly direction towards Quarry Road. Some limited above ground storage is provided within the existing pond which accepts overland runoff from the grassed area to the west of the existing offices as well as piped drainage from the roadways. During major events, flow would bypass the pond and flow directly offsite. The existing stormwater management regime is outlined in **Figure 6** below.



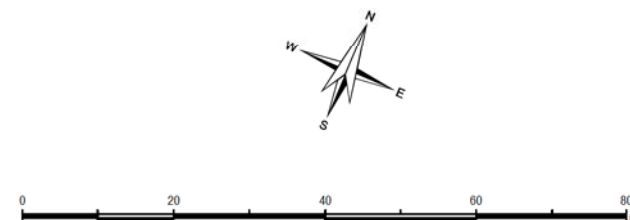
C:\Data\610.14324 Erskine Park\Figures\ArcGIS\SLR\61014324_Survey_01.mxd

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Cleanaway Waste Management Ltd

Erskine Park

Existing Stormwater Management

FIGURE 6

4 STORMWATER QUANTITY ASSESSMENT

Urban development has the potential to significantly increase surface runoff flow rates and volumes leading to impacts on stream stability, receiving water ecology and flooding in the receiving waters (South Creek). A holistic approach to water quality and stormwater management has been adopted for the development that incorporates Water Sensitive Urban Design principles to minimise impacts on the existing hydrologic regime. This holistic approach includes assessing the Stage 2 stormwater management system as part of this Stage 1 SWA where it is identified as providing the 'worst case' scenario in relation to potential impacts to the local environment.

The following assessments have been undertaken in accordance with Penrith City Council's Development Control Plan.

4.1 On-site Detention (OSD)

4.1.1 OSD Performance Criteria

PCC (2013a) states that the redevelopment of a site will require the provision of Onsite Storage Detention (OSD) at normal rates. SLR contacted Penrith City Council and they advised that normal rates should be considered to be the pre-development runoff rate of the existing development site.

The OSD and drainage design / performance criteria are:

- OSD system shall be designed for a 100 year ARI event;
- Limit peak post development offsite discharge rates to pre development offsite discharge rates for events up to and including the 100 year ARI event;
- Overland Flow Paths shall be designed for a 100 year ARI event;
- Piped drainage shall be designed for a 20 year ARI event; and
- Gutter and downpipes shall be designed for a 100 year ARI event.

4.1.2 Approach

Hydrological modelling was undertaken using the ILSAX model in the DRAINS software to assess Onsite Detention Storage (OSD) requirements.

The 'worst case' OSD scenario occurs during the future Stage 2 development which includes additional buildings and impervious surfaces. As such, the OSD was designed based on this future 'worst case' scenario.

The following ILSAX model parameters were adopted:

- Impervious area depression storage: 1mm;
- Pervious area depression storage: 5mm; and
- Soil type: 3 (slow infiltration rate).

The following catchment inputs were used in the model:

Table 1 Catchment Inputs

Model	Catchment Area (ha)	Impervious %	Pervious %
Existing Development	3.72	40	60
Post Development	3.78	84	16

The existing development includes a small pond which provides some attenuation of flows from the adjacent grass area. This pond was incorporated into the model for the purpose of assessing pre development discharge rates.

4.1.3 OSD requirements and discharge rates

Hydrological modelling indicates the need to incorporate a minimum of 710 m³ of OSD within the Development. It is proposed to incorporate OSD within a combination of storage zones including a detention pond and an underground Atlantis Flow-Tank system.

The detention pond and Atlantis detention tank details are provided in **Table 2** and **Table 3** respectively. An indicative layout of the detention systems is presented in **Figure 9** and **Figure 10**.

Table 2 Detention Pond requirements

Basin Footprint (m ²)	600
Low level outlet pit spill level (mAHD)	41.35
Low level outlet orifice centre level (mAHD)	40.47
Low level outlet orifice diameter (mm)	345
Existing outlet structures	To be retained
Overflow weir level (mAHD)	42.2
Overflow weir width	1 m
Max predicted water level in pond (mAHD)	42.37
Storage provided (m ³)	465

Table 3 Underground Atlantis Flow-Tank storage requirements

Tank Surface Area (m ²)	200
Tank Invert RL (mAHD)	42.25
Tank Top Level RL (mAHD)	43.50
Low level outlet orifice centre level (mAHD)	42.54
Low level outlet orifice diameter (mm)	430
Overflow Pit Cover Level (mAHD)	44.2
Storage provided (m ³)	245
Number of Atlantis Flow-Tank Units (triple)	711

The results of the hydrological modelling are presented in **Table 4** below. The results show that the development (incorporating OSD) will limit the peak discharge rate to the pre-development discharge rate or below for the modelled design events.

Table 4 Peak Discharge Rates

Design Event (ARI)	Pre-development discharge rate (m ³ /s)	Post development discharge rate (with OSD) (m ³ /s)	Post development reduction in discharge rate (+/- m ³ /s)
2 year	0.45	0.45	0
5 year	0.69	0.61	-0.08
10 year	0.84	0.69	-0.15
20 year	1.02	0.78	-0.24
50 year	1.17	0.83	-0.34

100 year	1.36	1.04	-0.32
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4.2 Stream Erosion Index (SEI) Assessment

The stream erosion index (SEI) is used as a way of assessing the potential for a development to cause an erosion impact to downstream waterways and measuring the performance of control measures in terms of managing erosion impacts.

4.2.1 SEI Performance Criteria

In accordance with PCC (2013b):

The post development duration of stream forming flows shall be no greater than 3.5 times the pre developed duration of stream forming flows. The comparison of post development and pre development stream forming flows is commonly referred to as the Stream Erosion Index (SEI).

In accordance with PCC (2014), the method described in the NSW Draft MUSIC Modelling guidelines (BMT WBM, 2010) was used to calculate the stream erosion index.

As detailed above, Councils SEI target (PCC, 2013a) is 3.5.

4.2.2 Approach

The 'worst case' SEI scenario occurs during the future Stage 2 development which includes additional buildings and impervious surfaces. As such, the SEI assessment was designed based on this future 'worst case' scenario.

The SEI is a dimensionless metric that represents the ratio of post development erosive flows to predevelopment erosive flows. The critical 'stream forming' flow for the receiving waterway above which mobilisation of bed material or shear erosion of bank material commences was assumed to be 50% of the 2 year ARI flow in accordance with PCC (2014).

The 2 year ARI flow (Q2) was calculated, using the probabilistic rational method, to be 0.46 m³/s. Therefore the stream forming flow was assumed to be 0.23 m³/s.

MUSIC modelling software was used to quantify annual runoff volumes for the pre-development and developed scenarios as detailed below. MUSIC (the Model for Urban Stormwater Improvement Conceptualisation) (ewater, 2009) provides the ability to simulate the quantity and quality of runoff from catchments.

In accordance with the NSW Draft MUSIC modelling guidelines (BMT WBM, 2010), a generic node was used in MUSIC to "clip off" all flows less than the stream forming flow and using the internal MUSIC function to tally and average the resultant runoff volume over the simulation period.

The 6 minute rainfall data for Penrith Lakes over the period of 1999 – 2008 was adopted for the model as recommended by PCC (2014).

Three scenarios were modelled including:

- Pre development - completely forested catchment
- Existing development – current land use
- Proposed development – proposed development incorporating rainwater harvesting and the detention tank and detention basin.

MUSIC model parameters were adopted in accordance with PCC (2014). Model parameters are documented within **Appendix C**.

The generic treatment node was applied to all three scenarios.

The SEI was then calculated based upon the following expression:

$$SEI = \frac{\sum(Q_{post} - Q_2 \cdot x\%)}{\sum(Q_{pre} - Q_2 \cdot x\%)}$$

Note

The 'pre-development' scenario was applied as Q_{pre} and the 'existing development' and 'proposed development' applied as Q_{post} for comparative purposes.
 $x\% = 50\%$.

4.2.3 SEI Compliance

SEI details for the existing and proposed development are provided in **Table 5** below.

Table 5 SEI Compliance

Scenario	SEI	Target	Target Met
Existing development	1.63	NA	NA
Proposed development	3.5	3.5	Yes

Therefore the proposed development meets Councils SEI target (3.5).

4.3 Runoff volumes

A conceptual site water balance was undertaken in MUSIC to predict the mean annual runoff volumes for the post development (including proposed rainwater harvesting) and pre development scenarios.

MUSIC models were developed for the existing and proposed development.

The 6 minute rainfall data for Penrith Lakes over the period of 1999 – 2008 was adopted for the model as recommended by PCC (2014).

MUSIC model parameters were adopted in accordance with PCC (2014). Model parameters are documented within **Appendix C**.

The modelling indicates that the mean annual runoff volume will increase as a result of the development due to an increase in the impervious surface onsite.

Table 6 Mean annual runoff volumes

Development Scenario	Mean Annual Runoff Volume (ML/year)
Existing Development	11
Proposed Development	17

4.4 Water reuse assessment

It is proposed to install rainwater harvesting tanks to collect runoff from the Stage 1 roof structure. The collected water will be reused as 'grey water' within the amenity building and provide fire suppression storage for use in the event of a fire. No irrigation of landscape areas is currently proposed.

4.4.1 Water conservation performance criteria

Penrith City Council's WSUD Policy (PCC, 2013b) specifies the following water conservation requirements:

- *Install rainwater tanks to meet 80% of non-potable demand including outdoor use, toilets and laundry*

Non potable water will be supplied for toilet flushing and may also be used for wash down and fire fighting water.

It is considered that the proposed internal dust control (misting) system should be supplied by potable water to prevent potential health issues associated with ingestion of non-potable water.

4.4.2 Approach

A water balance model was developed to assess the development's potential to capture and store roof runoff for reuse and determine changes in the runoff volume being discharged offsite. The model (MUSIC software) uses a continuous simulation of local rainfall and water usage rates that is able to simulate the performance of stormwater reuse on the water balance. The model accounts for seasonal variations in rainfall, wet and dry years and allows the assessment of various storage sizes. Daily rainfall data for Penrith Lakes over the period of 1999 – 2008 was adopted for the model as recommended by the Penrith City Council's WSUD Technical Guidelines Version 2 (PCC, 2014). The recorded average rainfall depth for the period is 691 mm/year.

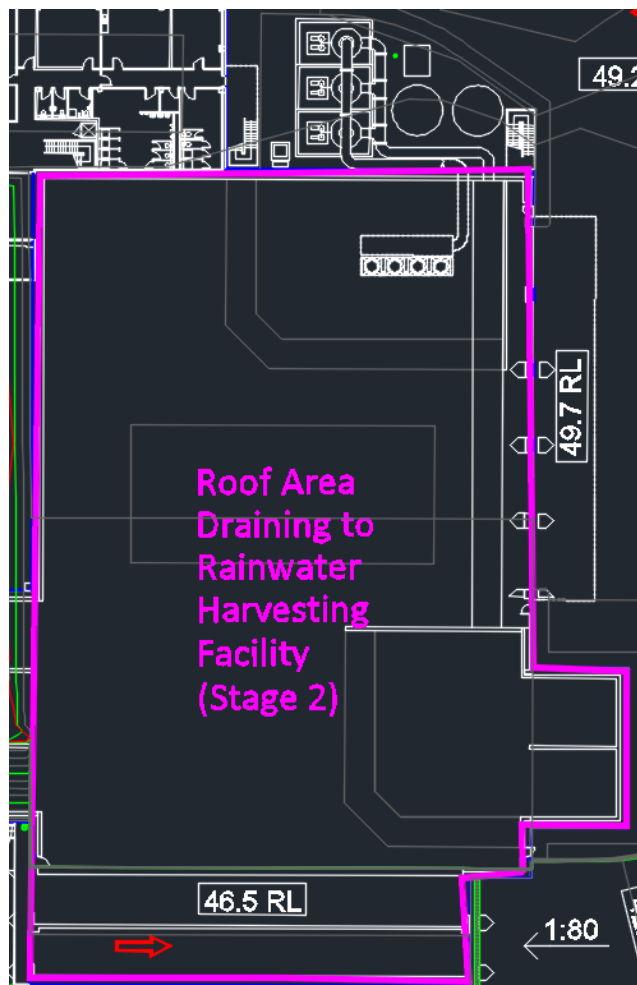
A set volume of fire suppression water will be stored at all times. Therefore fire suppression demand was not applied as a reuse demand. Fire hydrant installations including fire water storage facilities should be designed in accordance with AS 2419.1-2005.

In accordance with PCC (2014) a usage rate of 0.1 KL/day per toilet/urinal was applied for toilet water usage within the proposed development. Up to 20 toilets and urinals have been allowed for. 2 KL/day was also applied for the wheel wash facility.

The water reuse demand was therefore set as 4 KL/day and applied over 7 days per week equating to an annual reuse demand of 1.46 ML/year.

The roof area draining to the rainwater harvesting tank during Stage 2 (worst case scenario for personnel on-site) was assumed to be 0.402 ha as shown below.

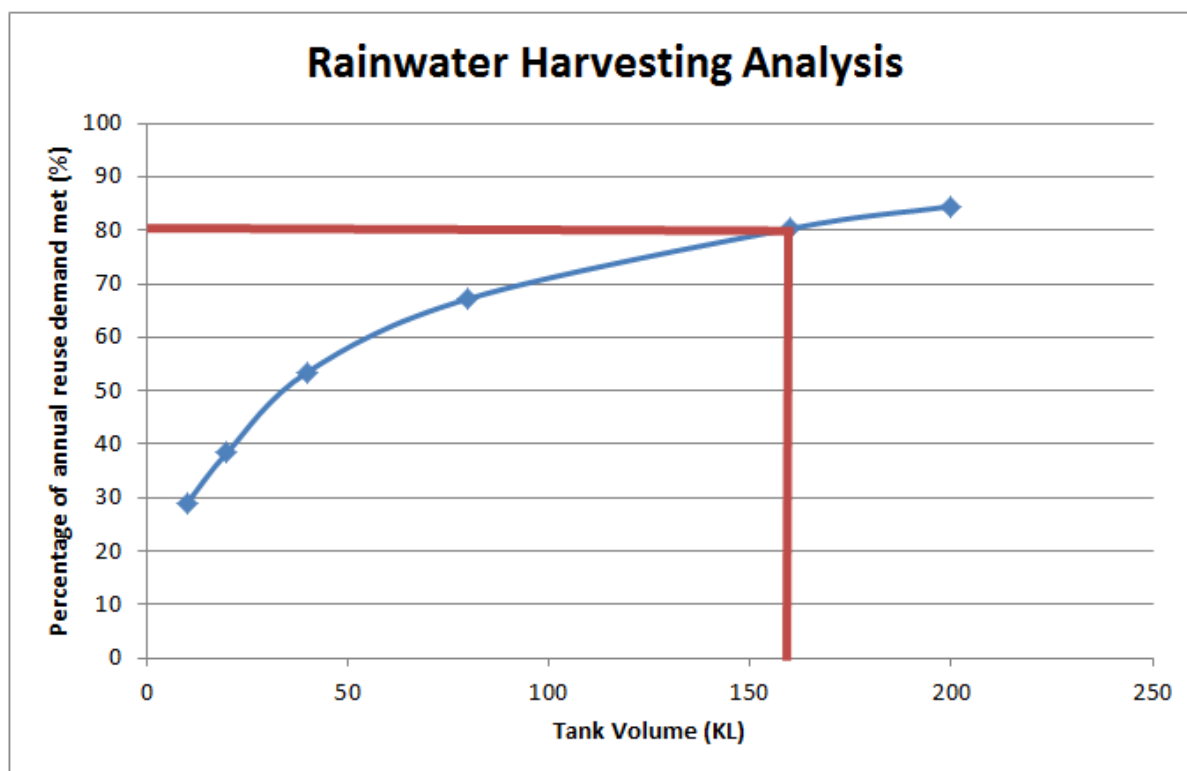
Figure 7 Adopted roof area draining to rainwater harvesting facility in Stage 2



4.4.3 Rainwater harvesting assessment outcome

Various tank sizes were modelled to assess the optimum tank size to supply 80% of the reuse target equating to an annual supply volume of 1.46 ML/year. The modelling results are presented in **Figure 8**.

Figure 8 MUSIC Rainwater Harvesting Analysis Results



The modelling indicates that the rainwater harvesting tanks should provide a minimum of 159 KL of water storage for supplying greywater for toilet flushing and the wheel wash facility.

Based upon the space available, two proprietary 79.64 KL, 4.3 m high, 4.86 m diameter corrugated commercial tanks would be suitable for use.

4.5 Comparison of water quantity changes compared to EIS

A number of minor changes relating to water quantity are proposed or predicted for the proposed modification compared to what was previously approved in the EIS. A summary of the key changes are provided in **Table 7** below. The proposed modification meets local stormwater management targets for water conservation and water quantity and is therefore considered to be consistent with best practice stormwater management standards

Table 7 Water quantity EIS and modification comparison

Parameter	EIS	Proposed Modification	Reason
Catchment Characteristics	Catchment Area = 3.72ha Impervious = 87% Pervious Area = 13%	Catchment Area = 3.78ha Impervious = 84% Pervious Area = 16%	Revised Layout and Design
Total Site On-Site Detention Volume	740 m3	710 m3	Altered catchment and stormwater design
Max predicted water level in Bio-retention pond	42.31 m AHD	42.37 m AHD	Altered catchment and stormwater design
On-Site Detention Requirements	Tank Surface Area = 340m2 Tank Invert = 41.7 m AHD Tank Top Level = 42.5 m AHD Overflow Pit Cover Level = 43.5 m AHD Storage Volume = 275m3	Tank Surface Area = 200m2 Tank Invert = 42.25 m AHD Tank Top Level = 43.5 m AHD Overflow Pit Cover Level = 44.2 m AHD Storage Volume = 245m3	Altered catchment, stormwater design and different type of OSD system (Atlantis Flow-Tank as opposed to a concrete tank)
Post Development Reduction in Discharge Rates	2 year ARI = -0.13 m3/s 5 year ARI = -0.28 m3/s 10 year ARI = -0.34 m3/s 20 year ARI = -0.41 m3/s 50 year ARI = -0.37 m3/s 100 year ARI = -0.34 m3/s	2 year ARI = 0.00 m3/s 5 year ARI = -0.08 m3/s 10 year ARI = -0.15 m3/s 20 year ARI = -0.24 m3/s 50 year ARI = -0.34 m3/s 100 year ARI = -0.32 m3/s	Altered catchment and stormwater design (both meet targets)
Stream Erosion Index	1.64	3.5	Altered catchment and stormwater design (both meet targets)
Minimum Water Storage for Supplying Greywater Reuse	56 kL	159 kL	Altered operational water demands, catchment and stormwater design. Proposed modification includes wheel wash in calculations)
Predicted Mean Annual Runoff Volume	19 ML/year	17 ML/year	Altered catchment and stormwater design

5 STORMWATER QUALITY ASSESSMENT

5.1 Pollutant load reduction criteria

The objective of providing stormwater quality controls is to safeguard the environment by improving the quality of stormwater run-off entering the receiving waters (South Creek).

In accordance with PCC (2013) the stormwater quality requirements for industrial developments which include alterations and additions where the increase in the roofed and impervious area is equal to or greater than 250m² are:

- Pollution load reductions:
 - 90% reduction in the post development mean annual load of total gross pollutant (greater than 5 mm);
 - 85% reduction in the post development mean annual load of Total Suspended Solids (TSS);
 - 60% reduction in the post development mean annual load of Total Phosphorus (TP);
 - 45% reduction in the post development mean annual load of Total Nitrogen (TN);
- Modelling for the determination of the mean annual loads of land uses must be undertaken in MUSIC;
- Any changes to the flow rate and flow duration within the receiving watercourses as a result of the development shall be limited as far as practicable. Natural flow paths, discharge point and runoff volumes from the site should also be retained and maintained as far as practicable; and
- Impervious areas directly connected to the stormwater system shall be minimised. Runoff from impervious areas shall be directed onto grass and other landscape areas designed to accept such flows.

5.2 Opportunities and constraints

5.2.1 Opportunities

The following stormwater quality improvement measures could potentially be implemented within the proposed development:

- Hydrocarbon and sediment treatment could be provided in the form of an oil and water separator and sediment basin;
- Filtration and biological uptake is typically required to meet nitrogen reduction targets. This could be provided in the form of a macrophyte zone or a bioretention system; and
- Bioretention could alternatively be incorporated in the landscaping within the south west of the site to treat stormwater from the southern portion of the site.

5.3 Constraints

The following constraints will influence the design of the stormwater quality improvement measures:

- The treatment system will be online and be subject to high flows if incorporated within the proposed detention basin;
- The primary pollutants at risk of being discharged offsite for the proposed development are considered to be hydrocarbons, oils and fine sediments. A secondary risk is associated with gross pollutants, coarse sediments and nutrients;

- As the proposed basin will also provide onsite detention storage, no high flow bypass will be incorporated into the basin configuration. Any macrophyte zones incorporated into the basin may potentially be damaged during high flow conditions therefore this is not considered to be a suitable option;
- A bioretention zone could be incorporated into the base of the basin. A shallow filtration zone will be required to ensure the bioretention system could drain to the existing outlet control;
- A bioretention system is likely to require more maintenance than a sediment basin and treatment performance could potentially be reduced over time; and
- Both a sedimentation basin and bioretention system will need to incorporate adequate inlet scour protection. A sediment forebay will be required upstream of a bioretention zone.

5.4 Approach

In accordance with PCC (2014), the MUSIC modelling software was used to test the performance of the proposed stormwater treatment system. The 'worst case' water quality scenario will occur during the future Stage 2 development which includes additional buildings and impervious surfaces. As such, the stormwater quality assessment was undertaken based on this future 'worst case' scenario.

MUSIC can be used to generate both pollutant concentrations and long term pollutant loads and is recognised as the most appropriate modelling software for the planning of stormwater treatment measures for urban catchments. The model can generate pollutant loads and event mean concentrations for TSS, TP, and TN.

Background concentrations typically used within MUSIC for various treatment measures (1st order decay model) are generally above these target water quality objectives, therefore making the concentration based objectives unattainable. This is an industry recognised limitation.

The proposed development scenario (as detailed in Section 5.4.1 and **Figure 9** and the existing development scenario (based upon **Figure 6**) were modelled in MUSIC.

MUSIC modelling parameters were adopted from PCC (2014) and are provided in **Appendix C**.

5.4.1 Treatment configuration

The stormwater treatment to be provided includes rainwater harvesting, two hydrodynamic separators (Humeceptors) and a 315m² of bioretention footprint within the basin. Although not included in the modelling it is recommended that trash racks be installed on any kerb inlet pits within the development site and Ecosol litter baskets be installed in any pits that have the potential to receive sediment laden runoff.

The proposed treatment configuration assets and features are outlined in **Table 8** below and shown in **Figure 9** and **Figure 10** respectively (refer to Section 6).

Table 8 Treatment configuration asset features

Assets	Features
Rainwater harvesting	2 x 79.64 KL tanks
Bioretention system	315 m ² of bioretention zone 0.15 m of extended detention (below the proposed low level outlet) 0.42 m deep filtration layer Effective nutrient removing plants in bioretention zone Sediment forebay and scour protection
Hydrodynamic separators	Two Humeceptors (or GPT / oil water separator which provides equivalent treatment function) will be installed

Assets	Features
	upstream of the bioretention system, one upstream of the southern catchment OSD system and one upstream of the basin
Trash racks	Although not included in the modelling it is recommended that trash racks be installed on any kerb inlet pits within the development site.

5.5 Stormwater quality assessment outcome

5.5.1 MUSIC modelling target compliance

MUSIC modelling results are provided in **Table 9** and **Table 10** below.

Table 9 MUSIC modelling – Treatment Performance

Pollutant	Target	Proposed Development	
		Predicted Reduction in pollutant load	Target achieved
Gross Pollutants	90	98.6	Yes
TSS	85	92.8	Yes
TP	60	76.5	Yes
TN	45	52.8	Yes

The modelling indicates that the proposed treatment system will meet Councils objectives for gross pollutants, TSS, TP and TN for both the proposed development and the future development.

5.5.2 Pollutant load discharge

The modelling indicates that the proposed development will discharge lower TSS, TP and TN pollutant loads than the existing development, refer to **Table 10** below.

Table 10 Mean annual discharge pollutant loads

Pollutant	Pre-Development (kg/yr)	Proposed Development (kg/yr)
TSS	1870	323
TP	3.13	1.75
TN	23.4	20.0
Gross Pollutants	354	7.7

The modelling indicates that the proposed and future development with the proposed treatment measures will discharge lower pollutant concentrations than the existing development except for Total Nitrogen which is expected to have a similar discharge concentration for the pre and post development scenarios. A comparison of the pollutant concentrations with ANZECC freshwater criteria is shown in **Table 11** below. It is noted that the ANZECC criteria relates to ambient water quality rather than stormwater discharge quality which typically has higher pollutant concentrations. The predicted concentrations are lower than the mean concentrations reported in Australian Rainfall and Runoff (EA, 2006) for industrial site runoff. It is noted that a number of Ecosol Litter Baskets are also proposed within a number of the stormwater pits which will also improve the water quality discharging from the site.

Table 11 Mean pollutant discharge concentrations

Pollutant	ANZECC criteria (mg/L)	ARQ mean concentration for industrial runoff (mg/L)	Pre-Development 90 Percentile concentration (mg/L)	Proposed Development 90 Percentile concentration (mg/L)
TSS	-	150	23.8	10.8
TP	0.05	0.3	0.207	0.12
TN	0.5	2.4	1.66	1.73

Orange cell indicates exceedance of ANZECC trigger value for lowland rivers in South East Australia

5.6 Comparison of water quality changes compared to EIS

A number of minor changes relating to water quality are proposed or predicted for the proposed modification compared to what was previously approved in the EIS. A summary of the key changes are provided in **Table 12** below. The proposed modification meets local stormwater management targets for water quality and is therefore considered to be consistent with best practice stormwater management standards.

Table 12 Water quality EIS and modification comparison

Parameter	EIS	Proposed Modification	Reason
Predicted Reduction in pollutant loads (worst case Stage 2 scenario)	Gross Pollutants = 95.7% TSS = 90.1% TP = 71.0% TN = 45.0%	Gross Pollutants = 98.6% TSS = 92.8% TP = 76.5% TN = 52.8%	Altered catchment and water quality treatment design (both meet targets)
Predicted Mean Annual Discharge Pollutant Loads (worst case Stage 2 scenario)	Gross Pollutants = 479 kg/yr TSS = 2.3 kg/yr TP = 24.7 kg/yr TN = 24.2 kg/yr	Gross Pollutants = 323 kg/yr TSS = 1.75 kg/yr TP = 20.0 kg/yr TN = 7.7 kg/yr	Altered catchment and water quality treatment design (no targets for this)
Predicted Pollutant Discharge Concentrations	TSS = 17.7 mg/L TP = 0.155 mg/L TN = 1.41 mg/L	TSS = 10.8 mg/L TP = 0.12 mg/L TN = 1.73 mg/L	Altered catchment and water quality treatment design (no targets for this)

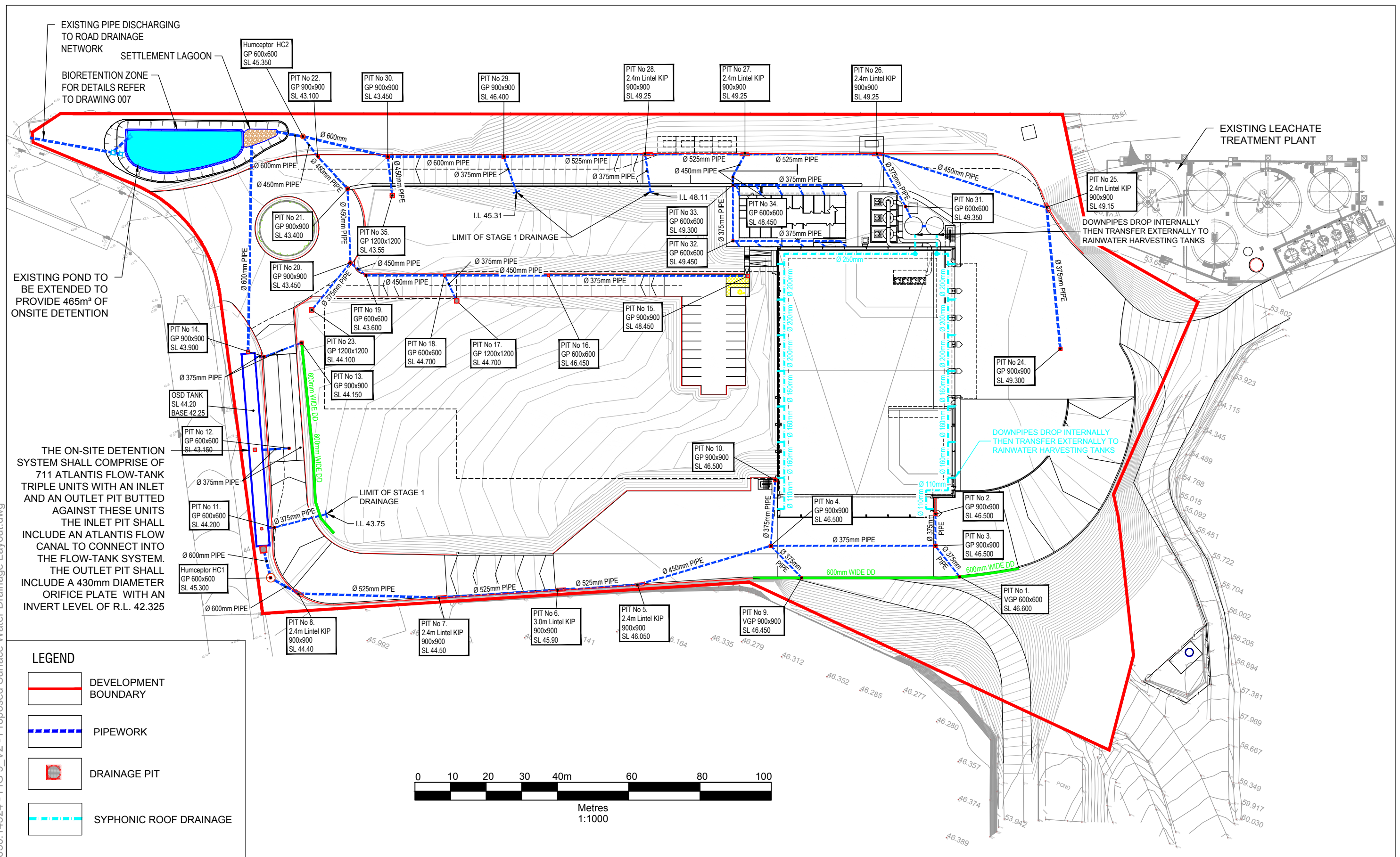
6 PROPOSED WATER MANAGEMENT

Similarly to what was proposed in the previously approved EIS, stormwater for the proposed modification will be collected within the stormwater drainage system and directed to stormwater management controls for treatment and attenuation prior to offsite discharge.

All waste management operations will be conducted in doors therefore rainfall runoff will not be generated within waste storage areas. Leachate collected within the tipping floor and load out areas is to be collected in sumps within a contained drainage system. The amount of leachate will be minimal and is to be pumped to tanks within the existing leachate treatment plant which is located outside of the development area on the north east corner of the site. There will be occasional washdown of the building floor, this is likely to contribute up to a further 1,500 L/hr but only for short periods of washdown. Further leachate will be generated from blowdown from the wet scrubber, as above for the water supply, this is to be assessed as a part of the odour management design but may be in the order of 920 L/hr. Leachate generated from the wet scrubber will be collected in a small sump chamber and directed to the nearby pumping station, it will then be pumped to an above ground storage tank located within the bunded leachate treatment compound.

An underground containment tank is located on the south side of the waste transfer building to capture leachate and firewater in the event of an emergency, this is then pumped to above ground storage tanks which are located within the existing leachate treatment plant.

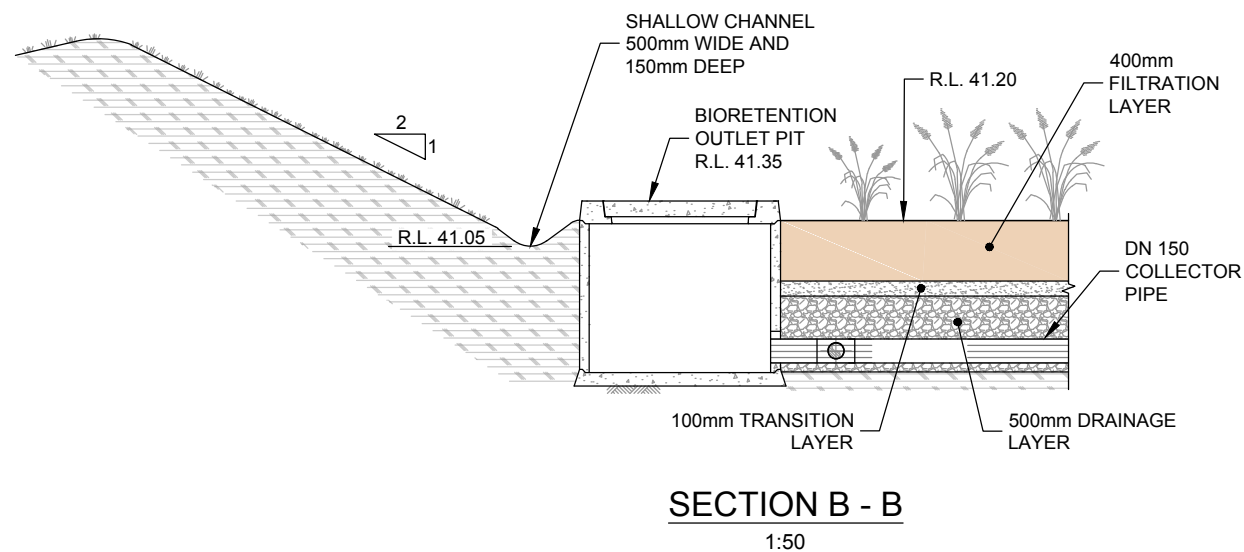
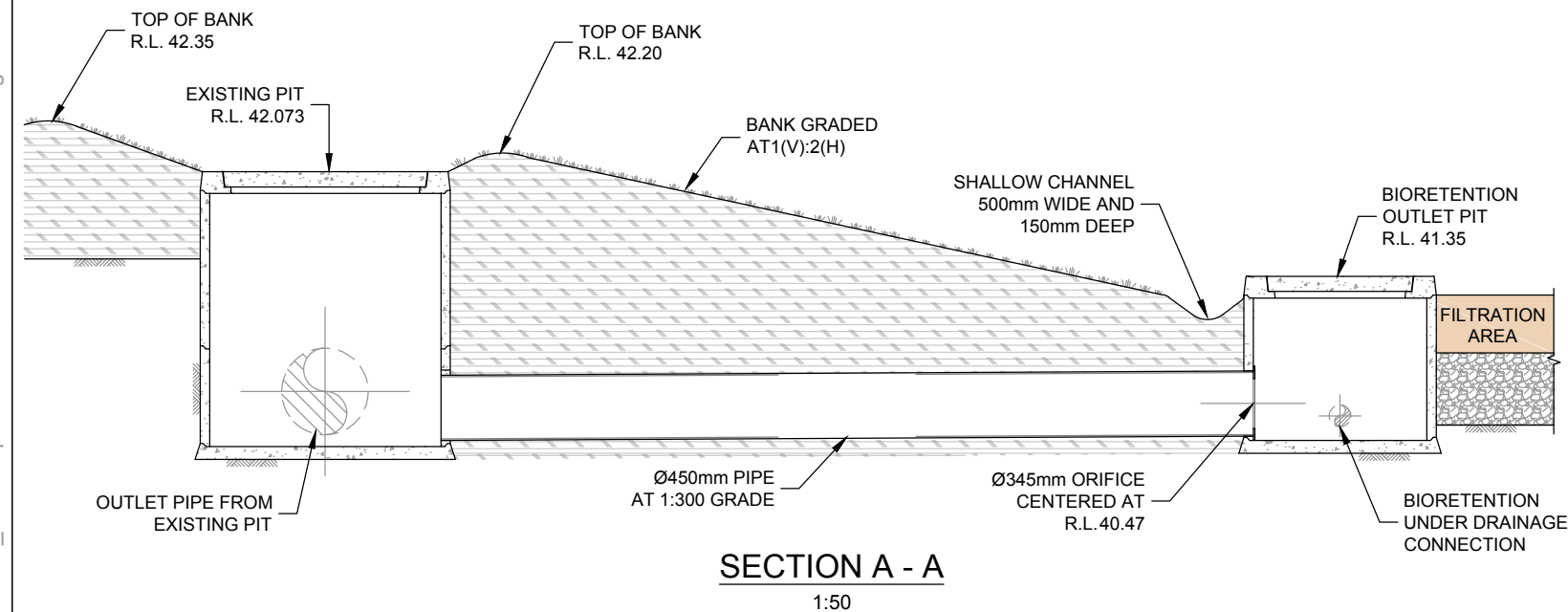
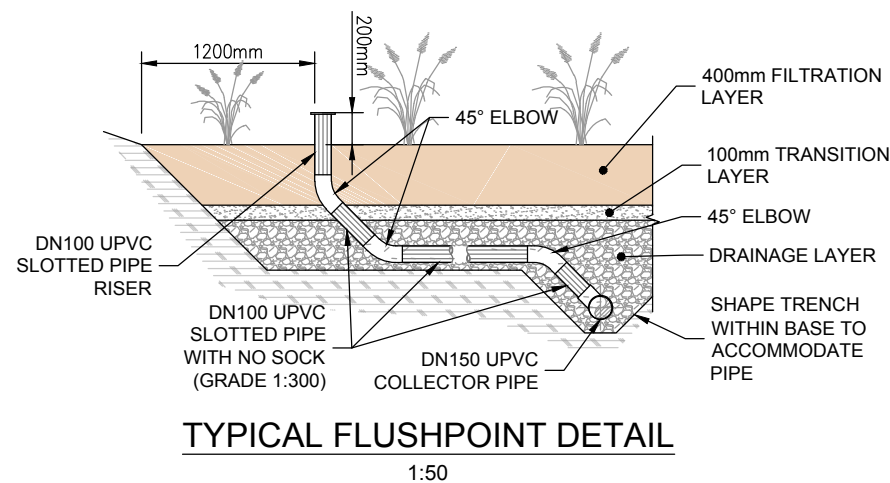
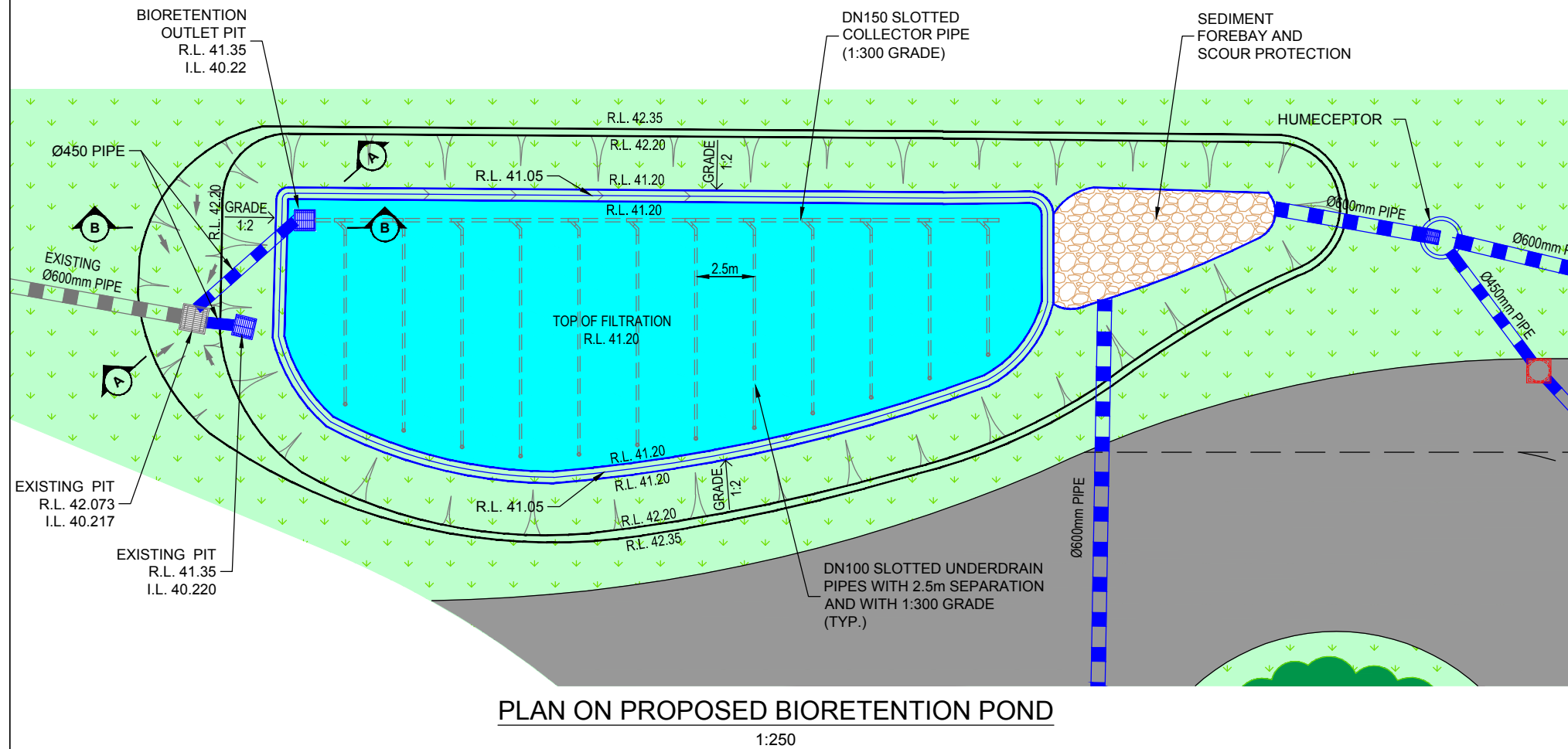
A stormwater plan for Stage 1 is provided in **Figure 9**. A plan and sections of the bioretention system are provided in **Figure 10**.



- DO NOT SCALE THIS DRAWING.
- KIP DENOTES KERB INLET PIT
- GP DENOTES GULL PIT
- SL DENOTES SURFACE LEVEL
- REFER TO DRAWING 008 FOR PIT PIPE SCHEDULE



630.14324 - FIG 10_V2 - Proposed Bioretention Pond Details.dwg



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EXISTING SURFACE WATER DRAINAGE
PROPOSED SURFACE WATER DRAINAGE



Cleanaway Waste Management Ltd.

Erskine Park Waste Transfer Facility

Bioretention System
Details

FIGURE 10

7 IMPACT ASSESSMENT

7.1 Construction Impacts

7.1.1 Hydrological Impacts

As the site is already developed, construction activities such as stockpiling and earthworks will not significantly alter the existing hydrology of the site.

Sediment control and stormwater harvesting for dust suppression will be carried out to prevent air quality issues and illegal discharge to receiving waters which will most likely result in a net reduction in stormwater discharge from the site. This could potentially provide some short term benefit to the already heavily urbanised catchment of South Creek.

As the proposed site is progressively developed with impervious surfaces including rooves and additional hardstand areas, there will be an increase in the frequency and intensity of runoff generated within the site, a reduction in the demand for water for dust suppression, and a net increase in offsite discharge of stormwater to the South Creek catchment. This will be a temporary increase while the site transitions from a state of near completion to being fully operational when further stormwater mitigation works will be incorporated. This temporary increase in runoff rates will not result in significant or lasting impacts on South Creek.

7.1.2 Erosion and Sedimentation

During construction, earthworks will generate stormwater borne sediment loads which must be intercepted to prevent illegal sediment discharge to South Creek. Mitigation measures are discussed in **Section 8.1.2**.

7.1.3 Spoil Handling and Stockpiling

Construction of the Development will generate spoil as a result of excavations. There is potential for runoff from stockpile areas to contribute to stormwater borne sediment loads. Runoff will be intercepted by a combination of mitigation measures discussed in **Section 8.1.2**.

7.1.4 Demolition Works

Civil construction works at the proposed site will require the demolition of existing buildings, stripping vegetation. The stockpiling of potentially contaminated material from the demolition sites presents a risk of draining to South Creek and mitigation measures are discussed in **Section 8.1.2**.

7.1.5 Fuel and Chemical Handling and Storage

Small volumes of liquid wastes and fuels and oils will be stored on site associated with construction and earthworks machinery.

Accidental spillage or poor management of fuels, oils, lubricants, hydraulic fluids, solvents and other chemicals during the construction phase will be controlled through spill management actions to prevent water quality and ecological impacts in South Creek and no further mitigation measures are considered necessary.

7.1.6 Cumulative Impacts

7.1.6.1 Hydrological

The proposed site represents a small proportion of the South Creek catchment and will not create a significant increase in peak flows during the construction phase.

Hydrologic impacts from the construction site are considered to be negligible with sediment basins in place.

7.1.6.2 Surface water quality

Given there are no existing stormwater quality controls in place within the existing development, any incremental increase in stormwater pollutant loads during construction will be consistent with best practice and is unlikely to pose an impact to the South Creek catchment.

Given the small volumes of liquids kept on site during construction, there is a negligible risk of spilt liquid wastes entering South Creek via either deliberate or accidental release. There is an increased chance of a spill reaching downstream water ways during heavy rainfall but the chance of occurrence is still minor with sedimentation basins in place.

7.2 Operational Impacts

7.2.1 Hydrological impacts

The completed Development once operational has the potential to increase the frequency and magnitude of stormwater runoff from the site.

Mitigation measures including stormwater detention and rainwater harvesting are required to intercept stormwater runoff and prevent creek bank instability and erosion, altered ephemeral hydrology and worsening of downstream flooding.

The results of the conceptual water balance, (refer to **Section 4.3**), show there will be an increase in the predicted runoff volume being discharged offsite due to an increase in impervious surfaces onsite. The Stream Erosion Index (SEI) analysis (refer to **Section 4.2**) indicates that the SEI for the site meets Councils SEI target. The development is therefore likely to provide a beneficial impact in terms of reducing the amount of potentially erosive flows being discharged offsite. As Councils SEI target is met, the minor increase in runoff volume is considered to be acceptable.

OSD will be provided onsite including a detention pond and underground storage. Hydrological modelling (refer to **Section 4.1**) indicates that 710m³ of storage is required to ensure post development discharge rates will be no greater than the pre development discharge rate for events up to and including the 100 year ARI event. The modelling results indicate that the proposed development will reduce peak flow rates for all design storm events (refer to **Section 4.1.3**).

The proposed mitigation measures are discussed further in **Section 8**.

7.2.2 Surface water quality impacts

7.2.2.1 Stormwater

The Development will introduce impervious areas and site operations that could potentially increase stormwater pollutant loads into the South Creek catchment.

Key pollutants include hydrocarbons, oils and fine sediments. Gross pollutants, coarse sediments and nutrients are also likely to be generated within the development.

Stormwater quality improvement measures as detailed in **Section 5.4** are required to improve the quality of stormwater discharges.

MUSIC modelling (refer to **Section 5.5**) indicates that:

- the proposed treatment control measures achieve Penrith City Councils pollutant reduction targets;
- The TSS, TP and TN pollutant loads being discharged offsite will decrease when compared to the existing development; and
- The TSS and TP 90 percentile concentrations within stormwater discharges are predicted to improve as a result of the Development except for TN which is expected to have a similar discharge concentration for the pre and post development scenarios.

Therefore the proposed Development (with implementation of the proposed treatment measures) is likely to provide an incremental improvement the water quality being discharged to South Creek.

7.2.2.2 Leachate

All waste management operations will be conducted in doors therefore rainfall runoff will not be generated within waste storage areas. Any minimal residual leachate will be collected by the leachate management system and transferred to the leachate treatment plant located outside the Development area on the north east corner of the site.

Leachate will be generated by:

- Collections during very wet weather may lead to fluid contained within the delivery vehicle being tipped out onto the tipping floor; and
- Maintenance / wash down of the tipping floor; and
- Blowdown from the wet scrubber.

Assuming an allowance of up to 5 KL/day for both sources above, the leachate treatment plant would need to have sufficient capacity to accept up to 10 KL/day during normal operations. The leachate treatment plant has adequate capacity to accept the anticipated leachate discharge. The leachate treatment plant discharges to the public sewer on Quarry Road.

Therefore, there will be a negligible impact to downstream water quality as a result of the treated leachate discharges.

7.2.2.3 Firewater

During a fire emergency, water used to suppress the fire could potentially exceed the capacity of the leachate collection system and flow out of the building and into the onsite stormwater drainage network and subsequently discharged to the local stormwater network. Any potentially contaminated fire wastewater which enters the local stormwater network could potentially impact on the water quality of downstream waterways and associated ecosystems.

The fire wastewater management approach will be finalised as part of the detailed design process. Any potential fire management measures should be documented within the Operational Environment Management Plan (OEMP). Management measures may include:

- Temporary (by deploying temporary bunding) or permanent onsite storage to capture fire wastewater;
- Outlets from all onsite detention facilities should be blocked immediately to prevent discharges to the offsite stormwater network; and
- Captured firewater should be pumped out by a liquid waste contractor and disposed of at an appropriately licenced facility.

The proposed management measures will aim to prevent discharges of potentially contaminated firewater to the local stormwater network.

7.2.3 Cumulative Impacts

7.2.3.1 Hydrological

The operational phase of the Development will create an incremental increase in the magnitude of low flows within South Creek and the frequency of flow events due to reduced infiltration in the catchment.

Peak discharge rates will be reduced as a result of the incorporation of OSD within the development. This is likely to result in an incremental reduction in peak flood flows within the South Creek catchment.

7.2.3.2 Surface water quality

There will be a reduction in TSS, TP and TN stormwater pollutant loads being discharged offsite as a result of the Development.

The TSS and TP 90 percentile concentrations within stormwater discharges are predicted to improve as a result of the Development except for TN which is expected to have a similar discharge concentration for the pre and post development scenarios.

Fire wastewater management measures will be implemented as per Section **7.2.2.3**. The proposed management measures will aim to prevent discharges of potentially contaminated firewater to the local stormwater network and downstream waterways.

In the context of the South Creek catchment, the Development is unlikely to pose a significant impact to the water quality or aquatic ecosystems within South Creek.

7.2.4 Summary

The proposed modification meets local stormwater management targets for water conservation, water quantity and water quality targets and is therefore considered to be consistent with best practice stormwater management standards. The impacts are generally beneficial and given the context of the Development within the wider South Creek catchment, any negative impacts are unlikely to pose a significant impact to the environment.

8 MITIGATION AND MANAGEMENT

8.1 Construction

8.1.1 General

Under current practices, the control and mitigation of potential surface water quality impacts during the construction phase is defined in a Erosion and Sediment Control Plan (ESCP) prepared as part of the overall Construction Environmental Management Plan (CEMP). These management plans will specify the following typical measures in accordance with Best Management Practices (BMPs) set out in '*Soils and Construction: Managing Urban Stormwater*' (Landcom 2009).

Water quality mitigation measures will also be implemented in accordance with relevant requirements of:

- ANZECC Guidelines for Fresh and Marine Water Quality;
- ANZECC Guidelines for Water Quality Monitoring and Reporting; and
- Water Management Act 2000.

8.1.2 Erosion and Sediment Control

Sediment fences and clean water diversion bunds will be established around stockpiles and earthworks areas to reduce and capture sediments in stormwater runoff. Check dams, temporary ground stabilisation and site regrading will be implemented if appropriate.

In addition to sediment control measures on the construction site sediment basins will be provided as needed or by grass lining the proposed stormwater basin to remove sediment from stormwater prior to discharge offsite. It is likely that the proposed stormwater basin will be required to function as a sediment basin until the development is 90% complete. Swales and temporary bunding will be used to convey stormwater runoff to the sediment basins until the stormwater drainage network is installed.

Suitably positioned sediment basins will be constructed at the commencement of the earthworks program to provide sediment control throughout the construction phase. ESC mitigation measures will need to be modified to suit the ever changing form and needs of the construction site as the works progress and will be determined as part of the CEMP in accordance with the requirements of the relevant Environment Protection Licence (EPL).

Treatment measures may be applied to water collected in the sediment basin(s), including settling of coarse sediments, the use of flocculation for finer sediments and pH correction.

As a first preference, treated surface water collected in sediment basins will be reused onsite, eg for dust suppression. Additional opportunities for re-using water on site or for construction will be investigated and implemented where feasible and reasonable.

Exclusion zones will be designated on the construction site to limit disturbance. Stabilising disturbed areas will occur as soon as feasible.

Surface controls to promote ground stability, limit run-off lengths and reduce run-off velocities within the work sites will be implemented. Ground stability will be re-established as soon as practicable following the completion of construction.

Installation of any permanent scour protection measures required for the operational phase will occur as soon as practical.

8.1.3 Contamination and Spills

Incidental spills will be intercepted by active spill management practices in accordance with the CEMP.

Storage of hazardous materials such as oils, chemicals and refuelling activities will occur in bunded areas.

8.1.4 Monitoring and Implementation

A qualified environmental officer will be employed to advise on appropriate controls and to monitor the implementation and maintenance of mitigation measures.

All site staff will be engaged through toolbox talks or similar with appropriate training on water management practices.

Water quality monitoring of water within the sediment basins will be carried out during the construction phase in accordance with the CEMP.

8.2 Operation

8.2.1 General

The approach to water quality and stormwater management incorporates Water Sensitive Urban Design principles to minimise impacts on the existing hydrologic regime. Water management measures will be integrated into the drainage system to meet Penrith City Council targets for OSD and WSUD.

8.2.2 Onsite Detention

A minimum of 710 m³ of OSD will be provided within an Atlantis Flow-Tank system and above ground storage within the bio-retention basin.

8.2.3 Rainwater Harvesting

Rainwater harvesting tanks will provide a minimum of 160 KL of water storage for supplying greywater for toilet flushing in the buildings and for use within the wheel wash facility. Based upon the space available, two proprietary 79.64 KL, 4.3 m high, 4.86 m diameter corrugated commercial tanks would be suitable for use.

8.2.4 Stormwater quality improvement measures

Stormwater quality improvement measures will be implemented within the development. The proposed treatment measures are outlined in **Section 5.4** including hydrodynamic separators and a bioretention system. A conceptual layout and sections of the bioretention system are presented in **Figures 9** and **10**.

8.2.5 Maintenance

The performance of stormwater management devices will decline if they are not maintained. It is recommended that a detailed maintenance and operations plan for the entire stormwater system be developed in accordance with Penrith City Councils WSUD Policy (PCC, 2013) and included within the Operational Environment Management Plan (OEMP). The maintenance schedule will outline tasks, triggers and mitigation actions as well as health and safety requirements for the stormwater management system, focussing on the WSUD system and detention facilities. A draft maintenance and operations plan for the WSUD components is provided in Appendix D. This will be refined and updated to include other components of the stormwater management system during detailed design.

8.2.6 Firewater

Fire management measures will be developed as part of the detailed design process and documented within the Operational Environment Management Plan (OEMP). Management measures may include:

- Temporary (by deploying temporary bunding) or permanent onsite storage to capture fire wastewater;
- Outlets from all onsite detention facilities should be blocked to prevent discharges to the offsite stormwater network as soon as practically possible and when safe to do so; and
- Captured firewater should be pumped out by a liquid waste contractor and disposed of at an appropriately licenced facility.

9 CONCLUSION

Cleanaway are seeking a modification (DA Mod 1) to Development Consent (SSD 7075) for the Erskine Park Stage 1 Waste Transfer Facility, due to a number of design changes. These changes include:

- Removal of truck parking area in south east corner of the project site;
- Defer truck parking to the north-west of the site;
- A revised storm water management system, including a reduction in retention basin size following the removal of the truck parking area and subsequent reduction to stormwater runoff;
- Revised “terraced” car parking layout to allow for parking for additional staff (future);
- Defer construction of load out bays;
- Temporary (relocated and modified existing) office;
- Modify site levels (elevations);
- Relocated car park to be constructed in the Stage 2 area; and
- Construction of entry and exit ramps from the landfill.

An Erosion and Sediment Control Plan (ESCP) will be prepared as part of the overall Construction Environmental Management Plan (CEMP) to define the control and mitigation of potential surface water quality impacts during the construction phase. The ESCP will be developed in accordance with the Best Management Practices (BMPs) set out in *‘Soils and Construction: Managing Urban Stormwater’* (Landcom 2009).

A holistic approach to water quality and stormwater management has been adopted for the development that incorporates Water Sensitive Urban Design principles to minimise impacts on the existing hydrologic regime. This holistic approach includes assessing the Stage 2 stormwater management system as part of this Stage 1 Surface Water Assessment (SWA) where it is identified as providing the ‘worst case’ scenario in relation to potential impacts to the local environment.

Stormwater management measures will be integrated into the drainage system to meet Penrith City Council targets for OSD and WSUD as detailed in this report. The proposed stormwater management measures are shown in **Figure 9** and **Figure 10** and include:

- Minimum of 710 m³ of OSD will be provided within an Atlantis Flow-Tank system and above ground storage within the bio-retention basin;
- Two hydrodynamic separators; and
- Bioretention system within the base of a stormwater detention basin.

A detailed maintenance and operations plan for the stormwater management system will be developed for inclusion in the Operational Environment Management Plan (OEMP) in order to maintain the performance of stormwater management devices onsite.

Emergency fire management measures will be developed and documented within the OEMP. The management measures will be developed to ensure all fire wastewater is captured onsite and discharges of fire wastewater to the local stormwater network do not occur. Management measures may include:

- Temporary (by deploying temporary bunding) or permanent onsite storage to capture fire wastewater;
- Outlets from all onsite detention facilities should be blocked immediately to prevent discharges to the offsite stormwater network; and

- Captured firewater should be pumped out by a liquid waste contractor and disposed of at an appropriately licenced facility.

The proposed development modification meets local stormwater management targets for water conservation, water quantity and water quality targets and is therefore considered to be consistent with best practice stormwater management standards. The impacts are generally beneficial and given the context of the development within the wider South Creek catchment, any negative impacts are not considered to pose a significant impact to the environment.

10 REFERENCES

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Penrith City Council, 2013a, Stormwater Drainage for Building Developments (Working Draft), October 2013

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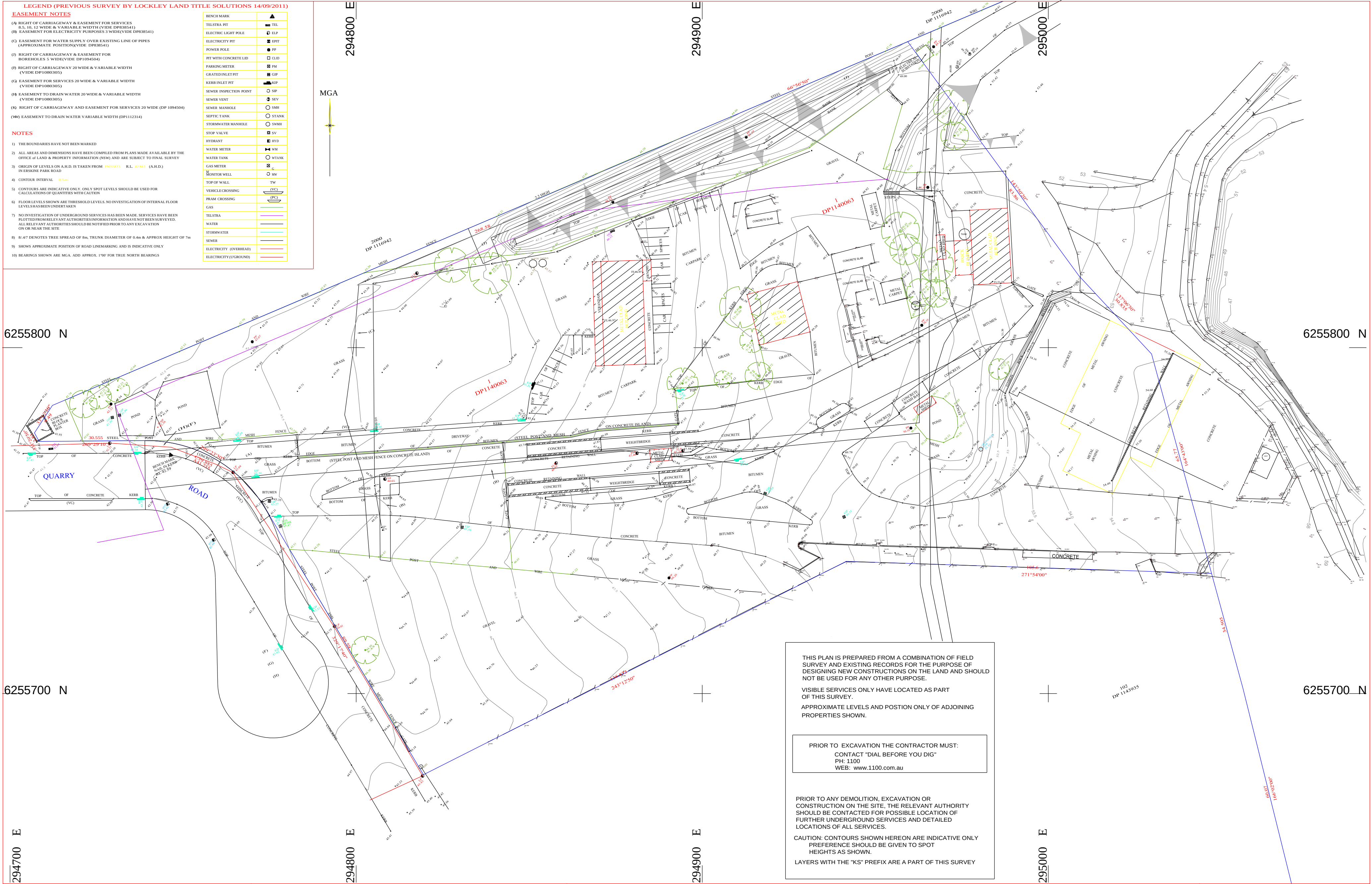
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Appendix A
Topographic Survey



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16 Bass Street, Kiama Downs NSW 2533

Phone 4237 6211 Fax 4237 5222 Mob 0413 388 428

Email surveyors@keatley.com.au

LOT 1 DP 1140063

Transpacific Industries Group Ltd

QUARRY ROAD ERSKINE PARK

KEY (VISIBLE SERVICES)

EB - EDGE OF BITMEN SURFACE
EC - EDGE OF PATHWAY
HYD - WATER HYDRANT
F - METAL FENCE
ET - EDGE OF TRACK
BB - BOTTOM OF BANK
TB - TOP OF BANK
TS - TOP OF BANK

NS - NATURAL SURFACE
PP - POWER POLE
SIG - SIGN POST
GP - GULLY PIT
SMH - SEWER MAN HOLE
SIL - SEWER INSPECTION
TAP - TAP

TK - BACK OF CONCRETE KERB
PIT - COVERED PIT
ELB - ELEC BOX
SIP - SURFACE INLET PIT
SIG+MWELL - MONITOR WELL

NAIL - SURVEY STATION
DHW - DRILL HOLE (SURVEY STATION)
TRW - TOP RET WALL
SEPO - CONC SEPTIC TANK

Appendix B

Council correspondence

William Legg

From: Shockair Fred <FShockair@penrithcity.nsw.gov.au>
Sent: Tuesday, 7 April 2015 2:39 PM
To: William Legg
Subject: Lot1 DP1140063

Hi Will

I confirm that Lot 1, DP1140063 (Quarry Road) is not affected by overlands flows or mainstream flooding.

Regards
Fred

This message has been scanned for malware by Websense. www.websense.com

Table 4: MUSIC Rainfall-Runoff Parameters for Penrith

Impervious Area Parameters	
Rainfall threshold (mm)	1.4mm
Pervious Area Parameters	
Soil Storage Capacity (mm)	105
Initial Storage (% of capacity)	30
Field Capacity (mm)	70
Infiltration Capacity Coefficient – a	150
Infiltration Capacity Exponent - b	3.5
Groundwater Properties	
Initial depth (mm)	10
Daily Recharge Rate (%)	25
Daily Baseflow Rate (%)	10
Daily Deep Seepage Rate (%)	0

Extracted from PCC (2014)

Table 5: Stormwater Quality Parameters for MUSIC Source Nodes

Land-use category		Log10 TSS (mg/L)		Log10 TP (mg/L)		Log10 TN (mg/L)	
		Storm Flow	Base Flow	Storm Flow	Base Flow	Storm Flow	Base Flow
General urban (incl. public open space)	Mean Std Dev	2.15 0.32	1.20 0.17	-0.60 0.25	-0.85 0.19	0.30 0.19	0.11 0.12
Residential							
Industrial							
Commercial							
Road Areas	Mean Std Dev	2.43 0.32	---* ---*	-0.30 0.25	---* ---*	0.34 0.19	---* ---*
Roof Areas	Mean Std Dev	1.30 0.32	---* ---*	-0.89 0.25	---* ---*	0.30 0.19	---* ---*

Extracted from PCC (2014)

Draft WSUD System Maintenance and Operations Plan

1 General

This document comprises a Draft WSUD System Maintenance and Operations Plan to support the DA Modification Application and should be read in conjunction with SLR's Surface Water Assessment. The Plan has been prepared in accordance with Penrith's WSUD Policy. The Plan will be developed further and finalised once the detailed design has been completed.

Site Description

	Existing Development	Current Development Proposal	Future Development Proposal
Site Area	3.72 ha	3.72 ha	3.72 ha
Imperviousness	40%	67%	87%

Land Use	Waste Transfer Station
Annual Rainfall	Mean Annual Rainfall is 834 mm
Topography	Proposed development will drain towards the north-west corner of the site
Site Access	Private site with gated access. WSUD measures have been sited adjacent to roadways for ease of maintenance.

2 Stormwater Pollutants and Treatment System

Stormwater pollutants expected to require treatment include:

- Gross pollutants
- Total Suspended Solids
- Nitrogen
- Phosphorous
- Heavy Metals
- Oil and grease

Stormwater treatment is outlined within Conceptual Stormwater Drainage Plan (refer to Figure 9). The treatment will include:

- Two proprietary hydrodynamic separators (e.g. HumeCeptors or approved equivalent);
- Bioretention system;
- First flush devices on connections to rainwater harvesting tanks;
- Grates will be provided on all inlet pits throughout the site to trap gross pollutants at surface; and
- Any kerb inlet pits will include litter baskets.

Draft WSUD System Maintenance and Operations Plan

Treatment Device	Predicted Annual Gross Pollutant Source Load (kg/yr)	Predicted Annual Total Suspended Solids Source Load (kg/yr)	Predicted Annual Total Nitrogen Source Load (kg/yr)	Predicted Annual Total Phosphorus Source Load (kg/yr)
Northern hydrodynamic separator	245	2230	21.3	3.74
Southern hydrodynamic separator	199	1550	15.8	2.53
Bioretention Basin	250	767	30.3	4.17

3 Operation and Maintenance Schedule

A detailed operation and maintenance program for the entire stormwater system will be developed and included within the Operational Environment Management Plan (OEMP). The operation and maintenance schedule will outline tasks, triggers and mitigation actions as well as health and safety requirements. Key maintenance tasks, responsibility, frequency of inspection and mitigation actions are outlined below for the bioretention system and proprietary hydrodynamic separators (e.g. HumeCeptors or approved equivalent).

System / Device	Inspection / Maintenance Tasks	Responsibility	Inspection Frequency	Mitigation Actions
Bioretention Vegetation	Check for weeds. Check health of plants. Note – the health of the plants is crucial to the treatment process.	Landscape Contractor	Monthly for first 6 months and Quarterly thereafter	Control weeds Replacement of plants as required. Investigate causes of significant die back / dead plants
Bioretention Filter Media Surface	Inspect filter media for sediment build up, litter, erosion or scour damage.	Cleanaway	Monthly and after heavy rainfall events for first 6 months and Quarterly thereafter	Removal of any litter from bioretention filter media surface. Scrape away small amounts of isolated sediment build up (if required). Seek advice from a suitably qualified stormwater engineer or consultant where significant erosion, scour or filter media damage is observed.
Basin Inlet Forebay	Inspect forebay for litter and sediment build up. Check depth of sediment in forebay.	Cleanaway	Quarterly	Remove any litter from forebay. Schedule removal of sediment to rock level if greater than 50% of forebay is full of sediment.
Basin Inlets and Outlets	Inspect inlets and outlets for blockage and debris.	Cleanaway	Monthly and after heavy rainfall events	Unblock inlets and outlets if required. Seek advice from a suitably qualified stormwater engineer or consultant where inlets or outlets are significantly damaged.
Bioretention	Inspect for blockages and	Cleanaway	Quarterly	Flush underdrainage at flush

Draft WSUD System Maintenance and Operations Plan

System / Device	Inspection / Maintenance Tasks	Responsibility	Inspection Frequency	Mitigation Actions
Underdrainage	isolated surface ponding			points if required.
Hydrodynamic Separators	Inspection in accordance with proprietary device inspection procedures.	Cleanaway / Contractor	Quarterly for first year. Establish appropriate frequency based on findings of first year of inspections	Schedule cleaning as required.
	Cleaning in accordance with device cleaning procedure	Vacuum / eductor truck contractor	Approximately annually – subject to inspection observations	Not applicable

4 Operation and Maintenance Costs

An indicative cost estimate for the maintenance of the key WSUD devices is provided below.

Device	Predicted Annual WSUD Maintenance Cost Range	Method
Bioretention System	\$650 to \$4,400	MUSIC model calculation. Cost is calculated as a function of the filtration area. The lower and upper range relate to the <i>Lower</i> and <i>Expected</i> cost estimates respectively generated in the model.
Hydrodynamic Separators	\$2,050 to \$4,050	Based upon information provided by Humes. The range is based on clean out every 2 years and or once a year respectively
Indicative WSUD Maintenance Cost Per Annum	\$5,575	Based upon median between lower and upper range

5 Waste Management and Disposal

All waste and pollutants removed from treatment devices will be tested as required and disposed of at an appropriately licensed landfill or waste management facility.

6 Reporting

All maintenance tasks and mitigation actions will be reported on. Reporting requirements will be established during the development of the OEMP.

Appendix D

Report Number 630.11948.00000-R01

Page 1 of 1

REVISED VISUAL IMPACT ASSESSMENT

Erskine Park Stage 1 Waste Transfer Station Modification 1

VISUAL IMPACT ASSESSMENT

Prepared for:



Prepared by:

GREEN BEAN DESIGN
landscape architects

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PO Box 3178 Austral NSW 2179
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June 2017

DOUCMENT CONTROL

Item	Detail
Project Name:	Erskine Park Stage 1 Waste Transfer Station
Report Title:	Modification 1 Visual Impact Assessment
Project Number:	17-229
Version Number:	v3
Status:	Final
Author:	Andrew Homewood , Registered Landscape Architect, AILA <i>Graduate Diploma Landscape Management, Bachelor Science (Dual Honours)</i> <i>Landscape Design and Archaeology, National Diploma Horticulture</i>
Date:	17 June 2017

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3	Legislative and planning frameworks	5
4	Project information provided to GBD	6
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9	Conditions of Consent	11
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Figures

Figure 1	Approved work
Figure 2	Approved works and proposed modifications
Figure 3	North elevation – approved and modification
Figure 4	East elevation – approved and modification
Figure 5	Receiver locations

Table

Table 1	Visual Significance Matrix
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1 Introduction

Green Bean Design Pty Ltd (GBD) has been commissioned by SLR Consulting Australia Pty Ltd (SLR) to prepare a Visual Impact Assessment (VIA) on behalf of Cleanaway Pty Ltd for the approved Erskine Park Stage 1 Waste Transfer Station Modification (the Project). This VIA supports an application for a modification of development consent in accordance with Section 96(1A) of the Environment Planning and Assessment Act 1979.

This VIA Modification has been prepared to:

- identify and describe the proposed Modification works
- assess the potential visual impacts associated with the Modification works and
- determine the significance of visual effects.

This VIA Modification has not included an assessment or determination of potential visual impacts associated with the proposed Stage 2 works identified in **Figures 1 and 2**.

2 Erskine Park Stage 1 Waste Transfer Station VIA August 2015

GBD prepared the original Erskine Park Stage 1 Waste Transfer Station VIA (August 2015). The VIA was submitted with the Environmental Impact Statement and gained Development Consent in October 2016. The Department of Planning and Environment Assessment Report concluded that *‘the visual impacts of the development would be acceptable’*.

The Department provided a number of Recommended Conditions which were adopted by the Planning Assessment Commission and included in the Development Consent. The Recommended Conditions includes a requirement to:

- prepare a Building and Material Schedule and a Landscape Plan for the development
- provide details on boundary fences
- ensure all external lighting shall comply with Australian Standard AS4282 1997 and
- ensure any new signage shall comply with the State Environmental Planning Policy 64 Advertising and Signage as relevant.

3 Legislative and planning frameworks

As noted in the original VIA, there are no Federal, New South Wales State Government or Local Government Authority planning policies, guidelines or standards that apply to the visual impact assessment prepared for this Project. Notwithstanding the lack of policies, guidelines or standards, this VIA Modification has been prepared with regard to industry standards including those such as:

- Visual Landscape Planning in Western Australia (Western Australian Planning Commission, November 2007); and
- Guidelines for Landscape and Visual Impact Assessment 3rd Ed. (Landscape Institute and Institute of Environmental Management and Assessment, 2013).

The Penrith Development Control Plan 2006 section 6.10 'Erskine Business Park' (the DCP) sets out a number of controls which relate to the urban design, visual impact and landscape design of this site.

The objectives of the DCP include measures to minimise the visual impact of development on residential areas.

The measures include:

- encouraging building forms that respond to the topography of the site and the relative position of the allotment to other allotments and the street;
- ensuring a scale of buildings which minimises the impact of development on adjoining residential areas;
- minimising the impact of development on views from adjoining residential areas;
- encouraging a high standard of architectural design utilising quality materials and finishes;
- establishing varied and articulated frontages facing or visible from public roads;
- minimising perceived scale and mass to prevent monotonous building forms resulting from poor design of walls and rooflines; and
- ensuring that new development contributes to the creation of a visually cohesive urban environment.

4 Project information provided to GBD

GBD confirms the following information has been provided by the Proponent, or procured by GBD, for consideration and/or incorporation into this VIA Modification:

- location and description of proposed modification works and
- plans and elevations.

5 Methodology

This VIA Modification methodology included the following activities:

- desktop study reviewing the approved application, and the proposed Modification layout
- an additional site inspection
- assessment of significance of residual visual effects and
- preparation of illustrative figures.

5.1 Desktop study

A desktop study was carried out to review the approved original application viewshed. This was carried out by reference to topographic maps as well as aerial photographs of the surrounding landscape. Topographic maps and aerial photographs were also used to verify the location and category of potential view locations that could be confirmed during the fieldwork component of the assessment.

5.2 Residual visual effects

The residual visual effects of the modification on surrounding receiver locations would result from a combination of the modification visibility and the characteristics of the landscape between, and surrounding, the receiver locations and the project site. The potential degree of visibility and resultant visual effect would be partly determined by a combination of factors such as:

- category and type of situation from which people could view the project works (examples of view location categories include residents or motorists)
- visual sensitivity of view locations surrounding the project site
- distance of visual effect (between view locations and the project site) and
- duration of time people could view the project from any particular static or dynamic view location.

The methodology adopted for the VIA Modification follows the methodology described and applied in the original VIA for the approved Erskine Park Stage 1 Waste Transfer Station project.

6 Approved and Modification works

6.1 Approved Project

As described in the original VIA, the approved project includes works or alterations to existing industrial infrastructure located within the Project Area. The general works include:

- general site clearance and earthworks to establish suitable grades for construction;
- a steel braced portal framed and clad waste transfer station building with associated two storey offices;
- amenities and lower level transfer vehicle load-out area;
- concrete slab working transfer station floor with concrete and asphalt peripheral roads;
- an active ventilation system and controlled discharge points as part of the overall approach to air emissions and odour management;
- associated infrastructure including all hardstand areas, car parks, weighbridges, and sealed roads; and
- ancillaries including perimeter security fencing, security gates, rain water harvesting, fire suppression system, signage, landscaping, drainage and services etc.

6.2 Modification works

The general works to be included in the Modification application include:

- a relocated carpark to be constructed within the proposed Stage 2 works area
- temporary office (existing site office to be relocated) in place of proposed 2 storey office and amenities building that may be built as future works
- revised “terraced” car parking design layout removed from Stage 1 and built as future works
- removal of truck/trailer parking to the east and west of the site and retaining wall changes
- construction of entry and exit ramps to/from landfill
- defer construction of second and third load out bay; and
- alterations to site levels (elevations), including a half depth load out area.

The modified waste transfer building would be similar in line, form and overall scale to the design assessed in the original VIA. The modified works indicate that the design levels would be reduced. The modified ground level and the vent structures would be around 1.9 metres below the original design levels.

The Project Area and site layout of the Development Approval and Modification works are illustrated in **Figures 1 and 2**, and the elevations for the Development Approval and proposed Modification works in **Figures 3 and 4**.

7 Viewshed

For the purpose of this VIA Modification the indicative primary viewshed is defined as the area of landscape surrounding and beyond the Project Area which could be potentially directly affected by the Project. In essence, the viewshed defines this VIA Modification study area. The proposed modification works would not amend the extent of viewshed determined in the original VIA.

8 Modification Visual Effects

8.1 Introduction

The assessment of visual effects describes:

- the changes in the character of the available views resulting from the Project modifications; and
- the changes in the visual amenity of the visual receivers.

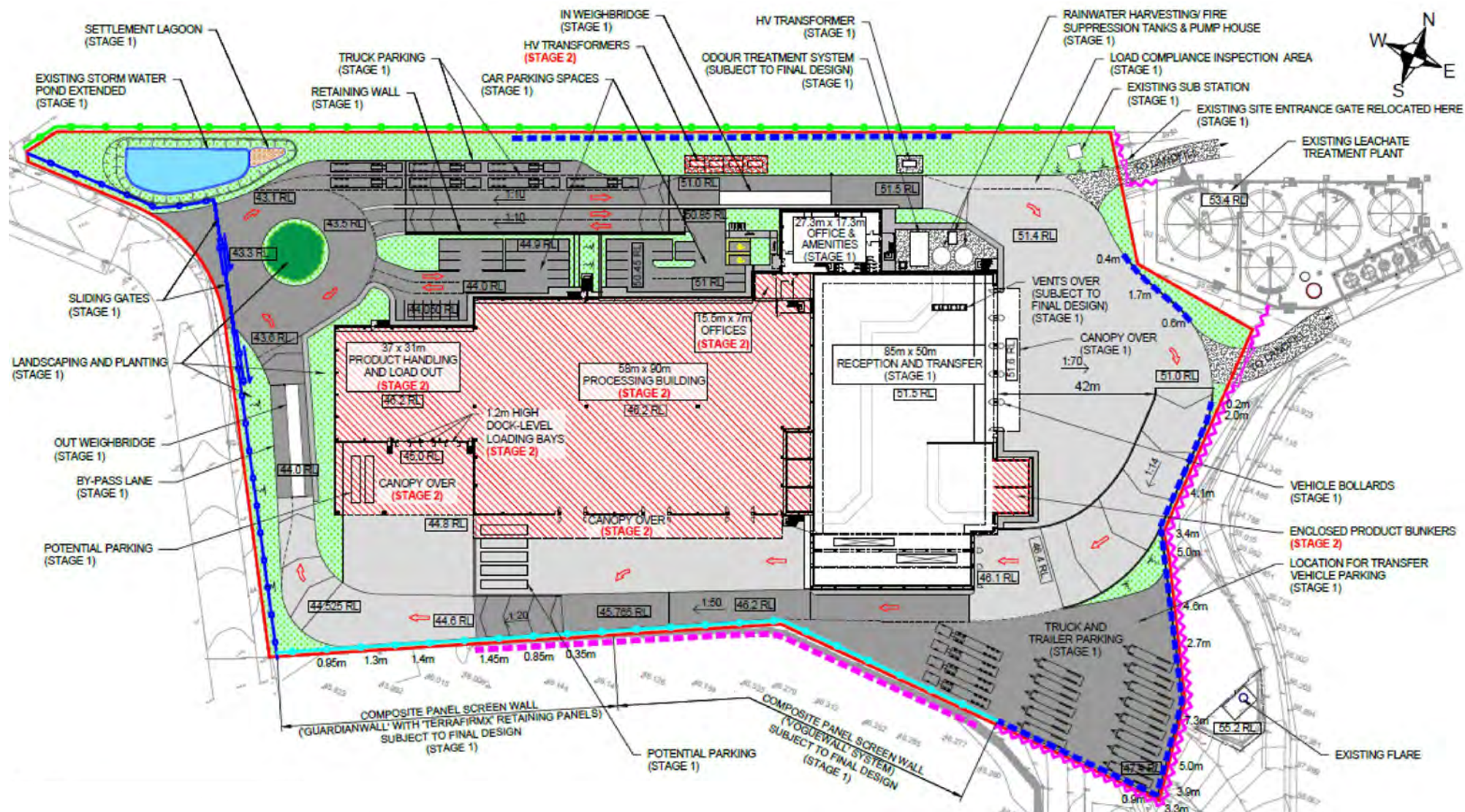
The magnitude and significance of visual impact resulting from the construction and operation of the Project modifications will primarily result from a combination of the following factors:

- distance between the view location and elements within the Project;
- duration of the view from view location toward elements within the Project;
- predicted impact of the Project on existing visual amenity;
- nature of predicted impacts; and
- receiver sensitivity of locations from which views toward elements within the Project exist.

The assessment of visual effects has adopted the same criteria used in the original VIA. The criteria are detailed in the Erskine Park Stage 1 Waste Transfer Station Visual Impact Assessment v3 August 2015.

8.2 Visual significance matrix

The matrix presented in **Table 1** presents the assessment and determination of visual impact significance for selected receiver view locations beyond the Project Area. The representative view locations are illustrated in **Figure 5**.



Legend A hatched works - ecluding Stage 2

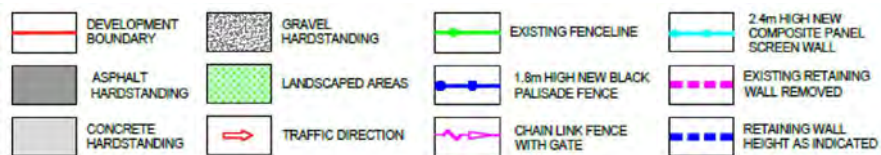


Figure source: SLR Consulting June 2017

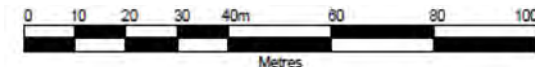


Figure 1
A hatched works

Erskine Park Stage 1 Waste Transfer Station Modification 1

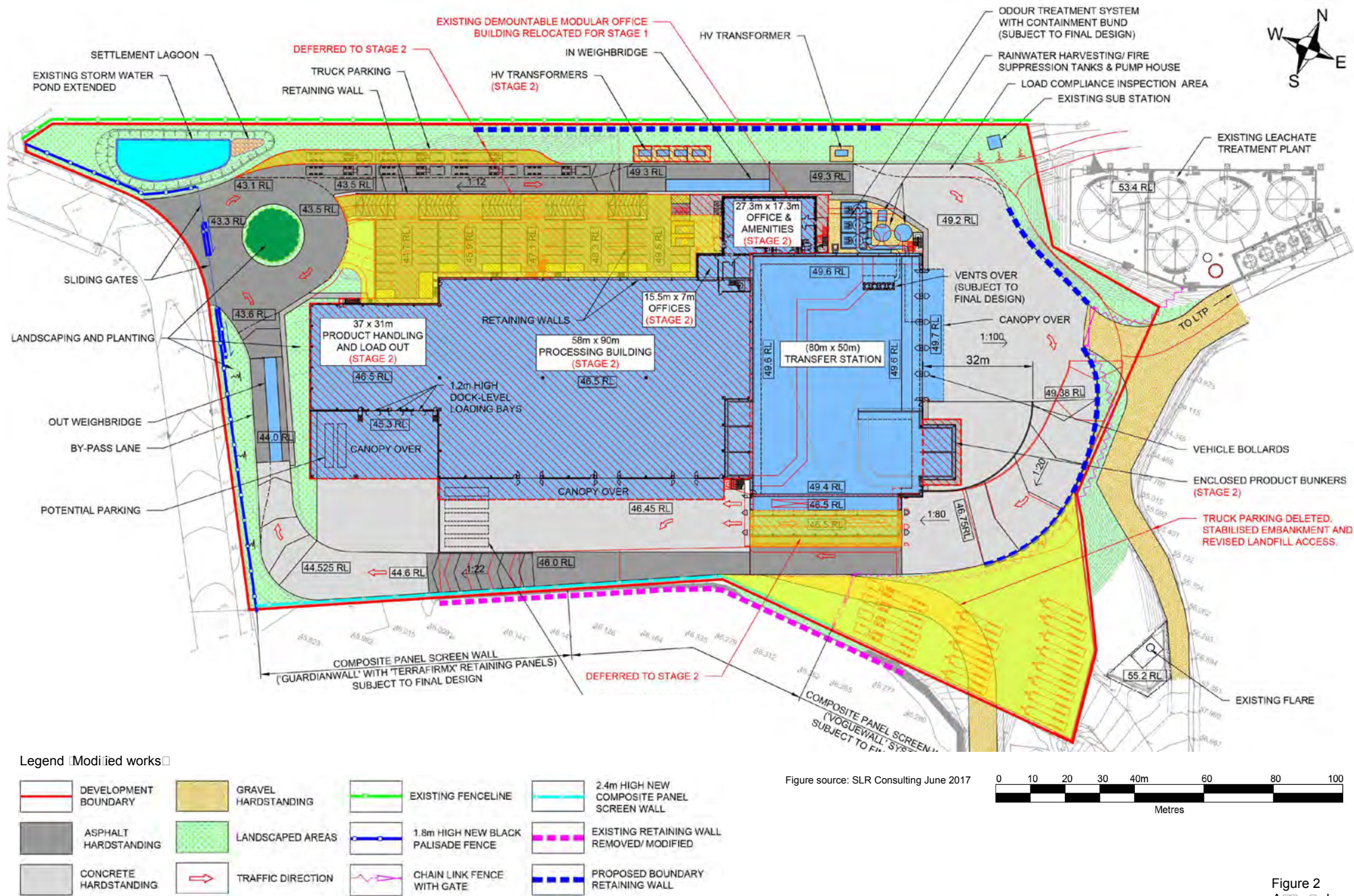


Figure source: SLR Consulting June 2017

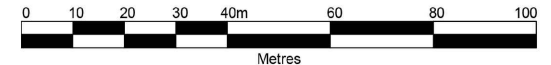
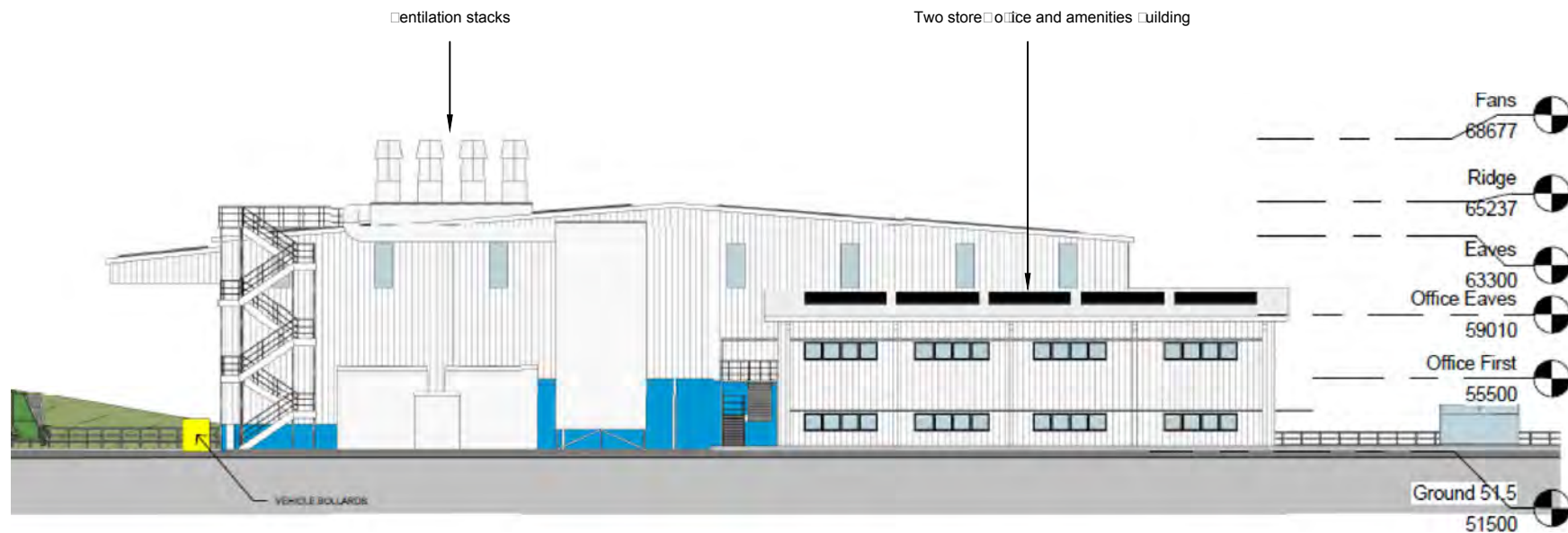


Figure 2
A modified works and proposed
Modifications (red text)

Erskine Park Stage 1 Waste Transfer Station Modification 1



Waste Transfer Building - north elevation (as proposed)



Waste Transfer Station - north elevation (modification)

Figure 3
As proposed and Modification
Elevations (north)

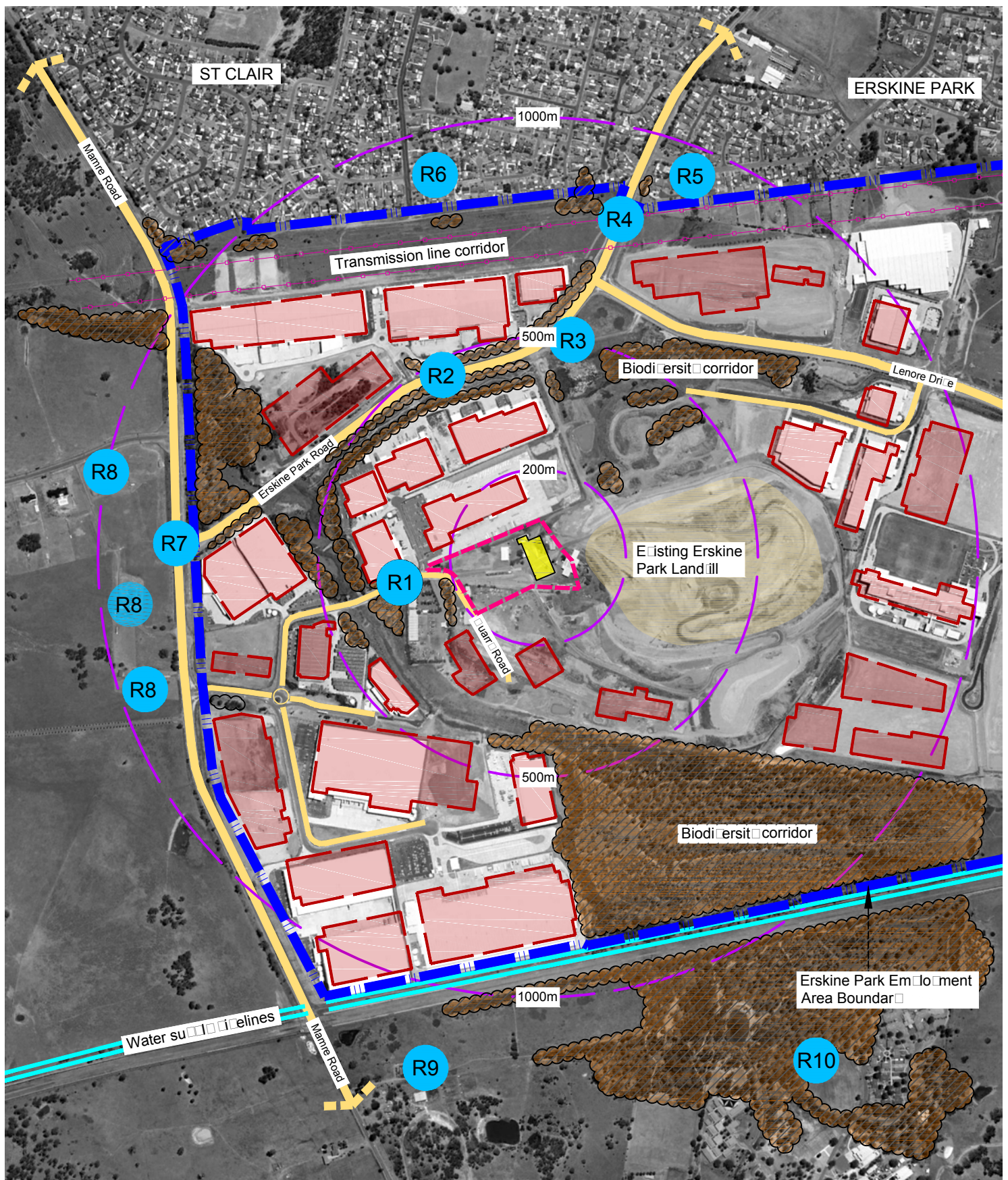


Waste Transfer Station - east elevation [approved]



Waste Transfer Station - east elevation [modification]

Figure 4
Approved and Modification
Elevations (east)



Legend Proposed works - indicate extent



Indicate Project area and waste transfer building



Road



Commercial/industrial building with screening potential



Tree cover with screening potential



Erskine Park Employment Area boundary



Receiver location

0m 200m



Figure 5
Receiver locations

Erskine Park Stage 1 Waste Transfer Station Modification 1

Table 1 – Visual Significance Matrix

Receiver viewpoint (Figure 4)	View direction and distance toward Project Area	Description relevant to modification	Modification Visual Significance
1 Quarry Road	East to north east Between 200 m and 500 m	Receiver viewpoint one incorporates views from the Quarry Road corridor toward the Project Area from vehicles, and for occasional pedestrians, travelling west to east along Quarry Road within the Erskine Business Park. Available views toward the Project Area include both framed and directed views along the road corridor, framed by tree planting and industrial development. Views become open and extend directly into the Project Area from the Quarry Road frontage to the Project Area. Views extend toward, and are limited to short distances, by modified and rising landforms associated with the adjoining landfill facility.	Negligible
2 Erskine Park Road (within the business park)	South to south west around 500 m	Receiver viewpoint two includes views along and within the Erskine Park Road corridor located within the general extent of the Erskine Business Park. Views extend south west to north east from vehicles travelling along the road corridor. There is limited pedestrian activity along the road corridor. Views toward the Project Area are screened and blocked by tree planting alongside the road corridor as well as industrial buildings south of the road corridor.	Negligible
3 Residential building – demolished further to original VIA	n/a	n/a	n/a
4 Erskine Park Road (north)	South to south west Around 800 m	Elevated views south to south west from receiver location four extend toward and beyond the Erskine Business Park from vehicles, and for pedestrians, travelling south west along the road corridor. Whilst views extend toward upper portions and partial views of existing constructed elements within the Project Area (including roof of storage and maintenance shelter structure) as well as the leachate treatment plant on the adjoining landfill facility, views toward proposed constructed elements will be largely screened by existing industrial buildings within the business park.	Negligible
5 Erskine Park (residential suburb)	South west Around 750 m	Views toward the Project Area from residential dwellings within urbanised localities of the Erskine Park suburb (along the interface with the transmission line corridor) are effectively screened by industrial development south of the transmission line corridor. Views toward the Project Area from residential dwellings extending to the north of the transmission line corridor are screened	Negligible

Table 1 – Visual Significance Matrix

Receiver viewpoint (Figure 4)	View direction and distance toward Project Area	Description relevant to modification	Modification Visual Significance
		by built form within urban areas. Views from upper storey locations within residential dwellings may afford views toward industrial structures within the Erskine Business Park; however, views toward the Project Area will be generally restricted by existing structures.	
6 St Clair (residential suburb)	South east to south west Around 730 m	Views toward the Project Area from residential dwellings within urbanised localities of the St Clair suburb (along the interface with the transmission line corridor) are effectively screened by industrial development south of the transmission line corridor. Views toward the Project Area from residential dwellings extending to the north of the transmission line corridor are screened by built form within urban areas. Views from upper storey locations within residential dwellings may afford views toward industrial structures within the Erskine Business Park; however, views toward the Project Area will be generally restricted by existing structures.	Negligible
7 Mamre Road	South east to north east In excess of 700 m	Receiver viewpoint seven incorporates views from vehicles travelling north and south along the Mamre Road corridor immediately to the west of the Erskine Business Park. Views toward the Project Area are blocked by a combination of industrial development and planting alongside the boundary between the business park and road corridor.	Negligible
8 Semi rural residential dwellings (west of Mamre Road)	East to south east In excess of 800 m	Receiver viewpoint eight incorporates views from a small number of rural residential dwellings to the west of the Mamre Road corridor. Views toward the Project Area from rural residential dwellings are blocked by a combination of industrial development and planting alongside the boundary between the business park and road corridor.	Negligible
9 Residential dwelling	North east In excess of 1 km	Views toward the Project Area are blocked by industrial development extending along the south boundary of the Erskine Business Park.	Negligible
10 School & community facilities off Bakers Lane	North west In excess of 1 km	Views toward the Project Area are blocked by industrial development extending along the south boundary of the Erskine Business Park as well as tree cover within and to the south of the business park.	Negligible

8.3 Summary of visual significance

The majority of receiver locations surrounding the Erskine Business Park, including private residential dwellings, road corridors and public spaces, have been determined to have an overall negligible significance with regard to the Project modification and its associated infrastructure.

The negligible visual significance results from a combination of factors which include:

- screening provided by existing industrial infrastructure within the Erskine Business Park;
- undulating and modified landforms associated with the landfill facility that extend to the east and above the Project Area; and
- moderate tree cover within and surrounding the Erskine Business Park and residential dwellings and other sensitive view locations to the south of the Erskine Business Park.

9 Conditions of Consent

9.1 Introduction

The original application Conditions of Consent has been reviewed as part of this VIA Modification to determine the type and extent of additional mitigation measures that would be required, or should be modified as a result of the proposed Project amendments. The existing Conditions of Consent set out in clauses B32 and B33 are considered applicable to the proposed Modification works.

10 Conclusion

10.1 Summary

This VIA Modification concludes that overall the Erskine Park Stage 1 Waste Transfer Station modification will have a negligible visual impact on people living in or travelling through the landscape within and surrounding the Project Area. Views toward the modified Project will be predominantly contained by existing development within the Erskine Business Park as well as modified landforms associated with the adjoining landfill facility.

The overall negligible visual impact will be due to a combination of the following factors:

- built forms associated with the proposed modified Waste Transfer Station will respond appropriately to existing site levels and to the relative position of existing industrial developments located along Quarry Road
- the scale of modified constructed elements within the Project Area will not impact on views from residential suburban areas to the north of the Erskine Business Park, or semi-rural residential dwellings to the west and south of the business park
- there will be negligible impact of development on views from adjoining residential areas
- there will be negligible impact of the development on views from local road corridors within and beyond the Erskine Business Park

- mitigation measures set out in the original VIA will assist to minimise the level of potential visual impacts during construction and operational phases; and
- the new development will contribute to the creation of a visually cohesive urban environment within the context of existing and established industrial development within the Erskine Business Park.