Rosehill Sustainable Road Resource Centre

Operational Environmental Management Plan

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Project Document Code	Latest Version Number	Latest Version Date
DG-DM-TP028	Version 4	25/01/2022

Document Version History			
Version No.	**Date**	**Document Status**	**Brief Description of Change(s) from Previous Version**
1	09/09/2021	Draft	First draft.
2	08/11/2021	Draft	Revised version after first draft for submission to EPA for consultation.
3	20/12/2021	Draft	Revised version after 2nd draft for submission to DPIE for review.

Document Version History			
Version No.	**Date**	**Document Status**	**Brief Description of Change(s) from Previous Version**
4	25/01/2022	Final	Revised version after 2nd draft for submission to DPIE for review.

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1 PURPOSE

This operational environment management plan (OEMP) defines the environmental management principles, processes, procedures, systems, tools, and templates implemented for use during operation of Downer's Sustainable Road Resource Centre (the site).

This plan has been prepared by personnel listed on the cover page, who all have over 10 years' experience in the preparation of environmental management documentation.

This plan has been developed to:

- satisfy the site-specific regularity requirements; and
- support the Operational Team in complying with applicable regulatory requirements, and Downer's internal requirements.

2 DOCUMENT SCOPE

The scope of this management plan applies to all Downer workers during operation of the Rosehill Sustainable Road Resource Centre.

This plan applies to all aspects of environmental management for the site.

The target audiences for this plan are all Downer workers and any other relevant stakeholders.

2.1 Conditions of consent

Development consent SSD 10459 was granted to VE Property on 31 January 2021 for the project described in Chapter 6. A copy of the development consent is attached as Annex A.

This OEMP has been prepared to satisfy the operation specific environmental conditions in Part B and environmental management conditions in Part C of SSD 10459. Sub-plans (outlined in Section 3.1 and appended) have been prepared to support this OEMP.

The specific requirements of these consent conditions and where they have been addressed in this OEMP are listed in Annex A.

2.2 Interaction with other consents applying to Lot 6

Condition C1(c) requires *a description of the measures to be implemented to comply with the relevant statutory requirements (including any relevant conditions under SSD 9302), limits, or performance measures and criteria* and Condition C6(c)(iv) requires a description of *how the operation will be managed in concert with any relevant conditions under SSD-9302 and any other relevant planning or licensing conditions related to the premises.*

SSD-9302 contains the following conditions, which require preparation and implementation of plans that have ongoing effect over Lot 6:

B8

Prior to the finalisation of the Site Audit Statement and Site Audit Report, required by Condition B6, the Applicant must prepare a Long Term Environmental Management Plan (LTEMP) for the development, to the satisfaction of the Site Auditor and the Planning Secretary.

B9

The LTEMP must:

(a) be prepared in consultation with Council and the EPA;

(b) identify where the LTEMP applies and who is responsible for implementing the LTEMP;

(c) detail how the LTEMP will be implemented, including corrective actions and reporting requirements;

(d) recommend any systems/controls to be implemented to minimise the potential for any material harm;

(e) include a groundwater monitoring program to verify natural attenuation is occurring over time, consistent with the requirements of condition B21;

(f) include biodiversity management measures for the Green and Golden Bell Frog, consistent with the Revised Plan of Management: Restoration of Green and Golden Bell Frog Habitat, Clyde Terminal, January 2019, or its latest version;

(g) detail procedures for managing and monitoring any remaining contamination, including triggers that would indicate if further management or remediation is required;

(h) detail procedures for managing and monitoring any remaining contamination that has potential for off-site migration so that it does not present an unacceptable risk to either the on-site or off-site environment;

(i) include measures to be implemented if any parts of the remediated area are required to be physically disturbed;

(j) describe any required planning controls for future development that may interact with any remaining contamination at depth;

(k) incorporate a programme for ongoing monitoring and review to ensure that the LTEMP remains contemporary with relevant environmental standards;

(l) include mechanisms to report results to Council and the EPA;

(m) be written in plain language to be understood by all personnel involved in the maintenance activities on the site.

B22

Prior to the commencement of remediation works, the Applicant must prepare a Groundwater Monitoring and Management Plan (GMP) to the satisfaction of the Site Auditor and the Planning Secretary. The GMP must form part of the REMP required by Condition C2 and must:

(a) be prepared by a suitably qualified and experienced person(s), in consultation with the EPA and DPIE – Water;

(b) include a program to monitor groundwater levels and quality during remediation works and following demobilisation;

(c) include a decision protocol for determining appropriate management measures for groundwater during remediation works, including but not limited to, pre-treatment, treatment, discharge or off-site disposal;

(d) detail ongoing monitoring following demobilisation, to verify that natural attenuation of groundwater contamination is occurring over time;

(e) include trigger levels for investigating potential adverse impacts to the Duck River, including triggers for indicating if further remediation of groundwater is required;

(f) outline contingency actions to be implemented if monitoring indicates that natural attenuation is not occurring, or groundwater is having an adverse impact on the Duck River;

(g) monitor the effectiveness of management measures and contingency actions for reducing impacts;

(h) procedures for reporting changes to groundwater conditions that have the potential to create unacceptable risks to the Duck River.

The LTEMP:

- Was prepared in January 2021.
- Contains the GMP in Appendix D.
- Is available at ***https://mpweb.planningportal.nsw.gov.au/major-projects/project/11341***.
- Will be made available at the site during operations.

Figure 1 of the GMP (in Appendix 4 of the LTEMP) identifies the following groundwater monitoring wells in Lot 6:

- MW11/24.
- MW12/17.

- MW11/41.
- MW11/42.

Table 2 of the GMP (in Appendix 4 of the LTEMP) requires ongoing biannual sampling at these wells, and they have been sampled up to the construction phase of the project.

The EPA approved site auditor for the Western Area Rehabilitation Project has since re-evaluated the requirement for ongoing groundwater monitoring on the site. The auditor has determined that 'active' management measures are no longer required on the site (see Page 8 of audit statement in Annex L). Active measures are defined on Page 15 of Annex L as *Active management systems usually incorporate…. monitoring….and, because of this, regular….inspection are necessary*.

Therefore, groundwater monitoring has ceased. It is stated on Page 9 of the audit statement that no management measures [from the LTEMP] are required for non-intrusive works [eg normal operation of the project]. The audit statement requires that the environmental controls in Section 7 of the LTEMP be implemented if intrusive works are proposed in the future.

2.3 Consultation

2.3.1 Department of Planning, Industry and Environment

Downer applied to the Department of Planning, Industry and Environment (DPIE) on 22 July 2021 to combine the air quality management plan, surface water management plan, waste monitoring program and waste management plan into the OEMP as chapters to reduce repetition across plans and to have the info in a single document/point of reference as this will improve the OEMP's implementation onsite.

DPIE approved this request in writing on 3 August 2021. Correspondence is attached in Annex J.

The air quality, surface water, waste monitoring and waste management specific requirements are addressed in sections 7.4, 7.7, 7.6 and 7.5 respectively, and the general management plan requirements under Condition C1 of the consent are addressed in Table 2.1.

The OEMP was submitted to DPIE on 20 December 2021 for review and comment. DPIE asked if the draft OEMP revised with EPA comments had been returned to EPA for review, the OEMP was not returned to EPA for review as EPA's comments were easily addressed as described in Section 2.3.2.

DPIE noted on 21 December 2021 that the OEMP does not appear to address conditions C1(c) or C6(c)(iv). These conditions have since been addressed in Section 2.2.

2.3.2 Environment Protection Authority

The EPA was consulted during preparation of this OEMP in accordance with CoC C5. This OEMP was provided to EPA on 8 November 2021 and a response was received on 9 December 2021. The EPA's feedback and OEMP section responding to the feedback is summarised in Table 2.1. EPA's full response is provided in Annex J.

Table 2.1 EPA feedback

Feedback	OEMP section
Air quality management plan and verification report	7.4.7
Noise verification report	7.8.2
Surface water management plan and verification report	7.7.5
Waste and dust management	
Re-use of waste materials generated onsite	7.5.4

Asbestos	7.5.4
Dust management	Table 7.7

3 SITE MANAGEMENT FRAMEWORK

The Downer site management framework aligns and integrates the site functions which define the operation's delivery methodologies and processes. The Sites Zero-Harm Management Plans (ZHMP), are a key element of the site management framework, and the integration document which identifies and details both the standard Downer site management practices, structure, and execution methods and any site-specific requirements for operations.

All positions in the Site Team have a clearly defined role and set of responsibilities that are included in this management plan. All members of the Site Team are made aware of and understand their responsibilities prior to commencing work for the site. Refer to Annex G – Project Roles & Responsibilities for the roles and responsibilities for environmental management.

The sites management plans are audited throughout the operation of the site to maintain compliance and are updated as required. Any updates to the site management plans are subject to the document review and approval process.

3.1 OEMP structure

The OEMP comprises two components:

1. The OEMP (this document) which:

- provides background information and strategic and broad environmental management considerations for the site; and
- includes procedures and processes for environmental management during operations.

2. Environmental management sub-plans, which detail current controls and mitigation measures to manage specific key site environmental risks or customer/ stakeholder concerns.

3.2 Referenced documents

Table 3.1 Referenced documents

CONTRACT AND MANAGEMENT PLANS	
DI-PM-FM007.3	Rosehill Asphalt Plant Zero Harm Management Plan
DI-PM-TP023	Rosehill Re-Purposing Facility Zero Harm Management Plan
145-RS-PM021001	Rosehill Workshop Operational Management Plan
DA-ZH-FM015.1	Rosehill Emergency Management Plan
POLICIES	
DG-ZH-PO001	Environmental Sustainability Policy
PROCEDURES	
DG-QA-PR003	Internal Audits
DG-ZH-PR006	Incident Management Procedure
DG-ZH-PR007	ZH Project Planning and Performance Reporting
DG-ZH-PR015	Emergency Management Procedure

DG-ZH-ST025	Visitor Management Standard
DG-ZH-PR028	Zero Harm Risk Management Procedure
DG-DM-PR003	Operational Change Management Procedure
DG-ZH-PR077.1	Sustainability Data Collection and Reporting Procedure
DG-ZH-PR007	Zero Harm Performance Monitoring and Reporting Procedure
DG-RM-PR003	Project Risk and Opportunity Management Procedure
DG-ZH-PR116.1	Inspection Procedure
DG-ZH-PR116.2	Observation Procedure

STANDARDS

DG-ZH-ST024	Hazardous Chemicals Standard
DG-ZH-ST013	Zero Harm Worker Consultation Standard
DG-HR-ST013	Training and Competency Management Standard
DG-ZH-ST054	Hazardous Chemicals and Dangerous Goods Storage Principles and Transportation
DG-ZH-ST063	Waste Management Standard
DG-ZH-ST064	Water Discharge Management Standard
DG-ZH-ST069	Environmental Noise and Vibration Standard
DG-ZH-ST070	Air Quality Management Standard

FORMS

DG-ZH-FM063.1	Waste Disposal Register
DG-ZH-FM063.2	Waste Estimation Record
DG-ZH-FM071.2	Hygiene Inspection Form
DA-ZH-FM015.2	Spill Response Equipment Needs Assessment Form
DG-ZH-FM116.2	Environmental Inspection Checklist Asphalt Plant

OTHER

10 Environmental Principles

4 DEFINITIONS

The terms in Table 4.1 are used in this document and are included in *Downer Group Definitions Register*.

Table 4.1 Definitions

Downer worker	All individuals working for Downer as: employees, contingent labour hire, contractors, subcontractors, apprentices, trainees, and work experience students.
EMP	Environmental Management Plan
EMS	Environmental Management System
Environmental Aspect	An element of Downer's activities, products or services that can interact with the environment. A significant environmental aspect has or can have a one or more significant environmental impacts (see below – Significant Environmental Impact).
Environmental Aspects and Impacts Evaluation	A documented evaluation of the environment aspects and impacts of Downer's operations. The Risk Assessment Workshop is run at a site level and the Risk and Opportunities Register is developed from this workshop.
Environmental Impact	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from Downer's environmental aspects. In context of this procedure it is referred to as risk or opportunity.
Integrated management system (IMS)	A document library controlled by Downer that: ▪ is designated as the IMS repository(s) for the single source of truth for all business processes; ▪ is designed to provide consistent process controls, meet the requirements of external standards, and link and integrate core business processes; and ▪ requires documents to be version controlled and identified by a document code and approved prior to releasing or removing from the document library.
INX	The Zero Harm database used to record, investigate and follow-up events, including audits, hazards, incidents, inspections, meetings, observations, risk assessments, reviews, and suggestions.
Significant Environmental Aspect	A "significant environmental aspect" is one that has or can have one or more significant environmental impacts. (see below – Significant Environmental Impact). Significant environmental aspects can result in risk or opportunity associated with adverse or beneficial impacts.
Significant Environmental Impact	A "significant environmental impact' is an impact which is important, notable, or of consequence, having regard to its context or intensity. Whether or not an action is likely to have a significant impact, depends upon the sensitivity, value, and quality of the environment, which is impacted, and upon the intensity, duration, magnitude and geographic extent of the impacts as well as the cumulative or incremental effects. Significant Environmental Impacts are those that are ranked A and B under Downer's Risk and Opportunities risk rating matrix. Environmental Critical Risk is also deemed to be a significant environmental aspect and impact.
Subcontractor	An individual or organisation that signs a contract with Downer to perform part or all of the obligations of a Downer contract, including the performance of work, i.e. provision of labour and/ or labour services. Examples of subcontractors include contingent labour hire, independent contractors, consultants and cartage contractors.
Task-based risk assessment	A risk assessment for a specific task or work activity, e.g. safe work method statement (SWMS), job hazard analysis (JHA), and job safety and environmental analysis (JSEA).

Zero Harm (ZH) Health, safety and environment and community.

5 STANDARDS & LEGISLATION

5.1 Legislation and regulatory requirements

Downer is aware of the importance of complying with all applicable environmental measures, and where practicable, exceeds the minimum legislative and regulatory requirements. Downer's obligations include conditions of regulatory approvals as well as the generally applicable environmental Acts and their subsidiary legislation. Downer and the site team monitor changes to environmental legislation through monthly updates on environmental law changes provided by EnviroLaw, and ensure compliance is maintained throughout the lifecycle.

Site personnel are to be aware of their legal responsibilities in accordance with ***DG-ZH-ST002 Legislative and Other Requirements Standard***.

The environmental authorisations, resource consents and permits in Table 5.1 are required for the site.

Table 5.1 Authorisations and permits

Authorisation/ Permit ** Awaiting final approval*	**Authority**	**Responsibility**
Approval under NSW *Environmental Planning and Assessment Act 1979*	DPIE	VE Property Pty Ltd
Environment protection license under NSW *Protection of the Environment Operations Act 1999*	EPA	Downer EDI Works Pty Ltd
Sydney Water Trade Waste Permit*	Syd. Water	Downer EDI Works Pty Ltd
NSW EPA Downer recovered aggregate and sand order 2021*	EPA	Downer EDI Works Pty Ltd
NSW EPA Downer recovered aggregate and sand exemption 2021*	EPA	Downer EDI Works Pty Ltd
Commonwealth legislation		
Environment Protection and Biodiversity Conservation Act 1999		
Environment Protection and Biodiversity Conservation Regulations 2000		
National Greenhouse and Energy Reporting Act 2007		
National Greenhouse and Energy Reporting Regulations 2008		
Ozone Protection and Synthetic Greenhouse Gas Management Act 1989		
Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995		
Site based legislation		
Protection of the Environment Operations Act 1997 (POEO Act)		

Authorisation/ Permit ** Awaiting final approval*	Authority	Responsibility
Protection of the Environment Operations (General) Regulation 2009		
Protection of the Environment Operations (Clean Air) Regulation 2010		
Protection of the Environment Operations (Waste) Regulation 2014		
Protection of the Environment Operations (Noise Control) Regulation 2017		
Work Health and Safety Act 2011		
Work Health and Safety Regulation 2017		
Australian Standards and Guidance Material		
ANZECC 1992 Australian Water Quality Guidelines for Fresh and Marine Waters		
AS 1940 The Storage and Handling of Flammable & Combustible Liquids		
AS 2436 Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites		
AS 3780 The Storage and Handling of Corrosive Substances (similar standards exist for other classes of dangerous goods)		
AS 4326-2008 The Storage and Handling of Oxidising Agents		
AS/NZS 3833 The Storage and Handling of Mixed Classes of Dangerous Goods, in Packages and Intermediate Bulk Containers		
IECA 2008 – Best Practice Erosion and Sediment Control		
ISO 14001 Environmental Management Systems – Requirements with Guidance for Use		
EPA (2014) *Waste Classification Guidelines*		

Development consent SSD 10459 was granted to VE Property on 31 January 2021 for the project described in Chapter 6. A copy of the development consent is attached as Annex A.

The conditions relevant to the operation of the site are outlined in Chapter 2.

5.2 Compliance tracking

Compliance is tracked continuously during operations using Downer's compliance management system **INX**, which allows authorised users to:

- access the Compliance Tracking Database, Incident Reporting Database, and Complaints Register; and
- sort and evaluate the compliance status of all conditions at any time.

The Compliance Tracking Database includes a protocol to address:

- auditing requirements;
- reporting requirements; and
- incident response mechanisms.

6 SITE DESCRIPTION

6.1 Description

6.1.1 Location and access

The site address is 9 Devon Street, Rosehill and is part of lot 100 in deposited plan 1168951 and covers 35.068 ha (Figure 6.1). The site will be on the newly created 6.998 ha Lot 6 of the plans listed in Annex A.

The site is in the Parramatta Local Government Area (LGA) and is zoned IN3 Heavy Industrial under the land use table in Part 2 of the LEP. The proposed use (general industry and waste or resource management facility – resource recovery facility) is permitted with consent in this zone.

The site is accessed from James Ruse Drive via Grand Avenue, Colquhoun Street and Devon Street or Grand Avenue, Durham and Devon streets. The site is accessed from Parramatta Road via Wentworth, Kay, Unwin, Colquhoun and Devon streets.

Figure 6.1 Site location

6.1.2 Site summary

The site is in the southern part of Lot 6 and an elevated pad (front block) forms the northern part of the lot. The front block will possibly be used by another Downer business unit, leased or sold. The final operational use of the front block would be subject to a future development application.

The site comprises the components summarised below, with processes shown in the flow diagrams in Annex I.

Asphalt Plant

A fixed Ammann Universal HRT Stationary asphalt plant will be constructed on Lot 6, which will produce up to 550,000 tonnes per annum (tpa) of asphalt. The maximum height of fixed equipment will be 41 m. Approximately two thirds of the outside of the asphalt plant will be clad.

Reclaimed Asphalt Pavement Facility

Up to 250,000 tpa of RAP will be cold planed from pavements with specialist equipment and transported in tip trucks to the site. It will then be stored in the dedicated RAP stockpile areas.

The RAP will be granulated and screened on an as required basis for use in the production of asphalt (as a substitute for aggregates and bitumen) or for pavement materials. The RAP plant will be inside a shed that will be enclosed on the north, west and south sides. The east side will be open in parts so the front-end loader can feed the RAP plant and remove the finished products.

Up to 90,000 tpa of RAP will be stored on site at any one time. Stockpiles will be a maximum 10 m high.

Bitumen Products Facility

A next generation, co-located emulsion plant is proposed on Lot 6, which will manufacture approximately 15,000 tpa using a purpose-built plant and will involve careful formulation of the products to produce chemically stable and well performing materials.

Reconomy Facility

Downer proposes to construct and operate a new Reconomy facility on Lot 6. The Reconomy facility will provide a recycling option for the following wastes which are traditionally landfilled:

- Street sweeper/stormwater pit waste.
- Non-destructive digging mud.
- Material Recovery facility glass fines.

Reconomy uses a customised material screening and processing plant and water treatment to recover materials, which are used in the manufacture of asphalt and other road products. The facility will process up to 40,000 tpa of the above waste streams.

Material will be separated during the recovery process and temporarily stockpiled adjacent to the recovery plant at the separation points and removed as required. Recovered aggregates and sand will be beneficially reused almost immediately in the adjacent asphalt plant and will require temporary storage bays as a collection point prior to transport to the asphalt plant.

6.2 Site contacts

The key operational contacts are provided in Table 6.1.

Table 6.1 Key site contacts

Role	Name	Details
Production Manager	Paul Sherry	**T** | 02 9897 4236 **M** | 0419 789 505 **E** | ***Paul.sherry@Downergroup.com***
Maintenance and Recycling Manager	Roy Stiff	**T** | 0407 228 098 **E** | ***Roy.stiff@downergroup.com***
Reconomy Production Manager	Mick Flynn	**M** | 0419 202 669 **E** | ***Mick.flynn@downergroup.com***
Site Supervisor	Gordon Mclisky	**M** | 02 9897 4337 **E** | ***Gordon.mclisky@downergroup.com***
Reconomy Site Supervisor	Matthew Wade	**T** | 0437 259 356 **E** | ***Matthew.wade@Downergroup.com***
Zero Harm Advisor	Kevin Fonti	**T** | 0429 398 219 **E** | ***Kevin.Fonti@Downergroup.com***
Senior Environmental and Sustainability Advisor – Road Services	Dale Thomas	**T** | 0447 479 621 **E** | ***Dale.Thomas1@Downergroup.com***

6.3 Environmental Sensitivities Map

The environmental control map for the site is included in *Annex H – Environmental Sensitivities Map* and details the environmental sensitivity of the site, including but not limited to:

- Endangered and threatened ecological communities.

- Watercourses.
- Site boundaries and work locations.
- Environmental protection boundaries.
- Designated 'no-go zones'.

7 ENVIRONMENTAL MANAGEMENT

7.1 Objectives and targets

In consideration of ***DG-ZH-PO001 Environmental Sustainability Policy*** and any identified hazards and/ or risks for the site, Downer has developed a standard set of objectives and targets that are applicable to all projects, as per Table 7.1. These objectives and targets are managed to ensure that all identified, as well as potential environmental impacts that could reasonably be expected to occur during the works, fall within acceptable and agreed limits. This is achieved through pro-active environmental management planning prior to carrying out particular elements of work.

Table 7.1 Objectives and targets

Focus area	Objective	Target
Legal compliance	▪ Compliance with all legal requirements. ▪ Undertake the project in accordance with environmental approvals.	▪ No regulatory infringements, including PINS and prosecutions. ▪ 100% compliance with statutory approvals.
Monitoring	Complete internal environmental audits in accordance with the pre-planned audit schedule.	Complete 100% of scheduled environmental audits.
Reporting	Promote a positive reporting culture. Ensure all environmental observations, hazards and near misses and incidents are entered into **INX**. Ensure actions are closed out by the nominated due dates.	0 actions arising from incident overdue >30 days.
Planning	Ensure that Downer workers are provided with regular and up-to-date information on environmental aspects relevant to the site.	Review the content of the OEMP in accordance with Section 11.1 to maintain the currency of information provided to Downer workers and others.
Risk management	Ensure that Downer workers are familiar with hazards and risks associated with the execution of the scope of work (work under contract).	The Site Risk & Opportunity Register, controls, and treatment plans are regularly reviewed and communicated to the site team in accordance with ***DG-RM-PR003 Project Risk and Opportunity Management Procedure***.
Consultation	Ensure that Downer workers are regularly consulted on matters that affect the environment.	Conduct pre-start meetings (daily), and toolbox meetings (monthly).

Focus area	Objective	Target
Training	Ensure Downer workers are provided with training to enable work practices to be undertaken that are safe and minimise risk to the environment.	All Downer workers undertake, as a minimum, the two levels of induction training, i.e. site specific induction and Downer site specific induction.

7.2 Risk management

Whilst operating at the site, risks are identified, assessed, and controlled in accordance with ***DG-ZH-PR028 Zero Harm Risk Management***.

Environmental risk and opportunities are also referred to as environmental aspects and impacts. The identification of environmental aspects and their potential impacts to the environment is determined following a review of:

- Consent conditions as applied by the State and Federal governments and detailed in the associated Environmental Impact Assessment (EIA) document; and
- actual scope of work and consideration of all applicable legislation, standards, and other conditions.

Taking into consideration the points above, environmental aspects and impacts are identified in the Risk Assessment Workshop and documented in the site Risk and Opportunities Register.

The Site Risk Register details the relevant environmental aspects, their associated impacts, the mitigation control, and a rating of their significance.

A “significant environmental aspect” is one that has or can have one or more significant environmental impacts. Significant environmental aspects can result in risk or opportunity associated with adverse or beneficial impacts. Significant Environmental Impacts are those that are ranked A and B under Downer’s Risk and Opportunities risk rating matrix. Environmental Critical Risk is also deemed to be a significant environmental aspect and impact and management controls are documented in this plan.

Environmental risks are managed during the site’s operation in accordance with this Management Plan and the site’s Risk & Opportunity Register. The Project Risk & Opportunity Register is created and maintained as per ***DG-RM-PR003 Project Risk and Opportunity Management Procedure*** and details the relevant environmental aspects, their associated impacts, the mitigation control, and a rating of their significance

Risk assessments are completed as follows:

- A Site Risk Register is developed by relevant personnel. The Site Team is responsible for maintaining the Risk Register.
- All high risk tasks are assessed by having a SWMS developed for them using the SWMS Form, as per ***DG-ZH-PR028 Zero Harm Risk Management***.
- A SWMS Register is developed as per ***DG-ZH-PR028 Zero Harm Risk Management***.
- Zero Harm start-up (i.e. pre-commencement) toolbox talks are conducted to communicate key hazards, risks, and the SWMS, and are documented accordingly.
- Zero Harm pre-start and risk control assessments are conducted prior to commencing work each day.

7.3 General environmental management

Table 7.2 provides measures to avoid, mitigate and manage the potential environmental impacts identified through the environmental impact assessment of the site.

Table 7.2 Environmental management

Measure	Timing/ frequency
Operational noise management	
▪ All onsite activities are to comply with ***DG-ZH-ST069 Environmental Noise and Vibration Standard***.	At all times
▪ The Applicant must comply with the following operating hours: Monday – Sunday: 24 hours	At all times
▪ Use the quietest plant feasible that can do the job.	At all times
▪ Schedule the use of noisy equipment at the least-sensitive time of day.	Least-sensitive time of day
▪ Reduce highly noise generating activities at night.	Night
▪ Position noisy equipment behind structures that act as barriers, or at the greatest distance from the noise-sensitive area, when possible.	At all times
▪ Keep equipment well maintained and operating it in a proper and efficient manner.	At all times
▪ Employ 'quiet' practices when operating equipment, for example, positioning idling trucks in appropriate areas.	At all times
▪ Run staff-education programs and regular toolbox talks on the effects of noise and the use of quiet work practices	At all times
▪ Use best available technology including alternatives to tonal reversing alarms and efficient muffler design.	At all times
▪ Downer will ensure that noise generated by the operation of the DSRRC does not exceed the noise limits in Table 7.14.	At all times
Greenhouse gas	
▪ Investigate ways to reduce energy consumption throughout the life of the site and reviewing energy efficient alternatives.	At all times
▪ Regular maintenance of equipment and plant.	At all times
▪ Ensure plant and equipment are switched off when not in use.	When not in use
▪ Monitoring the consumption of fuel and regularly maintaining diesel powered equipment to ensure operational efficiency.	At all times
▪ Monitoring the total site electricity and natural gas consumption and investigating avenues to minimise consumption.	At all times

▪ Source consumables materials from environmentally sustainable sources where possible.	At all times
▪ Energy usage will be reviewed in accordance with procedure ***DG-ZH-PR077.1 Sustainability Data Collection and Reporting Procedure***.	At all times
▪ Site energy usage will be monitored in accordance with NGER requirements.	At all times
Biodiversity	
▪ An average 40 m riparian corridor will be provided along Duck River consistent with the averaging rule described in DPI Water's (2012) Guidelines for Riparian Corridors on Waterfront Land.	At all times
▪ The existing native vegetation along Duck River will be demarcated as a no-go zone and will include appropriate signage	At all times
▪ Vegetation and habitat values within the site will be managed as per the landscape management plan.	At all times
▪ If unexpected threatened flora and fauna species are discovered, stop works immediately and contact your Zero Harm Team, which will contact DPIE - Environment, Energy and Science group for advice if required.	At all times
▪ If impacts to aquatic environments are observed within the vicinity of the work area (e.g. spill of any chemicals or substantial runoff of sediment), works at that location will cease and contact your Zero Harm Team, which will contact the NSW EPA and/or council for further advice if required.	If impacts are observed
Hazardous substances and dangerous goods	
▪ Dangerous goods, as defined by the Australian Dangerous Goods Code, will be stored and handled strictly in accordance with: (a) all relevant Australian Standards; and (b) ***DG-ZH-ST024 Hazardous Chemicals Standard***. In the event of an inconsistency between the requirements of part (a) and (b), the most stringent requirement must prevail to the extent of the inconsistency.	At all times
▪ All personnel will complete awareness training that includes hazardous substance management, emergency response and the use of spill kits.	During training
▪ Hazardous materials will be transported to and from the site by a licensed contractor, and stored and handled in accordance with the requirements of ***DG-ZH-ST024 Hazardous Chemicals Standard***.	During transportation
▪ Vehicles and transport vessels used on-site are to be regularly inspected for leaks, spills or other damage.	At all times
▪ Appropriately sized and stocked spill response kits will be provided within strategic areas of the site, and within mobile vehicles used to transport hazardous materials at the site.	At all times
▪ Spill response kits will be maintained, clearly identified and readily accessible on site for use in case of accidental spill. Key staff will be skilled in their location as well as usage, application and disposal of contaminated material.	At all times

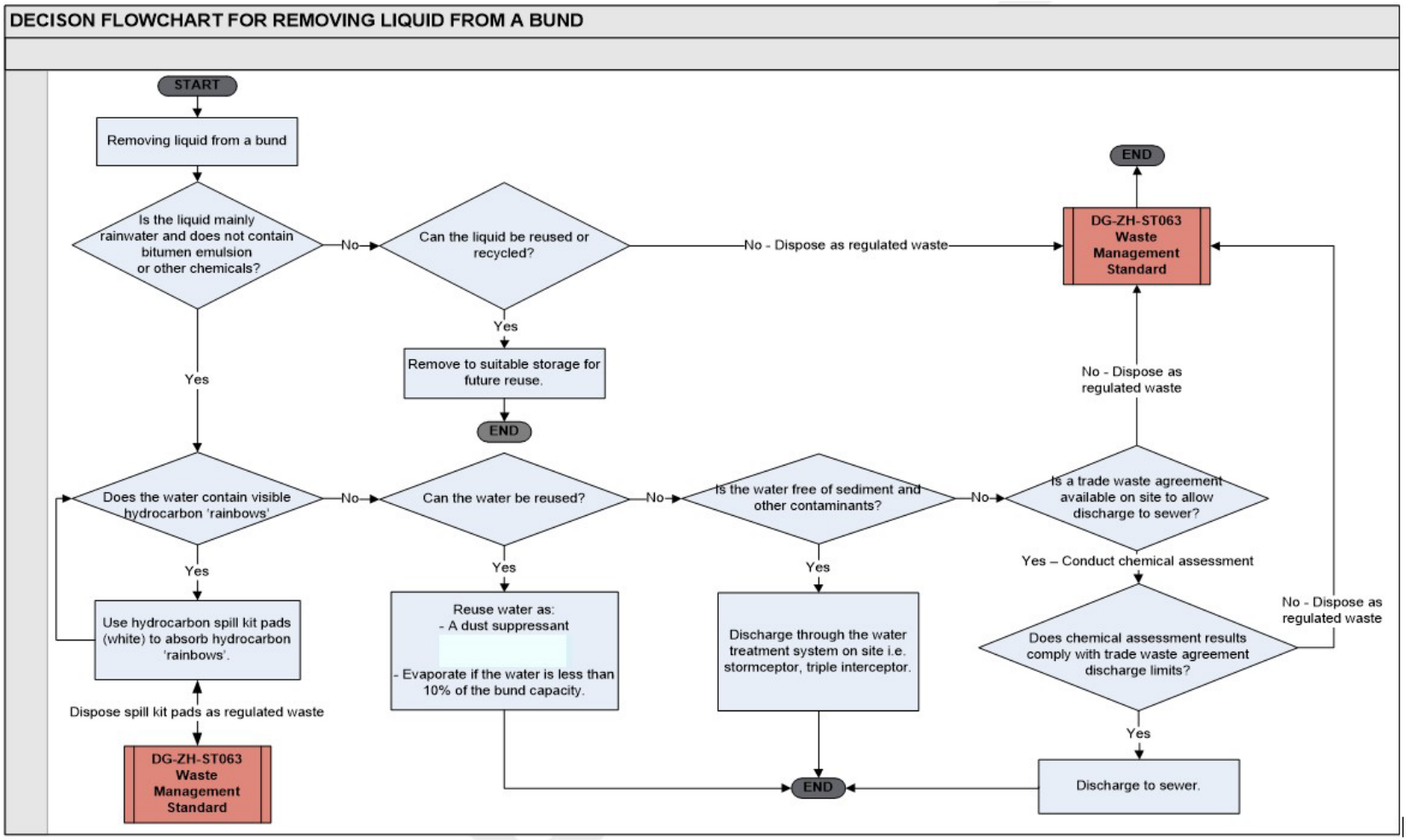
▪ Vehicles and equipment will be refuelled at the diesel storage area.	During refuelling
▪ Any scheduled mobile plant maintenance and repairs will be conducted offsite where possible.	During maintenance and repairs
▪ Equipment will not be used if there are any signs of fuel, oil or hydraulic leaks. Leaks will be repaired immediately, or the equipment will be removed from site and replaced with a leak-free item.	At all times
▪ A database will be maintained to assist in the recording and management of any chemicals and hazardous substances stored at the site.	At all times
▪ Any fuels spillage will be collected, and the contaminated material disposed of at a licensed waste management facility or used in the asphalt plant.	At all times
▪ Emergency procedures will be prepared and implemented for dealing with spillage of hazardous substances and dangerous goods.	At all times
▪ Hazardous chemicals will be stored in a bunded area ensuring the following requirements: o Bund constructed of impervious materials. o Contains at least 25% of the total volume stored or at least 110% of the largest container, whichever is larger. o The storage vessel(s) are back from the bund wall (or shielded) to prevent jetting of the liquid outside of the bund.	At all times
▪ A register and copy of SDSs of all hazardous substances and fuel and oil storages will be maintained in accordance with ***DG-ZH-ST024 Hazardous Chemicals Standard***.	At all times
▪ Hazardous chemicals will be segregated in accordance with ***DG-ZH-ST024 Hazardous Chemicals Standard***.	At all times
▪ For oxygen, acetylene and other compressed gases: o cylinders in use will be adequately restrained (i.e. chained to a trolley or other appropriate device) o full and empty cylinders in storage will remain upright and restrained to a wall (or similar) in an area away from sources of heat o empty cylinders will be stored separately to those that are full o cylinders of like gases will be stored together, except in the case of oxy/ acetylene secured to a trolley for use; and o oxygen and fuel gasses will be stored separately from corrosive and flammable gases.	At all times
▪ The disposal of hazardous chemicals and dangerous goods will be undertaken in a safe manner that complies with DG-ZH-ST063 Waste Management Standard.	During disposal
▪ Removal of liquid from a bund will be completed in accordance with Figure 7.1of this plan - Decision Flowchart for Removing Liquid from a Bund.	During liquid removal

▪ Hazardous chemicals management will be formally inspected regularly.	During site inspections
▪ Inspection of open storage facilities will be undertaken before and after significant (>10 mm) rainfall events to ensure adequate capacity remains.	Before and after rain
▪ The site trade waste system will be sampled in accordance with any Trade Waste Approval requirements to ensure that the site trade waste discharge is in accordance with the site trade waste permit.	Quarterly
▪ The development must not result in the non-compliance of any existing dangerous goods fuel and gas pipelines in accordance with AS2885 Pipelines – Gas and Liquid Petroleum.	At all times
Traffic	
▪ Downer will ensure that: (a) internal roads, driveways and parking (including grades, turn paths, sight distance requirements, aisle widths, aisle lengths and parking bay dimensions) associated with the development are constructed and maintained in accordance with the latest version of AS 2890.1:2004 Parking facilities Off-street car parking (Standards Australia, 2004), AS 2890.2:2018 Parking facilities Off-street commercial vehicle facilities (Standards Australia, 2018) and AS 2890.6.2009 Parking facilities Off-street parking for people with disabilities (Standards Australia, 2009) (b) the swept path of the longest vehicle entering and exiting the site, as well as manoeuvrability through the site, is in accordance with the relevant AUSTROADS guidelines; (c) the development does not result in any vehicles queuing on the public road network; (d) heavy vehicles and bins associated with the development are not parked on local roads or footpaths in the vicinity of the site; (e) all vehicles are wholly contained on site before being required to stop; (f) all loading and unloading of materials is carried out on-site; (g) all trucks entering or leaving the site with loads have their loads covered and do not track dirt onto the public road network; and (h) the proposed turning areas in the car park are kept clear of any obstacles, including parked cars, at all times.	At all times
▪ The development will not result in any vehicles queuing on the public road network.	At all times
▪ Heavy vehicles and bins associated with the development will not be parked on local roads or footpaths in the vicinity of the site.	At all times
▪ All vehicles will be wholly contained on site before being required to stop.	At all times
▪ All loading and unloading of materials will be carried out on-site.	At all times
▪ All trucks entering or leaving the site with loads will have their loads covered and will not track dirt onto the public road network.	At all times

▪ The proposed turning areas in the car park will be kept clear of any obstacles, including parked cars, at all times.	At all times
Public safety	
▪ To address the risks to public safety, the site will be fully fenced. The site entry and exit points will be monitored by surveillance cameras, and have necessary signage erected. All vehicle and pedestrian movements in and out of the site will be closely monitored.	At all times
▪ Downer will continuously review and improve security at the site, including new fencing, security cameras, gates and signage.	During management review
▪ All visitors to the site will be required to report to the site administration office and register prior to gaining entry to the active areas of the site.	At all times
Risk to workers	
▪ Downer commits to preparing an emergency and evacuation plan in accordance with AS 3745–2010 Planning for emergencies in facilities, which will be appended to and submitted to DPIE with the operational environmental management plan (Annex K). The plan will include measures to be implemented during floods and flood evacuation.	Prior to operations then at all times
▪ Downer commits to preparing an emergency services information package, which will be appended to the operational environmental management plan and made available to emergency services as they enter Lot 6 (Annex K).	Prior to operations then at all times
▪ Designated first aid and emergency response equipment will be available. Appropriately trained personnel will be on site throughout the life of the operations to provide first aid and respond to site emergencies.	At all times
▪ Any injuries incurred at the site will be reported and investigated in consultation with SafeWork NSW and other relevant authorities. Any recommendations or findings of investigation reports will be implemented by Downer where feasible and practical.	If there is an injury
Lighting	
▪ Outdoor lighting will be operated in accordance with Australia Standard 4282–2019 – Control of the obtrusive effects of outdoor lighting, including mounting, screening and directing in such a manner that it does not create a nuisance to surrounding properties, the public road network or the riparian corridor / Duck River.	At all times
Other Management Considerations	
▪ The environmental controls in Section 7 of the ***LTEMP*** be implemented if intrusive works are proposed in the future.	If Intrusive works are to be conducted onsite

Figure 7.1 Decision flowchart – removing liquid from a bund

(From standard ***DG-ZH-ST024 Hazardous Chemicals Standard***)



7.4 Air quality management

7.4.1 Overview

Condition B8 of the consent requires Downer to prepare an air quality management plan prior to operation of the site to the satisfaction of the Planning Secretary. The specific requirements are reproduced in Table 7.3.

Table 7.3 Air quality management plan requirements

Requirement	OEMP reference
(a) be prepared by a suitably qualified and experienced person(s);	7.4.1
(b) be prepared in consultation with the EPA;	2.2.2
(c) detail and rank all emissions from all sources of the development, including particulate emissions;	7.4.2
(d) describe a program that is capable of evaluating the performance of the operation and determining compliance with key performance indicators, including the prescribed concentrations contained in the Protection of the Environment Operations (Clean Air) Regulation 2010;	7.4.5, 7.4.6, 7.4.7
(e) identify the control measures that will be implemented for each emission source; and	7.4.4
(f) nominate the following for each of the proposed controls:	
i. key performance indicator;	7.4.3
ii. monitoring method;	7.4.5
iii. location, frequency and duration of monitoring;	7.4.5
iv. record keeping;	10, 11
v. complaints register;	10.4
vi. response procedures; and	7.4.4, Annex F
vii. compliance monitoring.	7.4.5, 7.4.6, 7.4.7

Condition B9 requires to:

a. not commence operation until the AQMP required by condition B8 is approved by the Planning Secretary; and
b. implement the most recent version of the AQMP approved by the Planning Secretary for the duration of the development.

This air quality section has been prepared by Todoroski Air Sciences. Todoroski Air Sciences, a specialist air quality and environmental consultancy whose personnel are members of the Clean Air Society of Australia and New Zealand. Todoroski Air Sciences has previously conducted the Air Quality Impact and Greenhouse Gas Assessment for the Central Sydney Industrial Estate Incorporating the DSRRC.

7.4.2 Emissions sources

The most significant pollutant generated from operation of the site is dust. Table 7.4 ranks the annual particulate emissions for the various activities associated with the asphalt and bitumen plant, RAP facility and Reconomy facility.

Estimates of air pollutant emissions associated with the site have been obtained from the Air Quality Impact Assessment (AQIA) (Todoroski Air Sciences, 2020). The controls assumed in this estimation are detailed in Appendix B of the AQIA. Note that for the purpose of this comparison, emissions are ranked based on the level of TSP, and rankings may differ slightly for PM_{10} and $PM_{2.5}$.

Table 7.4 Summary of dust emissions (kg/year)

Activity	Dust emissions		
	TSP	PM_{10}	$PM_{2.5}$
Hauling	8,361	1,605	388
Handling/loading/conveying	1,987	941	142
Screening	1,919	660	120
Wind erosion	965	483	73
Exhaust	815	815	790
Crushing	203	90	6
Total	**14,250**	**4,593**	**1,520**

Some odour may be generated by aspects of the site. Table 7.5 ranks the odour emission rates, per the AQIA for various site activities.

Table 7.5 Summary of odour emission rates

Location	Source	Odour emission rate ($ou.m^3/s$)
Asphalt plant	Plant stack exhaust	46,000
	Loading asphalt to the truck	11,000
	Truck waiting to be tarped	1,080
Reconomy	Organics stockpile	365

Other potential pollutant emissions from the asphalt plant stack exhaust include CO, NO_x, SO_2, metals, BTEX and PAH. These pollutant emissions have not been ranked as the asphalt plant stack exhaust is the only significant source of these emissions identified.

7.4.3 Performance indicators

There are no load limits, air quality criteria or air emission limits specified for the site in the development consent conditions.

POEO standards

Table 7.6 presents the applicable standards of concentration for non-scheduled activity as per the Protection of the Environment Operations (Clean Air) Regulation 2010 (POEO) for the stack source associated with the asphalt plant.

Table 7.6 Applicable POEO standards of concentration

Pollutant	Standard of concentration for non-scheduled activity – group C
Solid particles	100 mg/m^3

Performance indicators

Table 7.7 presents the air quality related key performance indicators that will be used to assess the air quality performance of the DSRRC.

Table 7.7 Air quality performance indicators

Measure	Key performance indicator
Training	All site personnel have completed air quality training
Implementation of the management practices	Annual compliance checklist shows that all management practices listed in this plan were implemented
Visual monitoring	No dust visible beyond boundary
Validated air quality complaints are minimised and appropriate management actions are implemented following receipt of a complaint	No validated air quality complaints
Stack testing	Solid particle concentrations do not exceed the applicable 100 mg/m^3 POEO standard

7.4.4 Air quality management measures

Downer will install and operate equipment in line with best practice to minimise the generation of air emissions and ensure compliance with all air quality requirements.

All reasonable steps are undertaken to minimise dust generated by the site and ensure that the site does not cause emissions of offensive odour beyond the boundary of the site.

Table 7.8 presents the operational air quality control measures and management practices implemented for the site.

Table 7.8 Operational air quality management measures

Measure	Timing/ frequency
General	
All onsite activities are to comply with ***DG-ZH-ST070 Air Quality Management Standard***.	At all times
Training is provided to all site personnel on appropriate air quality control practices and the requirements per this plan.	As required

The weather forecast is checked daily, and appropriate management measures are implemented prior to adverse weather to minimise particulate emissions from the site.	Daily
If adverse weather conditions occur during operations, activities are assessed and modified as required. Cease activity where reasonable levels of dust cannot be maintained using available means.	Prior to adverse weather
Visual monitoring of activities is undertaken to identify dust generation.	At all times
The site maintains an Environmental Complaints Register. All environmental complaints received are stored within Downers INX System.	At all times
In the event of an odour complaint, an immediate investigation of any odour sources is undertaken, together with appropriate actions to eliminate any identified excessive odour.	If there is an odour complaint
Plant, equipment and vehicles	
Where possible, all mobile non-road diesel equipment operated at the DSRRC site achieve a particulate matter emission performance commensurate with US EPA Tier 4 particulate emission standards.	Where practical
Engines of on-site vehicles and plant are switched off when not in use.	When not in use
Vehicles and plant are fitted with pollution reduction devices where practicable.	Where practical
Vehicles are maintained and serviced according to manufacturer's specifications.	At all times
Material handling	
Drop heights from loading and handling equipment are reduced where practical.	Where practical
Excessively dusty materials are dampened during handling.	When excess dust generated
Exposed areas/stockpiles	
The extent of exposed surfaces and stockpiles is kept to a minimum.	At all times
Exposed areas and stockpiles are either covered or are dampened with water as far as is practicable if dust emissions are visible, or there is potential for dust emissions outside operating hours.	If dust is or could be generated
Hauling/ vehicle movements	
On-site speed limits are enforced.	At all times
Vehicle traffic is restricted to designated routes.	At all times
Driveways and hardstand areas are swept/cleaned regularly as required. A sweeper is regularly deployed to the operational site to sweep/clean internal roads periodically to prevent any tracking of fine debris.	As required
Spills onto trafficked areas are cleaned as soon as possible.	If there is a spill

Delivery schedules are coordinated to avoid a queue of the incoming or outgoing trucks for extended periods of time.	During deliveries
Vehicle loads are covered when travelling off-site.	During offsite transport
RAP	
A dedicated access road will be maintained through the centre of the RAP stockpile area.	At all times
Dedicated truck tipping areas will be maintained in the RAP stockpile areas and will be kept free from RAP material.	At all times
The unprocessed RAP material is dampened using a sprinkler system when visible dust is evident from the stockpiles or during handling of the RAP material.	If dust is being generated/during handling
The unprocessed RAP stockpiles are restricted to the designated stockpile areas and not be allowed to encroach onto the truck access road through the centre of the stockpile area. This central unprocessed RAP stockpile area access road must be swept on a regular basis to remove spilt RAP material.	As required
The volume of unprocessed RAP is regularly monitored and receival of unprocessed RAP stopped when the stockpile area reaches capacity to prevent RAP being stockpiled outside the designated stockpile area.	At all times
RAP will be processed in a shed. Maintenance access roller doors on the RAP processing shed remain closed at all times during RAP processing.	During RAP processing
The granulating and separating/screening process will be against the clad western wall of the RAP processing shed, as far (25m) from the partly open eastern side of the RAP processing shed as possible.	At all times
The granulating process is fully enclosed inside a housing that contains hard wearing impact curtains.	At all times
A spray mist is applied to newly crushed RAP just prior to release from the transfer conveyor into the finished product bunkers.	During processing
Processed RAP is stored in concrete product bunkers.	During RAP storage
The volume of processed RAP in the finished product bunkers is regularly monitored and processing stopped when the bunkers reach capacity to prevent RAP spilling out of the bunkers and RAP processing shed.	During RAP storage
All dust controls built into the design of the RAP processing facility (e.g. roll top type belt covers on conveyors and spray misters at discharge points of the radial transfer conveyors) are maintained to operate as per manufacturers specifications.	At all times
Asphalt plant	
Ensure all emission controls built into the design of the asphalt plant (e.g. the stack exhaust controls and the bitumen vapour evacuation system at the loadout area) are maintained to operate as per manufacturers specifications.	At all times

Regularly clean road surface to ensure any aggregates that spill onto the road surface at the underground aggregate loading hopper to prevent them being tracked onto the internal and external roads.	If there is a spill
Bitumen emulsion plant	
Ensure all emission controls built into the design of the bitumen plant (e.g. the carbon filter on bitumen storage tanks) are maintained to operate as per manufacturers specifications.	At all times
Reconomy plant	
Organic material recovered from road sweepings in the Reconomy plant will be removed from site on a regular basis to reduce the level of decomposition and associated odour.	As required

7.4.5 Pollutant monitoring

No specific ambient air quality monitoring was recommended in the AQIA as modelling did not predict any exceedance of the relevant impact assessment criteria at the residential receptors.

Stack testing

Annual stack testing is to be conducted for the asphalt plant exhaust stack. Discharge parameters to be measured include diameter, volumetric flow rate, velocity, temperature, and particulates concentration.

Velocity, volumetric flow rate and temperature are to be measured in accordance with Test Method 2 and particulates are to be measured in accordance with Test Method 15 of the NSW EPA *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales* (2007).

The monitoring duration for each parameter is as specified by the relevant testing method/standard.

Records of stack testing results are to be kept for at least 4 years after the monitoring to which they relate took place.

Visual dust monitoring

Visual dust monitoring is to be undertaken continually during operation. Annex F presents the visual dust contingency measures. If a visible dust plume generated by the site is observed with the potential to cross or having already crossed the facility boundary, an immediate investigation of any dust sources must be undertaken together with appropriate actions to eliminate any identified excessive dust.

Downer will record any observation of excessive dust generated by the site in INX and environmental inspection forms. Records are to include the following details where relevant:

- the date, time, duration and location of the observation;
- meteorological conditions at the time of observation (obtained from the nearest BoM weather station);
- whether the visual dust plume travelled off-site;
- any source/s of dust specifically identified as contributing to the visual dust plume; and
- the action taken by Downer to minimise dust levels and prevent the issue from recurring.

7.4.6 Performance evaluation

The performance of the site is to be evaluated to be against the key performance indicators outlined in Table 7.9. Table 7.9 indicates the evaluation schedule for each key performance indicator.

Where performance indicators are not being met, the contingency plan per Annex F is to be implemented.

Table 7.9 Key performance indicators

Key performance indicator	Performance evaluation schedule
All site personnel have completed air quality training	Monthly
Annual compliance checklist shows that all management practices listed in this plan were implemented	Annual
No dust visible beyond boundary	Continuous
No validated air quality complaints	As required
Solid particle concentrations do not exceed the applicable 100 mg/m^3 POEO standard	Annual

7.4.7 Air quality verification

An air quality verification report (AQVR) must be submitted to the EPA and Planning Secretary within three (3) months of the commencement of operation of the site. The AQVR must:

(a) be undertaken in accordance with the Approved Methods for Modelling and Assessment of Air Pollutants in NSW;

(b) demonstrate that all reasonable and feasible mitigation measures have been incorporated into the development;

(c) reference manufacturer's specifications and/or performance guarantees for the asphalt plant;

(d) demonstrate compliance with the prescribed concentrations contained in the *Protection of the Environment Operations (Clean Air) Regulation 2010*;

(e) outline management actions to be taken to address circumstances where the concentrations specified in part d) have been exceeded; and

(f) describe the contingency measures and the timing of their implementation in the event the management actions are not effective in reducing the air emissions to an acceptable level.

Air quality matters will be verified by a suitable qualified person.

The pollutants in Table 7.10 will be also be assessed against the Group 6 limits during air quality verification.

Table 7.10 Reference pollutants

Pollutant	Units	Method
Temperature	degrees Celsius	TM-2
Volumetric flow rate	Cubic metres per second	TM-2
Oxygen	Percent	TM-25
Moisture	Percent	TM-22
Solid Particles (Total)	Milligrams per cubic metre	TM-15
Volatile organic compounds	Milligrams per cubic metre	TM-34
Oxides of Nitrogen, as NO2 equivalent	Milligrams per cubic metre	TM-11

Type 1 and Type 2 substances (in aggregate)	Milligrams per cubic metre	TM-12, TM-13, TM-14

A minimum of two rounds of sampling should be undertaken for each pollutant contained in table 1 to provide a suitable characterisation of the emissions during normal operations. The two rounds of sampling must not occur on the same day. Sampling must be conducted when plant / process conditions are representative of normal operations.

7.5 Waste management

7.5.1 Overview

Condition B45 of the consent requires Downer to prepare a waste management plan prior to operation of the site to the satisfaction of the Planning Secretary. The specific requirements are reproduced in Table 7.11.

Table 7.11 Waste management plan requirements

Requirement	OEMP reference
(a) detail the type and quantity of waste to be generated during operation of the development;	7.5.3
(b) describe the handling, storage and disposal of all waste streams generated on site, consistent with the NSW *Protection of the Environment Operations Act 1997*, NSW Protection of the Environment Operations (Waste) Regulation 2014 and the Waste Classification Guideline (EPA, 2014);	7.5.2, 7.5.4, 7.5.5
(c) detail the materials to be reused or recycled, either on or off site; and	7.5.3
(d) include the Management and Mitigation Measures included in Appendix 2.	7.5.2

Condition B46 requires Downer to:

(a) not commence operation until the WMP (this section) is approved by the Planning Secretary;

(b) implement the most recent version of the WMP approved by the Planning Secretary.

7.5.2 Waste management – general

The waste management measures in the consent and Appendix 2 of the consent are reproduced in Table 7.12.

Table 7.12 Waste management measures

Measure	Timing/ frequency
All waste received at the site will be unloaded in the designated waste unloading areas.	During unloading
All waste processing must be undertaken within designated areas.	During waste processing
All waste materials removed from the site must only be directed to a waste management facility or premises lawfully permitted to accept the materials.	During waste removal
Liquid and non-liquid wastes which cannot be treated onsite must be assessed and classified and taken off site in accordance with the latest version of EPA's Waste Classification Guidelines Part 1: Classifying Waste (EPA, 2014) and dispose of all wastes to a facility that may lawfully accept the waste.	During removal of liquid wastes

The Applicant must retain all sampling and waste classification data for the life of the development in accordance with the requirements of the EPA.	At all times
Implement suitable measures to manage pests, vermin and declared priority weeds on the site.	At all times
Inspect the site on a regular basis to ensure that these measures are working effectively, and that pests, vermin or priority weeds are not present on site in sufficient numbers to pose an environmental hazard or cause the loss of amenity in the surrounding area.	During site inspections
Waste will be managed in accordance with the waste hierarchy of avoidance, re-use, recycling/re-processing/treatment and disposal.	At all times
Waste will be managed in accordance with EPA's (2014) Waste Classification Guidelines and regulatory requirements. This will include: (i) its classification prior to leaving the site and (ii) (ii) recording (via an appropriate waste tracking system) its legal off-site transportation for re-use, recycling or disposal.	At all times
Waste will be stored in a suitable container, with a lid, and transported from the site to an appropriate facility. Enough suitable receptacles for general waste, hazardous waste and recyclable materials will be provided for waste disposal, including sufficient bins to allow separation of wastes for recycling.	At all times
Wastes will be securely stored to ensure that pollutants are prevented from escaping.	At all times
Fuel, lubricant or hydraulic fluid spillages will be collected using absorbent material and the used spill kit material will be stored separately before disposal to a suitably licensed waste facility.	If there is a spill
Hazardous materials will only be removed by a suitably qualified, licensed and experienced contractor.	During removal
Documents and records of the transport and destination of all materials removed from site will be kept as proof of correct disposal and for environmental auditing purposes.	During transport
Waste streams will be sorted to maximise the reuse/recycling potential and minimise disposal costs.	At all times
Waste will be covered, stored and removed in a timely manner so as not to attract animals.	At all times
Waste handling, transport and disposal will be in accordance with the requirements of the ***DG-ZH-ST063 Waste Management Standard***.	At all times
Dangerous goods will be managed and handled in accordance with AS 1940 (the storage and handling of flammable and combustible liquids) and AS 3780 (the storage and handling of corrosive substances).	At all times

7.5.3 Waste estimates

Residual wastes will be generated by the asphalt plant, Reconomy plant and ancillary infrastructure (such as offices). Estimated quantities and disposal methods are summarised in Table 7.13 and Table 7.14. No waste will be generated by the RAP plant. There will only be 12 tpa of packaging waste generated by the bitumen

products plant (mostly intermediate bulk containers), which will be collected and reused by suppliers or disposed at a licensed offsite facility.

Table 7.13 Waste estimate – asphalt plant and ancillary infrastructure

Waste description	Waste classification or type *(see 1 below)*	Method of storage	Estimated amount of waste produced *(Tonnes)*	Treatment/ actions	Waste monitoring activity *(See 2 below)*	Disposal method *(Based on the waste hierarchy)*	Disposal location *(see 3 below)*
1. *Waste* classification or t*ype: VENM (virgin excavated natural material), ENM (excavated natural material), general solid (P), general solid (non-putrescible) (non-P), restricted solid, hazardous liquid, special waste (e.g. asbestos), PASS (potential acid sulphate soils), ASS (acid sulphate soils), green or recyclable, regulated waste* 2. *Waste monitoring activity*: *visual inspection, chemical analysis.* 3. *Disposal location: provide the name and location of the receiving compound, landfill/ waste facility, transfer station, or development approved (DA) premises. Regulated waste disposal must list (and attach) the current licence for the transporter, disposal facility and accredited / approved agent.*							
Asphalt from non-conforming mix (0.25% volume)	Non-P	Neatly stockpiled in approved area not exceeding 10 m height	15 tonne per month	On sell to another customer where the asphalt mix is acceptable, use as RAP or reused as road base as is.	Monthly worksite inspection	Recycled	Downer asphalt plant or used as road base
Asphalt mix on start up and shutdown (0.5 t per start up)	Non-P	Neatly stockpiled in approved area not exceeding 10 m height	Minimal	Reused in plant as no bitumen is mixed in.	Monthly worksite inspection	Recycled	Reused in asphalt plant
Returned excess asphalt (0.5% volume)	Non-P	Neatly stockpiled in approved area not exceeding 10 m height	100 tonne per month	On sell to another customer where the asphalt mix is acceptable, use as RAP or reused as road base as is.	Monthly worksite inspection	Recycled	Reused in asphalt plant , on sell where practical or used as road base.
Baghouse (1% of volume)	Non-P	Baghouse or silo	200 tonne per month	Nil	Silo and baghouse inspection weekly	Reused	Used as a raw material in asphalt plant

Waste water from bunding (contaminated with oil/chemical)	Regulated waste – offsite recycle	Bund	Minimal	Must be collected and disposed of by the services of a licensed contractor	Visual inspection monthly and after every rain event	Disposal by licensed contractor	
Oily rags	Regulated waste - disposal	210 L drum	Minimal	Must be collected and disposed of by the services of a licensed contractor	Travel and annual disposal certificates	Disposal	
Solvents	Regulated waste - disposal	Manufacturers container	Minimal	Must be collected and disposed of by the services of a licensed contractor	Travel and annual disposal certificates	Recycled	
Contaminated soil/ sand from spill cleanup	Non-P	Non-conformance stockpile	Minimal	Reused in the asphalt plant	Monthly worksite inspection	Recycled	Used as a raw material in asphalt plant
General rubbish from office amenities	P	Dedicated bin	Minimal	Minimised as much as possible and dispose in a legal landfill.	Monthly worksite inspection	Off site landfill disposal by waste contractor	
Paper/ cardboard waste from office	Non-P	Dedicated bin	Minimal	Minimised and reuse as much as possible.	Monthly worksite inspection	Off site recyclable	

Table 7.14 Waste estimate – Reconomy

Facility	Waste received onsite	Source	Receival (max. tpa)	Storage		Recovered material and storage (any one time)	Fate	Quantity to be reused (tpa)	Quantity to be disposed offsite (tpa)	Method of offsite disposal
				Any one time (t)	Annual (tpa)					
Reconomy	Street sweepings from classified roads/ stormwater pit waste (spadable)	Road maintenance	40,000	300	40,000	Water (100 m^3 tank)	Disposal to sewer (trade waste)	1.2 ML (retained in Reconomy plant)	12 ML (disposed to on-site sewer)	Disposal to sewer (trade waste)
						Aggregates (100 m^3) and sand (100 m^3)	Reuse in asphalt	12,000	0	NA
						Organics (250 m^3)	Disposal	0	10,400 tpa	Initially landfilled, future recycled (composted)
	Hydro-excavated soil/ stormwater pit waste (wet)			250		Trash inc. plastic (10 m^3)	Disposal	0	3,600 tpa	Recycled
						Metal (5 m^3)	Disposal	0	800 tpa	Recycled
	Beach rakings	Beaches		100		Sand (20 t)	Reuse in asphalt	20	0	NA

7.5.4 Management of incoming wastes

The site will receive the wastes summarised in Table *7.15* for use as material inputs to the asphalt plant. The RAP facility will not produce residual wastes and the asphalt plant and Reconomy facility will generate the residual wastes summarised in Table 7.13 and Table 7.14, respectively.

All wastes streams received at the premises will only be utilised in accordance with an approved (and current) waste order or exemption. Waste materials not covered by an order or exemption will be disposed of in an approved facility.

The incoming wastes will be managed as follows.

Reconomy

The type of material Downer is licensed to accept is general solid waste (non-putrescible) and hydro-excavated soil. The authorised amount of waste permitted at the Reconomy premise cannot exceed 550 tonnes at any one time. The maximum amount of waste received at the Premises must not exceed 40,000 tonnes per year.

No feedstock with known contamination (such as with asbestos, per- and polyfluoroalkyl substances (PFAS), hazardous hydrocarbon/heavy metal concentrations etc.) is permitted and therefore management of incoming wastes will be risk-based.

Hydro-excavated soil, street sweepings and beach rakings will be transported to the site via sealed vacuum trucks and licensed street sweeper vehicles. Asbestos waste and PFAS-contaminated hydro-excavated soil will not be accepted, reused or recycled at the site. Supplier contracts will highlight that hazardous contaminants are not to be delivered to the site.

Asbestos

Supplier personnel are present during the hydro-excavation of soil and can closely monitor and inspect the soil as it is being blasted by high pressure air and water for visible contamination. Visible asbestos containing material (ACM) or hazardous contamination identified will be disposed at a licensed facility and not delivered to site.

PFAS

Road reserves present a lower risk profile for the presence of PFAS than contaminated sites where there has been historic use of fire-fighting foams, heavy industrial manufacturing sites or processes. As mentioned below, during pre-acceptance and notification of input material, detail on the source of the hydro-excavation soil will be discussed and reviewed for the risk of PFAS contamination.

Pre-acceptance and notification of input material

Downer is to communicate to suppliers that the site will not accept the hydro-excavation soil unless pre-notified and contents/source of the load is confirmed. This is to ensure that the site is able to accept it consistent with any conditions of its EPL and that any additional management and mitigation measures required (such as scheduling) can be identified and implemented in a specific management plan.

As deliveries will be informed beforehand, the following will be recorded and signed by the waste producer:

- Supplier, location and type of site that is the source of the waste.
- Activity resulting in the waste.
- Vehicle registration number.
- Vehicle driver contact.

Receival of input materials

- All vehicles delivering input materials to the Reconomy plant will be weighed and recorded when they enter and exit site.

- Each incoming load will be tracked by registration, company name and video footage with high-definition number plate recognition.
- Loads with incomplete or incorrect information, or which contain material that does not meet the acceptance criteria will be rejected (expectations detailed in supplier agreements).

Receival inspection

Downer will also visually inspect loads during unloading:

- Question the driver as to contents and source of load.
- Categorise the waste and direct driver to appropriate area for unloading (i.e. street sweeping, gully pit arising, hydro-excavation soil, or beach rakings).
- Check for the presence of visible/olfactory evidence of contamination at the point of unloading.
- If any non-conformances identified, material will be evaluated for processing. If there is minor contamination of inert solid material such as bricks/rubble – this may still be accepted, but a warning will be issued to the supplier.
- For any material that has been rejected (e.g. presence of asbestos), Downer reservices the right to either request the return of the material, or for the waste to be transferred back to the truck and taken to a licenced facility. Records will be maintained.

Any load containing suspected asbestos containing materials will be deemed unacceptable and the entire load will be rejected and required to be disposed at a licensed waste facility. If asbestos containing materials are suspected of entering an on-site stockpile, that entire stockpile will be deemed as asbestos containing material, quarantined and disposed at a licensed waste facility.

In the unlikely event trace microscopic fibres enter the facility, the segregation process will capture this in the sludge comprising of the inert soil fines component of the waste material (including silts, clays and asbestos fibres), which will be cleaned from the material and thickened through flocculants and coagulants. Moreover, the Reconomy plant is an entirely wet process, where trace microscopic fibres will be managed and not present a respirable risk.

RAP facility

The RAP facility will be managed in accordance with Downer (2015) *AB-QA-WI004 Reclaimed Asphalt Pavement*, which includes the following controls to ensure undesirable materials are not received on site.

Profiled asphalt material is to be inspected at the job site and directed to the RAP stockpile area if free from deleterious matter as outlined below.

Asbestos

Care should be taken not to inadvertently accept asphalt profilings from an unknown source. Full traceability back to the source location of the asphalt profilings must be maintained and recorded.

Downer road profiling personnel will observe profiled material at road construction/maintenance sites for contaminants including asbestos. Any contaminants will be managed onsite prior to dispatch of material to the RAP facility.

RAP facility personnel will observe the unloading of RAP deliveries for contaminants including asbestos. If potential asbestos containing material (ACM) is observed, unloading will cease and suitably trained and attired personnel will remove the entire load containing ACM from site in a compliant manner and dispose it at an appropriately licenced facility using licenced contractors following Downer procedures (*Asbestos Management Standard (DA-ZH-ST086)* and *Removal and Disposal of Asbestos (DA-ZH-ST087)*).

If asbestos containing materials are suspected of entering an on-site stockpile, that entire stockpile will be deemed as asbestos containing material, quarantined and disposed at a licensed waste facility.

Road base, concrete chippings, broken concrete

Road base, granular materials and concrete are readily discernible by visual inspection and shall not be included in processed RAP.

Asphalt millings containing road base and concrete are not to be included in processed RAP.

Plastics, brick and timber

Plastics, brick and timber are readily discernible by visual inspection and shall not be included in processed RAP.

Asphalt millings containing plastics, brick and timber are not to be included in processed RAP.

Coal tar

Sites likely to contain coal tar are cored and tested for the presence of coal tar. This is usually in inner city areas and the councils concerned indicate the streets that are likely to contain tar. Asphalt millings containing coal tar are directed to appropriately licensed waste facilities.

The laboratory cores for samples and tests for coal tar.

During milling the presence of coal tar can usually be detected by smell and appropriate measures are to be put in place to ensure that the asphalt millings containing the coal tar are sent to an appropriately licensed waste facility.

Asphalt millings containing coal tar are not to be included in processed RAP.

Scrap rubber

Scrap rubber is rare and direction would be expected to come from the RMS concerning likely effected job sites, however, visual inspection and a smell of rubber may indicate the presence of scrap rubber.

The asphalt millings are also inspected on arrival and prior to being tipped. Unsuitable material is sent to a licensed waste facility.

Any scrap rubber that enters the processed RAP will not be heated in the asphalt plant to an extent that causes its decomposition and/or ignition as the plant is a double drum mixer.

It should be noted that any asphalt millings containing scrap rubber will very likely have a higher binder content than is usual.

It is preferable that asphalt millings containing scrap rubber are not to be included in processed RAP and must be free from deleterious matter.

Asphalt plant

Downer proposes to use steel furnace slag as an input to the asphalt making process. According to *The steel furnace slag exemption 2019* the application of steel furnace slag which complies with the *Steel furnace slag order 2019* to land for roadmaking activities, including asphalt aggregate, is exempt from certain provisions of the POEO Act and Waste Regulation.

Table 7.15 Waste receival

Facility	Waste received onsite	Source	Receival (max. tpa)	Storage		Recovered material and storage (any one time)	Fate	Quantity to be reused (tpa)
				Any one time (t)	Annual (tpa)			
RAP facility	RAP	Road maintenance/ construction	250,000	90,000	250,000		Reuse in asphalt	180,000
							Reuse in road construction	70,000
Reconomy	See Table 7.14							
Asphalt plant	Glass fines	Suez	15,000 – 30,000	100 m^3	15,000-30,000	NA	Reuse in asphalt	30,000
	Toner	Close the Loop	1,500	100	1,500			1,500
	Crumbed tyres	Downer internal supplier	500	10	500			500
	Coal ash/fly ash (or other suitable ash products)	Daracon	300	23	300			300
	Steel furnace slag	Australian Steel Mill Services	15,000	3,000	15,000			15,000

7.5.5 Management of outgoing wastes

The following requirements for processors will be implemented in accordance with the *Downer bituminous pavement order 2021.*

- General – no asphalt will be supplied before it has been demonstrated to meet the specifications in Downer (2020) *Reconophalt quality management process.*
- Notification – Downer will provide the following to each person it supplies bituminous pavement to:
  - A written statement of compliance certifying that all the requirements set out in *Downer bituminous pavement order 2019* have been met.
  - A copy of the *Downer bituminous pavement order 2019*.
  - A copy of the *Downer bituminous pavement exemption 2019*.
- Records – Downer will keep a record of the following for six years:
  - The quantity of Downer bituminous pavement supplied.
  - The name and address of each person to whom the processor supplied the Downer bituminous pavement.
  - The processor must notify the EPA within seven days of becoming aware that it has not complied with any requirement in clause 5.1.

7.6 Waste monitoring

Condition B42 of the consent states “From the commencement of operation of the DSRRC, the Applicant must implement a Waste Monitoring Program for the development”. The specific requirements are reproduced in Table 7.16.

Table 7.16 Waste monitoring requirements

Requirement	OEMP reference
(a) be prepared by a suitably qualified and experienced person(s) prior to the commencement of operation;	7.6
(b) include suitable provision to monitor the:	
i. quantity, type and source of waste received on site; and	7.6.1
ii. quantity, type and quality of the outputs produced on site; and	7.6.2
(c) ensure that:	
i. all waste that is controlled under a tracking system, has the appropriate documentation prior to acceptance at the site; and	7.6.1
ii. staff receive adequate training in order to be able to recognise and handle any hazardous or other prohibited waste including asbestos.	8.3

Condition B42(a) requires the program to be prepared by suitably qualified persons. This section was compiled by Mark Roberts (B Environmental Science, Grad Dip Environmental Studies) based on the waste descriptions in the EIS and Downer’s waste monitoring procedures at existing sites that receive and process the wastes described in this plan.

7.6.1 Waste receivals

The site will receive the wastes described in Table 7.14 and Table *7.15*. Incoming wastes will be monitored as follows.

RAP and Reconomy facilities

RAP and Reconomy material will be delivered to the RAP and Reconomy facilities via the weighbridge, where the following is recorded in the Matrix Ops program:

- Date, time, operator and delivery vehicle registration.
- material type (RAP, street sweepings, hydro-excavated soil, stormwater pit waste, beach rakings) and source suburb/job.
- Nett tonnes of material (gross minus tare).

The program allows the operator to keep a running total and spot totals, which will be closely monitored by the Production Manager to ensure the waste quantities in Table 7.14 and Table *7.15* are not exceeded.

Downer will only accept RAP from a supplier that provides the following as required under the Reclaimed asphalt pavement order 2014:

- A written statement of compliance certifying that all the requirements set out in this order have been met.
- A copy of the exemption, or a link to the EPA website where the exemption can be found.
- A copy of the order, or a link to the EPA website where the order can be found.

Downer will only use RAP in accordance with the following under the Reclaimed asphalt pavement exemption 2014:

- Downer will keep a written record of the following in the Matrix Ops program for a period of six years:
  - the quantity of any material received; and
  - the name and address of the supplier of any material received.

Asphalt plant

Other than processed material from the RAP and Reconomy facilities, the asphalt plant will receive the wastes described in Table *7.15*, which will be monitored in accordance with their respective waste recovery exemptions as follows.

Downer will only accept waste from a supplier that provides the following as required under the resource exemption orders listed below:

- A written statement of compliance certifying that all the requirements set out in this order have been met.
- A copy of the exemption, or a link to the EPA website where the exemption can be found.
- A copy of the order, or a link to the EPA website where the order can be found.

Resource exemption orders:

- The steel furnace slag order 2019.
- The coal ash order 2014.
- The recovered glass sand order 2014.
- The recovered tyres order 2014.

Downer will only use waste material in accordance with the following under the resource recover exemptions listed below:

- Downer will keep a written record of the following in the Matrix Ops program for a period of six years:
  - the quantity of any material received; and
  - the name and address of the supplier of any material received.

Resource recovery exemptions:

- The steel furnace slag exemption 2019.
- The coal ash exemption 2014.
- The recovered glass sand exemption 2014.
- The recovered tyres exemption 2014.

Record keeping

Downer will keep hard or soft copies of the supplier statements available on site, which will be made available to authorised EPA officers upon request.

7.6.2 Production outputs

The Reconomy and RAP facilities will produce the quantities of materials shown in Table 7.14 and Table *7.15*. The majority of this material will be used to make asphalt, however, some RAP will be dispatched from site for reuse in road construction.

RAP

RAP dispatch will be recorded/monitored using the Matrix Ops program, which in addition to the fields described under *RAP and Reconomy facilities* above, will include:

- Nett tonnes of outgoing material (gross minus tare).
- Docket number.
- Time of dispatch.

The quality of RAP will be managed and monitored in accordance with Downer (2015) *AB-QA-WI004 Reclaimed Asphalt Pavement*, which will be provided to authorised EPA officers upon request.

Downer will provide the following to RAP customers on or before each transaction in accordance with the Reclaimed asphalt pavement order 2014:

- A written statement of compliance certifying that all the requirements set out in this order have been met.
- A copy of the exemption, or a link to the EPA website where the exemption can be found.
- A copy of the order, or a link to the EPA website where the order can be found.

Downer will keep a written record of the following in the Matrix Ops program for a period of six years in accordance with the Reclaimed asphalt pavement order 2014:

- the quantity of any material supplied; and
- the name and address of each person to whom RAP was supplied, or the registration details of the vehicle used to transport the RAP.

Asphalt

Downer will produce, test and supply asphalt in accordance with The Downer bituminous pavement order 2021 and Downer (2021) *Reconophalt Quality Management Process*, which will be provided to authorised EPA officers upon request, including results of quality testing.

Downer will record/monitor asphalt dispatch quantities in the Matrix Ops program, including the recording information described under *RAP and Reconomy facilities* in Section 7.6.1 and *RAP* above.

Downer will provide the following to asphalt customers on or before each transaction in accordance with The Downer bituminous pavement order 2021:

- A written statement of compliance certifying that all the requirements set out in this order have been met.
- A copy of the exemption, or a link to the EPA website where the exemption can be found.
- A copy of the order, or a link to the EPA website where the order can be found.

Downer will keep a written record of the following in the Matrix Ops program for a period of six years in accordance with The Downer bituminous pavement order 2021:

- the quantity of any material supplied; and
- the name and address of each person to whom asphalt was supplied.

7.7 Surface water management

7.7.1 Overview

Condition B27 of the consent requires Downer to prepare a surface water management plan prior to operation of the site to the satisfaction of the Planning Secretary. The specific requirements are reproduced in Table *7.17*.

Table 7.17 Water management plan requirements

Requirement	OEMP reference
(a) be prepared by a suitably qualified and experienced person(s);	7.6.1
(b) be prepared in consultation with the EPA;	2.2
(c) characterise the expected quality of discharges in terms of the typical and maximum concentrations of all pollutants likely to be present at non-trivial levels;	7.6.2
(d) contain a program to monitor surface water quality;	7.6.5
(e) include surface water impact assessment criteria, including trigger levels for investigating any potential adverse surface water impacts;	7.6.2, 7.6.5
(f) include a protocol for investigation and mitigation where surface water impact assessment criteria is exceeded; and	7.6.5
(g) contain an ongoing maintenance program to ensure the entire surface water management infrastructure continues to operate and perform as designed.	7.6.4

Condition B27(a) requires the plan to be prepared by suitably qualified persons. This section was compiled by Mark Roberts (B Environmental Science, Grad Dip Environmental Studies) based on the surface water assessment carried out by Xavier Cure, the civil engineer who prepared Costin Roe (2020) *Civil engineering report incorporating water cycle management strategy*.

As described in Section 2.2, this OEMP was prepared in consultation with the EPA.

Condition B28 requires Downer to:

(a) not commence operation until the SWMP is approved by the Planning Secretary;

(b) implement the most recent version of the SWMP approved by the Planning Secretary.

7.7.2 Water quality characterisation

The Parramatta Development Control Plan 2011 (DCP) water quality objectives were applied in Costin Rose (2020) to address Parramatta City Council's water sensitive urban design (WSUD) objective, which are summarised in Table 7.18 and are expressed as required reduction of pollutant load after treatment.

Table 7.18 Water quality objectives

Metric	Objective
Gross pollutants	90%
Total suspended solids (TSS)	85%
Total phosphorus (TP)	60%

Total nitrogen (TN)	45%
Total hydrocarbons	90%

As can be seen in Table 7.19, Costin Roe (2020) predicted the proposed stormwater treatment train will reduce pollutant loads more than the objectives.

Table 7.19 Costin Roe (2020) modelling results

Metric	Source	Residual	% reduction	Target met
Flow (ML/yr)	43.9	41.3	5.8	No target
TSS (kg/yr)	14,200	1,300	90.8	Y
TP (kg/yr)	24.0	5.99	75.1	Y
TN (kg/yr)	105	54.6	47.9	Y
Gross pollutants (kg/yr)	1,180	0	100	Y

Costin Roe provided further analysis of results in July 2021, which are summarised in Table 7.20

Table 7.20 Daily sample levels

Inflow	Mean	Standard deviation	Median	Maximum	Minimum	10 percentile	90 percentile
Flow (cubic metres/sec)	0.00116	0.00783	0.000000558	0.305	0	0	0.000312
TSS concentration (mg/L)	1.79	2.2	2.27	62	0	0	2.93
TP concentration (mg/L)	0.0409	0.0312	0.0577	0.244	0	0	0.0669
TN concentration (mg/L)	0.414	0.34	0.6	2.87	0	0	0.6

7.7.3 Surface water management – general

The water management measures in the consent and Appendix 2 of the consent are reproduced in Table 7.21.

Table 7.21 Surface water management measures – general

Measure	Timing/ frequency
▪ The development will comply with section 120 of the POEO Act, which prohibits the pollution of waters.	At all times
▪ Prepare a Flood Emergency Response Plan, which will be submitted to DPIE prior to	Prior to

operation of the DSRRC – refer to Annex C.	operations
▪ Energy dissipators will be provided on stormwater outlet structures in accordance with Guidelines for Waterfront Land and NSW Department of Primary Industries 'Guidelines for Outlet Structures'.	At all times
▪ Downer will apply for a trade waste agreement prior to discharging liquid waste to sewer.	Prior to operations
▪ The stormwater management system will be maintained during operation of the DSRRC in accordance with Section 7.6.4.	At all times

7.7.4 Surface water management system – maintenance

Overview

It is important that each component of the water quality treatment train is properly operated and maintained. In order to achieve the design treatment objectives, an indicative maintenance schedule has been prepared (refer to Table 7.22).

The inspection frequency may vary depending on site specific attributes and rainfall patterns in the area. In addition to the maintenance requirements below it is also recommended that inspections are made following heavy rainfall or major storm events.

The water management system should be inspected as soon as practicable following an intense period of rainfall, (i.e. greater than 100mm over 48 hours), as measured at Parramatta North Weather Station No. 66124.

Types of maintenance

Water sensitive urban design (WSUD) assets require both proactive and reactive maintenance to ensure long term system health and performance.

Proactive maintenance refers to regular scheduled maintenance tasks, whereas reactive maintenance is required to address unscheduled maintenance issues. If an asset is not functioning as intended, then rectification may be required to restore the asset back to its intended functionality.

The preferred and recommended approach is for proactive maintenance.

Proactive maintenance

Proactive maintenance is a set of scheduled tasks to ensure that the WSUD asset is operating as designed.

Proactive maintenance involves:

- Regular inspections of the WSUD asset.
- Scheduled maintenance tasks for issues that are known to require regular attention (e.g. litter removal, sediment removal, weed control, replacing filter baskets in stormwater drain inlets, scour management).
- Responsive maintenance tasks following inspections for issues which require irregular attention (e.g. spill clean-up).

Proactive maintenance in the first two years after the establishment period (construction and planting phases) are the most intensive and important to the long-term success of the treatment asset.

Proactive maintenance is a cost-effective means of reducing the long-term costs associated with operating stormwater treatment assets.

Maintenance activities specific to each WSUD asset type are detailed in the inspection and maintenance schedules and checklists provided in Table 7.22. The frequency of scheduled maintenance depends on the asset type and the issue being managed.

Reactive maintenance

Reactive maintenance is undertaken when a problem or fault is identified that is beyond the scope of proactive maintenance. Reactive maintenance may occur following a complaint about the quality of water discharging from a WSUD asset or in response to an onsite spill. Reactive maintenance often requires a swift response and may involve specialist equipment or skills.

Rectification

Rectification of a WSUD asset is undertaken when the system is not functioning as intended, and proactive and reactive maintenance activities are unable to return the asset to functional condition.

The lack of functional performance and therefore failure of a stormwater treatment asset may be related to many factors including inappropriate design, poor construction, and lack of regular maintenance or end of life cycle. In many cases, the design of assets has not included adequate consideration of the maintenance requirements, in terms of the system's ability to cope with catchment pollutant loads (i.e. sediments) and the frequency of maintenance required to maintain the system at a functional level.

Maintenance planning at the design phase is therefore crucial to both the long-term operating costs and the expected life cycle of the treatment system. In general, the expected lifecycle of a stormwater treatment asset (e.g. a bio-retention system) that has been well designed and constructed and is regularly maintained should be at least 15-20 years.

However, the lifecycle for each treatment system will be different and related to:

- Whether the system has been designed, constructed and maintained according to best practice.
- Catchment characteristics (influences the quality of the stormwater).
- The age and general health of the system.
- The type of plants that have been used in the system.

Regular asset condition assessments should be undertaken to monitor the system condition and to inform where an asset is in terms of its expected lifecycle. Renewal of a system refers to replacing the main elements of the system including:

- built elements if they are damaged or worn.
- Removing deposited sediment, removing and replacing the topsoil (or filter media in the case of a bio-retention system) and profiling the topsoil level back to the design levels.
- Re-planting.

A WSUD specialist may be required to assess whether a treatment system has reached the end of its life cycle and to provide advice on the renewal works.

Asset condition assessments can also identify assets that need to be rectified. The decision to continue with an increased maintenance regime or to rectify an asset, and over what timeframe, can be a difficult one to make. This is because certain maintenance items are more important to overall system function than others. For example, extended ponding on the surface of a bio-retention system or persistent scouring of a swale or stormwater outfall should be addressed more rapidly than recurrent weed problems.

Routine inspection and maintenance schedule for general stormwater system

Routine inspections are to be carried out to assess the need for maintenance and are primarily concerned with checking the functionality of the stormwater drainage facilities described in Table *7.22*. Maintenance of these items is vitally important for the ongoing drainage and treatment of stormwater.

Should the inspection reveal that maintenance of any item is required, this is to be reported to the site supervisor for action.

Items that are to be subject to routine inspections for maintenance may comprise, but not be limited to those listed in the table below. This table is to be read in conjunction with the stormwater design drawings.

It is vitally important that each component of the stormwater system is properly operated and maintained. In order to achieve the modelled and design treatment outcomes, a maintenance schedule has been prepared

(below) to assist in the effective operation and maintenance of the various drainage and water quality components.

Refer to Appendix A of Costin Roe (2020) for the design drawings of the components in Table *7.22*.

Table 7.22 Maintenance schedule

Action	Frequency	Responsibility	Procedure
Swales and landscaped areas			
Check density of vegetation and ensure minimum height of 150mm is maintained. Check for any evidence of weed infestation.	Between six months and one year.	Production Manager	Replant and/or fertilise, weed and water in accordance with LMP.
Inspect swale for excessive litter and sediment build up.	Between six months and one year.	Production Manager	Remove sediment and litter and recycle onsite or dispose at licensed waste facility.
Check for any evidence of channelisation and erosion.	Six monthly/ after major storm.	Production Manager	Reinstate eroded areas so that original, designed swale profile is maintained.
Weed infestation	Between six months and one year.	Production Manager	Remove any weed infestation ensuring all root ball of weed is removed. Replace with vegetation where required.
Inspect swale surface for erosion	Between six months and one year	Production Manager	Replace topsoil in eroded area and cover and secure with biodegradable fabric. Cut hole in fabric and revegetate.
Reconomy			
Check for any clogging and blockage of the first flush device.	Six monthly/ after major storm.	Reconomy Production Manager	First flush device to be cleaned out.
Rainwater tank			
Check for any clogging and blockage of the first flush device.	Six monthly/ after major storm.	Production Manager	First flush device to be cleaned out.
Check for any clogging and blockage of the tank inlet - leaf/litter screen.	Between six months and one year.	Production Manager	Leaves and debris to be removed from the inlet leaf/litter screen.
Check the level of sediment within the tank.	Every two years.	Production Manager	Sediment and debris to be removed from rainwater tank floor if sediment level is greater than 10% of the tank volume.

Inlet and junction pits			
Inside pit.	Six monthly.	Production Manager	Remove grate and inspect internal walls and base, repair where required. Remove any collected sediment, debris, litter.
Outside of pit.	Six monthly/ after major storm.	Production Manager	Clean grate of collected sediment, debris, litter and vegetation.
Stormwater system			
General Inspection of complete stormwater drainage system.	Bi-annually.	Production Manager	Inspect all drainage structures noting any dilapidation in structures and carry out required repairs.
Check filter baskets	Six monthly/ after major storm.	Production Manager	Remove sediment and litter and recycle onsite or dispose at licensed waste facility. Replace filters if necessary.
Bioretention basin			
Check all items nominated for SWALES/ LANDSCAPED AREAS above.	Refer to SWALES/ LANDSCAPED AREAS section above.	Production Manager	Refer to SWALES/ LANDSCAPED AREAS section above.
Check for sediment accumulation at inflow points.	Six monthly/ after major storm.	Production Manager	Remove sediment and recycle onsite or dispose at licensed waste facility..
Check for erosion at inlet.	Six monthly/ after major storm.	Production Manager	Reinstate eroded areas so that original, designed profile is maintained
Check for evidence of litter.	Six monthly.	Production Manager	Remove litter and recycle onsite or dispose at licensed waste facility..
Check condition of vegetation is satisfactory (density, weeds, watering, replating, mowing/ slashing etc).	Six monthly.	Production Manager	Replant and/or fertilise, weed and water in accordance with LMP
Check for evidence of prolonged ponding, surface clogging or clogging of drainage structures.	Six monthly/ after major storm.	Production Manager	Remove sediment and recycle onsite or dispose at licensed waste facility.. Replace filter media & planting (5-10 years) – refer to appropriately qualified engineer or stormwater

			specialist
Check stormwater pipes and pits.	Six monthly/ after major storm.	Production Manager	Refer to INLET/ JUNCTION PIT and STORMWATER SYSTEM section.
Check stormwater outfall	Six monthly/ after major storm.	Production Manager	Inspect for scour downstream of outfall to establish cause. If scour is superficial and can be rectified by remedial measures such as applying jute matting and planting native groundcover, then engage a landscape architect/specialist to advise on remedial measures. If the scour is severe and due to the design of the outfall, then engage civil engineer to redesign outfall to prevent scour.
Check cut-off valve	Six monthly.	Production Manager	Check valve can be engaged from control room and is in working order.
Water quality device (gross pollutant trap)			
Refer to manufacturer operation and maintenance manual.	Refer to manufacturer operation and maintenance manual.	Production Manager	Refer to manufacturer operation and maintenance manual.

7.7.5 Surface water monitoring

Surface water verification report and long-term monitoring

As described in Section 7.6.2, Costin Roe (2020) assessed performance of the water treatment system against council's DCP water quality objectives in mean annual and maximum terms. The predicted mean annual and maximum levels for analytes in discharges provide guidance for long term assessment of performance of the water management system.

Discharges from the bioretention basin will be sampled for the analytes in Table 7.19 during every discharge for the first 18 months of operation. The results of this monitoring will be used to establish the pollutant reduction trend and allow comparison with the predicted load reductions in Table 7.19.

If after the first 12 months of operation the analytes are tracking near to the annual mean then it will be assumed the water management system is functioning as predicted and will be maintained as described in Section 7.6.4.

If at any time any of the analytes are near or exceed the predicted maximum levels, then the actions in Table *7.22* will be implemented immediately to determine the cause of the higher pollutant loads and implement the associated management measures.

Additionally, the responsible person will review the site operations which have potential to generate the pollutants to determine if they are being carried out as described in the EIS/consent/OEMP and rectify those operations if necessary.

The discharge will be ceased using the cut-off valve until the above actions are complete, with basin water reused onsite.

If the analytes remain near or exceed the maximum predicted levels in the next sampling event then the discharge will be ceased and water in the bioretention basin treated (for example with flocculant/absorbent material) until the cause has been determined and resolved. A civil or environmental engineer will be engaged to review and modify the water management system to improve its performance.

The above monitoring and review process will continue until analytes in discharges track towards the predicted annual mean.

The monitoring results will be used in the surface water verification report required under Condition B29, which states:

> A Surface Water Verification Report (SWVR) must be submitted to the Planning Secretary and the EPA within eighteen (18) months (or as otherwise agreed by the Planning Secretary) of the commencement of all operations associated with the DSRRC. The SWVR must:
>
> (a) include an analysis of compliance with the maximum concentrations identified under condition B27(c) undertaken to the satisfaction of the Planning Secretary;
>
> (b) demonstrate that all reasonable and feasible mitigation measures have been incorporated into the development;
>
> (c) reference manufacturer's specifications and/or performance guarantees;
>
> (d) an outline of management actions to be taken to address any exceedances of the maximum concentrations identified under condition B27; and
>
> (e) describe the contingency measures and the timing of their implementation in the event the management actions are not effective in reducing water quality impacts to an acceptable level.

Oil and grease (as an indicator of hydrocarbon pollution) be included in surface water testing/verification programs to verify that proposed management and treatment procedures are effective.

The SWVR will also contain:

- A detailed description of the sampling location(s) and site conditions when samples were taken. Engineering drawings, schematics or photographs should be included to support the description.
- All information required to be sampled and assessed in accordance with the Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales.

For each site surface water discharge point, the SWVR will:

- Assess the potential compliance of measured discharges on the environmental values of the receiving waterway consistent with the interim Sydney Harbour and Parramatta River Water Quality and River Flow Objectives.
- Where relevant, identify appropriate measures to mitigate any identified impacts. Consistent with the principles of the NSW Water Quality Objectives, the discharge impact assessment must demonstrate that the premises will maintain the environmental values of the receiving waterway where they are currently being achieved.

Once, the stormwater discharged from the site is demonstrated to consistently meet the water quality objectives then water quality monitoring will be reduced to one event per year. If this annual monitoring identifies exceedance(s) of the maximum concentrations/levels in Table 7.20 then the action plan outlined in Section 7.6.4 will be repeated and monitoring will continue until the concentrations in Table 7.20 are achieved for the next two discharges from the bioretention basin.

Quality control

Water quality samples will be taken in accordance with NSW guidance for surface water sampling and by a suitably trained and experienced sampler. Samples will be analysed by a National Association of Testing Authorities accredited laboratory.

Surface water incidents and non-compliances

If at any time discharges from the bioretention basin are odorous or discoloured, or impacts to biota near the outlet are observed, the discharge will cease and water treated/reused onsite until the above actions are complete.

This will be treated as an incident/non-compliance and the process in Section 10.3 will be implemented, which will incorporate the above actions.

7.8 Noise monitoring

7.8.1 Complaints

As described in Table 11.1, noise will be monitored following a noise complaint and assessed against the limits in Table 7.23 to verify that the noise is from site activities and to identify the source of the noise.

The environmental complaints procedure in Section 10.4 will be implemented.

Table 7.23 Noise limits

Location	Day (dB(A) $L_{Aeq(15min)}$)	Evening (dB(A) $L_{Aeq(15min)}$)	Night (dB(A) $L_{Aeq(15min)}$)	Night (dB(A) L_{Amax})
R1A – 72 River Road, Ermington	30	30	33	52
R1B – 530 John Street, Rydalmere	31	31	34	52
R2A – 86 Carnarvon Street, Silverwater	34	34	37	53
R2B – 101 Beaconsfield Street, Silverwater	36	35	38	53
R3A – 71 Penelope Lucas Lane, Rosehill	30	30	30	55
R3B – 88 James Ruse Drive, Rosehill	30	32	30	55
FR01 – 181 James Ruse Drive	30	30	30	55

Noise generated by the development is to be measured and assessed in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Noise Policy for Industry (as may be updated or replaced from time to time).

7.8.2 Noise verification report

A noise verification report will be prepared in accordance with Condition B17 as follows:

A Noise Verification Report (NVR) must be submitted to the EPA and the Planning Secretary within three months of the commencement of operation of the DSRRC. The NVR must be prepared by a suitably qualified and experienced acoustic consultant and include:

a. an analysis of compliance with noise limits specified in condition B16, undertaken to the satisfaction of the Planning Secretary and in accordance with the Noise Policy for Industry (EPA, 2017);
b. demonstrate that all reasonable and feasible mitigation measures have been incorporated into the development;
c. reference manufacturer's specifications and/or performance guarantees for the asphalt plant;
d. an outline of management actions to be taken to where the limits specified in condition B16 have been exceeded; and

e. describe the contingency measures and the timing of their implementation in the event the management actions are not effective in reducing the noise impacts to an acceptable level.

The noise verification report (Report) will also contain:

a. A detailed description of the monitoring location(s) and atmospheric conditions when samples were taken. Engineering drawings, schematics or photographs should be included to support the description.
b. A description of the process operating conditions at the time of monitoring; including;
    a. description of the process (e.g. processing rates, materials produced, products used, activities)
    b. description of all noise control systems

7.9 Change Management

Zero Harm related changes in the workplace are managed using ***DG-DM-PR003 Operational Change Management Procedure***, which describes the change management process of:

- Initiate and plan the change.
- Consult on the change.
- Approve the change.
- Implement the change.
- Review the change.

7.10 Subcontractor management

Subcontractors comply with the requirements of the subcontract agreement, which includes the details of all environmental requirements while performing works under the control and direction of Downer.

Subcontractor personnel adopt the same responsibilities as outlined for Downer personnel, inclusive of reporting all matters relating to health, safety, and the environment.

Pre-qualification evaluation and assessment, engagement, review and on-site management and monitoring of subcontractors is undertaken as per ***DG-ZH-ST025 Visitor Management***.

8 TRAINING AND AWARENESS

Downer recognises the importance of employee training and induction, and the critical role it plays in supporting the safe and environmentally responsible conduct of site operations.

Downer promotes the following:

- A person must not undertake an activity that pollutes, or might pollute, the environment unless the person takes all reasonable and practicable measures to prevent or minimise any resulting environmental harm.
- In determining what training is required, the following are considered (amongst other things):
    - The nature of the pollution or potential pollution and the sensitivity of the receiving environment.
    - The current state of technical knowledge and likelihood of successful application of the activities that might be taken.
    - The financial implications of the activities that might be taken, as those implications relate to the class of person undertaking activities of the same or a similar kind.

Downer manages site activities in such a manner as to:

- minimise impact to the environmental; and
- educate personnel on their responsibilities relating to protecting the environment.

All personnel have environmental management responsibilities, and Downer ensures that these responsibilities are communicated to all personnel via appropriate environmental management training, including the initial environment induction.

8.1 Environmental principles

Downer has established ***DG-ZH-PN002 10 Environmental Principles*** that is a set of fundamental principles that all sites adhere to at all times. The Environmental Principles are prominently displayed on-site in communal areas, on notice boards and the Downer **IMS**.

8.2 Inductions

Environmental awareness training is provided to all personnel involved with the site, including all subcontractors and visitors, via inductions, as per ***DG-HR-ST013 Training & Competency Management Standard***.

A site specific induction is delivered to all personnel and subcontractors highlighting the hazards specific to the site, and the controls necessary to manage them appropriately. Induction handbooks and associated training presentations may be used for the induction. Personnel are re-inducted annually. The environmental component of the induction is tailored for each group of inductees (as applicable) to ensure that specific components of work are adequately addressed. This method of environmental awareness training ensures that all personnel are aware of:

- The importance of conformance with environmental policy and procedures and the requirements of the OEMP and associated sub-plans.
- ***DG-ZH-PN002 10 Environmental Principles***
- The significant environmental aspects of the site works and the environmental benefits of improved work performance.
- Their roles and environmental responsibilities for achieving conformance with environmental policy and procedures and with the OEMP, including site emergency preparedness and response requirements.
- The potential consequences of departure from specified operating procedures.

All personnel, including subcontractors, attend inductions prior to commencing work on the site. Records of inductions are recorded in the site's training matrix.

Induction and environmental training

The environmental induction training will cover all elements of the OEMP and will include, as a minimum, the following:

- Purpose and objectives of the OEMP.
- Requirements of due diligence and duty of care.
- Conditions of any environmental licences, permits and approvals.
- Potential environmental emergencies on site and the emergency response procedures, locations and training in the use of emergency spill kits for spills on water and on land.
- Reporting, notification and management requirements for pollution, contamination and other environmental incidents, and for damage and maintenance to environmental controls.
- High-risk activities and associated environmental safeguards i.e. night works, operation, washing, refuelling and maintenance of plant and equipment.
- Working in or near environmentally sensitive areas.
- Site-specific issues including:
    - Water quality controls (Section 7.6).

Induction and environmental training
▪ Air quality controls (Section 7.4). ▪ Restricted access to the Duck River riparian corridor (Section 7.2). ▪ Noise management controls (Section 7.2). ▪ Driver code of conduct to prevent impacts on road users from operation of the site (Annex D). ▪ Incident management processes (Section 10). Toolbox talks will be held to identify environmental issues and controls when environmental issues arise on site. The toolbox talk will include but not be limited to: ▪ A description of the activity and the area. ▪ Identification of the environmental issues and risks for the area. ▪ Outline the mitigations measures for the works and the area (Chapter 7).

8.2.1 Visitor inductions

Subcontractors that attend site on an intermittent basis, e.g. a delivery driver, are typically inducted on a visitor basis. Subcontractors are assessed by the relevant member of the site team on a case-by-case situation to determine if a subcontractor is required to undertake a visitor induction or full site induction.

A visitor induction is valid for a period of one year.

8.3 Training

Employee training and competency requirements are reviewed annually, or as an employee's role changes.

Downer maintains a database of training records and employee competencies that provides capabilities such as tracking expiry of time limited competencies and programming of training requirements.

Personnel who undertake activities with significant environmental risk complete specialist environmental training, which is conducted by Downer, in addition to the environmental induction.

Specialist training includes, but is not limited to:

- erosion and sediment control principles and practise
- dust control procedures
- response in heavy rain events
- vehicle wash down procedures
- emergency response procedures; and
- hazardous materials spill response.

Selected personnel, including all plant service personnel, undertake awareness training in the correct use of spill response kits.

Personnel involved in asbestos identification and removal must be trained in the following nationally recognised units:

- CPCCDE3015 – Remove friable asbestos.
- CPCCDE3014 – Remove non-friable asbestos.

Personnel managing asbestos will work under the supervision of a person trained in the nationally recognise unit CPCCDE4008 – Supervise asbestos removal.

9 COMMUNICATIONS

9.1 General communication

Achieving effective communication between all parties is critical to ensure that the requirements of this OEMP are met.

Downer uses a number of methods to communicate with employees, subcontractors, and visitors. The requirements, frequency, information, and methods of recording communication are outlined in ***DG-ZH-ST014 Zero Harm Communication Standard*** and ***DG-ZH-PR028 Zero Harm Risk Management Procedure.***

Typical methods of communication on site include:

- Pre-start meetings.
- Zero Harm start-up (i.e. pre-commencement) toolbox talks.
- Zero Harm inductions.
- Noticeboards.
- Toolbox talks.
- Environment alerts.

Pre-start and toolbox meetings include delivering key environmental messages and audit and inspection results and communicating environmental risks for the scheduled activities.

The Production Manager ensures that relevant documentation is filed electronically, and hard copies made available to personnel. Hard copy documentation made available to personnel typically includes:

- Standard operating procedures.
- Work instructions.
- Fatal risk control standards.
- Risk assessments.
- Minutes of meetings.
- Copies of pertinent legislation and codes of practice.

9.2 External communication

9.2.1 Production Manager

Refer to Annex G for Production Manager's responsibilities in relation to external communications.

9.2.2 Stakeholders

Primary community stakeholders during operations will comprise the following:

- Immediate neighbours:
  - Viva Energy.
  - Goodman Property.
  - Charter Hall Rosehill Distribution Centre.
  - Rosehill Gardens.
- Properties along the access/egress routes between James Rouse Drive and the site and Parramatta Road and the site.
- Residences in Silverwater to the south of Duck River.

9.2.3 Communications information

Downer will provide accurate communications information to relevant stakeholders and the community regarding operational activities and environmental matters, including:

- Prior to commencement of operations: a program of commencement and details of mitigation measures to minimise community impacts.
- Environmental incidents, including any associated community impacts and mitigation measures.

Downer's 24-hour contact is Paul Sherry mobile 0419 789 505, email ***paul.sherry@downergroup.com***.

9.2.4 Information channels

The site phone number, email and direct mail address will provide the community the opportunity to gain information about the site and raise any concerns. Both enquiries and complaints will provide important feedback to improve site processes and mitigation measures to avoid or minimise further complaints.

These numbers and contact details will be included on all notifications, signage and advertisements.

9.2.5 Meetings with stakeholders

Downer will coordinate engagement activities with key stakeholders and the community if required. Meetings or briefings with stakeholders may be organised to discuss environmental incidents. Suitable or specialist people will be available to attend these meetings.

Relevant material will be presented and/or distributed at these meetings.

9.2.6 Media and government relations

Downer will implement the following protocols if contacted by the media or a government representative:

- Ensure no statement (written, verbal or photographs) is provided to media or government representatives regarding the site, without the prior written approval of Downer executive management.
- Do not permit media or government representatives onsite without prior written approval from Downer executive management.

9.2.7 Access to information

During operation of the site, Downer will:

(a) make the following information and documents (as they are obtained or approved) publicly available on its website:

i. the documents referred to in condition A2 of the consent;

ii. all current statutory approvals for the development;

iii. all approved strategies, plans and programs required under the conditions of the consent;

iv. the proposed staging plans for the development if the construction, operation or decommissioning of the development is to be staged;

v. regular reporting on the environmental performance of the development in accordance with the reporting requirements in any plans or programs approved under the conditions of the consent;

vi. 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;

vii. a summary of the current stage and progress of the development;

viii. contact details to enquire about the development or to make a complaint;

ix. a complaints register (INX), updated as required;

xii. any other matter required by the Planning Secretary; and

(b) keep such information up to date, to the satisfaction of the Planning Secretary.

10MONITORING AND CORRECTIVE ACTION

10.1 Audit and inspection

10.1.1 Downer audits and inspections

Downer conducts internal environmental audits in accordance ***DG-ZH-PR007 ZH Project Performance Monitoring and Reporting Procedure*** to ensure the ongoing adequacy and effectiveness of the EMP and **EMS**, and to facilitate continuous improvement.

Environmental audits are planned and scheduled with all other site audits, and detail the type of audit, duration, auditors (including the Lead Auditor), and dates.

The findings from internal audits on the implementation of the OEMP and **IMS** for the site are provided to the Production Manager. The Production Manager will hold regular discussions with the site team to identify changes to operational activities that will address audit findings and facilitate continual improvement during operation of the site.

Audits are conducted by personnel with the relevant expertise.

In addition to planned internal audits, the site team verifies environmental conformance to the OEMP as per the reviews in Table 11.1 and ***DG-ZH-PR116.1 Inspections Procedure***.

Table 10.1 Environmental reviews

Type of review	Goal	Frequency
Meteorology	▪ Meteorological data including rainfall will be monitored.	▪ Daily.
Solid wastes	▪ Recycling where practical and economically feasible. ▪ Appropriate use of landfill site for disposal. ▪ Appropriate placement and use of site amenities.	▪ Spot checks of recycling facilities. ▪ Informal daily, formal monthly inspections using the environmental inspection checklist.
Biodiversity	▪ Compliance with the site's biodiversity management measures (Section 7.2). ▪ 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 the surrounding area.	Informal daily inspections of the site to locate any fauna that may have become trapped, formal monthly inspections of the Duck River riparian corridor using the environmental inspection checklist.
Stormwater management	▪ Discharges to satisfy objectives in Section 7.6.5.	▪ Informal daily, formal monthly inspections using the environmental inspection checklist. ▪ Water quality tested as described in Section 7.6.5.
Work site storage and handling of fuels, oils, chemicals, and paints	Compliance with dangerous substances regulations.	Informal daily, formal monthly inspections using the environmental inspection checklist.

Type of review	Goal	Frequency
Hydrocarbon and oil spills	▪ Minimal hydrocarbon and oil spills by use of well maintained construction plant and on-site refuelling protocols. ▪ All accidental spills contained and don't pollute groundwater/ surface water. ▪ Compliance with management measures.	Continuous monitoring by Environmental Advisor and/ or Site Supervisor. Spot checks of sites and monthly inspections using the environmental inspection checklist.
Air quality and dust management	▪ No visible dust off-site. ▪ No dust complaints. ▪ No odour complaints ▪ Compliance with the management measures.	Continuous monitoring by Environmental Advisor and/ or Site Supervisor. Spot checks of the site and monthly inspections using the environmental inspection checklist.
Noise	▪ No noise complaints.	Noise complaints will be investigated which may include an assessment of activities occurring on site at the time of the complaint.
Traffic management	▪ No visible mud/ dirt being tracked onto public roads. ▪ No complaints about heavy vehicles using the local road network. ▪ No complaints from neighbouring industrial premises about impacts to their property access/ egress.	Continuous monitoring by Environmental Advisor and/ or Site Supervisor. Monthly inspections using the environmental inspection checklist.
Applicable impact mitigation strategies	Compliance to task-based risk assessment requirements and the OEMP and any relevant sub-plans.	Formal review to be periodically undertaken.
Housekeeping	▪ Tidy work site with no litter and all waste contained in appropriate containers. ▪ Containers to be emptied and disposed of at appropriate intervals. ▪ No waste leaving the site unmanaged/ accidentally eg windblown waste or waste in stormwater runoff.	Informal daily, formal monthly inspections using the environmental inspection checklist.

Whenever practicable, personnel conducting an audit address identified deficiencies during the course of the inspection. In all other cases the Supervisor is responsible for ensuring action and a date for completion is assigned to each outstanding action. The Environmental Advisor monitors the progress of rectification of any outstanding corrective actions.

Results of all audits are made available to personnel via pre-start, and/ or toolbox meetings.

10.1.2 Compliance audit

Condition C16 of the consent states that within one year of the commencement of operations of the DSRRC, and every three years after, unless the Planning Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit (Audit) of the development. Audits must:

(a) be prepared in accordance with the Independent Audit Post Approval Requirements (Department 2020)
(b) be led and conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Planning Secretary; and
(c) be submitted to the satisfaction of the Planning Secretary within three months of commissioning the Audit (or within another timeframe agreed by the Planning Secretary).

Condition C17 of the consent states that, in accordance with the specific requirements in the Independent Audit Post Approval Requirements (Department 2020), the Applicant must:

(a) review and respond to each Independent Audit Report prepared under condition C16 of this consent;
(b) submit the response to the Planning Secretary and any other NSW agency that requests it, together with a timetable for the implementation of the recommendations;
(c) implement the recommendations to the satisfaction of the Planning Secretary; and
(d) make each Independent Audit Report and response to it publicly available no later than 60 days after submission to the Planning Secretary and notify the Planning Secretary in writing at least 7 days before this is done.

Condition C18 of the consent states that, any condition of this consent that requires the carrying out of monitoring or an environmental audit, whether directly or by way of a plan, strategy or program, is taken to be a condition requiring monitoring or an environmental audit under Division 9.4 of Part 9 of the EP&A Act. This includes conditions in respect of incident notification, reporting and response, non-compliance notification, compliance reporting and independent auditing.

Note: For the purposes of this condition, as set out in the EP&A Act, “monitoring” is monitoring of the development to provide data on compliance with the consent or on the environmental impact of the development, and an “environmental audit” is a periodic or particular documented evaluation of the development to provide information on compliance with the consent or the environmental management or impact of the development.

10.2 Subcontractor audits

Subcontractors are required to audit their workspace, as communicated to the subcontractor through the tender and contract. Compliance with this requirement is a contract deliverable and is defined in the vendor data requirements. Refer to the site’s procurement and supply management plan for further information. The environmental audit requirements are communicated to the procurement team for inclusion in the tender documents.

The reviews listed in the table in section *10.1 Audit and inspection* also apply to subcontractor activities and workspaces.

10.3 Incident and environmental non-compliance

For the purposes of this OEMP, an ‘incident’ is *an occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance*. A ‘non-compliance’ is *an occurrence, set of circumstances or development that is a breach of the consent*.

Non-compliances and incidents are registered and controlled in accordance ***DG-ZH-PR006 Incident Management Procedure*** and using **INX InControl**.

Possible non-compliances include non-compliance with the management measures outlined in this OEMP and sub-plans.

Where detected, any non-compliance or environmental impact exceeding specified limits are investigated by the Environmental Advisor to determine the extent of possible non-conformance. The non-compliance is corrected as soon as possible with necessary action taken to prevent recurrence.

All non-compliances are reported and clearly identify the corrective/ preventative actions to be taken and the close-out date.

10.3.1 Responsibility

The responsibilities of personnel in relation to incidents and non-conformances are summarised in Annex G.

The induction and toolbox talks outlined in Chapter 9 will be used to ensure all site employees, contractors and subcontractors are aware of and understand their obligations for incident and/or non-compliance response.

10.3.2 Notification requirements

Incidents

Section 147 of the POEO Act defines material harm as:

(a) harm to the environment is material if:

(i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or

(ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000 (or such other amount as is prescribed by the regulations), and

(b) loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.

Notification responsibilities for incidents that have caused or threaten to cause material harm to the environment are detailed in Section 148 of the POEO Act. In summary, these are broadly categorised as:

Duty of an employee or any person undertaking an activity:

Any person engaged as an employee or undertaking an activity with regard to the site will, immediately after becoming aware of any potential incident (even if outside of normal business hours), notify the Production Manager of the incident and all relevant information about it. The Production Manager will be available 24 hours a day, seven days a week and have the authority to stop or direct works.

Duty of an employer or occupier of the premises to notify:

The employer or occupier of the premises (in this case, the Production Manager) on which the incident occurred, who is notified (or otherwise becomes aware of) of the incident, will immediately notify the relevant authorities about the incident and all relevant information.

Under the POEO Act, ‘relevant authority’ means any of the following:

- The appropriate regulatory authority – the Environment Protection Authority (EPA).
- If the EPA is not the appropriate regulatory authority – the local authority for the area in which the pollution incident occurs (i.e. council).
- NSW Public Health Unit.
- SafeWork NSW.
- Fire and Rescue NSW.

Table 11.2 lists the contact details for these authorities. The person reporting the pollution incident will provide the following key details:

- Location of the pollution incident/emergency.
- Nature of the pollution incident/emergency.
- Their name and contact details.

- Details of any required assistance.

Table 10.2 Relevant authorities

Authority	Contact	Details
DPIE	Compliance Unit	1300 305 695 or 02 9228 6111 compliance@planning.nsw.gov.au
EPA	Environment Line	131 555 info@environment.nsw.gov.au
	Head office (Sydney)	02 9995 5000
Parramatta City Council	Main switchboard	1300 617 058 or 02 9806 5050
NSW Public Health Unit	Western Sydney Local Health District	(02) 8890 5555
SafeWork NSW	Incident Notification Hotline	131 050 Select Option 3 to report a serious incident or fatality – this will result in the incident being recorded and the appropriate person being contacted.
Emergency Services	NSW Police NSW Fire and Rescue NSW Ambulance Service	131 444 1300 729 579 Emergency: 000

Once becoming aware of an incident, Downer will immediately (within 24 hours) notify the DPIE, via the Major site's website, and other relevant agencies if an incident, or potential incident, causes (or may cause) harm to the environment. The notification must identify the development (including the development application number and the name of the development if it has one) and set out the location and nature of the incident. Subsequent notification requirements must be given, and reports submitted in accordance with the requirements set out in Appendix 3 of Annex A.

Non-compliances

DPIE will be notified via the Major Projects website within seven days of becoming aware of any non-compliance.

A non-compliance notification will identify the development and the application number for it, set out the condition of consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, taken to address the non-compliance.

A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

10.3.3 Incidents and non-compliance procedure

Upon becoming aware of an incident and/or non-compliance, the procedure outlined below will be followed.

1. Preventative action

Where possible and safe to do so, immediate action will be taken to prevent, stop, contain and/or minimise the environmental impact of the incident and/or non-compliance.

In the unlikely event that an incident and/or non-compliance requires the evacuation of the site, actions will be completed in accordance with evacuation procedures. All employees and contractors are to be made aware of the location of emergency assembly areas through site inductions, signage and regular toolbox talks.

2. Assistance

If adequate internal resources are not available and the incident and/or non-compliance threatens public health, property or the environment, it is essential that Fire and Rescue NSW be contacted by telephoning 000 for emergency assistance.

Contacting Fire and Rescue NSW does not negate the notification requirements in the above table.

3. Notify

Under the provisions of the POEO Act, there is a duty to notify any incident that has caused or threatens to cause material harm to the environment and all relevant information about the incident. The specific duties to notify are outlined above.

If there is a serious incident or emergency, it is more than likely that Fire and Rescue NSW will take control and manage the required investigation and remedial activities. Any instructions issued will be strictly adhered to.

DPIE and other relevant authorities be provided with a written incident notification via the Major Projects website within 24 hours after the incident.

A written notification will:

- Identify the development and application number.
- Provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident).
- Identify how the incident was detected.
- Identify when the Applicant became aware of the incident.
- Identify any actual or potential non-compliance with conditions of consent.
- Describe what immediate steps were taken in relation to the incident.
- Identify further action(s) that will be taken in relation to the incident.
- Identify a site contact for further communication regarding the incident.

Non-compliances will be notified in accordance with Section 10.3.2.

4. Investigate

Immediately investigate the cause of the incident and/or non-compliance.

5. Remedial action

Address the cause of the incident and/or non-compliance and mitigate any further environmental impact. In some instances, outside resources such as specialist contractors/consultants may be required.

6. Record

It is imperative that an honest assessment of the situation is carried out and documented in order to minimise the potential for similar events in the future. On this basis, every incident is to be recorded in an incident report in INX. A copy of the completed report will be maintained for at least five years.

A detailed incident report be provided to the DPIE within 30 days of the incident occurring.

The detailed incident report will include:

- A summary of the incident.
- Outcomes of an incident investigation, including identification of the cause of the incident.
- Details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence.

- Details of any communication with other stakeholders regarding the incident.
- All non-compliances are recorded.

7. Preventative action

Once the incident and/or non-compliance has been suitably handled, appropriate measures will be identified and implemented to reduce the possibility of re-occurrence.

10.3.4 Minor environmental incidents

There is the possibility of minor environmental incidents occurring as part of this site. A 'minor environmental incident' is where there has been no potential or actual material harm to the environment. Examples are excessive dust sighted by the site team or a small contained hydrocarbon spill that does not leave a site boundary and are cleaned up without residual on-site environmental harm.

Minor environmental incidents will still be handled under the process outlined in Section 10.3.3 except there will be no requirement for government notification. All minor or major incidents will be recorded in Downers INX system. A minor incident does not constitute a non-compliance with the consent.

10.4 Environmental complaints

Third-party environmental complaints are managed in accordance with ***DG-ZH-ST014 Zero Harm Communication Standard***. Specifically, the Site will:

- Record complaints as an incident in **INX.**
- Maintain a specific odour complaint log.
- Investigate and verify complaints and assesses if excessive off-site impacts have occurred.
- Implement corrective measures including modification of execution methods and operational techniques to avoid recurrence or minimise ongoing adverse impacts.
- Completes monitoring/ additional investigations to verify the adequacy of the recommendations, as required.
- Notifies the complainant of actions taken; and
- Continues to monitor activity, if required.

10.4.1 Responsibility

The Production Manager is responsible for ensuring that the appropriate management response and handling procedures are instigated and carried through in the event of an environmental complaint. The induction and toolbox talks will be used to ensure all site employees are aware of and understand their obligations for complaints response.

All employees who take receipt of a complaint, either verbal or written, are to immediately notify the Production Manager.

10.4.2 Procedure

1. Record and acknowledge

Any employee who receives a complaint, either verbal or written, is to immediately notify the Production Manager.

In the normal course of events, the first contact for complaints will usually be made in person or by telephone. The complainant's name, address and contact details, along with the nature of the complaint, will be requested. If the complainant refuses to supply the requested information, a note will be made on the form and the complainant advised of this.

2. Assess and prioritise

The Production Manager will prioritise all complaints by considering the seriousness of the complaint including risk to health and safety and will attempt to provide an immediate response via phone or email.

3. Investigate

A field investigation will be initiated to confirm details relevant to the complaint and the cause of the problem. Any monitoring information and/or records at and around the time of the complaint will be reviewed for any abnormality or incident that may have resulted in the complaint.

If the complaint is due to an incident, the notification requirements and handling procedures outlined in Section 10.3 will be followed.

4. Action or rectify

Once the cause of the complaint has been established, every possible effort will be made to undertake appropriate action to rectify the cause of the complaint and mitigate any further impact. The Production Manager will assess whether the complaint is founded or unfounded and delegate the remediation, as required.

5. Respond to complainant

The Production Manager will oversee the rectification of the issue and respond to the complainant once the issue has been resolved. The complainant will be provided with a follow up verbal response on what action is proposed. Where a complaint cannot be resolved by the initial or follow-up verbal response, a written response will be provided to the complainant.

6. Record

Every complaint received is to be recorded in the Downer INX System. In accordance with Condition C19 of SSD 10459, records of relevant complaints will be will be updated within INX monthly.

7. Preventive action

Once the complaint has been suitably handled, appropriate measures will be identified and implemented to negate the possibility of re-occurrence. The complaint is not closed out and the Complaints Register is not finalised until the preventative actions are completed and recorded.

10.4.3 Dispute resolution

Downer's dispute resolution process meets the requirements of the Work Health and Safety Regulation 2011 and is included in ***DG-ZH-ST013 Zero Harm Worker Consultation Standard***.

If there is a dispute between Downer and Council or a public authority, in relation to an applicable requirement in the consent or relevant matter relating to construction, either party may refer the matter to the Planning Secretary for resolution. The Planning Secretary's determination of any such dispute will be final and binding on the parties.

In the case of a dispute between Downer and a community member/complainant, either party may refer the matter to the DPIE and/or relevant regulatory authority for consideration, advice and/or negotiation. If the matter escalates, a third party mediator may be required.

10.5 Environmental Breach

Subcontractors found to be in breach of this OEMP are managed in accordance with the subcontract under which they have been engaged.

Employees who breach the requirements of this OEMP are managed in accordance with the site's employee relations management plan. Personnel found to be grossly negligent or commit an intentional environmental breach are removed from site and managed in accordance with the site's employee relations management plan.

10.6 Reporting

Environmental performance is Environmental performance is reported in accordance with ***DG-ZH-PR007 Zero Harm Performance Monitoring and Reporting Procedure***.

As per ***DG-ZH-PR077.1 Sustainability Data Collection and Reporting Procedure***, regular reporting for Downer includes:

- greenhouse gas and energy data; and
- waste generation and water consumption data, gathered using the Subcontractor Envizi Data Collection Record.

Other reporting requirements are summarised in Table 11.3.

Table 10.3 Other reporting requirements

Requirement	Timing/ frequency	CoA/ OEMP reference
The Planning Secretary must be notified in writing via the Major Projects website immediately after the Applicant becomes aware of an incident. The notification must identify the development (including the development application number and the name of the development if it has one) and set out the location and nature of the incident. Subsequent notification requirements must be given, and reports submitted in accordance with the requirements set out in Appendix 3 (of Annex A).	Within 24 hours	SSD 10459 Condition C10
The Planning Secretary must be notified in writing to the Major Projects website within seven days after the Applicant becomes aware of any non-compliance.	Within 7 days	SSD 10459 Condition C11
A register of all complaints, incidents and non-compliances will be kept.	For at least 5 years after completion	OEMP sections 10.3.4 and 10.4.2
Downer will record environmental performance during regular management meetings and/or 'toolbox talks'. Items to be discussed and recorded include: ▪ Results of any monitoring activities. ▪ Any environmental incidents that have occurred during the previous period, including the management/ corrective actions taken. ▪ Any complaints that have been received during the previous period, including any management/ corrective actions taken.	Monthly	OEMP Section 8
A copy of all environmental records will be maintained, including: ▪ Site environmental inspection reports. ▪ Environmental monitoring data. ▪ Internal and external audit reports. ▪ Reports of environmental incidents, environmental, associated actions taken, and follow-up actions. ▪ Minutes of management review meetings. ▪ Induction and training records.	For at least 5 years after completion	Best practice and OEMP sections 10.1, 10.2, 10.3.4, 10.7, 8.2 and 8.3

A waste management register will be maintained and will include: ▪ Type of waste and its classification (according to the POEO Act and *Waste Classification Guidelines*). ▪ Quantities of waste, measured in tonnes. ▪ How and where the waste was reused, recycled, stockpiled or disposed of. ▪ Date when the waste was reused, recycled, stockpiled or disposed of. ▪ Name and waste transport licence (if applicable) of the transporter used.	Ongoing	Section 7.5
Within three months after the first year of commencement of operation of the DSRRC, and in the same month each subsequent year (or such other timing as agreed by the Planning Secretary), the Applicant must submit a Compliance Report to the Planning Secretary reviewing the environmental performance of the development to the satisfaction of the Planning Secretary. Compliance Reports must be prepared in accordance with the Compliance Reporting Post Approval Requirements (Department 2020) and must also: (a) identify any trends in the monitoring data over the life of the development; (b) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and (c) describe what measures will be implemented over the next year to improve the environmental performance of the development. The Applicant must make each Compliance Report publicly available no later than 60 days after submitting it to the Planning Secretary and notify the Planning Secretary in writing at least 7 days before this is done.	Annual	SSD 10459 Condition C14

10.7 Contingency plan

The table in Annex F lists the actions to be implemented if inspections, monitoring and/or auditing indicate that the mitigation measures listed in Chapter 7 and the sub-plans are not effective in managing environmental impacts.

All condition amber and condition red occurrences will be recorded and discussed during the toolbox talks.

11 DOCUMENT CONTROL AND MANAGEMENT REVIEW

11.1 General

All site documents are generated, numbered, approved, revised, transmitted, and stored in accordance with the site's document control plan.

The OEMP review ensures the suitability, effectiveness, and adequacy of the plan. The OEMP is formally reviewed annually (as a minimum) and whenever the plan, risk, and/ or activities change from the scope/ content.

The review is conducted by a review team comprising the Production Manager (or delegate) and the Environmental Advisor/Zero Harm Advisor) and considers performance against the OEMP with respect to incident trends and findings from internal and external audits.

The Production Manager (or delegate) ensures any changes to the OEMP as a result of review/ change is communicated to personnel.

11.2 Revision of strategies, plans and programs

Within three months of:

(a) the submission of a Compliance Report under condition C14;

(b) the submission of an incident report under condition C10;

(c) the submission of an Independent Audit under condition C16;

(d) the approval of any modification of the conditions of this consent; or

(e) the issue of a direction of the Planning Secretary under condition A2(b) which requires a review,

the strategies, plans and programs required under this consent must be reviewed, and the Planning Secretary must be notified in writing that a review is being carried out.

If necessary, to either improve the environmental performance of the development, cater for a modification or comply with a direction, the strategies, plans and programs required under this consent must be revised, to the satisfaction of the Planning Secretary. Where revisions are required, the revised document must be submitted to the Planning Secretary for approval within six weeks of the review.

ANNEX A – DEVELOPMENT CONSENT SSD 10459 AND SPECIFIC REQUIREMENTS

Table A.11.1 Consent conditions

Condition		OEMP reference
Contamination		
B2	The Applicant must ensure the development does not result in a change of risk in relation to any pre-existing contamination on the site so as to result in significant contamination.	Addressed in CEMP
Air quality		
B3	The Applicant must take all reasonable steps to minimise dust generated during all works authorised by this consent.	Section 7.4
B5	The Applicant must install and operate equipment in line with best practice to ensure that the development complies with all load limits, air quality criteria/air emission limits and air quality monitoring requirements as specified in the EPL applicable to the DSRRC site.	Section 7.4
B6	Driveways and hardstand areas must be swept/cleaned as required by a street sweeper during operations. The street sweeper must be utilised to maintain the sealed surfaces in such a manner that prevents or minimises air pollution.	Section 7.4
B7	Where possible, all mobile non-road diesel equipment operated at the DSRRC site must achieve a particulate matter emission performance commensurate with US EPA Tier 4 particulate emission standards.	Section 7.4
B8	Prior to the commencement of operation of the DSRRC, the Applicant must prepare an Air Quality Management Plan (AQMP) to the satisfaction of the Planning Secretary. The AQMP must form part of the OEMP required by condition C5.	Section 7.4
B9	The Applicant must: (a) not commence operation until the AQMP required by condition B8 is approved by the Planning Secretary; and (b) implement the most recent version of the AQMP approved by the Planning Secretary for the duration of the development.	Section 7.4
B10	An Air Quality Verification Report (AQVR) must be submitted to the EPA and Planning Secretary within three (3) months of the commencement of operation of the DSRRC.	Section 7.4
B11	The Applicant must ensure the development does not cause or permit the emission of any offensive odour beyond the boundary of the site (as defined in the POEO Act).	Section 7.4
Noise		

B12	The Applicant must comply with the hours detailed in Table 1 (refer Table 7.2). Operation: Monday – Sunday: 24 hours	Table 7.2
B16	The Applicant must ensure that noise generated by the operation of the DSRRC does not exceed the noise limits in Table 2 (refer Table 7.23).	7.8.1
B17	A Noise Verification Report (NVR) must be submitted to the EPA and the Planning Secretary within three months of the commencement of operation of the DSRRC.	7.8.2
B18	The Applicant must prepare a Driver Code of Conduct and induction training for the development to minimise road traffic noise. The Code is to be incorporated into the CEMP required under condition C2 and the OEMP required under condition C5.	Annex D
Soils, water quality and hydrology		
B21	The development must comply with section 120 of the POEO Act, which prohibits the pollution of waters, except as expressly provided for in an EPL.	Table 7.21
B22	Prior to the commencement of operation of the DSRRC, the Applicant must design, install and operate a stormwater management system for the development.	Table 7.21
B23	Prior to the commencement of construction, the Applicant must prepare a Flood Emergency Response Plan (FERP). The FERP must form part of the CEMP and OEMP required by conditions C2 and C5 and must: (a) be prepared by a suitably qualified and experienced person(s); (b) address the provisions of the Floodplain Development Manual (2005) and any relevant guidelines; (c) be prepared in consultation with the State Emergency Service; (d) include details of: i. the flood emergency responses for both construction and operation phases of the development; ii. predicted flood levels; iii. flood warning time and flood notification; iv. assembly points and evacuation routes; v. evacuation and refuge protocols; and vi. awareness training for employees and contractors.	Annex C
B24	The Applicant must: (a) not commence construction until the Flood Emergency Response Plan required by condition B23 is submitted to the Planning Secretary for information purposes; and (b) implement the most recent version of the Flood Emergency Response Plan for the duration of the development.	Annex C

B27	Prior to the commencement of operation of the DSRRC, the Applicant must prepare a Surface Water Management Plan (SWMP) to the satisfaction of the Planning Secretary. The SWMP must form part of the OEMP required by condition C5.	Section 7.7
B28	The Applicant must: (a) not commence operation until the SWMP required by condition B27 is approved by the Planning Secretary; and (b) implement the most recent version of the SWMP approved by the Planning Secretary for the duration of the development.	7.7
B29	A Surface Water Verification Report (SWVR) must be submitted to the Planning Secretary and the EPA within eighteen (18) months (or as otherwise agreed by the Planning Secretary) of the commencement of all operations associated with the DSRRC.	7.7.5
Traffic		
B35	The Applicant must provide sufficient parking facilities on-site for the DSRRC, including for heavy vehicles and for site personnel, to ensure that traffic associated with the development does not utilise public streets.	Table 7.2
B36	The Applicant must ensure at the DSRRC that: (a) internal roads, driveways and parking (including grades, turn paths, sight distance requirements, aisle widths, aisle lengths and parking bay dimensions) associated with the development are constructed and maintained in accordance with the latest version of AS 2890.1:2004 Parking facilities Off-street car parking (Standards Australia, 2004), AS 2890.2:2018 Parking facilities Off-street commercial vehicle facilities (Standards Australia, 2018) and AS 2890.6.2009 Parking facilities Off-street parking for people with disabilities (Standards Australia, 2009) (b) the swept path of the longest vehicle entering and exiting the site, as well as manoeuvrability through the site, is in accordance with the relevant AUSTROADS guidelines; (c) the development does not result in any vehicles queuing on the public road network; (d) heavy vehicles and bins associated with the development are not parked on local roads or footpaths in the vicinity of the site; (e) all vehicles are wholly contained on site before being required to stop; (f) all loading and unloading of materials is carried out on-site; (g) all trucks entering or leaving the site with loads have their loads covered and do not track dirt onto the public road network; and (h) the proposed turning areas in the car park are kept clear of any obstacles, including parked cars, at all times.	Table 7.2, Annex D
Hazards and risks		

B37	Dangerous goods, as defined by the Australian Dangerous Goods Code, must be stored and handled strictly in accordance with: (a) all relevant Australian Standards; (b) for liquids, a minimum bund volume requirement of 110% of the volume of the largest single stored volume within the bund; and (c) the Environment Protection Manual for Authorised Officers: Bunding and Spill Management – technical bulletin (EPA, 1997). In the event of an inconsistency between the requirements of part (a) to (c), the most stringent requirement must prevail to the extent of the inconsistency.	Table 7.2
B38	The development must not result in the non-compliance of any existing dangerous goods fuel and gas pipelines in accordance with AS2885 Pipelines – Gas and Liquid Petroleum.	Table 7.2
Waste		
B42	From the commencement of operation of the DSRRC, the Applicant must implement a Waste Monitoring Program for the development.	7.6
B43	The Applicant must unload all waste received at the site within the designated waste unloading areas.	Table 7.12
B44	All waste processing must be undertaken within designated areas.	Table 7.12
B45	Prior to the commencement of operation of the DSRRC, the Applicant must prepare a Waste Management Plan (WMP) for the development to the satisfaction of the Planning Secretary. The WMP must form part of the OEMP required under condition C5.	7.5
B46	The Applicant must: (a) not commence operation until the WMP is approved by the Planning Secretary; (b) implement the most recent version of the WMP approved by the Planning Secretary.	7.5
B47	All waste materials removed from the site must only be directed to a waste management facility or premises lawfully permitted to accept the materials.	7.5
B48	The Applicant must assess and classify all liquid and non-liquid wastes to be taken off site in accordance with the latest version of EPA's Waste Classification Guidelines Part 1: Classifying Waste (EPA, 2014) and dispose of all wastes to a facility that may lawfully accept the waste.	7.5
B49	The Applicant must retain all sampling and waste classification data for the life of the development in accordance with the requirements of the EPA.	7.5
Pests, vermin and priority weed management		

B50	The Applicant must: (a) implement suitable measures to manage pests, vermin and declared priority weeds on the site; and (b) inspect the site on a regular basis to ensure that these measures are working effectively, and that pests, vermin or priority weeds are not present on site in sufficient numbers to pose an environmental hazard or cause the loss of amenity in the surrounding area.	Table 7.12 10.1
Visual		
B51	Prior to the commencement of construction, the Applicant must prepare a Landscape Management Plan (LMP) to manage the revegetation and landscaping works on-site, to the satisfaction of the Planning Secretary. The LMP must form part of the OEMP required under condition C5. The LMP must: (a) detail the species to be planted on-site, using only locally native species; (b) describe the monitoring and maintenance measures to manage revegetation and landscaping works; and (c) be consistent with the Applicant's Management and Mitigation Measures at Appendix 2.	Annex E
B52	The Applicant must: (a) not commence construction until the LMP is approved by the Planning Secretary. (b) must implement the most recent version of the LMP approved by the Planning Secretary; and (c) maintain the landscaping and vegetation on the site in accordance with the approved LMP required by condition B51 for the life of the development.	Annex E
Lighting		
B54	The Applicant must ensure the lighting associated with the development: (a) complies with the latest version of AS 4282-2019 - Control of the obtrusive effects of outdoor lighting (Standards Australia, 2019); and (b) is mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties, the public road network or the riparian corridor / Duck River.	Table 7.2
Signage and fencing		
B55	All signage and fencing must be erected in accordance with the development plans referenced in Appendix 1. Note: This condition does not apply to temporary construction and safety related signage and fencing.	Table 7.2
Environmental management		
C1	Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:	This OEMP

C1	be prepared by a suitably qualified and experienced person/s;	1 7.4.1 Annex C – Document control Annex E – Title page
C1(a)	details of: i. the relevant statutory requirements (including any relevant approval, licence or lease conditions);	5 Annex C – 1.1 Annex E – 1.1
C1(a)	ii. any relevant limits or performance measures and criteria; and	7.1, 7.3, 7.4.3, 7.7.2, 7.8.1. Annex F Annex C – 4
C1(a)	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;	7.2, 7.4.6, 7.7.1, 7.6.5 Annex C – 4 Annex E – 6.3
C1(b)	details of site-specific training to be provided to construction and operation personnel to ensure compliance with the plans;	8 Annex C – 5.4
C1(c)	a description of the measures to be implemented to comply with the relevant statutory requirements (including any relevant conditions under SSD 9302), limits, or performance measures and criteria;	2.2 7 Annex C – 6 Annex E – 4, 5, 6
C1(d)	a program to monitor and report on the: i. impacts and environmental performance of the development; and	7.6, 7.4.5, 7.6.5, 7.7.5, 7.8, 10.6,11 Annex C – 6 Annex E – Appendix B
C1(d)	ii. effectiveness of the management measures set out pursuant to paragraph (c) above;	7.6, 7.4.6, 7.4.7, 7.7.5, 7.8.2, 9.2.9, 10, 11 Annex C – 6 Annex E – Appendix B

C1(e)	a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;	Annex F Annex F – Appendix A
C1(f)	a program to investigate and implement ways to improve the environmental performance of the development over time;	10, 11 Annex E – Appendix B
C1(g)	a protocol for managing and reporting any: i. incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria);	10.3
C1(g)	ii. complaint;	10.4
C1(g)	iii. failure to comply with statutory requirements; and	10.6
C1(h)	a protocol for periodic review of the plan.	11 Annex E – 6.3.4
Operational environmental management plan		
C5	The Applicant must prepare an Operational Environmental Management Plan (OEMP) for the DSRRC site in accordance with the requirements of condition C1, in consultation with the EPA and to the satisfaction of the Planning Secretary.	This OEMP
C6	As part of the OEMP required under condition C5 of this consent, the Applicant must include the following:	
C6(a)	describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development;	Annex H
C6(b)	describe the procedures that would be implemented to:	
C6(b)	i. keep the local community and relevant agencies informed about the operation and environmental performance of the development;	9, 10.6
C6(b)	ii. receive, handle, respond to, and record complaints;	10.4
C6(b)	iii. resolve any disputes that may arise;	10.4.3
C6(b)	iv. respond to any non-compliance;	10.3
C6(b)	v. respond to emergencies; and	10.3.2, 10.3.3, Annex K
C6(c)	describe:	
C6(c)	i. how the DSRRC will ensure compliance with any relevant statutory obligations;	This OEMP
C6(c)	ii. the processes involved for each aspect of operation including processes for each of the individual facilities;	6, Annex I

C6(c)	iii. how each of the facilities interrelate and how they will be managed in concert with one another during operation; and	6, 7.4.4, 7.4.5
C6(c)	iv. how the operation will be managed in concert with any relevant conditions under SSD-9302 and any other relevant planning or licensing conditions related to the premises;	2.2
C6(d)	include the following environmental management plans or codes:	
C6(d)	i. Air Quality (see condition B8);	7.4
C6(d)	ii. Driver Code of Conduct (see condition B18);	Annex D
C6(d)	iii. Waste (see condition B45);	7.5, 7.6
C6(d)	iv. Flood Emergency Response (see condition B23); and	Annex C
C6(d)	v. Water (see condition B27).	7.7
C7	The Applicant must: (a) not commence operation until the OEMP is approved by the Planning Secretary; and (b) operate the development in accordance with the OEMP approved by the Planning Secretary (and as revised and approved by the Planning Secretary from time to time).	2.2
Revision of strategies, plans and programs		
C8	Within three months of: (a) the submission of a Compliance Report under condition C14; (b) the submission of an incident report under condition C10; (c) the submission of an Independent Audit under condition C16; (d) the approval of any modification of the conditions of this consent; or (e) the issue of a direction of the Planning Secretary under condition A2(b) which requires a review, the strategies, plans and programs required under this consent must be reviewed, and the Planning Secretary must be notified in writing that a review is being carried out.	11.2
C9	If necessary, to either improve the environmental performance of the development, cater for a modification or comply with a direction, the strategies, plans and programs required under this consent must be revised, to the satisfaction of the Planning Secretary. Where revisions are required, the revised document must be submitted to the Planning Secretary for approval within six weeks of the review. Note: This is to ensure strategies, plans and programs are updated on a regular basis and to incorporate any recommended measures to improve the environmental performance of the development.	11.2
Reporting and auditing		

C10	The Planning Secretary must be notified in writing via the Major Projects website immediately after the Applicant becomes aware of an incident. The notification must identify the development (including the development application number and the name of the development if it has one) and set out the location and nature of the incident. Subsequent notification requirements must be given, and reports submitted in accordance with the requirements set out in Appendix 3.	10.3.2
C11	The Planning Secretary must be notified in writing to the Major Projects website within seven days after the Applicant becomes aware of any non-compliance.	10.3.2
C12	A non-compliance notification must identify the development and the application number for it, set out the condition of consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.	10.3.2
C13	A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.	10.3.2
C14	Within three months after the first year of commencement of operation of the DSRRC, and in the same month each subsequent year (or such other timing as agreed by the Planning Secretary), the Applicant must submit a Compliance Report to the Planning Secretary reviewing the environmental performance of the development to the satisfaction of the Planning Secretary. Compliance Reports must be prepared in accordance with the Compliance Reporting Post Approval Requirements (Department 2020) and must also: (a) identify any trends in the monitoring data over the life of the development; (b) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and (c) describe what measures will be implemented over the next year to improve the environmental performance of the development.	Table 10.3
C15	The Applicant must make each Compliance Report publicly available no later than 60 days after submitting it to the Planning Secretary and notify the Planning Secretary in writing at least 7 days before this is done.	Table 10.3
C16	Within one year of the commencement of operations of the DSRRC, and every three years after, unless the Planning Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit (Audit) of the development. Audits must: (a) be prepared in accordance with the Independent Audit Post Approval Requirements (Department 2020) (b) be led and conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Planning Secretary; and (c) be submitted to the satisfaction of the Planning Secretary within three months of commissioning the Audit (or within another timeframe agreed by the Planning Secretary).	10.1.2

C17	In accordance with the specific requirements in the Independent Audit Post Approval Requirements (Department 2020), the Applicant must: (a) review and respond to each Independent Audit Report prepared under condition C16 of this consent; (b) submit the response to the Planning Secretary and any other NSW agency that requests it, together with a timetable for the implementation of the recommendations; (c) implement the recommendations to the satisfaction of the Planning Secretary; and (d) make each Independent Audit Report and response to it publicly available no later than 60 days after submission to the Planning Secretary and notify the Planning Secretary in writing at least 7 days before this is done.	10.1.2
C18	Any condition of this consent that requires the carrying out of monitoring or an environmental audit, whether directly or by way of a plan, strategy or program, is taken to be a condition requiring monitoring or an environmental audit under Division 9.4 of Part 9 of the EP&A Act. This includes conditions in respect of incident notification, reporting and response, non-compliance notification, compliance reporting and independent auditing. Note: For the purposes of this condition, as set out in the EP&A Act, “monitoring” is monitoring of the development to provide data on compliance with the consent or on the environmental impact of the development, and an “environmental audit” is a periodic or particular documented evaluation of the development to provide information on compliance with the consent or the environmental management or impact of the development.	10
Access to information		

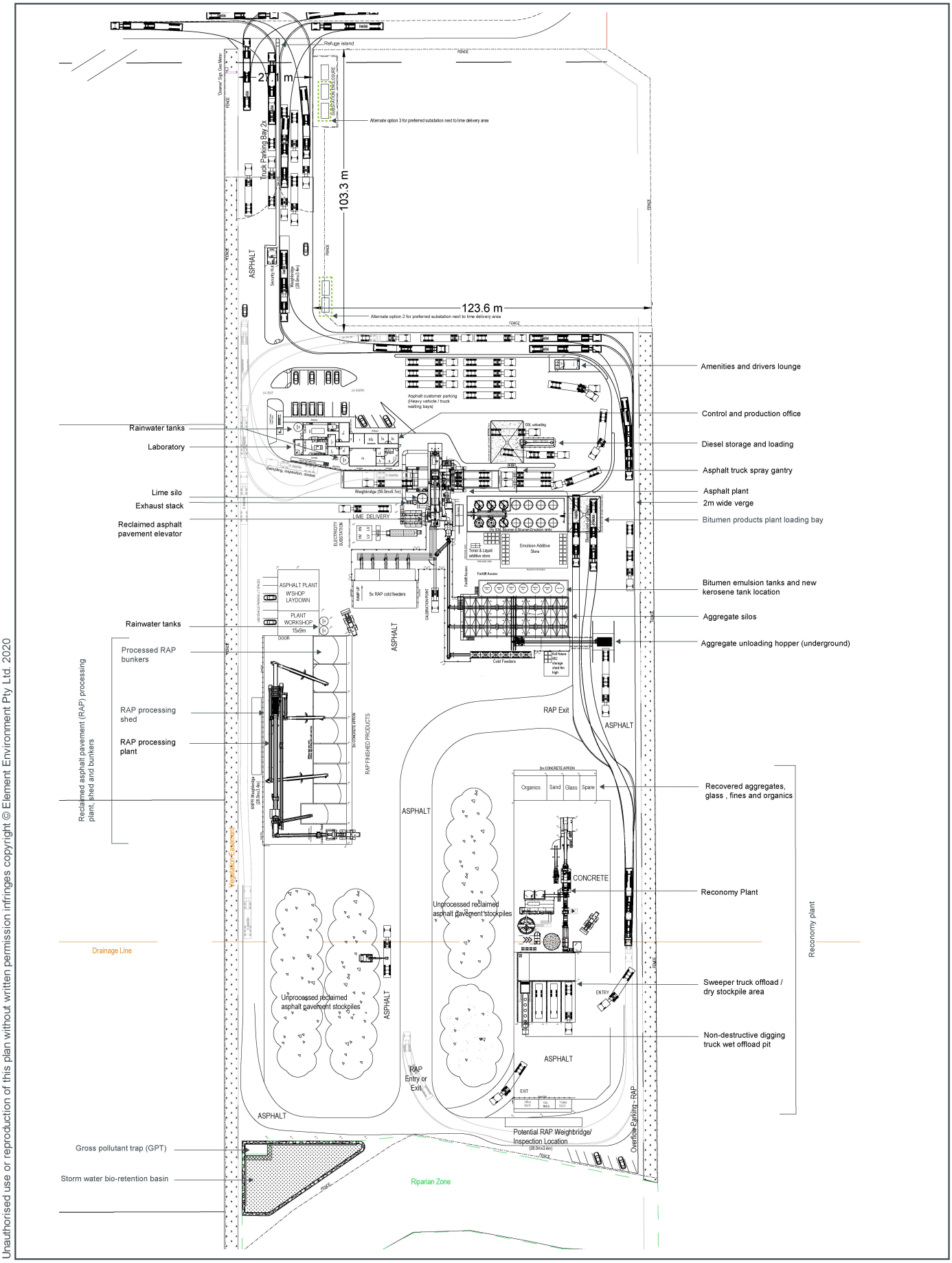
C19	At least 48 hours before the commencement of construction until the completion of all works under this consent, the Applicant must: (a) make the following information and documents (as they are obtained or approved) publicly available on its website: i. the documents referred to in condition A2 of this consent; ii. all current statutory approvals for the development; iii. all approved strategies, plans and programs required under the conditions of this consent; iv. the proposed staging plans for the development if the construction, operation or decommissioning of the development is to be staged; v. regular reporting on the environmental performance of the development in accordance with the reporting requirements in any plans or programs approved under the conditions of this consent; vi. 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; vii. a summary of the current stage and progress of the development; viii. contact details to enquire about the development or to make a complaint; ix. a complaints register, updated monthly; x. the Compliance Report of the development; xi. audit reports prepared as part of any Independent Audit of the development and the Applicant's response to the recommendations in any audit report; xii. any other matter required by the Planning Secretary; and (b) keep such information up to date, to the satisfaction of the Planning Secretary.	9.2.7

ANNEX B – SITE LAYOUT

Figure 5.1 Revised site development plan of the RTS is include below.

Figure 5.1
Revised site development plan

Central Sydney Industrial Estate incorporating the Sustainable Road Resource Centre
STATE SIGNIFICANT DEVELOPMENT - RESPONSE TO SUBMISSIONS



ANNEX C – FLOOD EMERGENCY RESPONSE PLAN

MOLINO STEWART

ENVIRONMENT & NATURAL HAZARDS

Downer EDI Works Pty Ltd

Downer Sustainable Road Resource Centre Operations Phase

Flood Emergency Response Plan

Final

Downer Sustainable Road Resource Centre Operations Phase

Flood Emergency Response Plan

Final

Client: Downer EDI Works Pty Ltd

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Cover photo from: Central Sydney Industrial Estate incorporating the Sustainable Road Resource Centre State Significant Development Application Environmental Impact Statement (September 2020) prepared by Element Environment for VE Property Pty Ltd and Downer EDI Works Pty Ltd.

February 2022

Document Control

Document Reference	1262 Downer Sustainable Road Resource Centre Operations Phase Ferp Final
Project	Downer Sustainable Road Resource Centre Operations Phase
Document Type	Flood Emergency Response Plan
Author	Filippo Dall'Osso; Kelsey Sanborn

Revision History

Date	Version	Name	Comments
05/02/2021	1.0	Filippo Dall'Osso	Draft for client review
02/09/2021	2.0	Filippo Dall'Osso	Updated draft for client review
31/01/2022	3.0	Filippo Dall'Osso	Final

Document Approval

For Molino Stewart	
Name	Dr Filippo Dall'Osso
Position	Principal
For Downer EDI Works Pty Ltd	
Name	Jason Hearn
Position	Project Manager

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1 | Introduction

The Downer Sustainable Road Resource Centre (SSD-10459), located on Lot 100 DP 1168951 at 9 Devon Street (Rosehill), is State Significant Development (SSD).

It will comprise the development and operation of a road resource facility in one of the lots (i.e. Lot 6) of the Central Sydney Industrial Estate (CSIE). Such facility is referred to as the "Downer's Sustainable Road Resource Centre" and will include an asphalt plant, reclaimed asphalt pavement processing facilities, a bitumen products plant and a detritus road waste recycling plant.

Downer EDI Works Pty Ltd has agreed with VE Property (VEP) to acquire Lot 6 of the CSIE to build the road resource facility. Lot 6 will become available as a result of the Stage 1 of the CSIE.

The Development Application for the stages of work on this site from applicant VEP has been approved subject to conditions. The development conditions related to flood risks are summarised in Table 1. The table also include a reference to which parts of this report address each condition.

Table 1. Summary of the Conditions of Consent related to flooding and where in this report these are addressed.

Condition	Addressed in Section	Notes
B23. Prior to the commencement of construction, the Applicant must prepare a Flood Emergency Response Plan (FERP). The FERP must form part of the CEMP and OEMP required by conditions C2 and C5 and must:		
(a) *be prepared by a suitably qualified and experienced person(s);*	1.2	
(b) *address the provisions of the Floodplain Development Manual (2005) and any relevant guidelines;*	1.2	
(c) *be prepared in consultation with the State Emergency Service;*	5.1	
(d) *include details of:* i. *the flood emergency responses for both construction and operation phases of the development;*	6	This FERP only covers the operations phase. A previous FERP has covered the construction phase.
ii. *predicted flood levels;*	3.3.2	
iii. *flood warning time and flood notification;*	4 and 5.2	
iv. *assembly points and evacuation routes;*	5.2	
v. *evacuation and refuge protocols; and*	6	
vi. *awareness training for employees and contractors.*	6.3.1	

B24. *The Applicant must:* (a) not commence construction until the FERP required by condition B23 is submitted to the Planning Secretary for information purposes; and (b) *implement the most recent version of the FERP for the duration of the development.* (c) *implement the most recent version of the Flood Emergency Response Plan for the duration of the development.*	N/A	Noted.
B25. *All habitable building floor levels must be no lower than the 1% Annual Exceedance Probability flood plus 500 mm of freeboard.* **B26.** *All structures that are built below the 1% Annual Exceedance Probability flood must be constructed from flood compatible building components to ensure structural stability during a flood event.*	N/A	Conditions B25 to B26 do not pertain to emergency planning and as such are not addressed by this report.

1.1 Scope of this Report

This report is the Flood Emergency Response Plan (FERP) for the operations of the Downer Sustainable Road Resource Centre in Lot 6, and fulfills the requirements of condition B23 with regard to operational activities. Flood emergency management procedures for the construction of the Downer Sustainable Road Resource Centre and the construction of the remaining industrial lots are addressed in separate FERPs.

As per condition B23 (a), this report is prepared by qualified and experienced flood consultants from Molino Stewart. The work has been prepared by Steven Molino who is a founding Principal of Molino Stewart with more than 35 years' experience in floodplain management. Steven is a leading expert in flood emergency planning in NSW, and particularly western Sydney. He is a Registered Professional Engineer NPER 3 Civil and Environmental (1053737). Working with Steven is, Dr Filippo Dall'Osso who has 14 years' experience in floodplain risk management and flood emergency response in NSW.

This FERP has been prepared in a consistent manner with the Floodplain Development Manual (2005). All staff at Molino Stewart are extremely familiar with the Floodplain Development Manual (2005) and have used this to produce several flood emergency response plans and floodplain risk management studies and plans for clients ranging from private developers, local councils to State-Government Organisations.

An Environmental Impact Statement (EIS) has been prepared for the site by Element Environment Pty Limited (Element) on behalf of VEP for submission to the NSW Department of Planning, Industry and Environment (DPIE) to gain SSD approval. The EIS included a flooding assessment produced by WMAWater. Following review of the EIS by government agencies and other relevant stakeholders, response to submissions were produced that included a number of clarifications and refinements to the original plan. This FERP draws on information presented in these documents, which are:

- Central Sydney Industrial Estate incorporating the Sustainable Road Resource Centre State Significant Development Application: Environmental Impact Statement (Element Environment, 2020a)
- Central Sydney Industrial Estate incorporating the Sustainable Road Resource Centre State Significant Development Application: Response to Submissions (Element Environment, 2020b)
- Central Sydney Industrial Estate incorporating Downer Sustainable Road Resource Centre Flooding Assessment (WMAWater, 2020a)
- Central Sydney Industrial Estate incorporating Downer Sustainable Road Resource Centre Review of Flooding Submissions (WMAWater, 2020b)

2| Description of the Development

2.1 Site Overview

Lot 6 (the site) is located in the eastern part of the Industrial Estate, at 9 Devon Street, Rosehill (lot 100 in deposited plan 1168951) within Parramatta Local Government Area (LGA) (Figure 1 and 2). Lot 6 has an area of approximately 7 ha and it is zoned IN3 Heavy Industrial.

The site is in the Duck River catchment, and the river is adjacent to the southern site boundary. The site is west of the confluence of Duck River and Parramatta River, with the latter river located approximately 900 m north of the site.

2.1.1 Access

Lot 6 has a single driveway onto Devon Street (Figure 4). Access to Devon Street from James Ruse Drive (to the site's west) is via Grand Avenue and Colquhoun Street or Durham Street. Alternatively, Devon Street can be accessed from the south from Parramatta Road via Wentworth Street, Kay Street, Unwin Street and Colquhoun Street.

2.1.2 Topography and Drainage

The construction earthworks on Lot 6 redefined the topography of the site. This comprised grading of the lot and the construction of lightly tiered pads. The pad in the northeast section of the lot is at RL 4.2 m AHD and the southern section of the lot is at RL 3.5 m AHD. Allowing for 0.3 m pavement over Lot 6, the finished floor level of the pad in the north is at RL 4.5 m AHD and the southern pad is at RL 3.8 m AHD (Element Environment, 2020a). The ground level where the Lot 6 driveway connects to Devon Street is 4.42 m AHD.

The site drains to the south towards Duck River. The lowest area within the lot is approximately 1 m AHD within the riparian zone adjacent to Duck River in the southwest corner of the site. There is a stormwater bioretention basin in the southwestern part of the site, directly to the north of the riparian zone at RL 2.0 m AHD (Figure 3).

A drainage easement extends 5 m into the lot along the eastern boundary of the lot. There is a pit and pipe stormwater drainage system around the inside of the lot boundary and through the centre of the lot (Figure 3).

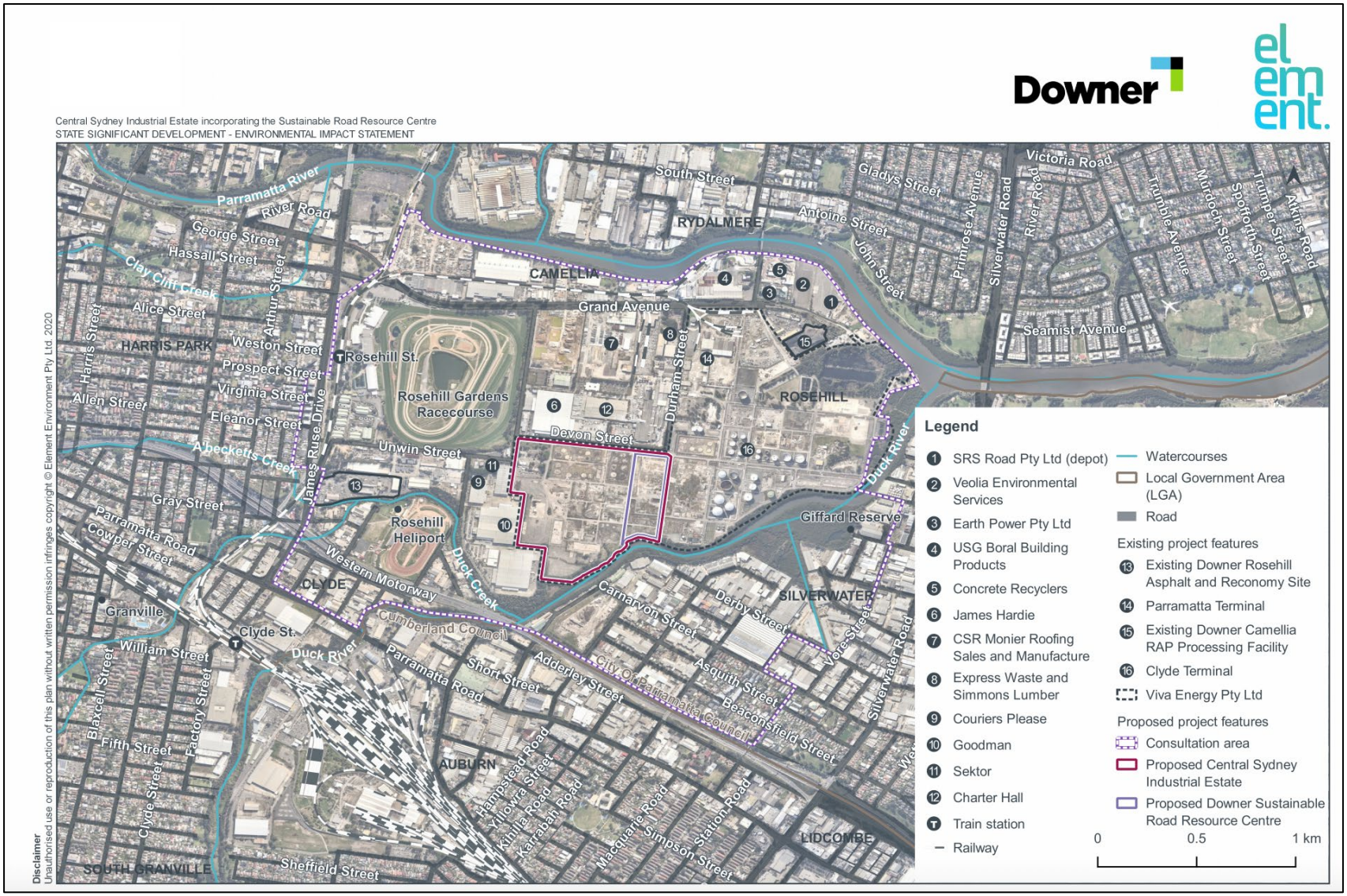

Figure 1. Local context of the site (from: Element Environment, 2020a).

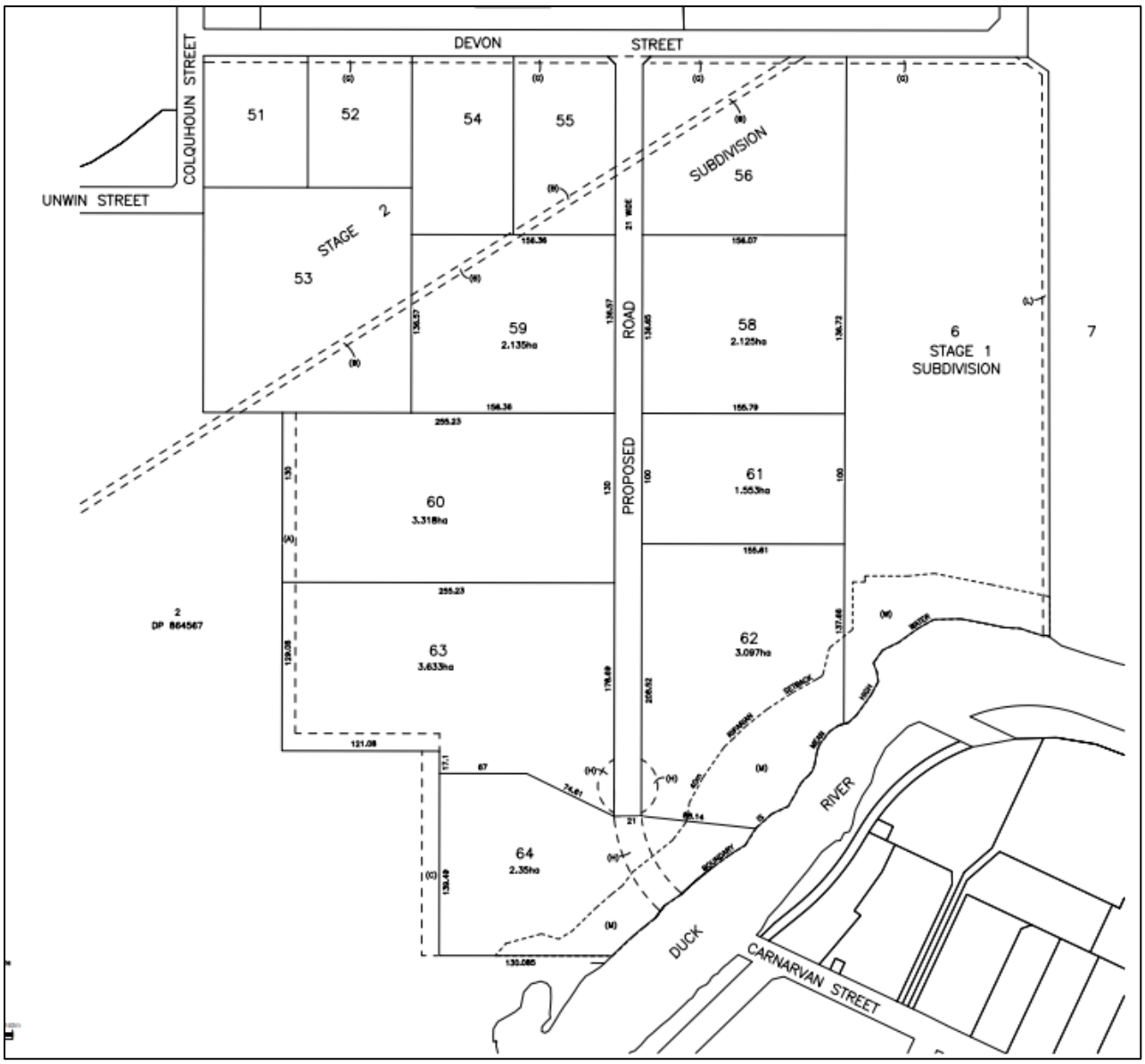

Figure 2. Location of Lot 6 (Stage 1) within the final proposed subdivision plan (from: Element Environment, 2020b).

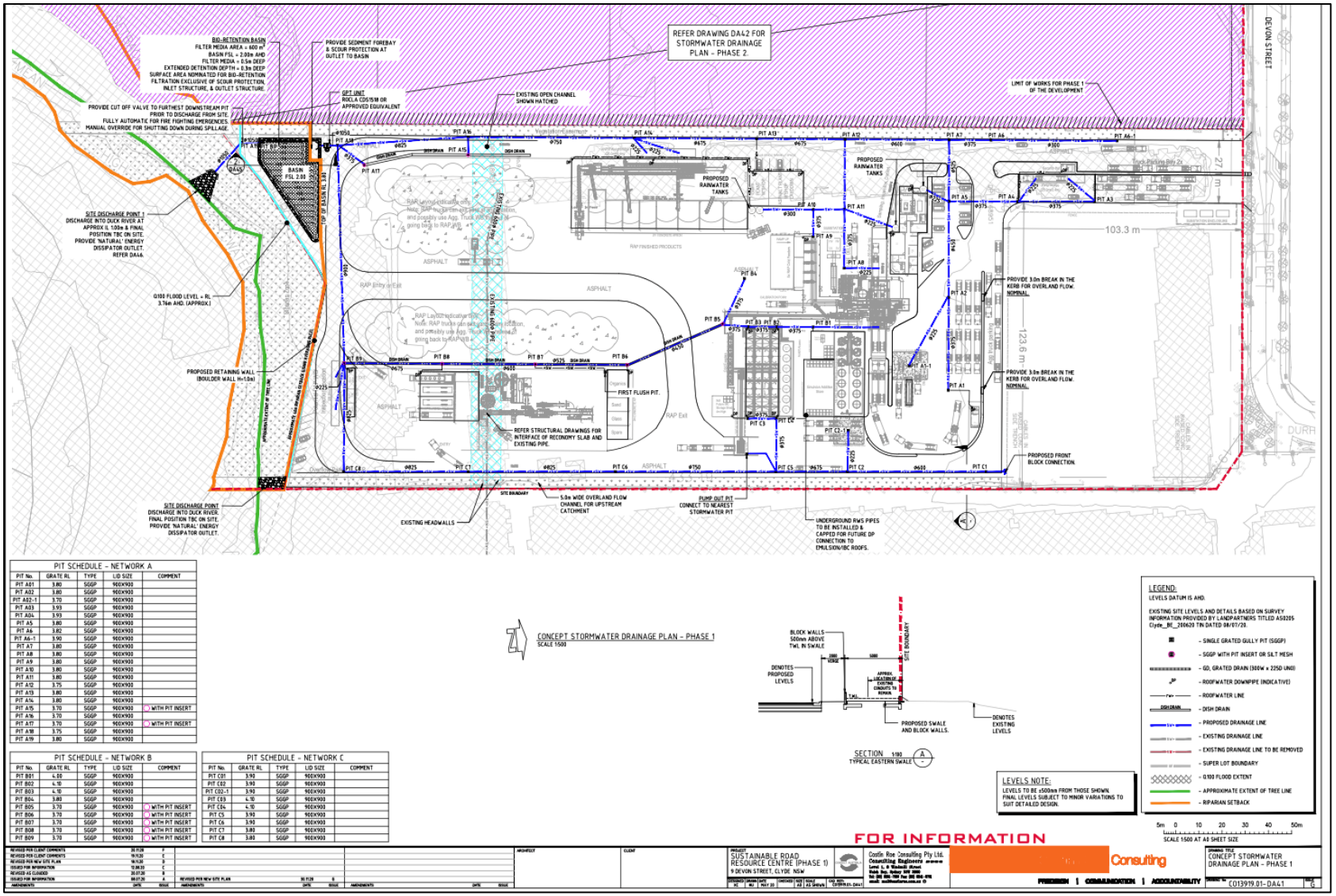

Figure 3. Surface water management plan (from: Element Environment, 2020b).

2.2 The Proposed Road Resource Centre

The Downer Sustainable Road Resource Centre is in Lot 6 (Figure 4). In the northeast corner of the lot, there is an elevated pad that was used as a laydown area during construction. After construction, it will be repurposed, leased or sold and subject to a new future development application.

The project comprises:

- **Asphalt plant:** A new fixed Ammann Universal HRT Stationary asphalt plant, which will produce up to 550,000 tonnes per annum (tpa) of asphalt. The maximum height of fixed equipment is 41 m, and approximately two thirds of the outside of the asphalt plant is clad.
- **Reclaimed asphalt pavement (RAP) facility:** Up to 250,000 tpa of RAP will be transported in tip trucks to the site and stored in dedicated RAP stockpile areas. The RAP will be granulated and screened for use in the production of asphalt or for pavement materials. The RAP plant is in a shed that is enclosed on the north, west and south sides, and open on the east side for loading and removal of product. Up to 90,000 tpa of RAP will be stored on site at a time on a 10,000 m^2 stockpile area, with maximum 10 m high stockpiles.
- **Bitumen products plant:** A co-located emulsion plant manufactures approximately 15,000 tpa of products.
- **Reconomy:** The Reconomy facility provides a recycling option for the following wastes which are traditionally landfilled:
    - Street sweeper/stormwater pit waste.
    - Hydro-excavated soil.

    Reconomy uses a customised material screening and processing plant and water treatment to recover materials which are used in the manufacture of asphalt and other road products. The facility will process up to 40,000 tpa of street sweepings, stormwater pit waste and hydro-excavated soil.

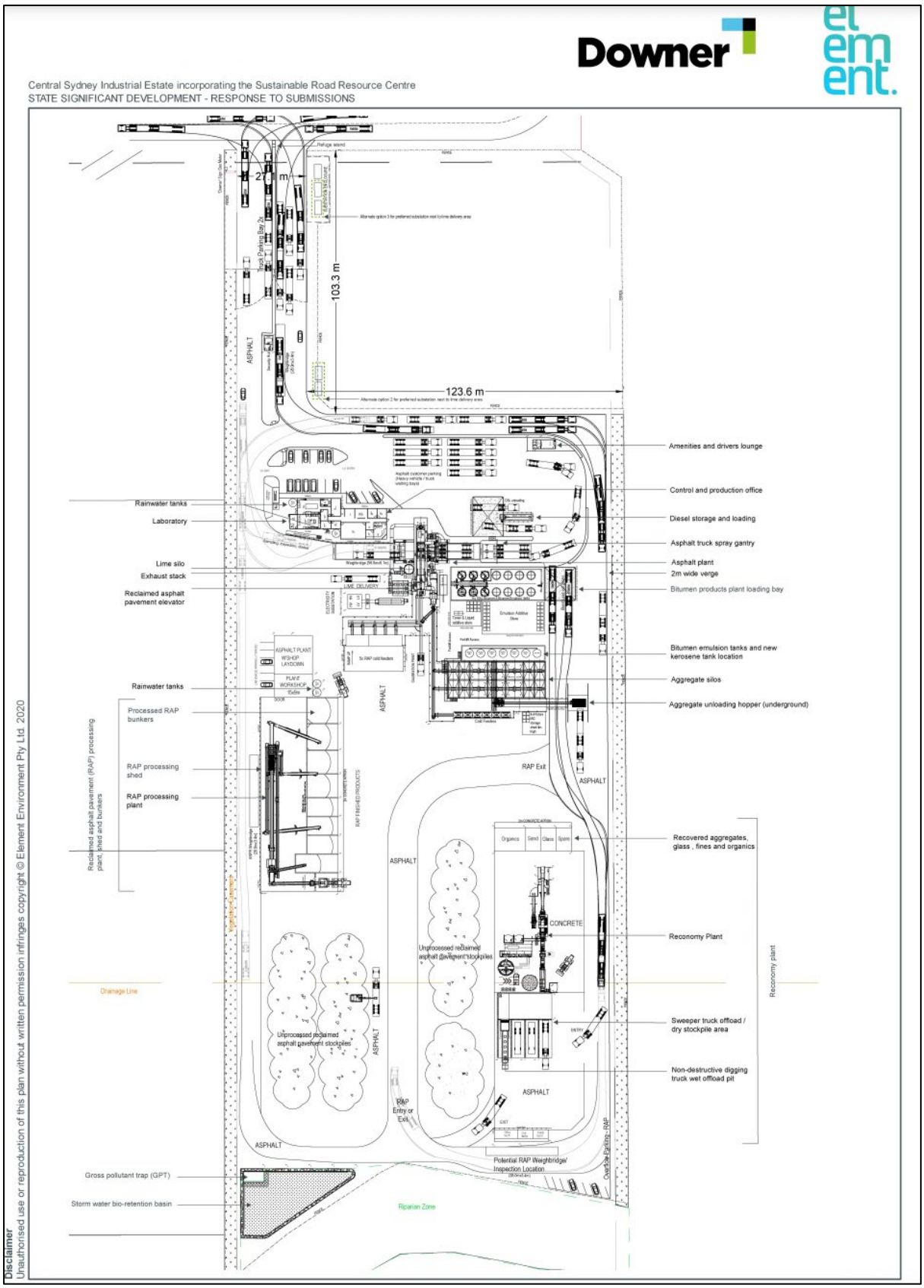

Figure 4. Layout of Lot 6 (from: Element Environment, 2020b).

2.3 Site Operations

This FERP will only address the operations of Lot 6, which is the site for the Downer Sustainable Road Resource Centre. Lot 6 has been obtained as Stage 1 of the CSIE subdivision process, while Stages 2 and 3 will generate the other 14 lots.

The proposed start date of operations is early 2022.

2.3.1 Working Hours and People on Site

The facility will operate 24-hours a day, seven days a week, 365 days a year. These operations include the arrival of raw materials and customer vehicles and product dispatch.

Forty-eight personnel will be employed to operate Stage 1 over several shifts. Twenty-eight personnel will be employed in the day shift (5am-6pm), three in the afternoon shift (2pm-10pm) and 17 in the night shift (6pm-6am). See the breakdown of personnel shifts in Table 2.

There will be a peak of 189 heavy vehicles and 48 light vehicles per day during operations. The numbers of light vehicles will approximately match the operational personnel and shift times in Table 2. There will be a total of 34 parking spaces for light vehicles on Lot 6.

Table 2. Operational Personnel (from: Element Environment, 2020a).

Component	Role	Typical Shift	Personnel
Asphalt plant	Laboratory and plant	6 am — 6 pm	10
		6 pm — 6 am	11
RAP Facility	Operator	6 am — 6pm	3
		6 pm — 6 am	2
Bitumen Products Plant	Operator	6 am — 6 pm	4
Reconomy Facility	Manager	7 am — 5 pm	1
	Supervisor	5 am — 3 pm	1
	Operator	7 am — 7 pm	1
		6 pm — 6 am	1
Weighbridge	Operator	6 am — 2 pm	3
		2 pm — 10 pm	3
		10 pm — 6 am	3
Other	Asphalt and RAP facility management staff	8 am — 5 pm	5

3| Flood Risks

3.1 Flood Generating Weather

Coastal areas of eastern Australia mostly receive flooding rains from so-called "east coast lows" that develop from time to time over the adjacent Tasman Sea. These are intense depressions off the coast and can produce thunderstorm activity associated with troughs.

Depressions can develop at any time of year, but are most likely when sea surface temperatures are high and the air is humid. Therefore, these events usually occur in the summer months and over the first half of the year.

Flooding can also be a winter-spring phenomenon, associated with unusually frequent or active extra-tropical depressions and fronts. However, some major events have occurred in the summer half-year as systems of tropical origin extend or move south. Flooding over inland areas is usually associated with southward-moving tropical systems, but in the cooler months, it may occur when well-developed cloud bands extend across the interior from the oceans north and northwest of Australia.

Rainfall patterns are also dependent on longer term weather patterns. Flooding is more prevalent in a La Nina year when rainfall is significantly greater than the mean average rainfall. Thunderstorms, which generally occur during the summer, can also result in localised flooding which could impact specifically on the site.

In summary, there are many different weather events which could cause flooding on the site.

3.2 Flood Probabilities

Flood probability can be expressed in more than one way. For example, a flood may be described as having a 100-year Average Recurrence Interval (ARI). This means that over many thousands of years, a flood of this magnitude would occur on average once in 100 years. This does not mean that a flood of this size only occurs once every 100 years. It is possible to have floods of this size in consecutive years or even two in the same year. This happened in several locations in Queensland and Victoria in 2010 and 2011.

Another way of expressing flood probability is in terms of Annual Exceedance Probability (AEP). A 100-year ARI flood has roughly a 1 in 100 AEP. That is, each year and every year it has a 1 in 100 or 1% chance of being reached or exceeded. This is perhaps a more helpful way of thinking about flood probabilities. A flood with a 1% AEP has about a 1 in 2 chance of being reached or exceeded in the average person's lifetime, the same probability of tossing a coin and getting a head. There were four floods of about this size on the Georges River between 1860 and 1889 but there has not been another since. This underlines the randomness of flood frequency.

Bigger floods can and do occur. There were several floods with greater than a 1% AEP experienced in Eastern Australia in early 2011. Some reached levels which have a 1 in 2,000 (0.05%) AEP. A flood with a 1 in 500 (0.2%) AEP has about a 1 in 6 chance of being reached or exceeded in the average person's lifetime, the same as tossing a die and getting a 6.

The largest flood that can occur is referred to as the Probable Maximum Flood (PMF). Although it has a very low probability of occurring in any one year (1 in 10,000 or less), events approaching a PMF have been recorded.

Flooding may occur at any time of year and at any time of day.

3.3 Flooding of the Site

The site can be affected or isolated by three types of flooding:

- Mainstream flooding from the Duck River
- Mainstream flooding from the Parramatta River
- Overland local flooding due to intense rainfall

The above flooding mechanisms can occur independently or concurrently. When occurring concurrently, in most cases thy will reach their peak at different times. It is however not uncommon to have overland flooding caused by intense rain just before floodwaters rise from the river.

3.3.1 Available Flood Model Results

Downer supplied the hydraulic model results for the Duck River mainstream flooding, and local overland flooding. In both cases, the model was run under existing conditions (i.e. with no proposed development in place) and design conditions (i.e. with the proposed development in place). The existing conditions models are not relevant to this report and will not be further discussed. Further details about the flood model results used to inform the emergency plan are provided below:

- **Duck River mainstream model:** This is the TUFLOW hydraulic model produced as a part of the Duck River and Duck Creek Flood Study (WMAWater, 2012). The critical storm duration adopted was the 2-hour event for the flood study. WMAWater (2020a) re-ran the mainstream model incorporating the design conditions accounting for all landworks. For the 1% AEP event and the PMF, the model assumed a concomitant steady 1% AEP event and a PMF in the Parramatta River. As such, the model shows the site being already flooded at the first model timestep, before any contributions from the Duck River. This is considered to be a very conservative scenario as it assumes two concomitant low probability events, in two distinct catchments. While it is likely that the Parramatta River will be flooding to some extent during a PMF from the Duck River, it is extremely unlikely that two PMFs would occur at the same time.
- **Overland flow model:** An overland flow model was produced by WMAWater (2020a) as a part of the flooding assessment included in the site's EIS (Element Environment, 2020a). This is a TUFLOW "Direct Rainfall" or "Rainfall on the Grid" one / two-dimensional hydraulic model. Design conditions that account for the proposed landworks were incorporated into the model. Several storm durations were run from 25 to 360 minutes, and the 120-minute event was adopted as the critical storm duration. All models were run with an assumption of 100% blockage as this is Council's preference for overland flood risk assessments. Importantly, the overland model assumed that all the depressions in the terrain were already filled with water before the beginning of the rainfall. For this reason, this model cannot predict at what point in time the low points along the access roads would cut. However, the rate of rise is such that it can be expected that, in the worst case scenario, all low points along the access roads would cut within minutes from the beginning of the rainfall event.

No flood models for flooding from the Parramatta River alone were provided. However, because the Duck River flood model assumes a steady PMF level from the Parramatta River, we were able to extract the peak depth and hazard for a PMF from the Parramatta River only, without contributions from the Duck River, by exporting the Duck River model at its first time step.

Figures 5 to 12 show the peak depth and hydraulic hazard for the 1% AEP event and PMF of the Duck River (with concomitant steady flooding of the Parramatta River), and overland flooding.

Figure 13 and 14 show the peak depth and hazard of a PMF from the Parramatta River only.

3.3.2 Flood Levels and Depths

Table 3 shows the peak flood levels and depths within Lot 6. The available flood model results do not allow extracting peak depth and levels should the Duck River flood without contributions from the Parramatta River, or with a smaller flood event in the Parramatta River.

Table 3. Peak flood depths and levels in Lot 6.

Flood Type	Flood Event	Peak Depth (m)	Peak Level (m AHD)
Overland	1% AEP	0.72	3.93
	PMF	0.86	4.63
Mainstream (concurrent peak in Duck River and Parramatta River)	1% AEP	1.25	3.77
	PMF	4.09	6.13
Mainstream (Parramatta River only)	PMF	3.55	5.52
	1% AEP	NA	NA

3.3.3 Frequency of Flooding

(a) Mainstream Flooding

With regard to mainstream flooding, in the 1% AEP event the site is generally flood free and experiences minor affectation only at its southern boundary. This is assuming that a 1% AEP flood would peak at the same time in the Duck River and Parramatta River. Access to the site would be flood-free in this event, provided that there were no concurrent overland flooding.

In case the Duck River and the Parramatta River reached the peak of the PMF event at the same time, which is an extremely unlikely scenario, the site would be isolated and severely flooded.

The NSWSES have confirmed that the intersection between Hassall Street and James Ruse Drive, which is along one of the two access routes to the site, is cut by mainstream flooding from the Parramatta River in the 20% AEP event.

The second access route, south of the site along Unwin Street, Kay Street and Wentworth Street, crosses A'Becketts Creek and Duck Creek and the NSWSES has confirmed that this route would also be cut in the 20% AEP event of the Parramatta River.

(b) Overland Flooding

In the 1% AEP event, under the assumption of full blockage of the stormwater system, the site would experience some shallow flooding and its access roads would be cut at several locations.

In the PMF, the site would be isolated and would experience more extensive flooding.

The model does not allow extracting how often local flooding would cut access to the site, because in all events all the topographic low points were artefactually filled with water before the beginning of

the rainfall. However, given the small size of the overland catchment and the frequency of flooding in the last few years, it is reasonable to expect that the site may become isolated by local flooding relatively often.

3.3.4 Flood Hazard

Hydraulic hazard is a function of flood depth and velocity and represents the threats posed by floodwaters to life and property. The Australian Rainfall and Runoff Manual classifies hydraulic hazard in six categories based on the type of impacts that floodwaters may be able to cause. These are shown in Figure 15. The available flood model results indicate that the peak hydraulic hazard on site would be as follows:

- Mainstream flooding (concurrent flood from Duck River and Parramatta River)
  - PMF: H3 to H5
  - 1% AEP Flood: H3 to H4 (only in the southern part of the site)
- Overland flooding
  - PMF: H3 to H4
  - 1% AEP Flood: H1 to H2

For reference, a PMF in the Parramatta River alone would cause a peak hazard at the site of H3 to H4.

The available flood model results do not allow extracting peak hazard should the Duck River flood without contributions from the Parramatta River, or with a smaller flood event in the Parramatta River.

Maps of the peak hydraulic hazard in each event are shown in Figure 6 (mainstream 1% AEP event), Figure 8 (mainstream PMF), Figure 10 (overland 1% AEP event), and Figure 12 (overland PMF).

3.3.5 Flood Duration and Rate of Rise

The available flood models were used to extract hydrographs of level and hydraulic hazard at low points in Devon Street, James Ruse Drive and Grand Avenue, in the mainstream and overland PMF events. These are shown in Figure 16 to Figure 19. The peak rate of rise is about 300 mm/hour in the mainstream PMF and up to 600 mm/hour in the overland flooding event. The peak of the PMF is reached within 2.5 hours from beginning of the rainfall for the mainstream PMF, and within 30 minutes for overland flooding.

Vehicular traffic is considered blocked when hydraulic hazard exceeds a value of 1. In a PMF of overland flooding this would happen within minutes from the beginning of the rainfall.

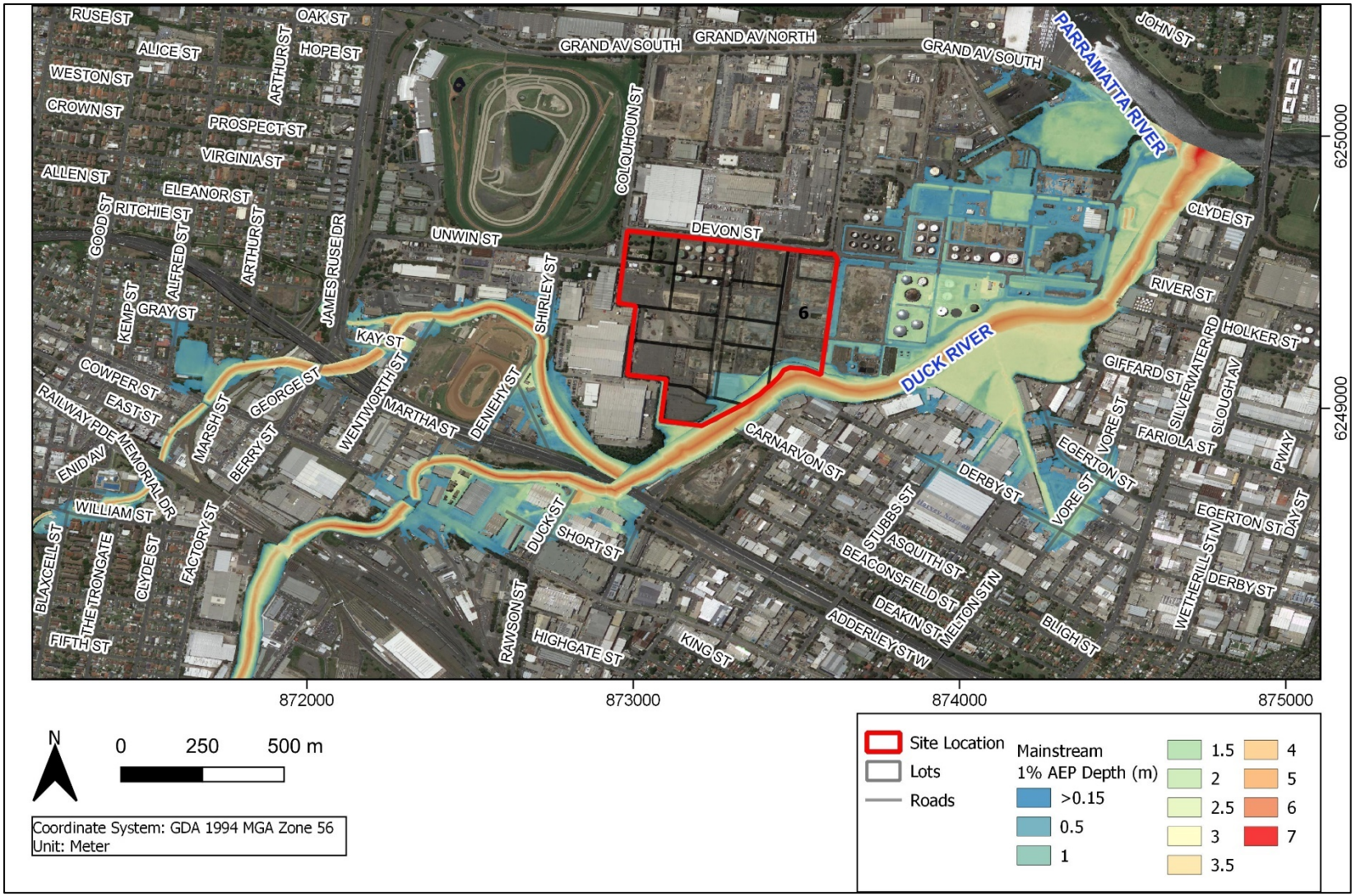

Figure 5. Peak flood depth for the 1% AEP flood on the Duck River (with concomitant steady flooding of the Parramatta River).

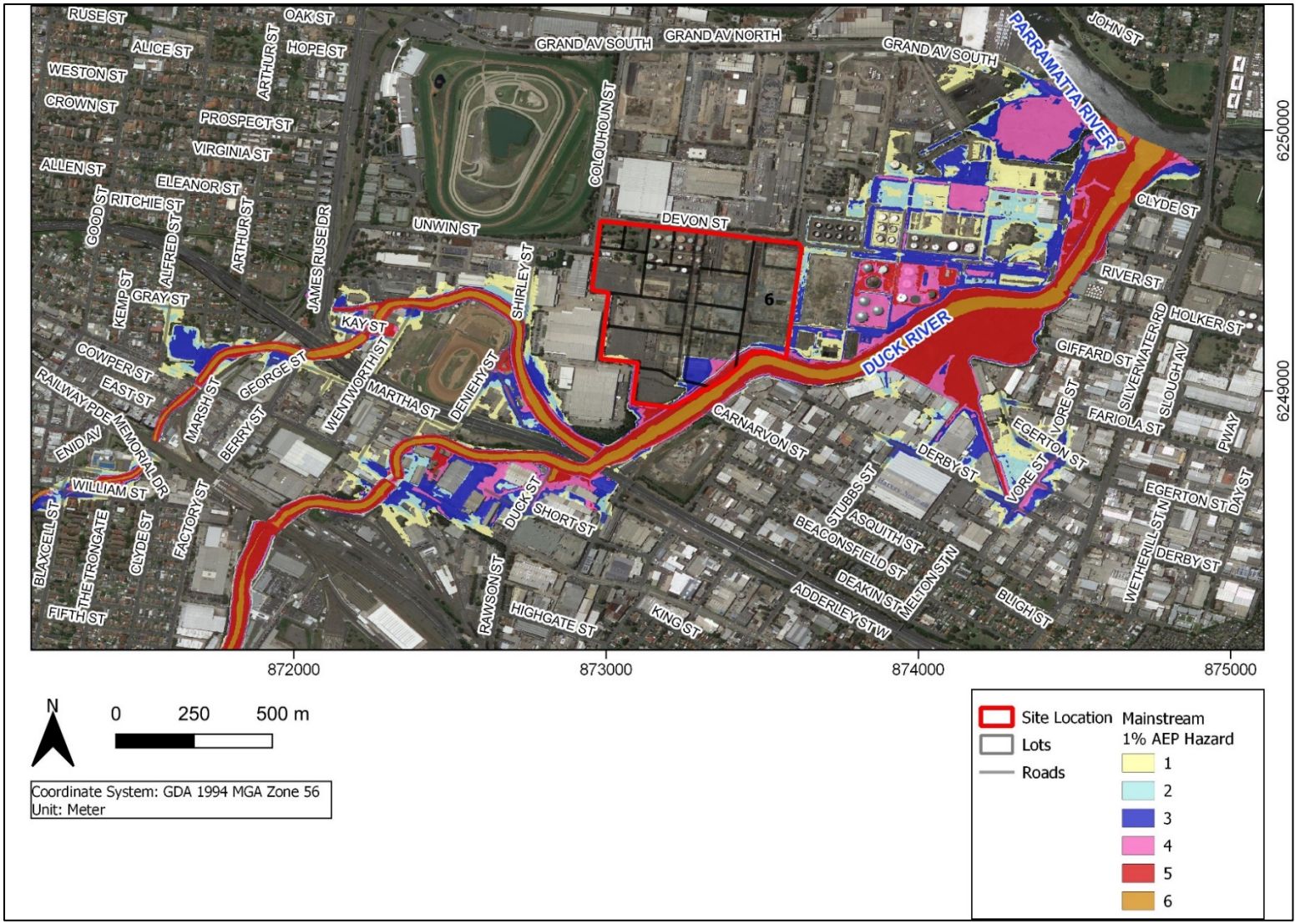

Figure 6. Peak hydraulic hazard for the 1% AEP flood on the Duck River (with concomitant steady flooding of the Parramatta River; no trim of model).

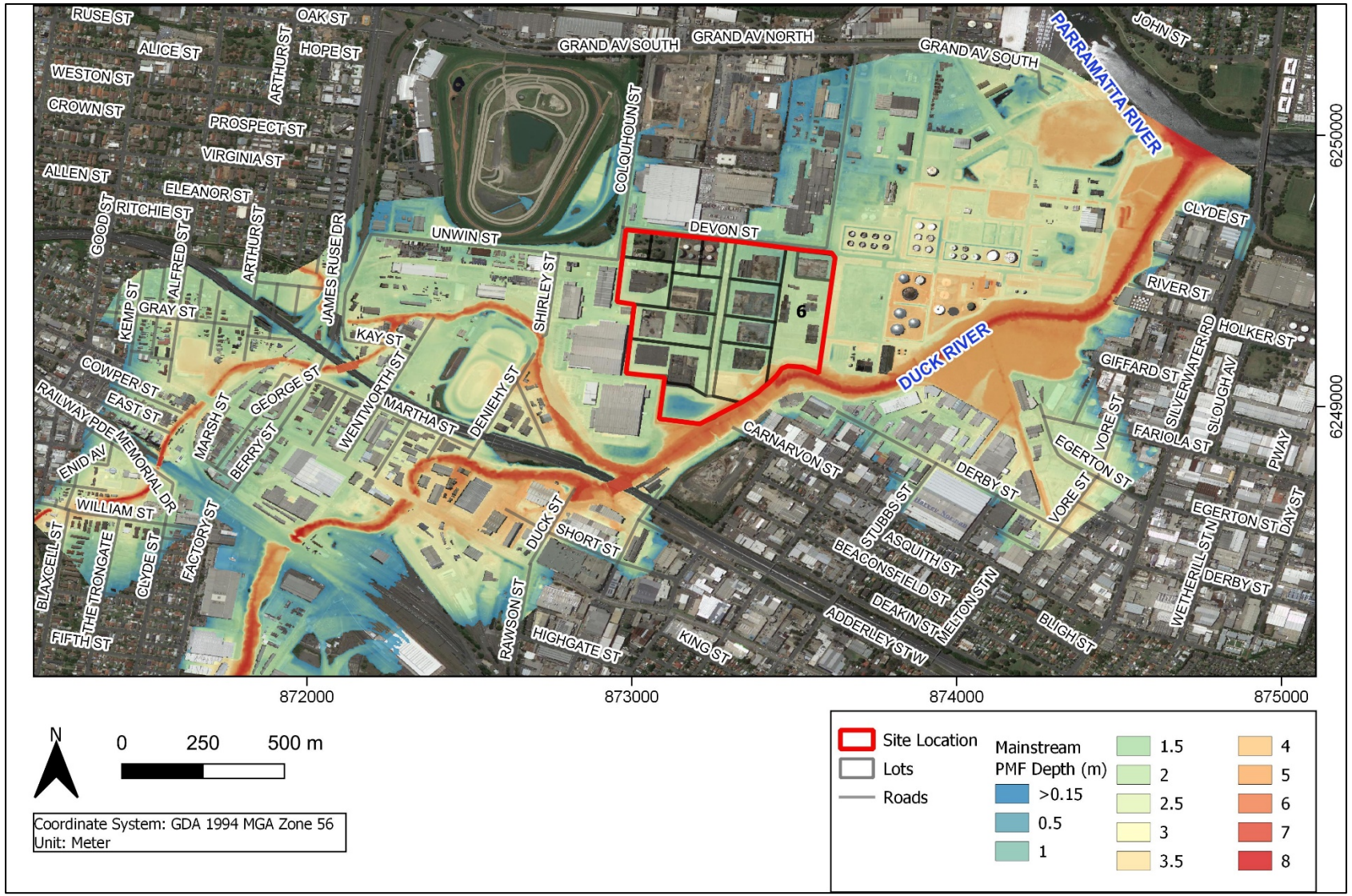

Figure 7. Peak flood depth for the PMF on the Duck River (with concomitant steady flooding of the Parramatta River).

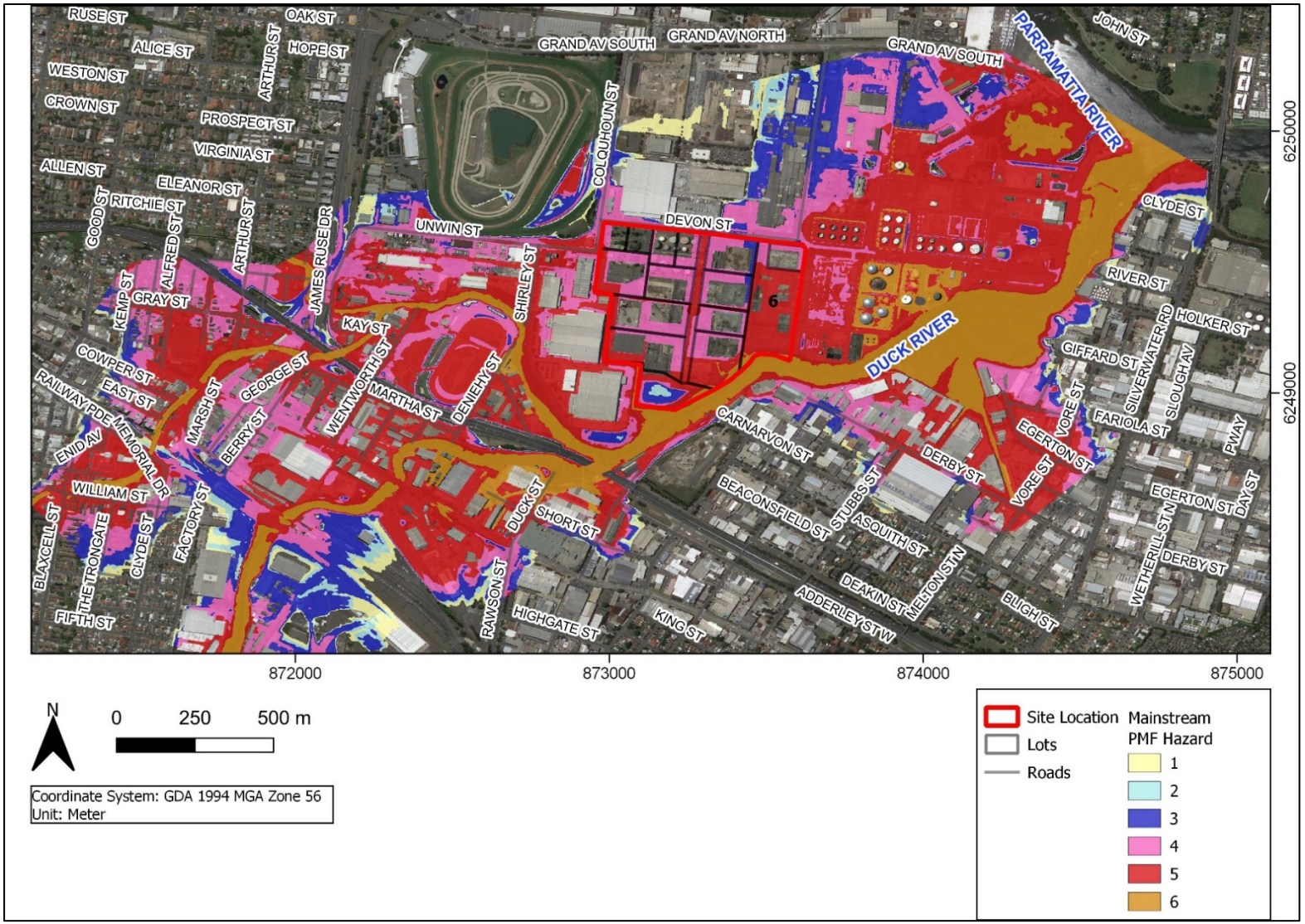

Figure 8. Peak hydraulic hazard for the PMF on the Duck River (with concomitant steady flooding of the Parramatta River; no trim of model).

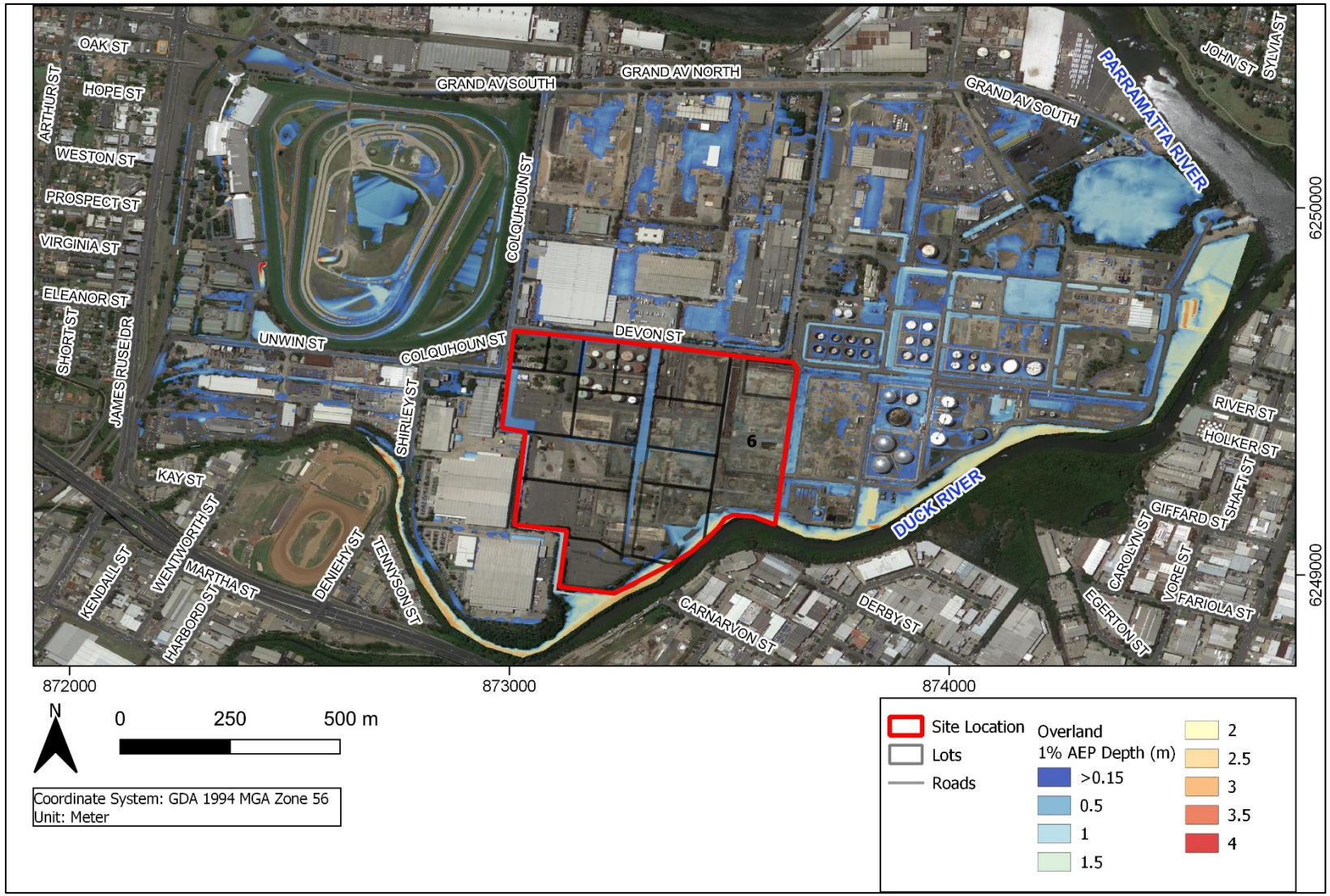

Figure 9. Peak flood depth for the 1% AEP overland flood.

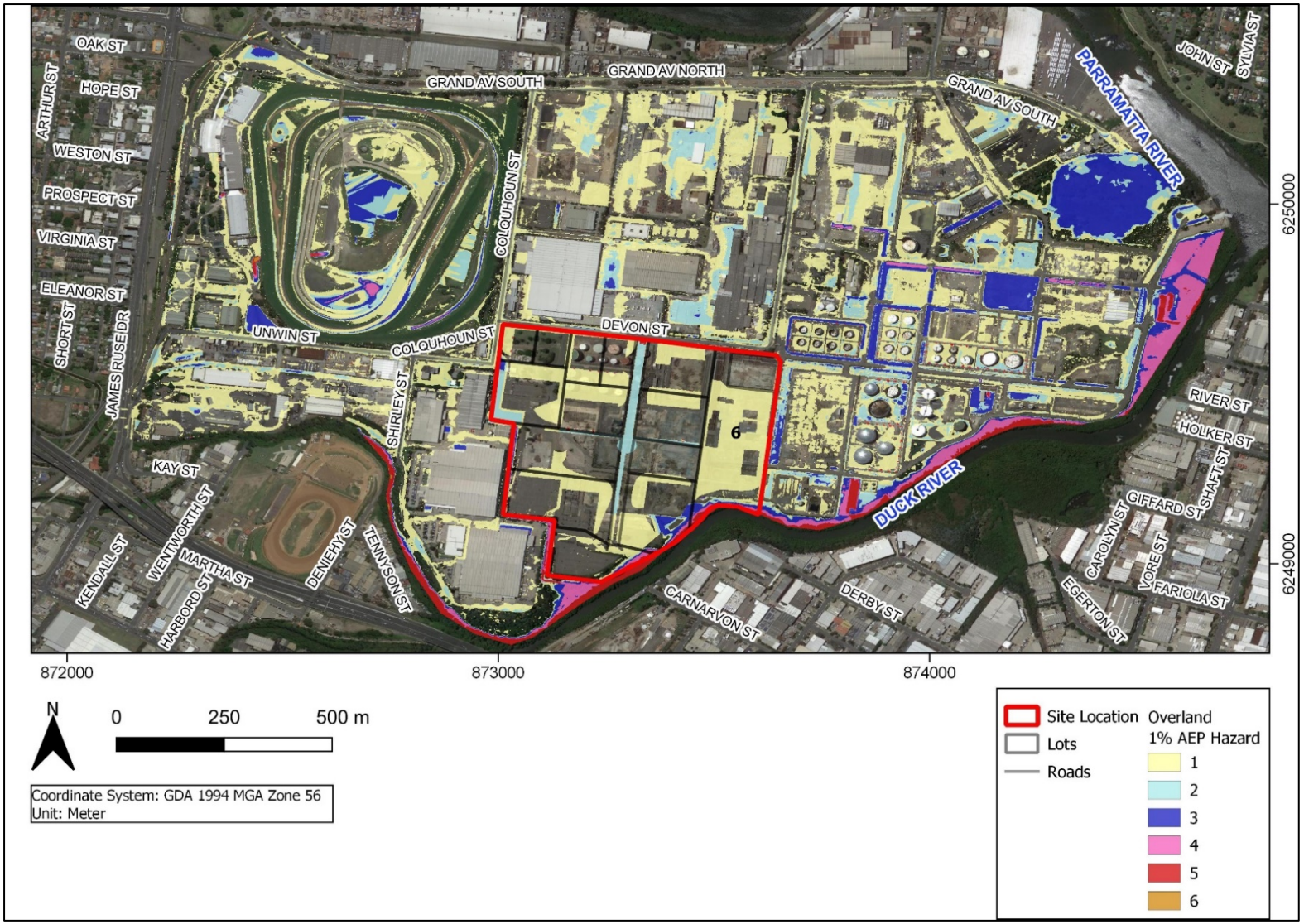

Figure 10. Peak hydraulic hazard for the 1% AEP overland flood (<5 cm trimmed out).

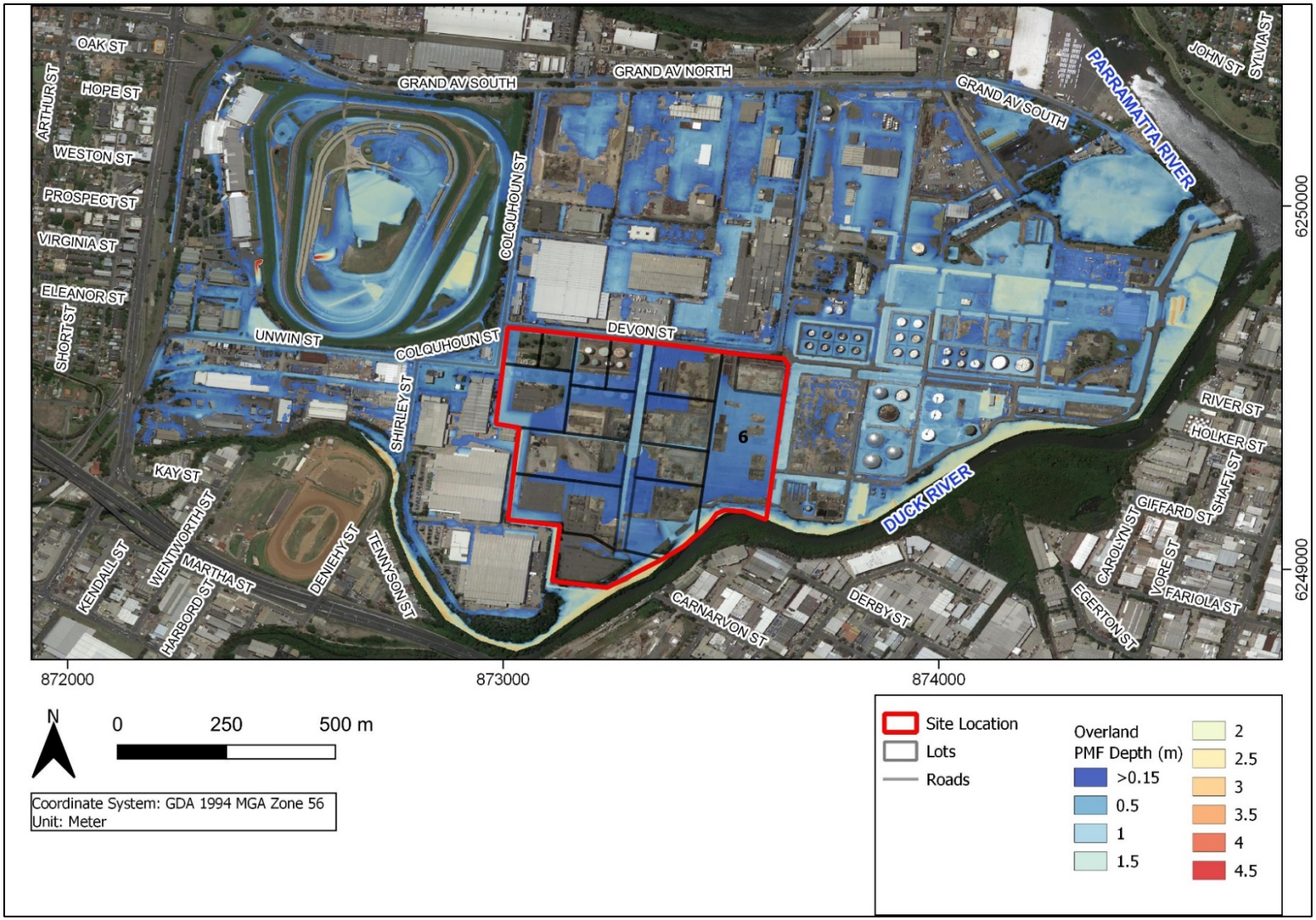

Figure 11. Peak flood depth for the overland PMF.

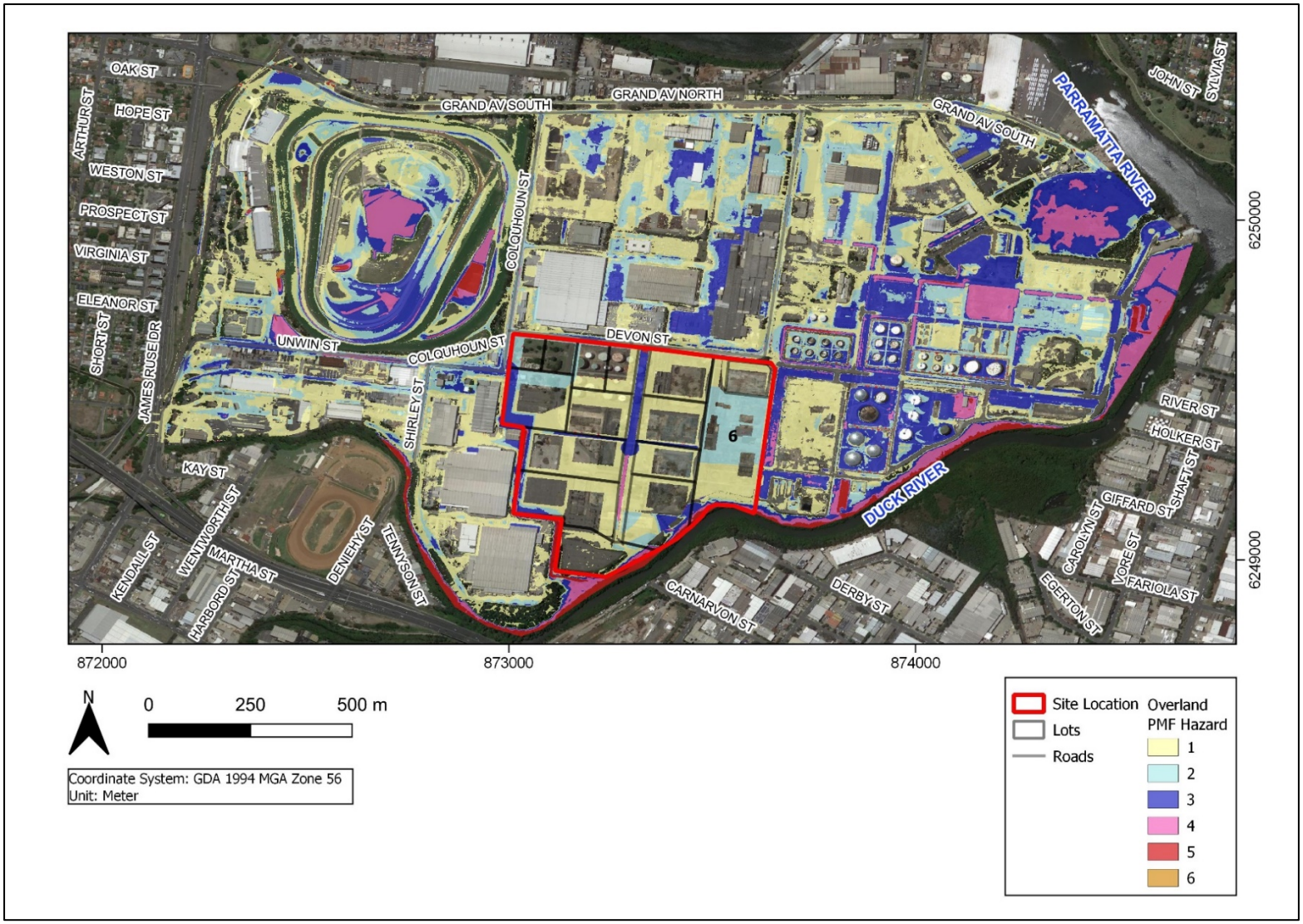

Figure 12. Peak hydraulic hazard for the overland PMF (<5 cm trimmed out).

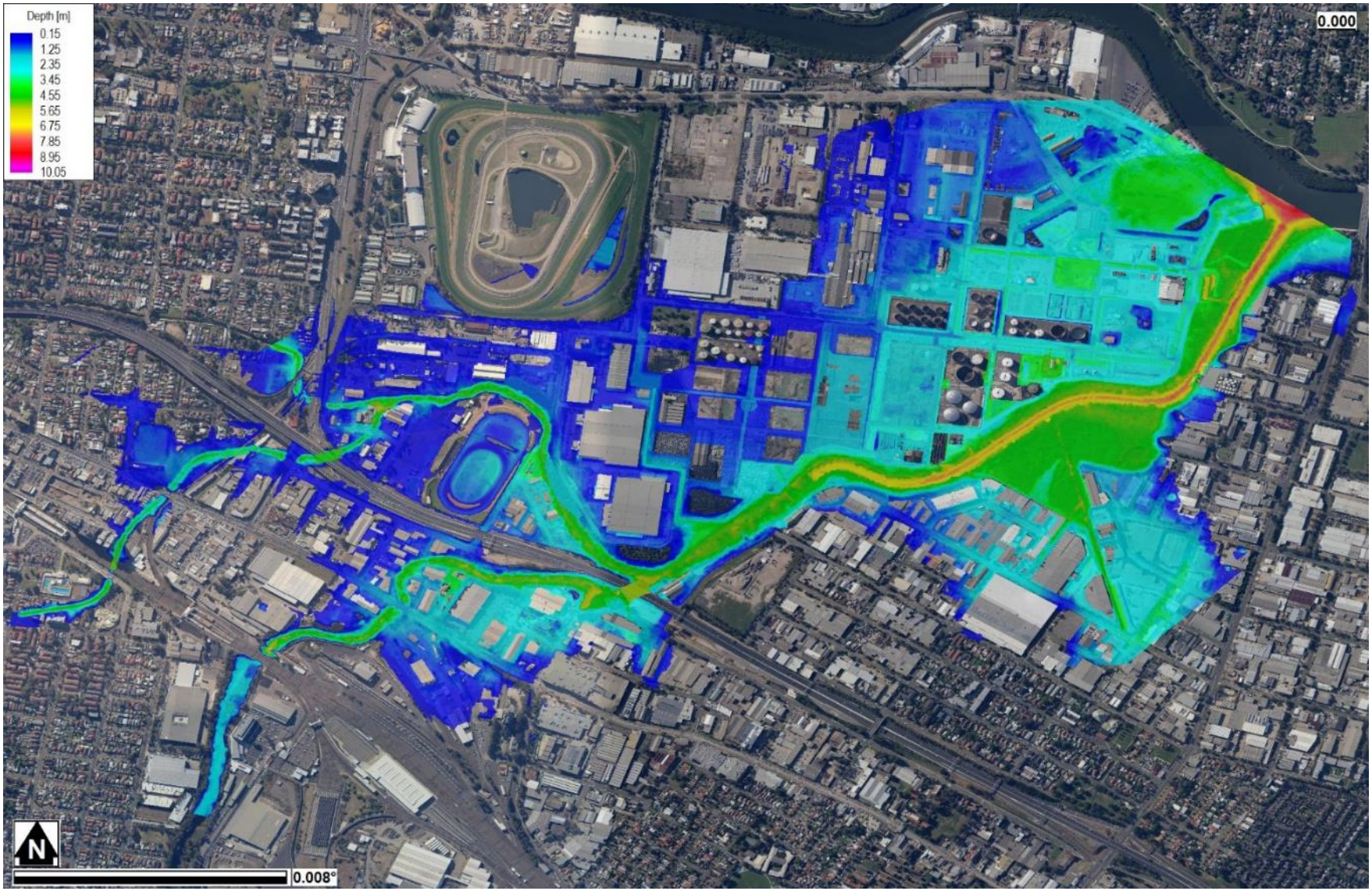

Figure 13. Parramatta River peak PMF depth.

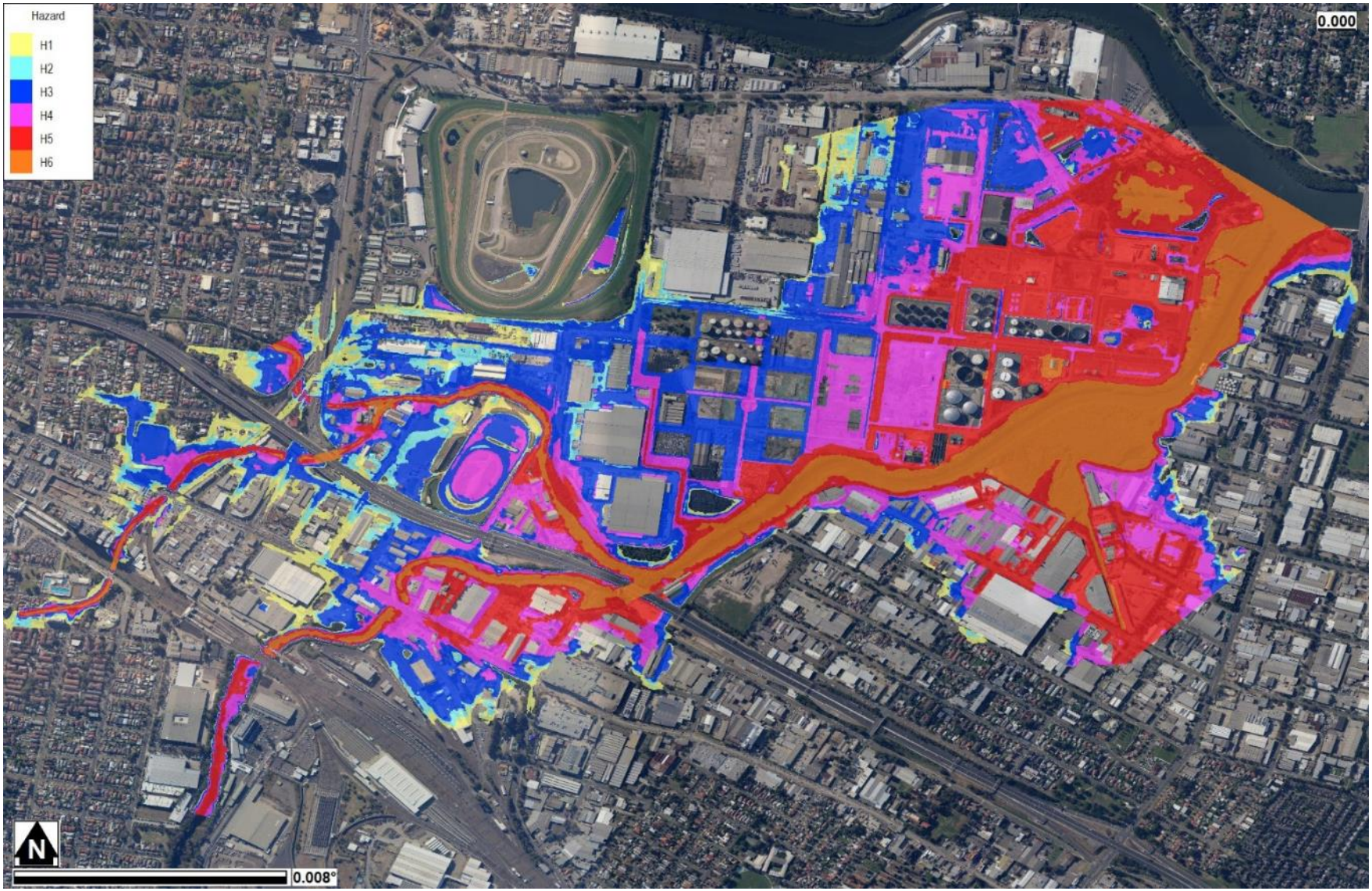

Figure 14. Parramatta River peak PMF hazard.

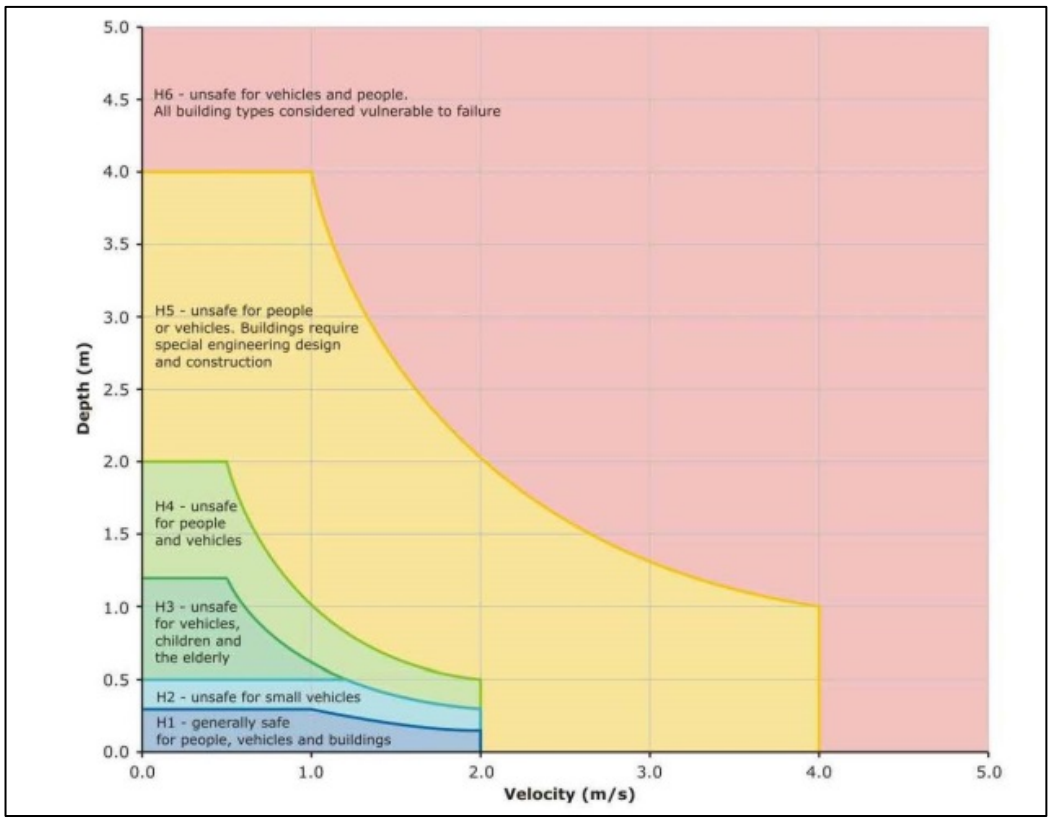

Figure 15. Flood hazard vulnerability curves (source: Smith et al., 2015).

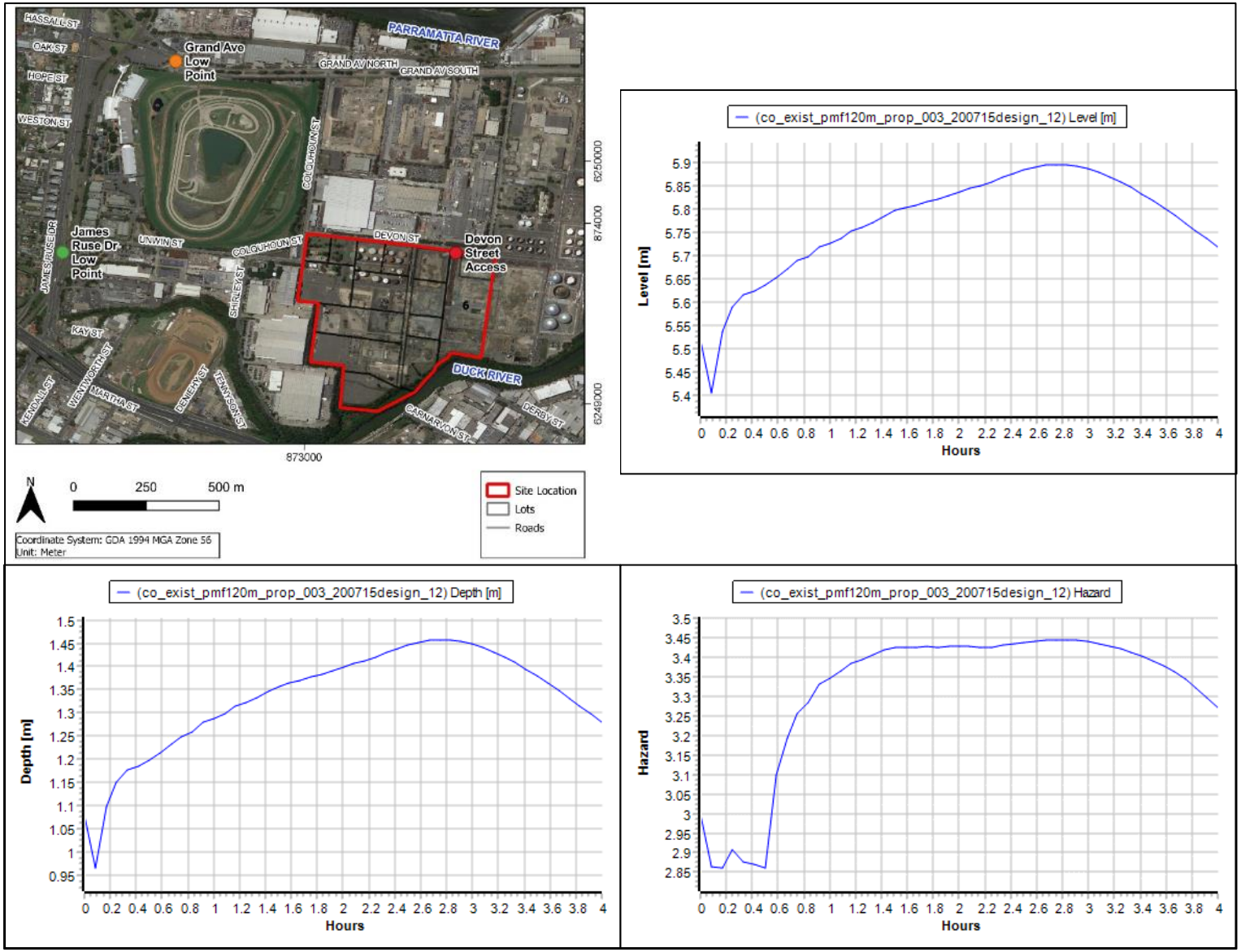

Figure 16. Mainstream PMF Hydrographs at Devon Street.

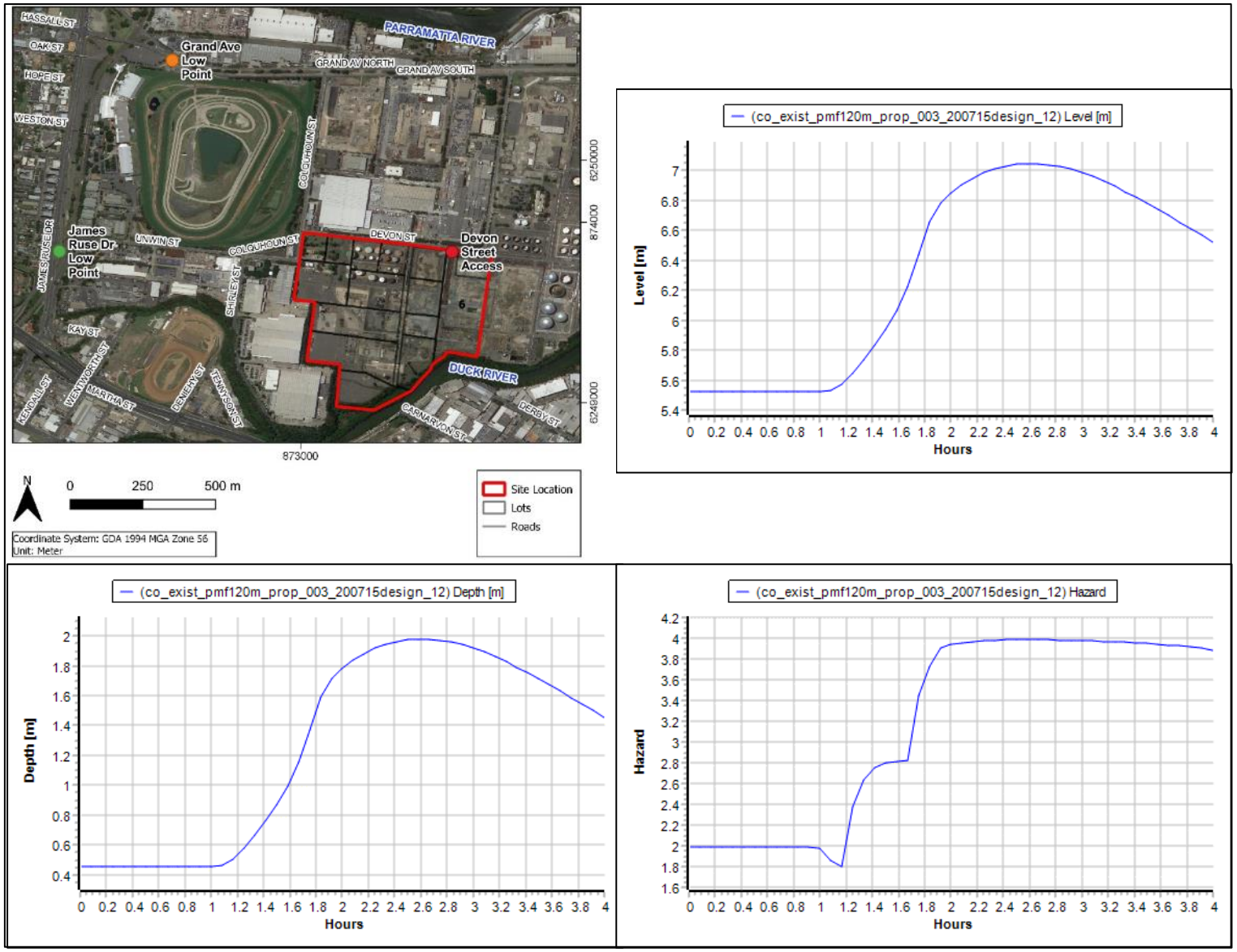

Figure 17. Mainstream PMF Hydrographs at James Ruse Drive Low Point.

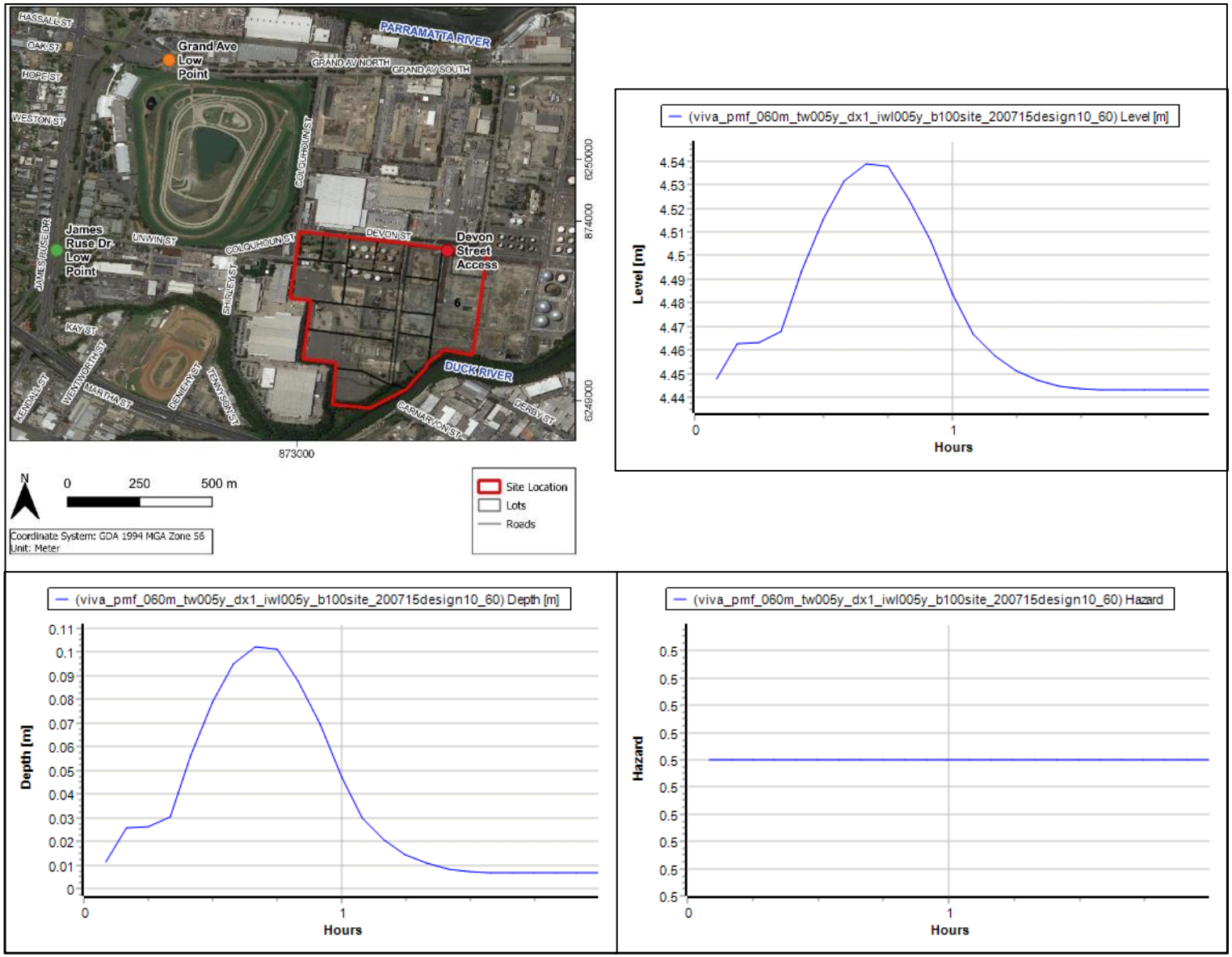

Figure 18. Overland PMF Hydrographs at Devon Street.

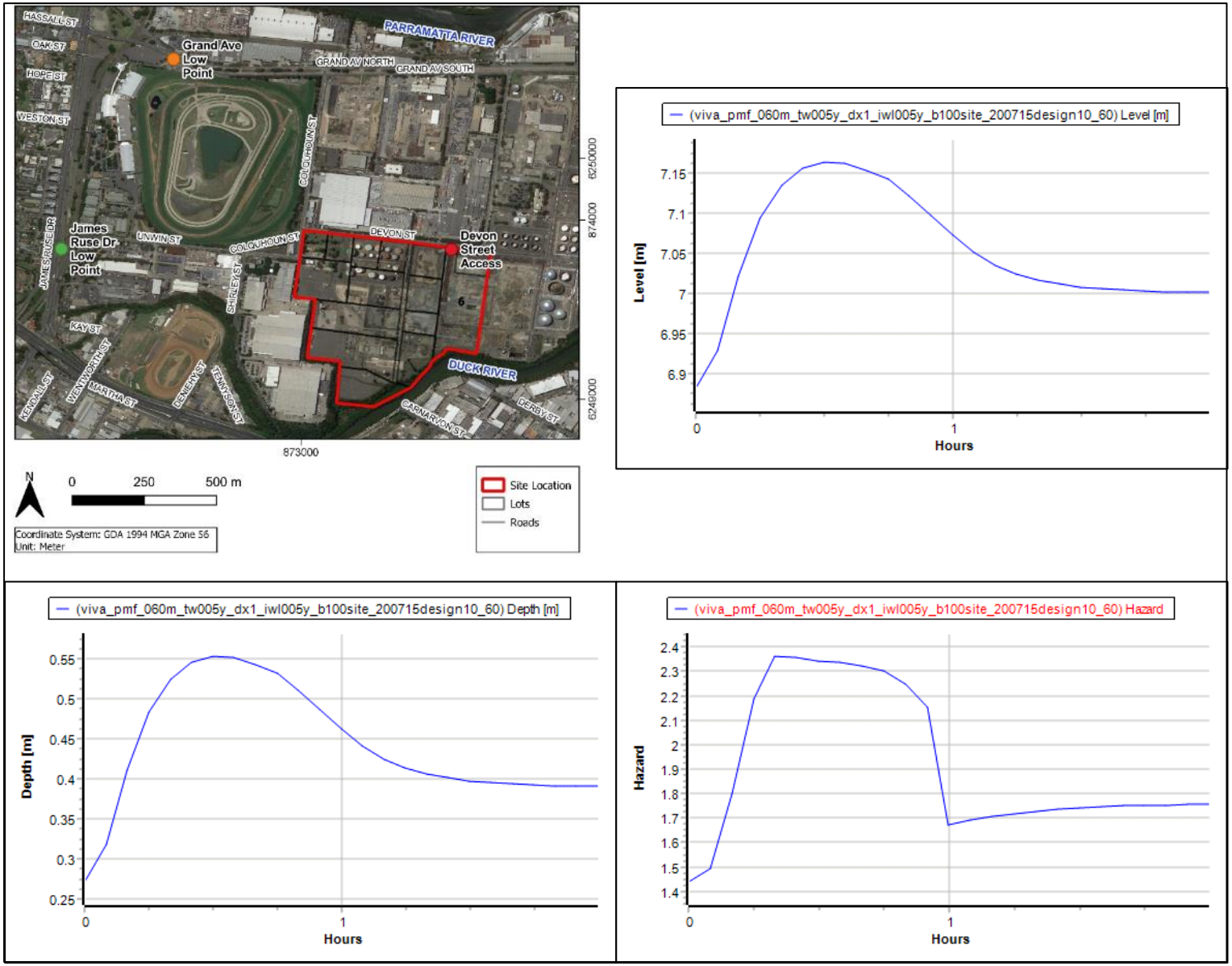

Figure 19. Overland PMF Hydrographs at Grand Avenue Low Point.

4| Flood Forecasts and Warnings

Monitoring the weather forecasts and warnings will be an integral step in managing the flood risk of the site.

4.1 Bureau of Meteorology (BoM)

The Bureau of Meteorology (BoM) has a number of generalised warning products that could provide an indication of an increased flood threat:

- **Severe Weather Warnings:** The BoM issues Severe Weather Warnings whenever severe weather is occurring in an area or is expected to move into an area. The warnings describe the area under threat and the expected hazards. Warnings are issued with varying lead-times, depending on the weather situation, and range from just an hour or two to 24 hours or sometimes more. The key subtype of Severe Weather Warning to be monitored for the site are warnings with reference to flash flooding for the Sydney Metropolitan Area. These are issued directly to the media by the BoM when there is a high probability of flash flooding as a result of intense rainfall. New South Wales weather warnings are issued by the BoM and can be found at the following link: www.bom.gov.au/nsw/warnings/.
- **A Flood Watch for the Parramatta River area:** A Flood Watch is a "heads-up" that flood producing rainfall is forecast and flooding may eventuate. These are usually issued one or two days in advance of the expected flooding and about 25% of the time flooding does not eventuate.

In addition to the above listed warning products, the BoM has forecast rainfall maps which can be used to estimate the amount of rain expected to fall over the next eight and four days, as well as the next 24 hours. This information is available at the following website: http://www.bom.gov.au/jsp/watl/rainfall/pme.jsp

The radar service on the BoM website also shows current rainfall locations and intensities. The radar station to be used for the site would be the Sydney Terrey Hills Radar (http://www.bom.gov.au/products/IDR714.loop.shtml#skip).

4.2 Floodsmart

In addition to the information provided by the BoM, the City of Parramatta Council has put in place a local flood warning system for the Parramatta River which is freely available to anyone subscribing to the service. The system is called "FloodSmart." While FloodSmart does not cover Rosehill, it does cover the Parramatta CBD. As there are no significant inputs to the Parramatta River (i.e. converging rivers) between the CBD and the site location, any flood warnings for the Parramatta CBD would also apply to the site.

FloodSmart can be accessed at the following link:

https://www.cityofparramatta.nsw.gov.au/recreation-environment/floodsmart-parramatta/flood-warning-service

FloodSmart provides flood early warning messages via text, email, or automated voice message. The types of flood warnings provided are summarised in Table 4..

Table 4. FloodSmart warning messages.

Type of Warning Message	Description
MINOR: **High risk areas may experience property flooding**	• Risk to life from fast flowing or deep water near the river or creek • Closure of roads most at risk of flooding • Flooding of land near rivers, creeks, low spots and recreational areas • Water levels may be high for many hours
MODERATE: **High and Medium risk areas may experience property flooding.**	• High risk to life from fast-flowing or deep water near the river or creek • Closure of many bridges and roads • Widespread flooding in areas not necessarily near the river • Water levels may be high for many hours
MAJOR: **High, Medium and Low risk areas may experience property flooding**	• Damage is possible to buildings and infrastructure • Extreme risk to life from fast-flowing deep water even in areas not near the river or creek • Closure of many bridges, roads and transport routes • Widespread deep flooding in many areas not necessarily near the river • Water levels may be high for many hours
NO FURTHER IMPACT	• The local conditions should now be improving: • No further flooding is expected in the next 12 hours • Flood levels will continue to drop However: • There may still be dangerous fast flowing water near the river or creek • Debris and contamination may still cause problems in areas that have been flooded

Lot 6 is located between the 1% AEP and PMF levels from the Parramatta River and as such it is in a Low Hazard area with respect to the FloodSmart warning system. Therefore it would only potentially experience flooding when there is a Major Flood Warning for the CBD. However, the evacuation route low point at the intersection between James Ruse Drive and Grand Avenue is a High Hazard area and may be cut by floodwaters following a Minor Flood Warning for the Parramatta River. Similarly, access to the site from the south via Unwin Street and Kay Street goes across A'Becketts Creek and the Duck Creek and it is likely to flood frequently when the Parramatta River level is high.

Therefore, a Minor Flood Warning for Parramatta CBD indicates that the site may be isolated by floodwaters within two hours. It is noted that such warning is not issued for overland flooding events, nor for mainstream events coming down the Duck River alone.

Table 5. Relevant FloodSmart warning messages for the site.

Location at Risk	Floodsmart Hazard Classification	Relevant FloodSmart Flood Warning (Parramatta River only)
Low point at intersection of Grand Avenue and James Ruse Drive	High	Minor; No Further Impact
Low point at intersection of Unwin Street and A'Becketts Creek and Duck Creek	High	Minor; No Further Impact
Lot 6	Low	Major; No Further Impact

5| Emergency Management Considerations

The two main types of responses to a flood emergency are to either:

- Evacuate to an area above the reach of floodwaters in the PMF. This is the NSWSES preferred response, provided that the risks of evacuating are deemed acceptable;
- Take Shelter in Place (SIP) within the site and wait until floodwaters have receded and the emergency has passed. SIP is to be considered an alternative to evacuation only when the risks of evacuating are higher than the risks of SIP. SIP requires flood-free access to a suitable shelter above the PMF level. The shelter must be protected from the weather, be structurally stable in a PMF and have sufficient floor area for all people likely to be on site at any one time.

Both evacuation and SIP are considered as possible flood emergency response strategies in this FERP. This section provides a summary of the flood emergency response analysis (for evacuation and SIP) that was undertaken as part of this FERP to inform the identification of the most suitable response strategy and management actions.

5.1 Consultation with the NSWSES

The flood emergency response strategy for the operations phase of Lot 6 presented in this report was established in consultation with the NSWSES during two online meetings held on 21 and 27 January 2021. The meetings were attended by:

- Three representatives from the NSWSES (i.e. Peter Cinque, Shelly Stingmore, and Jacqueline Kenner):
- A representative of Downer (Neville Hattingh of Element Environment);
- Molino Stewart's Principals Steven Molino and Dr Filippo Dall'Osso, and Dr Kelsey Sanborn.

A copy of this report was provided by Downer EDI Works Pty Ltd to the NSWSES for any additional feedback.

5.2 The Emergency Response Strategy

While the site itself is only severely affected in mainstream and overland events greater than the 1% AEP, all evacuation routes may become cut within minutes after the beginning of a rainfall event by overland flooding or mainstream flooding. Such routes are:

- North-west of the site via Devon Street, Colquhoun Street, Grand Avenue, and then north on James Ruse Drive; or
- South-west of the site via Devon Street, Colquhoun Street, Unwin Street, Kay Street, and then south on Wentworth Street.

While in most flood events floodwaters would not reach the site, in extreme events floodwaters may keep rising after all evacuation routes are cut to affect the site with hazardous floodwaters. Flood depths on site would exceed 2 m in the mainstream PMF and may reach a peak hydraulic hazard of H5, which may pose a risk to the stability of buildings that were not purposely engineered to withstand flood forces. It should be emphasized that this event represents the absolute worst-case scenario of a concurrent PMF peak in the Duck River and Parramatta River catchments. The probability of this is

much smaller than a single PMF event, which has a probability of occurrence in the order of 1 in 1,000,000 each year. As such, we consider the probability of a concurrent PMF events to be negligible for emergency planning purposes. More realistically, in the worst credible scenario of a PMF in the Duck River with a 1% AEP tailwater level in the Parramatta River the site would not experience hydraulic hazards in excess of H4 (safe for buildings).

Based on the above considerations it was concluded that both evacuation and Shelter in Place could be effective flood emergency response strategies for the site, in principle. However, since there will be no suitable shelters above the PMF within the site, early evacuation was deemed to be the only practical alternative.

It is noted that Downer attempted to negotiate a request with Mostyn Copper, the managers of the nearby Rosehill Racecourse, in order to use the elevated stands in the racecourse as a Shelter in Place (SIP) refuge by Downer personnel during the operation of the Downer Sustainable Road Resource Centre on Lot 6 of the Central Sydney Industrial Estate. However, as of August 2021, Mostyn Copper believes that having a SIP agreement for the racecourse is unlikely to be approved because the racecourse is currently under master planning and will be subject to redevelopment. There are also registered zones in the facility that specify where people or horses can go. Therefore, a SIP agreement would need to be registered over a specific part of the racecourse and responsible parties allocated to manage entry and exit during a flood. This is unlikely to be entertained by the organisation. Therefore, this possibility was excluded from this FERP.

It was agreed with the NSWSES that the following triggers should be used for a site evacuation:

- A Floodsmart Minor Flood Warning for Parramatta CBD; or
- A Flood Watch for the Parramatta River, followed by a BoM Severe Weather Warning with reference to flash flooding for the Sydney Metropolitan Area.

The above triggers will provide a minimum of one hour of notice before the site may become isolated, however in most instances the notice will be greater. Given the nature of the development (i.e. an industrial site) the minimum notice was deemed acceptable, especially in consideration of the following items:

- Everyone on site will be pre-alerted when there is a Flood Watch active for the Parramatta River that evacuation may be required. A Flood Watch is usually issued one to two days in advance;
- There will be offices with access to power and internet for continued monitoring of the evacuation triggers;
- Everyone on site will have access to a vehicle and will quickly be able to drive out should an evacuation order be issued;
- There will be no more than 28 staff on site at any one time. If they all have individual vehicles, there will be no more than 28 vehicles evacuating the site. The NSWSES assumes a minimum evacuation rate of 600 cars per lane per hour. Based on this, it would take less than 5 minutes for 28 vehicles to clear the site.

6 | Flood Emergency Response Plan

6.1.1 Priorities

This FERP recognises that protection of life is of critical and primary importance. This FERP is principally concerned with the safety and comfort of personnel. All flood emergency responses recommended in this FERP are to recognise the primacy of life and wellbeing over protection of property.

Nonetheless, it is recommended that the site management and staff take all necessary measures outside of this FERP to manage the risks which flooding poses to the site and its property.

The FERP sets emergency management prevention, preparedness and response measures that are relevant to a flood emergency. It does not cover broader emergency management guidance for any type of hazard that could affect the site.

6.2 Responsibilities

The responsibility of successful implementation of the Flood Emergency Response Plan lies with the site management. However the NSW SES, as the State combat agency for flood events, and the NSW Police Force have the right to and may intervene before, after or during a flood to provide guidance or prescriptive directions.

6.2.1 NSW State Emergency Services (NSWSES)

The NSWSES is the lead combat agency for flooding in NSW. It can command resources from other government organisations including local councils, Transport for NSW and the Police to assist in flood operations under its command.

Under the State Emergency and Rescue Management Act, 1989, the NSWSES has the power to direct any citizen or organisation to take actions in response to flooding. This includes the power to order evacuations.

Any flood response directive issued by the NSWSES or by delegated authority to others acting on its behalf must be followed by site management and staff. This includes any order to evacuate the site or not evacuate the site, irrespective of what decisions have been made by management in accordance with this FERP.

6.2.2 Site Management

A Production Manager will be on site at all times during the operations of Lot 6. The Production Manager, or a trained staff member nominated by the Production Manager, will be in charge of monitoring the evacuation triggers and ensuring a successful emergency response exercise.

6.3 What do to Before, During and After a Flood

This section provides the list of actions to be undertaken before, after and during a flood. These are also provided as a checklist in Appendix A.

6.3.1 Before a Flood

TRIGGER FOR ACTION #1: Always

ACTIONS:

- The site Production Manager will make all staff on site aware of the possibility of flooding and the procedures to be followed in a flood.
- The Production Manager will appoint a Flood Warden. This should be a senior staff member who is familiar with this Flood Emergency Response Plan and who is always on site when the site is open. If necessary, to ensure that at least one Flood Warden is always on site, the Production Manager may appoint two or more Flood Wardens.
- An airhorn will be kept on site at all times. This is to be used to alert everyone on site in case of emergency. All staff on site will be trained during their site induction to immediately go to the muster point at the front of the site when the airhorn sounds.
- A set of at least two wireless radio communication transceivers with charged spare batteries will be kept on site at all times. The Flood Warden will make sure that the main and spare batteries are changed at all times.
- A flood warning sign will be kept on the premises. The sign should read a message to this effect:
  The site is temporarily closed due to flood risk. For your own safety, leave the area immediately. You will be notified once it is safe to come back.

- The Production Manager and the Flood Warden will make sure they always have a personal smartphone or tablet handy. The smartphone/ tablet will need to have 3G/4G/5G internet access and at least 12 hours independent power supply.
- Using the above smartphone/ tablet, the Production Manager and the Flood Warden will subscribe to the City of Parramatta Council's Floodsmart warning system for the area of Parramatta CBD, and will make sure that the relevant notifications are given "push-up" priority (i.e. high-priority) so that these can be read as soon as they are received.
- Using the above smartphone/ tablet, the Production Manager and the Flood Warden will bookmark links to the BoM warning webpage and Floodsmart for easy access.
- Every morning, the site Production Manager will check the Bureau of Meteorology weather forecast and warnings. At the time this report was prepared, the BoM weather forecast and warnings for NSW were available at the following link: New South Wales Warnings Summary (bom.gov.au).
- An emergency contact sheet will be kept on site. A suggested format for these details and other necessary contact details is provided in Appendix B.
- The Production Manager will keep an updated register of the people who are on site at all times. The list will have to include as a minimum name, mobile number, and emergency contact details.
- The Production Manager will maintain an emergency kit including a portable radio and torch with spare batteries and a first aid kit.

6.3.2 When a Flood is Possible

TRIGGER FOR ACTION #2: When there is an active BoM Flood Watch for the Parramatta River

ACTIONS:

- The site Production Manager will notify the Flood Warden(s) that there is a risk that the site may flood and the procedures to be followed in a flood.
- The Production Manager and the Flood Warden(s) will notify everyone on site, as well as any workers arriving to the site later in the day, that there is a risk that the site may flood and the procedures to be followed in a flood.
- The Flood Warden will monitor the BoM warning webpage and any notifications from Floodsmart every 30 minutes.
- Everyone on site will ensure they can be ready to evacuate within 30 minutes should an evacuation order be issued by the Production Manager.

6.3.3 During a Flood

TRIGGER FOR ACTION #3:

When there is an active Flood Watch for the Parramatta River and the BoM issues a Severe Weather Warning with risk of flash flooding or local flooding for the Sydney Metropolitan Area,

OR

TRIGGER FOR ACTION #4:

When a Floodsmart Warning for Minor, Moderate or Major Flooding is issued for the Parramatta River.

Note: a Floodsmart flood warning may or may not be preceded by a BoM Flood Watch.

ACTIONS:

- The Flood Warden will notify the Project Manager that the site must be immediately evacuated.
- The Flood Warden will take the radio transceiver, the flood warning sign and the register of everyone who is on site and go to the site vehicular access point on Devon Street.
- The Production Manager will issue an evacuation order by sounding the airhorn. As per the site induction training, everyone on site will immediately muster at the front of the site where the Production Manager or Flood Warden will notify them of the reason for the evacuation and any evacuation procedures to comply with.
- The Production Manager will sound the airhorn every five minutes until everyone has left the site.
- As each vehicle leaves the site, the Flood Warden will record they have left in the register and will remind all drivers that under no circumstances they should drive through floodwaters.
- The Production Manager will contact the NSWSES and communicate that the site is being evacuated as per the FERP.
- Using the radio transceiver, the Flood Warden will let the Production Manager know when everyone has left. The Flood Warden will put the flood warning sign in place and then leave the site.

- The Production Manager will patrol the site on their car for no more than five minutes to ensure that no one is left on the premises. They will then shut off all power supplies, close access to the site and leave.
- Once the Production Manager has evacuated, they will contact everyone due to arrive to the site on that day and communicate that the site is closed due to flood risk until further notice.
- The Production Manager will keep monitoring the BoM weather warnings and any further notifications from Floodsmart every two hours.

6.3.4 After a Flood

TRIGGER FOR ACTION #5:

When a Floodsmart notification of "No Further Impact" for Parramatta CBD is received,

OR

If a Floodsmart flood warning for Parramatta CBD was never issued, when the BoM cancels the Severe Weather Warning with risk of flash flooding for the Sydney Metropolitan area.

ACTIONS:

- The Production Manager will inspect the site to check if access roads are clear and if the site was affected by flooding.
- If access roads are clear and the site was not affected, the emergency has passed and the site can re-open.
- If access roads are not clear, the Production Manager will return for an inspection after at least two hours. Under no circumstances should the Production Manager drive through floodwaters.
- If access roads are clear but the site was affected by flooding, the Production Manager will
  organise access to the site making sure that any precautionary measures recommended by the NSWSES are put in place.
- Extra care will be taken of potential slips on a muddy floor if floodwaters have entered the mobile offices or other structures.
- All flood-affected parts of the premises will be appropriately cleaned and utilities checked by professionals before anyone can return to the site.
- A hazard assessment will be undertaken for the clean-up, safe work methods statements will be prepared and personal protective equipment supplied consistent with the known hazards which can be associated with floods:
  - Slips, trips and falls;
  - Sharp debris;
  - Venomous animals;
  - Contaminated water and sediments.
- Following the re-commencement of the site activities, a de-brief will be held with key management staff and may involve Council flood staff or the NSWSES. The flood event and response, including the use of this FERP and any emergency procedures will be reviewed.
- Changes may be made to the FERP and the requirements for future emergency response should the review identify any improvements which may be made.

7 | References

Element Environment, 2020a. Central Sydney Industrial Estate incorporating the Sustainable Road Resource Centre State Significant Development Application: Environmental Impact Statement. Prepared for VE Property Pty Ltd and Downer EDI Works Pty Ltd.

Element Environment, 2020b. Central Sydney Industrial Estate incorporating the Sustainable Road Resource Centre State Significant Development Application: Response to Submissions. Prepared for VE Property Pty Ltd and Downer EDI Works Pty Ltd.

Smith, G., McLuckie, D., 2015. Delineating hazardous flood conditions to people and property, 2015 Floodplain Management Australia National Conference, Brisbane, QLD, 19-22 May 2015.

WMAWater, 2012. Duck River and Duck Creek Flood Study. Prepared for Parramatta City Council.

WMAWater, 2020a. Central Sydney Industrial Estate incorporating Downer Sustainable Road Resource Centre Flooding Assessment. Prepared for VE Property Pty Ltd.

WMAWater, 2020b. Central Sydney Industrial Estate incorporating Downer Sustainable Road Resource Centre Review of Flooding Submissions. Prepared for VE Property Pty Ltd.

Appendix A | Action Checklist

Stage	Trigger for Action	Action	Who is responsible	What is needed
Before a flood	Always	The site Production Manager will make all staff on site aware of the possibility of flooding and the procedures to be followed in a flood.	Production Manager	N/A
		The Production Manager will appoint a Flood Warden. This should be a senior staff member who is familiar with this Flood Emergency Response Plan and who is always on site when the site is open. If necessary, to ensure that at least one Flood Warden is always on site, the Production Manager may appoint two or more Flood Wardens.	Production Manager and Flood Warden(s)	N/A
		An airhorn will be kept on site at all times. This is to be used to alert everyone on site in case of emergency. All staff on site will be trained during their site induction to immediately go to the muster point at the front of the site when the airhorn sounds.	Production Manager	Airhorn
		A set of at least two wireless radio communication transceivers with charged spare batteries will be kept on site at all times. The Flood Warden will make sure that the main and spare batteries are changed at all times.	Production Manager	Wireless radios with batteries
		A flood warning sign will be kept on the premises. The sign should read a message to this effect: *The site is temporarily closed due to flood risk. For your own safety, leave the area immediately. You will be notified once it is safe to come back.*	Production Manager	Flood warning sign
		The Production Manager and the Flood Warden will make sure they always have a smartphone or tablet handy. The	Production Manager and	Smartphone or tablet, internet

Stage	Trigger for Action	Action	Who is responsible	What is needed
		smartphone/ tablet will need to have 3G/4G/5G internet access and at least 12 hours independent power supply.	Flood Warden(s)	and back-up power
		Using the above smartphone/ tablet, the Production Manager and the Flood Warden will subscribe to the City of Parramatta Council's FloodSmart warning system for the area of Parramatta CBD, and will make sure that the relevant notifications are given "push-up" priority (i.e. high-priority) so that these can be read as soon as they are received.	Production Manager and Flood Warden(s)	Smartphone or tablet and internet
		Using the above smartphone/ tablet, the Production Manager and the Flood Warden will bookmark links to the BoM warning webpage and FloodSmart for easy access.	Production Manager and Flood Warden(s)	Smartphone or tablet and internet
		Every morning, the site Production Manager will check the Bureau of Meteorology weather forecast and warnings. At the time this report was prepared, the BoM weather forecast and warnings for NSW were available at the following link: New South Wales Warnings Summary (bom.gov.au).	Production Manager and Flood Warden(s)	Smartphone or tablet and internet
		An emergency contact sheet will be kept on site. A suggested format for these details and other necessary contact details is provided in Appendix B.	Production Manager	Emergency Contact Sheet
		The Production Manager will keep an updated register of the people who are on site at all times. The list will have to include as a minimum name, mobile number, and emergency contact details.	Production Manager	Register of people on site
		The Production Manager will maintain an emergency kit including a portable radio and torch with spare batteries and a first aid kit.	Production Manager	Emergency kit with radio, torch,

Stage	Trigger for Action	Action	Who is responsible	What is needed
				batteries, and first aid kit
When a flood is possible	**When there is an active BoM Flood Watch for the Parramatta River**	The site Production Manager will notify the Flood Warden(s) that there is a risk that the site may flood and the procedures to be followed in a flood.	Production Manager and Flood Warden(s)	N/A
		The Production Manager and the Flood Warden(s) will notify everyone on site, as well as any workers arriving to the site later in the day, that there is a risk that the site may flood and the procedures to be followed in a flood.	Production Manager and Flood Warden(s)	Phones
		The Flood Warden will monitor the BoM warning webpage and any notifications from Floodsmart every 30 minutes.	Flood Warden(s)	Smartphone or tablet and internet
		Everyone on site will ensure they can be ready to evacuate within 30 minutes should an evacuation order be issued by the Production Manager.	Everyone on site	N/A
During a flood	**When there is an active Flood Watch for the Parramatta River and the BoM issues a Severe Weather Warning with risk of flash flooding or local flooding for the Sydney Metropolitan Area,** **OR** **When a FloodSmart Warning for Minor, Moderate or Major**	The Flood Warden will notify the Production Manager that the site must be immediately evacuated.	Production Manager and Flood Warden(s)	N/A
		The Flood Warden will take the radio transceiver, the flood warning sign and the register of everyone who is on site and go to the site vehicular access point on Devon Street.	Flood Warden(s)	Radio, warning sign and register of people on site
		The Production Manager will issue an evacuation order by sounding the airhorn. As per the site induction training, everyone on site will immediately muster at the front of the site where the Production Manager or Flood Warden will notify them of the	Production Manager	Airhorn

Stage	Trigger for Action	Action	Who is responsible	What is needed
	Flooding is issued for the Parramatta River. *Note: a Floodsmart flood warning may or may not be preceded by a BoM Flood Watch.*	reason for the evacuation and any evacuation procedures to comply with		
		The Production Manager will sound the airhorn every five minutes until everyone has left the site.	Production Manager	Airhorn
		As each vehicle leaves the site, the Flood Warden will record they have left in the register and will remind all drivers that under no circumstances they should drive through floodwaters.	Flood Warden(s)	Register of people on site
		The Production Manager will contact the NSWSES and communicate that the site is being evacuated as per the FERP.	Production Manager	Phones
		Using the radio transceiver, the Flood Warden will let the Production Manager know when everyone has left. The Flood Warden will put the flood warning sign in place and then leave the site.	Flood Warden(s)	Radio
		The Production Manager will patrol the site on their car for no more than five minutes to ensure that no one is left on the premises. They will then shut off all power supplies, close access to the site and leave.	Production Manager	N/A
		Once the Production Manager has evacuated, they will contact everyone due to arrive to the site on that day and communicate that the site is closed due to flood risk until further notice.	Production Manager	Phones
		The Production Manager will keep monitoring the BoM weather warnings and any further notifications from FloodSmart every two hours.	Production Manager	Smartphone or tablet and internet
After a flood		The Production Manager will inspect the site to check if access roads are clear and if the site was affected by flooding.	Production Manager	N/A

Stage	Trigger for Action	Action	Who is responsible	What is needed
	When a FloodSmart notification of "No Further Impact" for Parramatta CBD is received, **OR** **If a FloodSmart flood warning was never issued, when the BoM cancels the Severe Weather Warning with risk of flash flooding for the Sydney Metropolitan area.**	If access roads are clear and the site was not affected, the emergency has passed and the site can re-open.	Production Manager	N/A
		If access roads are not clear, the Production Manager will return for an inspection after at least two hours. Under no circumstances should the Production Manager drive through floodwaters.	Production Manager	N/A
		If access roads are clear but the site was affected by flooding, the Production Manager will organise access to the site making sure that any precautionary measures recommended by the NSWSES are put in place.	Production Manager	TBC by NSWSES
		Extra care will be taken of potential slips on a muddy floor if floodwaters have entered the mobile offices or other structures.	Everyone on site	N/A
		All flood-affected parts of the premises will be appropriately cleaned and utilities checked by professionals before anyone can return to the site.	Production Manager	Cleaning supplies
		A hazard assessment will be undertaken for the clean-up, safe work methods statements will be prepared and personal protective equipment supplied consistent with the known hazards which can be associated with floods: Slips, trips and falls; Sharp debris; Venomous animals; Contaminated water and sediments.	Production Manager	Hazard assessment/ safe work methods statement
		Following the re-commencement of the site activities, a de-brief will be held with key management staff and may involve Council flood staff or the NSWSES. The flood event and response, including the use of this FERP and any emergency procedures will be reviewed.	Production Manager, Flood Warden(s), Council and NSWSES	FERP

Stage	Trigger for Action	Action	Who is responsible	What is needed
		Changes may be made to the FERP and the requirements for future emergency response should the review identify any improvements which may be made.	Production Manager	FERP

Appendix B | Emergency Contact List

Name	Organisation	Role	Contact Details
	Downer	Production Manager	0403 550 384
	Downer	Flood Warden	0447 049 490
	Emergency Services	Fire/ambulance/police	000
	State Emergency Service	SES Local Controller	132 500
	Bureau of Meteorology	NSW Flood Warning Centre	02 9296 1511
	City of Parramatta Council	Customer Service Centre on	02 9806 5050
	Westmead Hospital		02 8890 5555

ANNEX D – DRIVER CODE OF CONDUCT

DRIVER CODE OF CONDUCT

This driver code of conduct applies to all personnel and any other person conducting business for Downer, whether a direct employee of Downer or employed by some other organisation providing a service or product to the project.

We are all members of the general community, so you are expected to comply with all the relevant legal requirements and accepted community standards whilst conducting your business. Whether you are an employee of Downer or operate any service to the company, your behaviour on the road reflects upon the community reputation of the project and in this regard your full compliance with this Driver Code of Conduct is required.

PENALTIES AND DISCIPLINARY ACTION

Failure to comply with this Driver Code of Conduct will lead to either the issue of a 'warning notice' or

'disciplinary action' if the offender is an employee of Downer. If the offending party represents another company then 'disciplinary action' may be treated as suspension or cancellation of a service contract or arrangement with that company.

A warning notice may be issued for a number of reasons, which may include (but not limited to) if, you:

- Abuse other road users or customers.
- Do not carry out instructions as advised.
- Do not comply with local road and site speed restrictions.
- Do not report incidents, accidents or near misses.
- Use mobile phones and/or hand held devices while driving.
- Do not comply with any of the requirements in this Drivers Code of Conduct.

MOTOR TRAFFIC ACT

As a driver you are required to know and comply with all road rules pertaining to your vehicle (whether standard passenger car, utility or heavy transport vehicle).

DRIVING LICENCE

You must hold a current and valid driving licence for the class of vehicle that you operate. Additionally, you must always carry your current driver's licence with you while you are on duty. If your licence is cancelled or suspended, you must inform your supervisor immediately who will in turn inform project management immediately.

VEHICLE MINIMUM MAINTENANCE AND OPERATING CONDITION

All vehicles must be maintained and operated in accordance with the vehicle manufacturers recommended standards (refer to vehicle manufacturer's handbook).

OCCUPATIONAL HEALTH AND SAFETY

The health and safety of all people employed by (or working for) Downer, and those visiting the project site, is of the utmost importance. As an employee of the project, or supplier or contractor to the project, you are required to adhere to the occupational health and safety legislation.

Generally this means that you must:

- Carry out your duties in a way which does not adversely affect your own health and safety or that of others.
- Cooperate with measures introduced in the interest of workplace health and safety, in particular follow OHS Standard Operating Procedures of the Downer Group.

- Attend all Health, Safety & Environmental training provided.
- Immediately report all matters which may affect workplace health & safety to your supervisor.
- Correctly use any information, training, personal protective equipment and safety devices provided.
- Not intentionally misuse or recklessly interfere with anything that has been provided for health and safety reasons.
- Only do tasks for which you have authorisation and/or have the necessary training, and for which all necessary safety arrangements are in place.

ENVIRONMENT

Downer is committed to protecting the environment and preventing air, water and noise pollution. As the operator of your vehicle, you are subject to environmental regulations relating to vehicle emission and product spill. You must understand and appreciate the seriousness of polluting the environment and the consequences of such events. If you are careless or neglect your responsibilities, you can cause personal injury, loss of life, property damage, damage to the environment, and cause adverse publicity for the project.

NOISE CONTROL

Using engine brakes can be extremely noisy. If possible, you should not use engine brakes near residences and built-up areas. Generating excessive noise is an offence governed by relevant legislation.

You must also not unnecessarily over-rev your engine when driving and pulling off from a stationary position.

The following noise management measures must be implemented where possible when delivering/offloading materials on site to minimise noise:

- Avoid shouting and minimise talking loudly and slamming vehicle doors.
- Avoid metal to metal contact and dropping materials from height.
- Minimise idling of trucks.
- Avoid reversing.

HIGHWAY COURTESY

The on-going reputation of the project depends very much on the way you drive your vehicle and courtesy that you extend to the community. The road is there to share and therefore, it is a project requirement that you display courtesy and restraint towards other road users.

SPEED RESTRICTIONS

As a competent driver, you must always adjust your driving to the existing conditions. Speeding is the leading behavioural factor in deaths and serious injury on NSW roads. Speeding is not just driving faster than the posted speed limit, it includes driving too fast for the weather, light, traffic and road conditions.

Always follow posted signs as they provide vital clues to road conditions and characteristics. You should always apply the following rules:

- Always reduce your speed in wet conditions.
- Drive cautiously in low visibility.
- Descend hills in the lowest gear to suit the conditions.
- Always observe the special limits that apply for road works etc.
- **DO NOT** exceed the posted maximum speed.

Always comply with school zone time speed limits and reduce speed when approaching a bus stopping/stopped.

Reduce speed from dusk to dawn in areas where nocturnal wildlife may be present. Do not use bright headlights as blinded animals cannot see the vehicle and do not move away from the road.

SPECIFIED ACCESS ROUTES

All vehicles must use the vehicle access routes shown on the site layout in Annex B. RAP and Reconomy trucks will require the use of the entry weighbridge.

SITE SPEED LIMITS

The project site has a general speed limit of 20 km/h with 10 km/h limits in designated areas. These limits are to ensure the interaction between personnel and vehicles are managed to minimise the risk of injury to all personnel.

Drivers are required to observe the posted speed limits and other traffic signage at all times. All incidents where drivers do not observe speed limits and other traffic instructions will be logged and investigated and where appropriate, disciplinary action will be taken.

DEFENSIVE DRIVING

You should always drive in a manner that will help you to avoid an accident, despite incorrect/inappropriate actions of others or poor driving conditions. Defensive driving requires a high degree of anticipation.

VEHICLE BRAKING

One of the most important single skills that a professional and competent driver possesses is bringing a loaded vehicle to a controlled stop both in the city and in open road conditions. You may need to brake heavily but you must also be aware of the possible consequences. As a rule, you should always be aware of traffic conditions 1 to 2 km in front of you. In doing so, you are adjusting your own driving conditions to avoid the need for heavy braking.

Always brake with care, remembering that the truck will react differently according to the weight of the load, weight distribution of the load and road surface condition. You should never, under any conditions, drive a vehicle with faulty or suspect brakes. You must always immediately report the fault to your supervisor to be repaired.

Engine brakes are auxiliary to the main service brakes. In general, the following should be observed regarding engine brakes:

DO NOT use the engine brake on slippery or wet surfaces

DO NOT use engine brakes in or near residences and built-up areas, as this causes excessive noise and is a public disturbance.

TAILGATING

By law, you are required to maintain a gap between yourself and the vehicle directly in front of you, so that heavy braking will not be required. The gap is based on several factors including speed, vehicle weight, traffic congestion and road condition. During wet weather or other adverse conditions, the gap distance should be doubled.

The legal distance for heavy vehicles in areas with limited streetlights is 60 metres. A gap of 60 metres is approximately the same as:

- The length of four (4) semi-trailer combinations.
- Twelve (12) car lengths.
- Four (4) seconds.

Always remember, appropriate gap distance between other road users is a key defensive driving tool.

OVERTAKING/PASSING

Overtaking and passing should be done so only when necessary, where legally allowed and in a careful and safe manner. There is to be no overtaking or passing within residential areas.

MOBILE PHONES

Using a mobile phone while driving is strictly prohibited for all drivers operating a motor vehicle unless a blue tooth hands-free kit is installed and utilized in the vehicles. This will be enforced to all site personnel and delivery partners during the site specific induction process prior to commencing on the project.

ROAD HAZARDS

During most journeys that you take, there will be hazards on and near roadways. Always be alert for these hazards and make your adjustments as necessary.

Examples of hazards are:

- Rough/slippery surfaces.
- Flooded roads.
- High winds.
- Fog and smoke haze.
- Sunset and sunrise.
- Narrow or winding roads.
- Low wires or awnings.
- Low bridges, tunnels etc.
- Crossings, rail/people.
- Animals, pedestrians & cyclists.
- Underpasses and trees.

Be aware that your vehicle itself may become a road hazard when it is parked on a roadway, broken down or otherwise. In this circumstance, use portable warning signals, placing them 50-150 metres in front of and behind the vehicle, as well as at the side.

If your vehicle becomes bogged on site, make contact with your supervisor or site contact and do not attempt to retrieve your vehicle without approval and appropriate risk controls including a SWMS.

PARKING

Avoid the need to park on the local streets by planning your trip to arrive at the site during Downers' specified delivery scheduled. Heavy vehicles are to park on shoulder lanes on the internal road and in loading areas. Asphalt trucks will park at the dedicated area to the north of the asphalt plant.

REVERSING

Try to avoid reversing whenever possible. If you cannot avoid it, use extreme caution. If you need to reverse while on the project site:

- Always use a spotter.
- Maintain visual contact with the spotter.
- Maintain clear communications with the spotter.

If you need to reverse when not on the project site:

- Get out of your vehicle and check the rear surrounding area.
- Check clearances at sides, top and bottom.
- Constantly monitor mirrors for pedestrians or other traffic when reversing.

MATERIAL TRANSPORT

Drivers are responsible for ensuring that all tail and side gates are properly secured and that there is no ropes, straps or chains dangling from the trailer.

Drivers of trucks hauling materials to and from the project site will ensure adequate separation between vehicles. No tailgating or formation of rolling convoys is permitted.

Drivers are responsible for ensuring that all loads are properly secured and/or covered and that there is no spillage or leakage of the load from the vehicle to the road surface.

Drivers are responsible to ensure the cleanliness of their vehicle and must inspect for the following:

- Loose material, including but not limited to packing material, gravel, dirt, dust etc, may spill from the trailer platform and become a hazard to other drivers on the road.

Loose material (gravel, dirt or caked mud) may become dislodged from the underside of the vehicle, including wheel arches, and become a hazard to other drivers on the road.

ANNEX E – LANDSCAPE MANAGEMENT PLAN

GEOSCAPES
LANDSCAPE ARCHITECTS

SSD 10459 - Central Sydney Industrial Estate

LOT 6 - DOWNER SUSTAINABLE ROAD RESOURCE CENTRE

LANDSCAPE MANAGEMENT PLAN

Report Ref: **190130_CC_RPT_LMP01**

Prepared by

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Document Status

REV	Description	Initial	Date
1	Draft	BG	13.01.2021
2	For Approval	BG	29.01.2021
3	For Approval	BG	02.02.2021

CONTENTS

1.0 INTRODUCTION

1.1 Project Background

This Landscape Management Plan (LMP) has been prepared to fulfill DA condition B51 and B52 of the approved Stage 1 - Lot 6 Downer Rosehill development located at Lot 6 - 9 Devon Street, Rosehill. Condition B51 and B52 state:

B51. Prior to the commencement of construction, the Applicant must prepare a Landscape Management Plan (LMP) to manage the revegetation and landscaping works on-site, to the satisfaction of the Planning Secretary. The LMP must form part of an OEMP in accordance with condition C5. The LMP must:

(a) detail the species to be planted on-site, using only locally native species;
(b) describe the monitoring and maintenance measures to manage revegetation and landscaping works; and
(c) be consistent with the Applicant's Management and Mitigation Measures at Appendix 2.

B52. The Applicant must:

(a) not commence operation until the LMP is approved by the Planning Secretary;
(b) implement the most recent version of the LMP approved by the Planning Secretary; and
(c) maintain the landscaping and vegetation on the site in accordance with the approved LMP required by Condition B51 for the life of the development.

1.2 This Report and Author

Geoscapes Pty Ltd has been commissioned to produce a Landscape Management Plan (LMP) for the above mentioned development. This LMP has been written by Ben Gluszkowski, the director of Geoscapes and a AILA Registered Landscape Architect.

Geoscapes also prepared the approved SSD (10459) landscape design drawings and landscape design report. These documents detail landscape treatments to the site, and should be read in conjunction with this report.

1.3 The Role of this Landscape Management Plan

Lot 6 will contain the Downer Sustainable Road Resource Centre which is located within the southern part of the site. The front block will be used as a lay-down area during construction, with final use subject to a separate development application. The Stage 1 works include the asphalt plant, Reconomy facility, RAP processing facility, bitumen products plant, workshop, silos, main office, car parking, storage hardstand, road access and associated earthworks and landscaping.

New landscaping is proposed to be installed along the southern, eastern and western boundaries. The southern boundary proposes a riparian corridor in the form of a 40m offset from Duck River using an averaging method. Existing riparian vegetation will be retained and supplemented by new planting to create the riparian zone within Lot 6. This will also extend further across southern lots (as part of separate subdivision works).

Due to the site being located adjacent to the Duck River corridor, revegetation and visual screening with the use of landscape planting is an important part of the development. The visual appearance and scale of the built form can be reduced with the maintenance of existing vegetation and introduction of new native tree and shrub species. The ongoing management of landscape buffer zones and the riparian corridor is therefore, fundamental in maintaining visual mitigation of the development and flora and fanua habitats now and into the future. A Vegetation Management Plan or VMP has been prepared by AECOM and was submitted with the development application. This should be referenced where required. Planting numbers and locations have been detailed in the landscape plans following species listed in the VMP.

1.4 Areas to which this Plan Applies

This plan will apply to the following areas within the site boundary, these are:

- 5m swale to eastern boundary
- 5m landscape buffer to western boundary
- The riparian corridor to southern boundary

1.5 Landscape Maintenance Responsibility

The Landscape Contractor awarded the contract, will hold the first level of responsibility for the implementation of the Landscape Management Plan. The on-going, day-to-day implementation, monitoring and reviewing of the LMP will be undertaken by Downer.

1.6 Landscape Management Principles

The following landscape management principles have been identified as being consistent with the approved SSD Landscape Documentation:

- Minimise environmental impacts that may result from landscape management activities and utilise environmentally sustainable practices. Disturb only the minimum area necessary.
- Control dust with best management principles.
- Mark clearance boundaries prior to commencement of construction to ensure that there is no removal of native vegetation.
- Strengthen, enhance and promote local character with the use of native and endemic planting in all landscape areas and for any replacement plantings.
- Construct, manage and maintain a fully structured riparian corridor.
- Adopt a low water use, low maintenance approach with the use of native species.
- Provide clear site lines for trucks and vehicular users.
- Provide a safe environment, minimising potential risks to people, buildings and property.
- Best practice landscape maintenance in landscaped areas.
- Target environmental weeds and feral animals through the use of integrated pest management approaches, as per section 5.2 of this LMP
- Undertake monitoring, auditing and maintenance activities to ensure an effective and a resilient landscaping outcome.
- Appropriately fund, plan and manage landscape maintenance to provide sufficient resource to achieve a long term quality landscape.

1.7 Report Structure

This report is to be read in conjunction with the following documents:

- Landscape Drawings for State Significant Development- SSD 10459 prepared by Geoscapes Landscape Architects, Dwg No's SSD-00 to

SSD-17.
• Landscape Design Report for State Significant Development - SSD 10459 prepared by Geoscapes Landscape Architects, Rpt No: LDR01
• Operational Environmental Management Plan (OEMP).
• Construction Environmental Management Plan (CEMP).
• SSD 10459 Development Consent Appendix 2 - Applicant's Management and Mitigation Measures.
• Vegetation Management Plan (VMP), prepared by AECOM 2020

Section 1.0 provides an introduction to the LMP
Section 2.0 describes the general site conditions
Section 3.0 describes the proposed planting species
Section 4.0 describes specific landscape types
Section 5.0 describes irrigation and disease control
Section 6.0 describes protective measures for trees, vegetation and erosion
Section 7.0 monitoring and reporting

The report describes maintenance categories as follows:

1. Specific Landscape types –

• Swamp Oak Floodplain Forest within the Riparian Zone - This re-vegetation area has a mix of trees, shrubs, native grasses and groundcovers planted in accordance with the Landscape Plans.
• Eastern Swale - This is planting capable of surviving in temporary inundation type conditions.
• Buffer Planting - This is a 5m setback containing native tree, shrub and groundcover planting to the western boundary.

2. All areas of the site – Those maintenance activities that apply to all areas of the site. These activities include but is not limited to:

a. Soil Management
b. Mulching
c. Pruning
d. Weeding
e. Disease and Insect Control
f. Irrigation

1.8 Intensity of Use

A key factor in the frequency and types of landscape maintenance activities required for particular areas is the intensity of their use.

All planting areas

Planting occurs close to the site boundary in areas to the south, east and western boundaries. These will generally be of low activity.

Areas of mass / riparian planting are not generally susceptible to compaction from pedestrian usage, therefore heavier textured soils can be used if required.

2.0 GENERAL SITE CONDITIONS

2.1 Soil

The site had previous industrial uses and has been remediated. It is recommended that all topsoil be imported for new planting works.

2.2 Existing Vegetation

Within the landscape plans and VMP, an area along the shoreline to Duck River has been identified for retention and protection. Sediment, protection fencing and management activities for this area are described within the VMP.

3.0 PROPOSED PLANTING SPECIES

3.1 Riparian Planting

The riparian area will be planted with trees, shrubs and groundcovers that form part of the Swamp Oak Floodplain Forest community. Across the entire corridor, approximately 500 canopy and sub canopy trees are proposed to be planted to fulfill re-vegetation outcomes within the VMP. A future 2.5m wide access track has been proposed for maintenance. All species are listed in the schedule within section 3.5 and the landscape documentation and should be read in conjunction with this LMP. The landscape plans document the placement and planting of species listed in the VMP. They are intended to create a fully structured 40m averaged riparian zone. The Downer site contains only part of the riparian corridor and access for maintenance of this area will be from the southern part of the Downer lot.

3.2 Swale Planting

The eastern swale is to be planted with a mix of native grasses capable of growing in conditions of temporary water inundation.

3.3 Western Buffer Planting

The western buffer is intended to be mass planted with layered native trees, shrubs and ground covers and will provide a 5m screening buffer from the adjoining lot.

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3.4 LOT 6 Plant Species

Stage 1 Lot 6 Downer Site Planting							
CODE	BOTANICAL NAME	COMMON NAME	MATURE HEIGHT	MATURE WIDTH	POT SIZE	NATIVE	PLANTING DENSITY
Trees							
CAL SAL	*Callistemon salignus*	Sweet Willow Bottlebrush	8m	5m	100LT	✓	AS SHOWN
ELA RET	*Elaeocarpus reticulatus*	Blueberry Ash	9m	4m	75LT	✓	AS SHOWN
EUC TER	*Eucalyptus tereticornis*	Forest Red Gum	20-30m	5m	75LT	✓	AS SHOWN
GLO FER	*Glochidion ferdinandi*	Cheese Tree	15m	8m	100LT	✓	AS SHOWN
WAT FLO	*Waterhousea floribunda*	Weeping Lilly Pilly	8m	5m	75LT	✓	AS SHOWN
Shrubs & Hedge planting							
ACM smi	*Acmena smithii*	Lilly Pilly	3m**	1m	200mm	✓	750mm Ctrs
BUR spi	*Bursaria spinosa*	Sweet Bursaria	1.5-4m	1.5-3m	200mm	✓	AS SHOWN
COR alb	*Correa alba*	White Correa	1.5m	1.5m	200mm	✓	AS SHOWN
COR gla	*Correa glabra 'Ivory Lantern'*	Rock Correa	1.6m	0.6m	200mm	✓	AS SHOWN
COR ref	*Correa reflexa*	Native Fuchsia	0.5-1.2m	0.5m	200mm	✓	AS SHOWN
CAL rev	*Callistemon citrinus 'Reeve's Pink'*	Reeve's Pink Bottlebrush	3m	2m	200mm	✓	AS SHOWN
CAL whi	*Callistemon citrinus 'White Anzac'*	Bottlebrush	0.5-1.5m	2m	200mm	✓	AS SHOWN
CRI ped	*Crinum pedunculatum*	Swamp Lily	1.5-3m	1-3m	200mm	✓	AS SHOWN
DOR exc	*Doryanthes excelsa*	Gymea Lily	2-3m	2-3m	200mm	✓	AS SHOWN
Grasses and Groundcovers							
DIA bre	*Dianella caerulea 'Breeze'®*	Blue Flax Lily	0.8m	0.8m	Tubestock	✓	5/m2
DIA lil	*Dianella caerulea 'Little Jess'™*	Blue Flax Lily	0.4m	0.4m	Tubestock	✓	5/m2
LOM tan	*Lomandra longifolia 'Tanika'®*	Spiny-headed Mat-Rush	0.8m	0.6m	Tubestock	✓	5/m2
LOM kat	*Lomandra longifolia 'Katrinus Deluxe'*	Spiny-headed Mat-Rush	0.8m	0.8m	Tubestock	✓	5/m2
VIO ban	*Viola banksii*	Native Violet	0.4m	NIL	140mm	✓	3/m2
Swale planting							
BAU jun	*Baumea juncea*	Bare Twig Rush	1m	1m	Tubestock	✓	3/m2
CAR app	*Carex appressa*	Tall Sedge	1m	1m	Tubestock	✓	3/m2
DIA cae	*Dianella caerulea*	Blue Flax Lily	0.8m	1.5m	Tubestock	✓	3/m2
GAH cla	*Gahnia clarkei*	Saw Sedge	1.5m	1.5m	Tubestock	✓	3/m2
IMP inu	*Imperata cylindrica var. major*	Blady Grass	1.2m	0.3m	Tubestock	✓	3/m2
ISO inu	*Isolepis inundata*	Swamp Club-sedge	0.5m	0.5m	Tubestock	✓	3/m2
JUN usi	*Juncus usitatus*	Common Rush	1.2m	0.5m	Tubestock	✓	3/m2
LOM lon	*Lomandra longifolia*	Spiny-headed Mat-Rush	0.8m	0.8m	Tubestock	✓	3/m2

*Final plant number to be calculated at CC stage

**To be trimmed to specified height

3.5 Riparian Corridor Plant Species

Riparian Corridor Planting - Swamp Oak Floodplain Forest							
CODE	BOTANICAL NAME	COMMON NAME	MATURE HEIGHT	MATURE WIDTH	POT SIZE	NATIVE	PLANTING DENSITY
Trees Canopy Species 1 per 300m2							
ALP EXC	*Alphitonia excelsa*	Red Ash	20m	15m	Forestry Tube	✓	AS SHOWN
CAS GLA	*Casuarina glauca*	Swamp Oak	20m	15m	Forestry Tube	✓	AS SHOWN
GLO FER	*Glochidion ferdinandi*	Cheese Tree	15m	8m	Forestry Tube	✓	AS SHOWN
MEL STY	*Melaleuca styphelioides*	Prickly-leaved Paperbark	10m	8m	Forestry Tube	✓	AS SHOWN
MEL QUI	*Melaleuca quinquenervia*	Broad-leaved Paperbark	20m	6m	Forestry Tube	✓	AS SHOWN
Small Trees / Shrubs 1 per 50m2							
ACM smi	*Acmena smithii*	Lilly Pilly	3-5m	2m	Tube	✓	AS SHOWN
CUP ANA	*Cupaniopsis anacardioides*	Tuckeroo	6m	3m	Tube	✓	AS SHOWN
CAL SAL	*Callistemon salignus*	Sweet Willow Bottlebrush	8m	5m	Tube	✓	AS SHOWN
MEL alt	*Melaleuca alternifolia*	Narrow-leaved Paperbark	7m	3m	Tube	✓	AS SHOWN
MEL ERI	*Melaleuca ericifolia*	Swamp Paperbark	9-15m	3m	Tube	✓	AS SHOWN
MYO acu	*Myoporum acuminatum*	Waterbush	10m	3m	Tube	✓	AS SHOWN
Grasses and Groundcovers 1 per 2.5m² in fully structured vegetation only							
BLE ind	*Blechnum indicum*	Swamp Water-fern	1m	NIL	Forestry Tube	✓	AS SHOWN
CAR app	*Carex appressa*	Tall Sedge	1m	1m	Forestry Tube	✓	AS SHOWN
DIA cae	*Dianella caerulea*	Blue Flax Lily	0.8m	1.5m	Forestry Tube	✓	AS SHOWN
JUN usi	*Juncus usitatus*	Common Rush	1.2m	0.5m	Forestry Tube	✓	AS SHOWN
ISO inu	*Isolepis inundata*	Swamp Club-sedge	0.5m	0.5m	Forestry Tube	✓	AS SHOWN
LOM lon	*Lomandra longifolia*	Spiny-headed Mat-Rush	0.8m	0.8m	Forestry Tube	✓	AS SHOWN
VIO ban	*Viola banksii*	A Violet	0.40m	NIL	Forestry Tube	✓	AS SHOWN
Vines 1 per 25m² in fully structured vegetation only							
PAR str	*Parsonsia straminea*	Common Silkpod	0.1m	NIL	Tube	✓	AS SPECIFIED
STE dis	*Stephania japonica var. discolor*	Snake Vine	na	NIL	Tube	✓	AS SPECIFIED
FLA ind	*Flagellaria indica*	Whip Vine	15m	NIL	Tube	✓	AS SPECIFIED
Bioretention Basin planting							
BAU jun	*Baumea juncea*	Bare Twig Rush	1m	1m	Tubestock	✓	5/m2
CAR app	*Carex appressa*	Tall Sedge	1m	1m	Tubestock	✓	5/m2
DIA cae	*Dianella caerulea*	Blue Flax Lily	0.8m	1.5m	Tubestock	✓	5/m2
GAH cla	*Gahnia clarkei*	Saw Sedge	1.5m	1.5m	Tubestock	✓	5/m2
IMP inu	*Imperata cylindrica var. major*	Blady Grass	1.2m	0.3m	Tubestock	✓	5/m2
ISO inu	*Isolepis inundata*	Swamp Club-sedge	0.5m	0.5m	Tubestock	✓	5/m2
JUN usi	*Juncus usitatus*	Common Rush	1.2m	0.5m	Tubestock	✓	5/m2
LOM lon	*Lomandra longifolia*	Spiny-headed Mat-Rush	0.8m	0.8m	Tubestock	✓	5/m2

4.0 LANDSCAPE MANAGEMENT ACTIVITIES

4.1 General

All plant species are native or endemic and have been selected from the VMP (for riparian corridor planting) or council planting lists, the landscape plans follow these selections and set out planting with specified densities and spacings. Areas shall be weed free and mulched annually to suppress weed growth and retain moisture content within the soil.

The key differences in the management of native plants are their requirement for low-phosphorous fertilisers and a lower fertiliser rate than exotic species generally. Plants of the Pea group (including Acacias, Daviesia and Pultenaeas) and Casuarinas are also able to fix their own Nitrogen. Natives also have lower water requirements in comparison to exotics and are adapted to the harsher Australian conditions.

For the above reasons native plantings make a more sustainable option in respect of the long term landscape management and should there be failures the original species specified on the landscape plans should always be reused.

4.2 Swamp Oak Floodplain Forest (SWOF) within Riparian Corridor

To protect waterways, loose mulch should not be placed within 10m of the top of bank. Mulch under a covering of biodegradable erosion protection, such as pegged and overlapped open-weave jute mesh, should be used for revegetation areas within 10m of the top of bank.

Tubestock is used throughout the riparian corridor, therefore a 10-15% failure rate is to be expected through the establishment stage. The contractor is to monitor and replace failed tubestock immediately.

4.3 Swale Planting

Tubestock sedges and rushes are to be planted within the swale at a rate of 3 per m2 as to not adversely affect flows. A minimum of eight (8) species are to be utilised in these areas.

4.4 Soil Management

As a general rule riparian or areas of native mass planting require a sandy loam to clay loam topsoil mix which is suitable for the planting of grasses, woody and herbaceous perennials and trees. The following mix is suitable for plants that do not have high nutrient requirements and are not susceptible to compaction. Note that if phosphorous sensitive natives are used, the phosphorous levels of all components must be checked for suitability. Additional drainage may be required depending on the situation.

The following table outlines suggested components, that may likely meet the physical requirements of the soil for all landscape areas:

Sandy loam soil or site won topsoil Composted soil conditioner conforming with AS 4454	70-100% by volume 0-30% by volume	e.g. 8 parts washed sand/2 parts sandy loam/1 part AS 4454 compost

(Leake and Haege 2014, p.87)

4.5 Fertilising, Composting and Mulching

To ensure the health and vigor of the riparian and street trees are maintained. Mass planted areas will perform better when the soil conditions

are healthy. Building healthy soils is the key to achieving the long term maintenance goals of mass planted landscape areas. Soil health is primarily achieved with regular applications of organic soil conditioners such as animal manures, decomposed green waste or proprietary blends of compost.

Fertilising and composting are not critical maintenance activities except where there are obvious deficiencies, but should be assessed on an annual basis by observation and leaf analysis.

Maintain an adequate level of mulch to all planting and new riparian areas in order to maximise water conservations and to suppress weeds. Do not use organic mulches in the swale. Instead a rock mulch should be used that will not be disturbed by water flows.

4.6 Pruning

Remove dead or dying plant material from mass planted areas on the site as required. This may become necessary as plantings mature, after damage or adverse environmental conditions. Pruning will be carried out on trees and shrubs that require it to remove the dead and damaged branches and to retain natural shape and to improve health and vigour. Where die-back of plant material has been identified new plants will be planted as soon as possible, using species originally specified.

4.7 Weeding

For the riparian corridor, a detailed Weed Management Plan is also described within the VMP .

Weeding is often a concern in new areas of revegetation type landscaping. As of 1 July 2017 the NSW Noxious Weeds Act 1994 was repealed and replaced with the NSW Biosecurity Act 2015 and its accompanying Biosecurity Regulations. Under the act, plants are no longer termed "noxious weeds" nor do they have "classes" of weeds. The new legislation provides greater flexibility to respond to, manage and control all weed species. All plants are assessed for their biosecurity risk. This is the risk that the introduction, presence, spread or increase of a plant will have, or may potentially have, an adverse effect on the economy, the environment or the community.

Environmental weeds are non-local plants that can invade and change natural areas and threaten the survival of native plants and animals. After land clearing, environmental weeds are considered to be the next greatest threat to our indigenous biological diversity. Environmental weeds have the potential to readily invade planting bed areas and potentially impact on the adjacent lands.

In addition to the environmental hazard posed by weeds, weeds occurring in mass planted beds, growing from the base of trees and from pavement can be unsightly and presents an untidy appearance.

Appendix 1 of the Greater Sydney Regional Strategic Weed Management Plan 2017-2022 lists all priority weeds for the Greater Sydney region that have prescribed requirements under the NSW Biosecurity Act 2015. It also lists other regional priority weeds and the minimum outcomes that demonstrate compliance with the general biosecurity duty.

NSW WeedWise is a NSW Department of Primary Industry website which profiles over 300 high priority weeds across the State and Greater Sydney Region. It describes the Biosecurity duty required under the Biosecurity Act 2015 for each plant and outlines their methods of control (including registered herbicide options).

Another guide for the control of weeds on the site is the New South Wales Weed Control Handbook a guide to weed control in non-crop, aquatic and bushland situations NSW DPI management guide, seventh edition.

A copy of the handbook can be downloaded at the link:

https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0017/123317/weed-control-handbook.pdf

To ensure that environmental weeds do not reproduce within or spread into mass planted areas and compete with plantings and spread to other areas such as Duck River, weeding and weed control is considered to be a critical maintenance action.

Maintenance Action Required	Frequency
Prevent reproduction of weeds by destroying seedlings and established weeds before seed set or other propagules form. Remove by hand in the first instance (where infestations are low). Ensure that the entire weed including all roots is removed. Dispose of the weeds off site.	Monthly or as defined by the VMP
Remove by Herbicide application any weeds which cannot be controlled by hand removal. Herbicide application must occur before weed seed set. Non-target species and areas must be reinstated if damaged by herbicide application.	
Herbicide use to be in accordance with regulation rates and manufacturers recommendations. Herbicide use must comply with the requirements of the Noxious and environmental weed control handbook. A guide to weed control in non-crop, aquatic and bushland situations. NSW Department of Primary Industry Management Guide, Seventh Edition.	
After spraying, lop any dead weeds flush with the ground surface and dispose of the cuttings.	Monthly or as defined by the VMP
Use of bio-degradable herbicide is mandatory	

5.0 IRRIGATION, DISEASE AND INSECT CONTROL

5.1 Temporary Irrigation

It is recommended that the riparian corridor has a temporary irrigation system installed to help establish revegetation works within the first 6 months after planting. The irrigation system is to be designed, supplied and installed by an experienced specialist irrigation contractor, nominated by the Landscape Contractor and approved by the Head Contractor or their landscape consultant. After selection they will be required to prepare detailed irrigation plans and specifications for approval prior to commencing work. The Landscape Contractor will co-ordinate the irrigation installation to the client / landscape architects approval. Ensure completion of the irrigation system before the commencement of any other landscape works, so as to provide a readily available supply of water to planting areas.

Upon completion of the installation of irrigation works, the Landscape Contractor is to run through the system to ensure that it is operating correctly and instruct the client's representative in the correct operation and maintenance of the system.

The following principles are to apply:

Maintain adequate soil moisture – match supplemental irrigation water needs to climate conditions and available soil water
Water effectively – apply water so that it reaches the root systems with minimal losses
Encourage extension of the root system – apply water to extremity of root system and beyond
Remove competition for water – maintain mulch around the plants

5.2 Disease, Insect and Feral Animal Control

Always consider biological and non-chemical controls in favour of chemical controls in the first instance because the margin for error is far smaller with chemicals. For example most insecticide will also harm beneficial insects as well as the target species. For a comprehensive reference to the identification, diagnosis and control of pests and diseases refer to "What Garden Pest or Disease Is That? Organic and Chemical Solutions for Every Garden Problem" by Judy McMaugh 2000 New Holland.

If feral animals become a problem refer to Greater Sydney Regional Strategic Pest Animal Plan 2018 - 2023.

The plan can be found at the following location:

https://www.lls.nsw.gov.au/__data/assets/pdf_file/0003/820794/greater-sydney-strategic-pest-plan-web.pdf

6.0 PROTECTIVE MEASURES

6.1 Protection of Existing Vegetation

Existing vegetation to the Duck River shoreline is nominated within the VMP and landscape documentation to be protected and retained.

Existing vegetation needs protection during construction and establishment. An existing fence is present along the edge of the existing Duck River riparian vegetation and is likely to remain in place during construction.

As per commitments of the EIS, the existing native vegetation along Duck River is to be demarcated as a no-go zone and is to include appropriate signage. Access to the riparian corridor (outside the existing native vegetation) during construction is to be limited to personnel and equipment required to install the stormwater outfalls and for revegetation works. After the stormwater outfalls and revegetation works are complete, the riparian corridor will be permanently fenced.

6.2 Tree Protection

Tree protection must comply with the Australian Standard 4970 – 2009 Protection of trees on development sites.

The relevant Australian Standards are:
- AS 4970 Protection of trees on development sites.
- AS 4687 Temporary fencing and hoardings

6.3 Erosion, Contamination and Sedimentation Control

During construction, all precautions necessary should be undertaken to prevent erosion, contamination, and sedimentation of the site, surrounding areas and drainage systems, including but not limited to the following:

- Construction of temporary drains and catch drains

- Diversion and dispersal of concentrated flows to points where the water can pass through the site without detrimental impacts

- Construction and maintenance of silt traps to prevent discharge of scoured material to downstream areas

- Stabilisation of exposed soil surfaces

• Use of erosion and sediment control measures to collect sediment and to reduce flow velocities

• Construction of sediment fencing and erosion controls as per Landcom's Managaing Urban Stormwater: Soils and Construction 2004.

• Regular monitoring and maintenance of all erosion and sediment control structures throughout the construction and operational phases of the development to ensure their effective function.

7.0 MONITORING AND REPORTING

General maintenance tasks are described in SSD landscape drawing Specifications & Typical details SSD-16. A Maintenance Schedule is also included in Appendix B of this report. A log book should be used to record daily/weekly/monthly visits. All maintenance actions should be recorded in the log book.

Regular inspections of all landscape areas should be undertaken initially by the appointed contractor and then by lot owners following handover. This is to ensure that maintenance is carried out according to the plan. Inspections should include the ongoing protection of revegetation works during its establishment period.

8.0 APPENDICES

8.1 Appendix A - Approved Central Sydney Industrial Estate Landscape Masterplan

Drawing Title: **Overall Master Plan**
DWG No: **SSD-01**

GEOSCAPES LANDSCAPE ARCHITECTS
Suite 215, 284 Victoria Ave, Chatswood NSW 2067 Ph. (02) 9411 1485
www.geoscapes.com.au
ABN 64 620 265 781 ACN 620 265 781

Project Manager: element Element Environment Pty. Ltd.

Client: VE PROPERTY
LEVEL 16, 726 BOURKE STREET
DOCKLANDS VIC 3008
PH: (03) 8623 144

Scale: 1:5000@A1 1:10000@A3
Date: 26.11.2020
Job Number: 200411
North:

Project: SSD - Central Sydney Industrial Estate
9 Devon Street, Rosehill, NSW 2142

Rev	Date	Description	FOR SSD APPLICATION	
			Drawn	Checked
H	09.10.20	UPDATED FOR SSD	SB	BG
I	13.10.20	UPDATED FOR SSD	SB	BG
J	11.11.20	UPDATED FOR RTS	SB	BG
K	26.11.20	UPDATED FOR RTS	PT	BG

8.2 Appendix B - Maintenance Schedule

CATEGORY		TIMEFRAMES / FREQUENCY			
	Daily/Weekly	2 Weekly/Monthly	3 to 6 Months	As Required	Tasks and Specification
1. Weeding and Rubbish Removal		✓			Remove by Herbicide application any weeds which cannot be controlled by hand removal. Herbicide application must occur before weed seed set. Protect plants from overspray and avoid if rain is likely within 12 hour period. Non-target species and areas must be reinstated if damaged by herbicide application. Dispose of any waste material using appropriate methods and at designated disposal sites. Maintain weeds for a period of 12 months, with more frequent weeding in the summer months. Use of bio-degradable herbicide is mandatory
2. Leaf Litter Removal		✓	✓		Remove leaf litter from pathways
3. Mulching		✓	✓		Reapply mulch to maintain to a depth of 75mm in areas that are deficient. Soil should be aerated before placing mulch. After 12 months, mulching will have broken down and should be topped up to ensure a depth of 75mm. A slow release, low phosphorous fertiliser should also be applied.
4. Plant Fertiliser			✓		Only to be applied if plants are noticeably under stress and the plant will benefit from the application of the fertiliser. Apply slow release fertiliser N:P:K ratio– 18:3:10 at manufacturer's recommended rate per plant.
5. Pest & Disease Control		✓		✓	Check for incidence of fungal and insect attack. Avoid use of chemical sprays. Apply appropriate treatment for fungal and insect attack if necessary. Check for damage by animals, seek specialist advice if persistent damage is observed.
6. Pruning, Trimming, Stakes and Ties		✓			Remove deadwood, remove suckering roots from rootball, check ties. Improve plant shape and promote new growth .Adjust ties and stakes as necessary. Stakes can be removed once plants are self-supporting. Identify need for tree structural work and appoint contractor to perform work.
7. Plant Removal & Replacements		✓			Inspect for failed or dying plants requiring replacement and record probable cause. Replant after dead or failed plant removal. Densities, sizes and species to be in accordance with Landscape DWG SSD-17 and relevant drawing sheet no. Water replacement plantings for a minimum of 12 weeks after planting.
8. Urgent Works	✓				To be actioned within 7 days.
9. Watering	✓	✓			Water as necessary every day especially during periods of hot weather. 2 week interval watering should be maintained until planting is fully established. Best practice watering is early morning or late afternoon to reduce evaporation.

CATEGORY		TIMEFRAMES / FREQUENCY				
	Daily/Weekly	2 Weekly/Monthly	3 to 6 Months	Annually	As Required	Tasks and Specification
SWALE						
1. Outlet			✓		✓	Check for no evidence of erosion, blockage, damage or standing water. Outlet freely draining. No excessive sediment build-up (i.e. more than 20% of pipe opening blocked with sediment). Refer to Water by Design (2012) Rectifying Vegetated Stormwater Treatment Assets, if the erosion is either recurring or severe.
2. Erosion and Scour			✓			Check for no evidence of erosion. Eroded areas should be locally re-profiled or reinforced and re-planted if necessary. Refer to Water by Design (2012) Rectifying Vegetated Stormwater Treatment Assets, if the erosion is either recurring or severe.
3. Sediment accumulation			✓			Check for no sediment accumulation in the base of the swale. Sediment should be removed from the base if it is impeding the free drainage of stormwater. The removal of accumulated sediment may involve removal and re-establishment of vegetation. Refer to Water by Design (2012) Rectifying Vegetated Stormwater Treatment Assets, if excessive sediment deposition is a recurring issue. Note: the disposal of sediment material must comply with EPA NSW guidelines for the disposal of contaminated soil .
4. Surface ponding and boggy conditions				✓		Check for no surface ponding or permanently saturated soils in the base of the swale 24 hours after rainfall. Note: the presence of mosquito larvae in isolated pools of water may indicate ponding problems. Sediment should be removed from the base of the swale if it is impeding the free drainage of stormwater. The removal of accumulated sediment may involve removal and re-establishment of vegetation. Refer to Water by Design (2012) Rectifying Vegetated Stormwater Treatment Assets if excessive sediment deposition is a recurring issue. Note: the disposal of sediment material from a swale must comply with EPA NSW guidelines for the disposal of contaminated soil.

8.3 Appendix C - Reference Documents

The following Australian Standards are referred to in this management plan:

- AS 1319 Safety signs for the occupational environment
- AS 4373 Pruning of amenity trees
- AS 4454 Composts, soil conditioners and mulches
- AS 4687 Temporary fencing and hoardings
- AS 4970 Protection of trees on development sites

The following documents are referred to in this report:

- Landscape Drawings for State Significant Development- SSD 10459 prepared by Geoscapes Landscape Architects, Dwg No's SSD-00 to SSD-17.
- Landscape Design Report for State Significant Development - SSD 10459 prepared by Geoscapes Landscape Architects, Rpt no: LDR01
- Operational Environmental Management Plan (OEMP).
- Construction Environmental Management Plan (CEMP).
- SSD 10459 Appendix 2 - Applicant's Management and Mitigation Measures.
- Vegetation Management Plan (VMP), prepared by AECOM 2020
- Noxious and environmental weed control handbook. a guide to weed control in non-crop, aquatic and bushland situations. NSW Department of Primary Industry Management Guide, Seventh Edition.
- Soils for Landscape Development. Selection, Specification and Validation. Simon Leake and Elke Haege. CSIRO Publishing 2014.
- What Garden Pest or Disease Is That? Organic and Chemical Solutions for Every Garden Problem. Judy McMaugh 2000 New Holland.

ANNEX F – CONTINGENCY MANAGEMENT PLAN

Item	Trigger/ response	Condition		
		Green	Amber	Red
Noise impacts at sensitive receiver locations	Trigger	Noise levels do not exceed limits.	Minor exceedance of applicable limits.	Significant exceedance of applicable limits.
	Response	Ongoing best practice management measures to minimise noise emissions.	Undertake all feasible and reasonable mitigation and management measures to minimise noise impacts.	Undertake all feasible and reasonable mitigation and management measures to ensure noise levels are below limits. If noise levels cannot be kept below applicable limits then operational processes and management measures will be reviewed.
Visible dust leaving the site	Trigger	Daily inspections show that there is no visible dust leaving the site.	Daily inspections show that there is visible dust leaving the site.	Daily inspections show that there is visible dust leaving the site multiple times during a day OR from multiple locations within the site.
	Response	Continue monitoring program as normal.	Review and investigate activities and respective control measures, where appropriate. Implement additional remedial measures, such as deploying additional sweeper trucks etc.	Undertake an investigation of the dust generating activities, and if necessary, temporarily halt the dust generating activities.
Queuing	Trigger	No queuing identified	Queuing identified within site.	Queuing identified on the public road.
	Response	No response required. Continue monitoring program.	Review the delivery schedule. If drivers are not following the correct schedule, then they should be provided with additional training and an extra copy of the Driver code of conduct.	Review and investigate activities. If it is concluded that activities are directly responsible for queuing on public roads, implement additional control measures that may include: ▪ Put a temporary hold on incoming heavy vehicle deliveries where possible. ▪ Review Driver code of conduct and

				update where necessary. ▪ Provide additional training.
Erosion	Trigger	No evidence of erosion.	Minor gully or tunnel erosions present and/or rilling. Evidence of sediment or sediment laden water leaving the site.	Significant gully or tunnel erosions present and/or rilling. Evidence of sediment or sediment laden water leaving the site.
	Response	Continue water management system implementation.	A suitably trained person to inspect the site. Review of water management structures. Remediate as appropriate. Revise water management system if required.	A suitably trained person to inspect the site. Review of water management structures. Remediate as soon as practical. Revise water management system if required.
Water management structures	Trigger	Water management structures have been designed, constructed and managed in accordance with the water management system.	Inspections indicate that water management structures illustrate minor non-compliance with the water management system.	Inspections indicate a failure of the water management structures.
	Response	Continue water management system implementation.	A suitably trained person to inspect the site. Review of water management structures. Remediate as appropriate. Revise water management system if required.	A suitably trained person to inspect the site. Remediate as soon as practical. Review of engineering design and revise water management system.

ANNEX G – SITE ROLES AND RESPONSIBILITIES

The Production Manager works with the relevant functional managers and human resources personnel to ensure adequate resources are in place for the site.

The Production Manager ensures that the specific roles, inter-relationships, and lines of reporting are defined in the site's organisational structure, and may assign:

- an individual to a specific role
- the responsibilities for the specific role to themselves; or
- the responsibilities for the specific role to other site team members.

Production Manager

Typical Responsibilities

- Visibly committing to and implementing environmental practices as defined in the EMP.
- Overseeing site occupation and delivery compliance to the EMP, and ensuring environmental records are maintained and made available upon request to government agencies.
- Reporting environmental status and environmental incidents.
- Reviewing and participating in environmental incident investigations and nominated corrective measures.
- Instigating site meetings where environmental performance is an agenda item.
- Participating in environmental audits.
- Initiating environmental reviews with the Zero Harm Advisor / Environmental Advisor to facilitate continual improvement.
- Maintaining a useable library of environmental documentation.
- Ensuring required environmental training, including for environmental management, spill response, and spill prevention, is completed.
- Understand legal requirements relevant to their role and responsibilities and implement appropriate measures to comply with legal requirements.
- Verify that legal requirements have been identified in compliance registers and measures to comply are implemented.
- Lead a program of communication activities for informing the community on operations.
- Manage the handling of enquiries and complaints in line with the complaint handling procedure.
- Work closely with the technical streams and management team to ensure known stakeholder requirements are proactively considered.
- Manage the maintenance of stakeholder database and contribute to reporting requirements.
- Ensure that the appropriate management response and handling procedures are instigated and carried through in the event of an incident and/or non-compliance.

Site Supervisor

Typical Responsibilities

- Visibly committing to and implementing environmental practices as defined in the EMP.
- Participating in environmental incident investigations and nominated corrective measures.
- Participating in environmental audits.
- Undertaking monthly environmental inspections across all areas of the site and presenting alerts or findings at toolbox meetings.

- Co-ordinating and facilitating SWMS activities for their area of responsibility.
- Ensuring all personnel, including subcontractors and visitors, undertake site defined induction and training, and are aware of any evacuation and emergency procedures.
- Reporting environmental incidents to the Environmental Advisor as they are identified.
- Participating with the Zero Harm Advisor / Environmental Advisor in the investigation of incidents in their area of responsibility.
- Ensuring environmental issues are raised at site toolbox meetings.
- Comply with the information, instruction, processes and systems provided for legal compliance.

Environmental and Sustainability Advisor (Governance Role)

Typical Responsibilities

- Providing senior support to the Production Manager and Zero Harm Advisor to ensure environmental works are carried out in accordance with the EMP and the respective sub-plans, and Downer procedures.
- Providing technical support to site staff.
- Assisting in the investigation of any incidents.
- Consulting with the administering authorities on environmental matters, as required.
- Maintaining effective Zero Harm systems in the field by developing maximum employee and subcontractor participation.
- Assisting in achieving zero environmental incidents for the site.
- Undertaking regular system/ site environmental audits and producing high quality environment audit reports.
- Provide environmental guidance in resolving issues with a view to continuous improvement and elimination of any environmental incidents.
- Assisting site personnel in the development of site-specific documentation, e.g. SWMS.
- Assisting in the preparation of the Site Risk Register and the environmental induction of site personnel.
- Monitoring and reporting on energy, greenhouse gas and waste management, including sewage disposal.
- Being familiar with and implementing the requirements of this EMP, as required.
- Complying with any regulations or statutory obligations for environmental management.
- Identify legal requirements and implement measures to comply, while also providing guidance and advice regarding relevant Zero Harm requirements.

Downer Worker

Typical Responsibilities

- Visibly committing to environmental procedures and instruction.
- Completing required inductions as specified in this EMP.
- Participating in the formulation of SWMS.
- Implementing environmental controls as detailed in inductions, SWMS, all aspects of this EMP and applicable sub-plans, compliance documents, procedures, and standards.
- Reporting environmental incidents and issues to the relevant Supervisor or to the Environmental Advisor.
- Using equipment provided to reduce environmental hazards or emissions.
- Participating in environmental inspections.

- Contributing to the overall site goal for zero environmental impacts and incidents by making suggestions for improvement where identified.
- Complying with all aspects of this EMP and all associated compliance documents, permits, procedures, and standards.
- Conducting risk assessments and providing SWMS to Downer prior to construction.
- Undertaking induction(s) as defined by this EMP and complying with site environmental instructions.
- Providing to Downer details of all hazardous substances, contained within Safety Data Sheets (SDS), proposed for use in subcontractor scope.
- Providing other environmental related data to Downer as defined by this EMP, including data for NGER, waste generation, and water consumption.
- Attending site meetings when requested.
- Reporting, investigating, and implementing corrective measures arising from associated environmental incidents.
- Attending environmental training and awareness sessions.
- Comply with the information, instruction, processes and systems provided for legal compliance.
- Employees, contractors and subcontractors are to:
    - Notify the Production Manager of any hazard or potential hazard that may result in an incident and/or non-compliance, regardless of the nature or scale.
    - Take immediate action (where it is safe to do so) to prevent, stop, contain and/or minimise any adverse impact associated with an incident and/or non-compliance.

Zero Harm Advisor

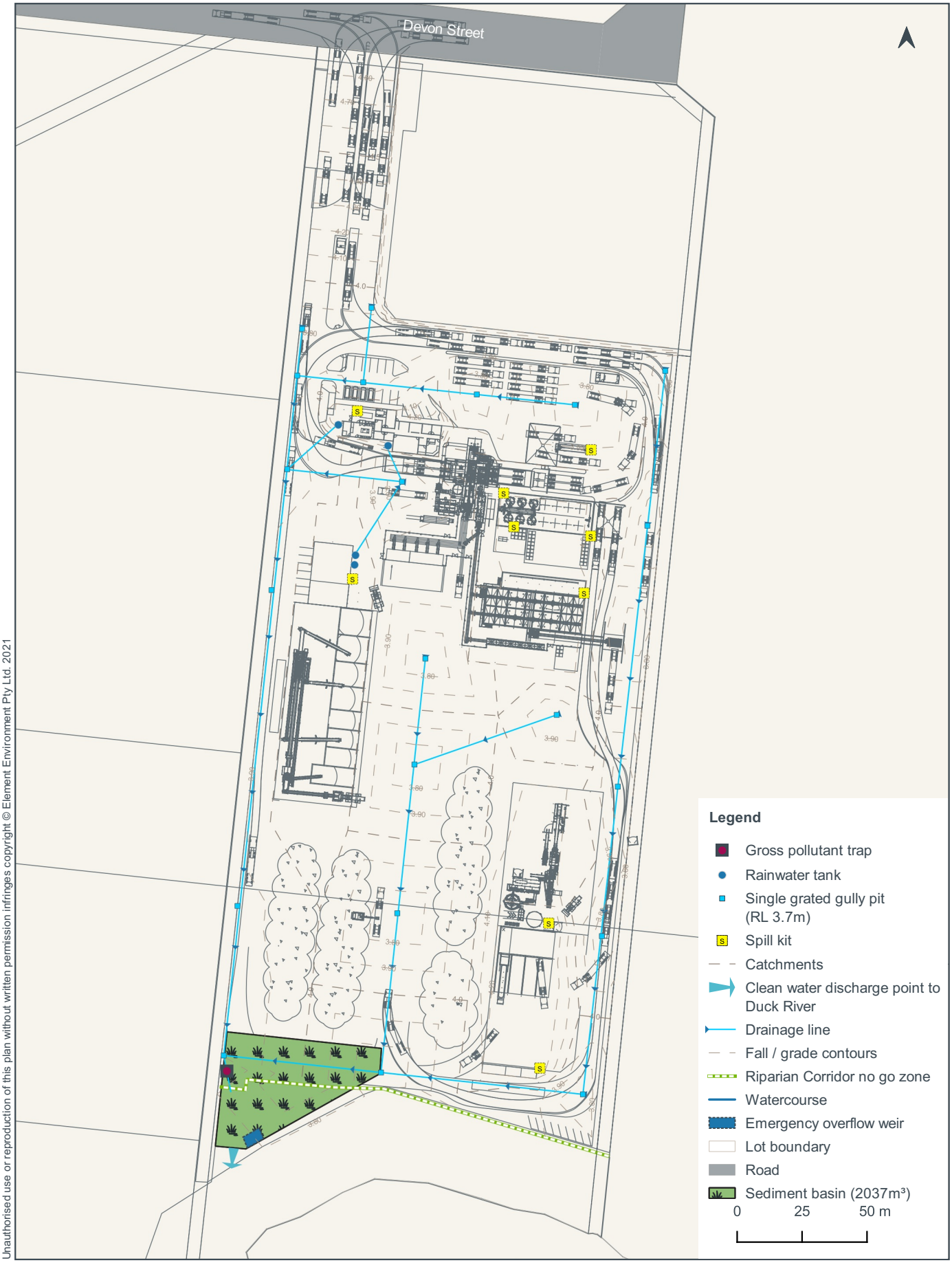
Typical Responsibilities

- Visibly committing to environmental procedures and instruction, and maintaining environmental records defined within this EMP.
- Providing technical support to the Production Manager and site team.
- Assisting the Production Manager / Environmental Advisor in providing environmental training and inducting all site personnel, including subcontractors and visitors.
- Providing environmental input to the formulation of SWMS, as required.
- Resolving and/ or facilitating solutions to site environmental issues and problems.
- Liaising with relevant regulatory authorities and stakeholders, as required.
- Reviewing and participating in environmental incident investigation and nominating corrective measures.
- Carrying out environmental inspections.
- Initiating environmental reviews with the Production Manager and facilitating continual improvement.
- Directing the workforce (in consultation with the Production Manager) to stop work in order to achieve compliance with the environmental requirements of the head contract, as covered in the EMP, or to prevent environmental damage.
- Identify legal requirements and implement measures to comply, while also providing guidance and advice regarding relevant Zero Harm requirements.

ANNEX H – ENVIRONMENTAL CONTROL MAP

Annexure H
Environmental control map

Sustainable Road Resource Centre
OPERATIONAL ENVIRONMENTAL MANAGEMENT PLAN



ANNEX I – PROCESS FIGURES

Figure 3.14 Asphalt production process diagram from the EIS is included below.

Figure 3.14
Asphalt production process diagram

Central Sydney Industrial Estate incorporating the Sustainable Road Resource Centre
STATE SIGNIFICANT DEVELOPMENT - ENVIRONMENTAL IMPACT STATEMENT

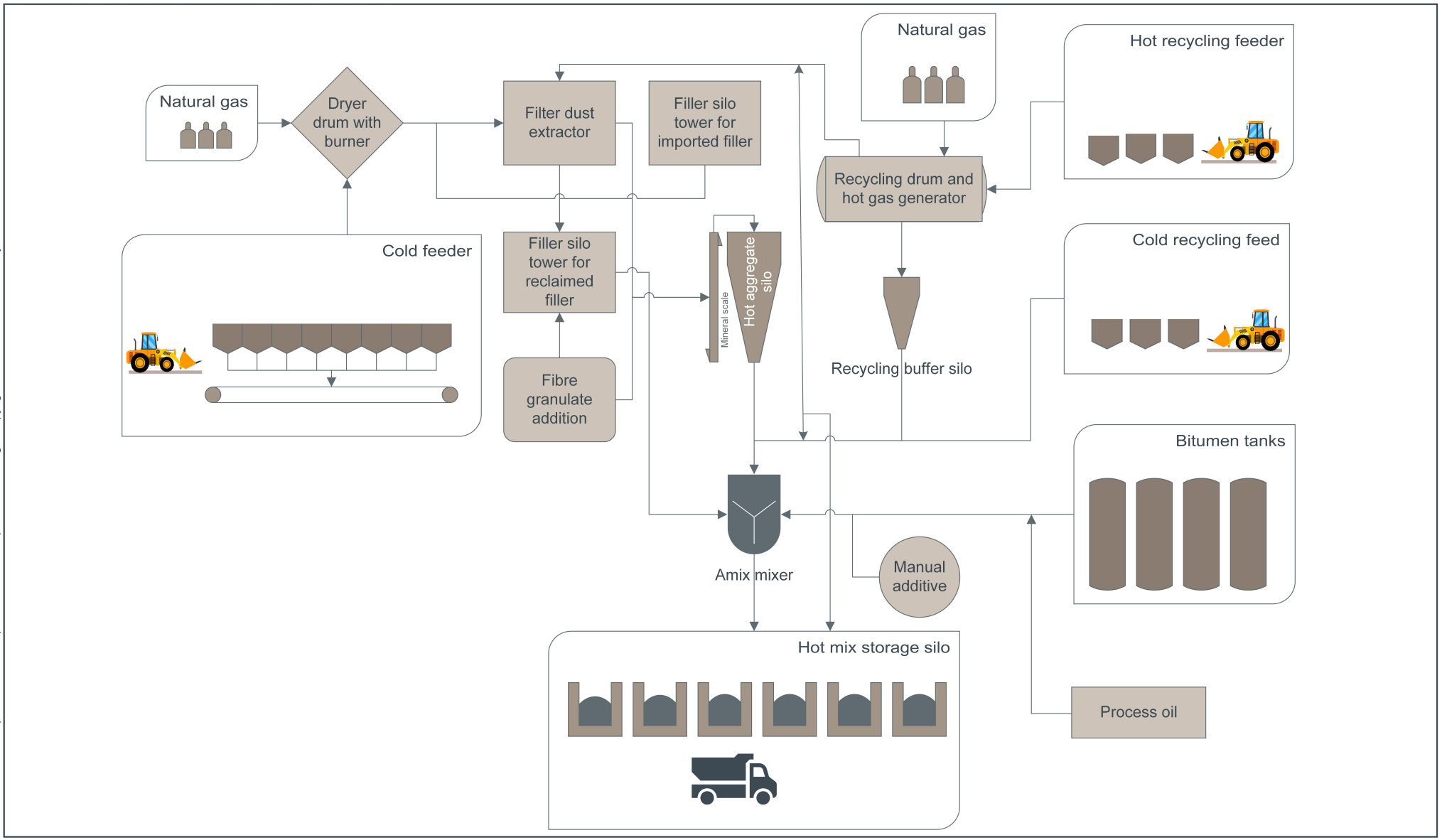


Figure 3.15 RAP process diagram from the EIS is included below.

Figure 3.15
RAP process diagram

Central Sydney Industrial Estate incorporating the Sustainable Road Resource Centre
STATE SIGNIFICANT DEVELOPMENT - ENVIRONMENTAL IMPACT STATEMENT

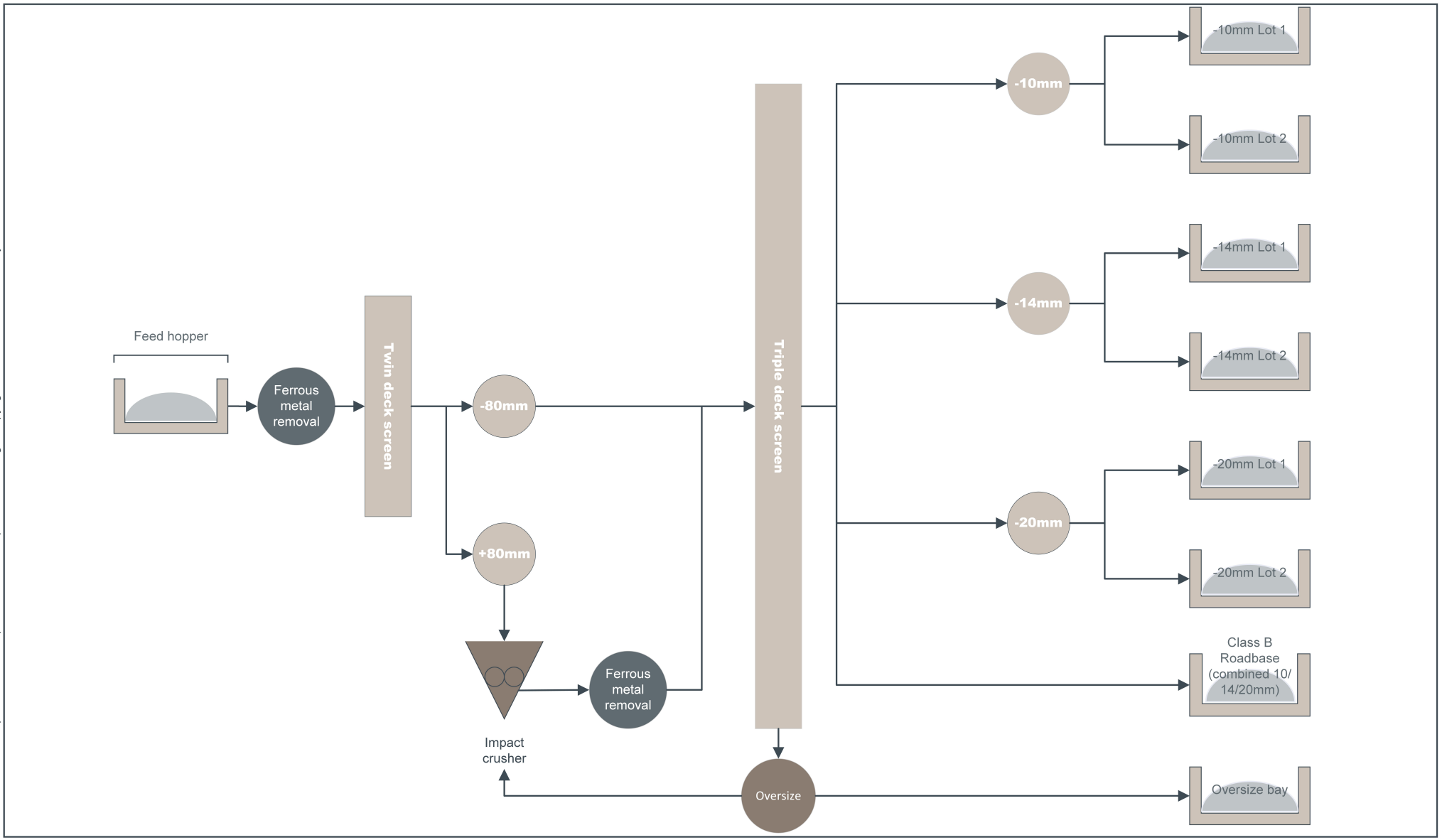


Figure 3.17 Bitumen products process diagram from the EIS is included below.

Figure 3.17
Bitumen products process diagram

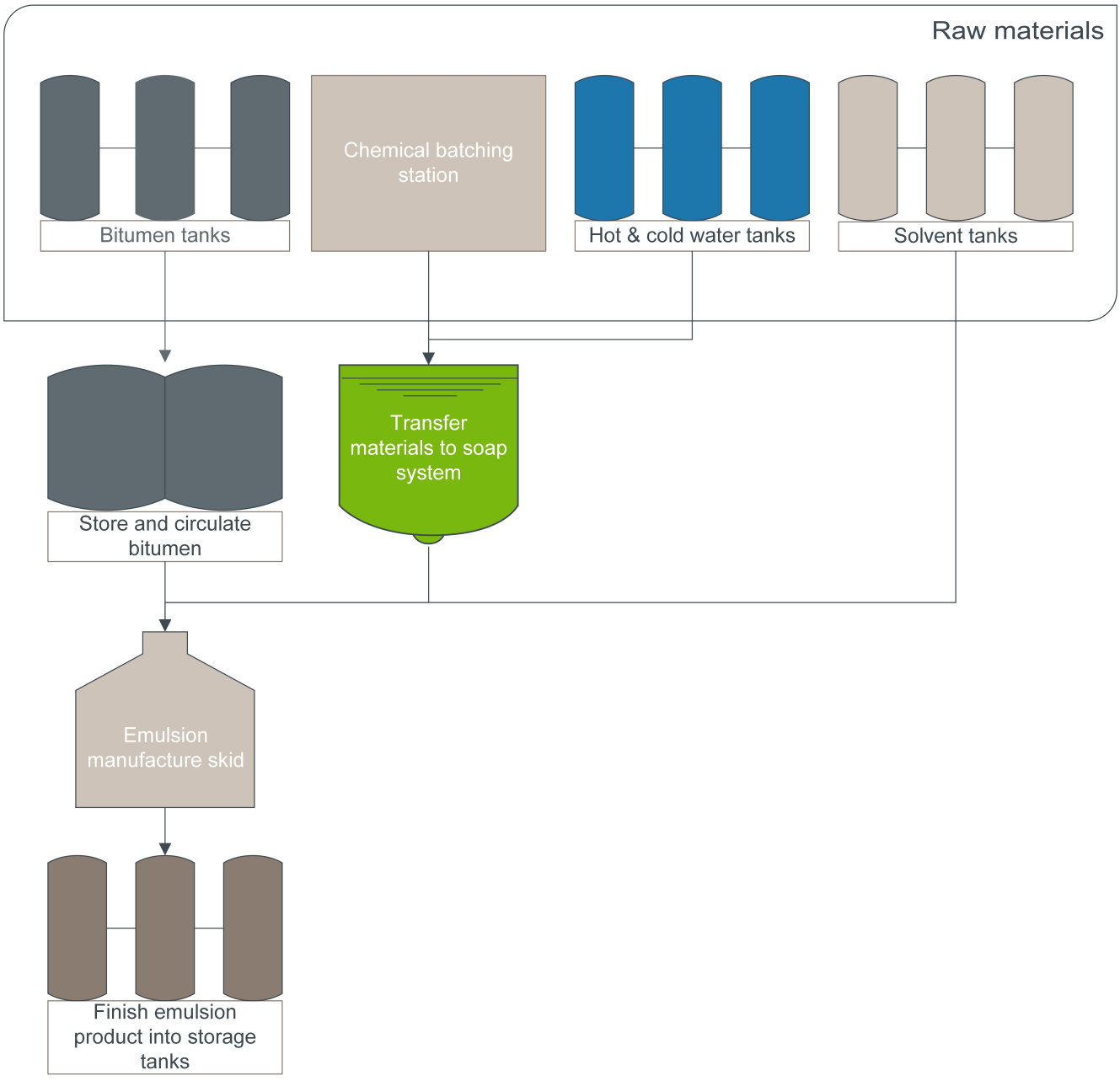
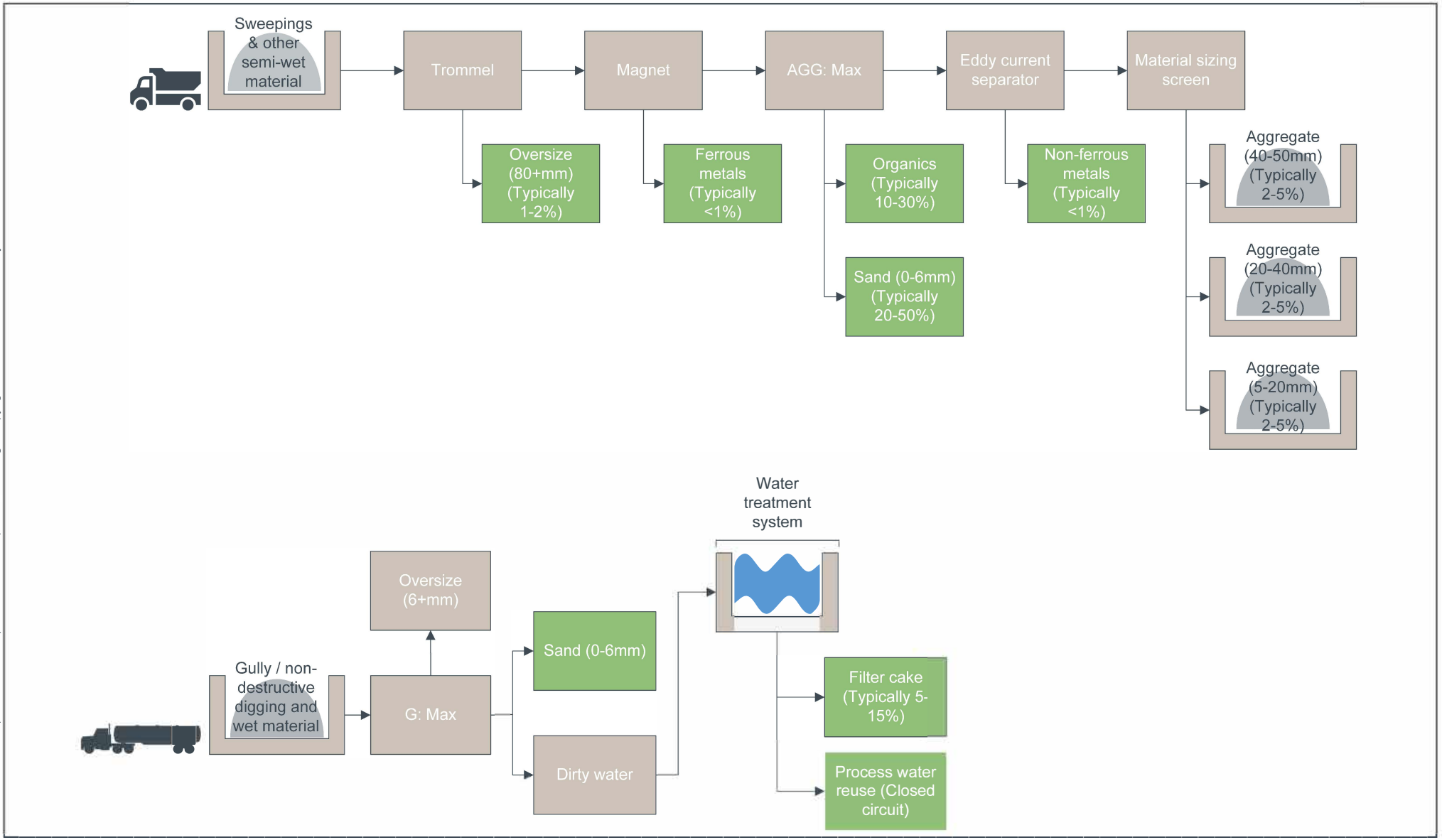


Figure 3.18 Reconomy process diagram from the EIS is included below.

Figure 3.18
Reconomy process diagram



ANNEX J – CORRESPONDENCE

Mr Mark Roberts
Senior Environmental Scientist
Element Environment
25 Kingfisher Way
WARRIEWOOD NSW 2102

3 August 2021

Dear Mr Roberts

Central Sydney Industrial Estate and Downer Sustainable Road Resource Centre (SSD-10459)
Combined Submission of Management Plans
Operational Environmental Management Plan - DSRRC

I refer to your request to seek approval to combine various management plans (in accordance with Condition A14) which are required to form part of the Operational Environmental Management Plan (OEMP) under Conditions C5 and C6 of the consent for the Downer Sustainable Road Resource Centre (DSRRC) (SSD-10459).

The Planning Secretary has previously approved the staging of pre-construction management plans, with the CEMP for the DSRRC component of the project approved by the Planning Secretary on 16 February 2021.

The Department notes the combining of management plans will in this instance apply to the OEMP for the DSRRC.

The Department has reviewed your request and is satisfied with the proposed approach to combining management plans. Accordingly, the Planning Secretary agrees to the combining of management plans for the OEMP for the DSRRC.

If you wish to discuss the matter further, please contact David Koppers on 9373 2869 or at david.koppers@planning.nsw.gov.au.

Yours sincerely

Chris Ritchie
Director
Industry Assessments

As nominee of the Planning Secretary

DOC21/1090745

Mr Dale Thomas
Downer EDI Works PTY LTD
9 Devon St
Rosehill NSW 2142
Email: Dale.Thomas1@Downergroup.com
cc. david.koppers@planning.nsw.gov.au

Dear Mr Thomas

I am writing regarding the preparation of environmental management plans required under the Development Consent conditions for the Downer resource recovery centre at Rosehill (SSD 10459). The Consent conditions state these plans must be prepared in consultation with the Environment Protection Authority (EPA) and to the satisfaction of Department of Planning, Industry & Environment (Planning).

For the operational phase of the resource recovery project, these plans include:

• Air Quality Management Plan (AQMP) & Verification Report (AQVR) (Conditions B8-B10);
• Noise Verification Report (NVR) (Condition B17);
• Surface Water Management Plan (SWMP) and Verification Report (SWVR) (Conditions B27-B29); and.
• Waste Management Plan (WMP) (Condition B45).

The WMP, SWMP and AQMP was included in the draft Operational Environmental Management Plan (OEMP) provided to the EPA on 9 November 2021. The EPA provides our comments on these components of the OEMP in Attachment A. The EPA courtesy copied Planning for their consideration as part of the approval process.

The EPA understands that the OEMP is a dynamic document and may become more detailed as operational procedures are refined. At the same time management practices must operate per the broad methodologies listed and assessed in the Environmental Impact Statement and within the conditions of the Development Consent.

In the finalisation of the OEMP for the Rosehill premises, Downer should consider that:

1. As environment regulator for the project as the appropriate regulatory authority under the Protection of the Environment Operations (POEO) Act 1997 (the POEO Act), the EPA's role is to set environmental objectives, whereas it is Downer's responsibility to develop specific strategies, plans and procedures that may be required to meet those objectives.

2. The EPA will regulate the project through an Environment Protection Licence (EPL). Downer retains primary responsibility for the environmental performance of its project and activities; and

3. All plans and procedures should be reviewed and updated on a regular basis. This should consider complaint and incident handling, waste compliance tracking and reporting as well as the outcomes of any regular auditing processes.

If you have questions regarding the above, please phone Walter Moore on (02) 4221 6902.

Yours sincerely

9 December 2021

James Boyle
Unit Head Metro South Operations
Regulatory Operations Metro

Attachment A – Comments on Operations Environmental Management Plan (OEMP)

The EPA has reviewed the draft OEMP (dated 8 November 2021) and provides the following comments below.

Air Quality Management Plan and Verification Report

The OEMP outlines an annual stack testing program and the process to be followed for an Air Quality Verification Report. The EPA makes the following comments:

Suitability qualified person

- The licensee must engage a suitably qualified person to undertake post-commissioning air emissions sampling to verify the emission performance of the exhaust stack.

Relevant Limits under the Clean Air Regulation

- Noting that the licence application now included the fee based activity of petrochemical production related to the asphalt plant, and as the plant is an integrated part of the larger DRSSC facility and is therefore also involved in a scheduled activity, any environment protection licence that is issued will include cover this part of the operation as well.
- Therefore the prescribed Group 6 limits under Schedule 4 of the Protection of the Environment Operations (Clean Air) Regulation 2010 apply.
- Therefore, stack testing proposed in Section 7.4.5 of the OEMP must also be performed for all pollutants and parameters listed in Table 1, using the methods listed in column 3. As noted in the OEMP, all sampling and analysis must be undertaken in accordance with the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.

Table 1

Pollutant	**Units of measure**	**Sampling Method**
Temperature	degrees Celsius	TM-2
Volumetric flow rate	Cubic metres per second	TM-2
Oxygen	Percent	TM-25
Moisture	Percent	TM-22
Solid Particles (Total)	Milligrams per cubic metre	TM-15
Volatile organic compounds	Milligrams per cubic metre	TM-34
Oxides of Nitrogen, as NO_2 equivalent	Milligrams per cubic metre	TM-11
Type 1 and Type 2 substances (in aggregate)	Milligrams per cubic metre	TM-12, TM-13, TM-14

- For the purposes of the Air Quality Verification Report (AQVA), a minimum of two rounds of sampling should be undertaken for each pollutant contained in table 1 to provide a suitable characterisation of the emissions during normal operations. The two rounds of sampling must not occur on the same day. Sampling must be conducted when plant / process conditions are representative of normal operations.

- Note: The EPA may utilise the information contained in the report submitted to include additional conditions in this EPL. This includes but is not limited to emission limits, and ongoing monitoring requirements.

Noise Verification Report

Section 7.8.2 of the OEMP details the scope of the noise verification report, which is to be prepared in accordance with Condition B17 of the consent. The EPA recommends that the noise verification report (Report) should also contain:

a) A detailed description of the monitoring location(s) and atmospheric conditions when samples were taken. Engineering drawings, schematics or photographs should be included to support the description.
b) A description of the process operating conditions at the time of monitoring; including;
    a. description of the process (e.g. processing rates, materials produced, products used, activities)
    b. description of all noise control systems

Note: The EPA may utilise the information contained in the upcoming noise verification report submitted to include additional conditions in this EPL, noting the noise limits included in Condition B16 of the consent.

Surface Water Management Plan and Verification Report

The project Environmental Impact Statement and draft OEMP indicate that Parramatta Development Control Plan 2011 (DCP) water quality objectives will be complied as a result of stormwater quality control measures employed for the project, including a management of stockpiles, chemicals and use of a bio-retention basin (WSUD).

Condition B.17 of the Consent Conditions require Downer to (inter alia):

- characterise the expected quality of discharges in terms of the typical and maximum concentrations of all pollutants likely to be present at non-trivial levels; and
- contain a program to monitor surface water quality.

Condition B27 requires Downer to prepare a Surface Water Management Plan (SWMP) prior to commencement of operation. The SWMP is included in Section 7.7 of the OEMP.

In the OEMP, water quality predictions for site stormwater discharge have been provided for total suspended solids, total nitrogen and total phosphorous. However, the EIS did not quantitatively assess the potential for hydrocarbon run-off from the Downer site due to the modelling methodology used. Given the presence of multiple waste sources, such as bituminous road aggregate, proposed re-use of bund water for dust suppression and the ongoing high vehicle traffic volumes at the site it is possible that hydrocarbons will be present in site stormwater at non-trivial levels. Therefore, the EPA recommends that Oil & Grease (as an indicator of hydrocarbon pollution) be included in surface water testing/verification programs to verify that proposed management and treatment procedures are effective.

The OEMP proposes a surface water verification report and long-term monitoring program.

The EPA recommends that the surface water verification report (SWVR) contains:

c) A detailed description of the sampling location(s) and site conditions when samples were taken. Engineering drawings, schematics or photographs should be included to support the description.
d) All information required to be sampled and assessed in accordance with the *Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales*.

For each site surface water discharge point, surface water verification report should:

a) Assess the potential compliance of measured discharges on the environmental values of the receiving waterway consistent with the interim *Sydney Harbour and Parramatta River Water Quality and River Flow Objectives*, and;

b) Where relevant, identify appropriate measures to mitigate any identified impacts. Consistent with the principles of the NSW Water Quality Objectives, the discharge impact assessment must demonstrate that the premises will maintain the environmental values of the receiving waterway where they are currently being achieved.

Note: The EPA may utilise the information contained in the report submitted to include additional conditions in this EPL. This includes but is not limited to discharge limits, and ongoing monitoring requirements (which may result in an increased frequency of ongoing monitoring proposed in Section 7.7.5.

Pollution Incidents

Section 7.7.5 of the OEMP lists actions that Downer will take in the event of potential impacted discharges are identified. The EPA reminds Downer of their obligation to comply with:

- Section 120 of the POEO Act in relation to water pollution; and
- Duty to Notify pollution incidents threatening or causing harm to the environment, as detailed in Section 5.7 of the POEO Act. This includes notifying such incidents to the NSW EPA.

Waste and Dust Management

All wastes streams received at the premises can only be utilised in accordance with an Approved (and current) Waste Order or Exemption. Waste materials not covered by an Order or Exemption must be disposed of in an approved facility.

Downer should ensure that the management and handling of dangerous goods is done in accordance with AS 1940 (the storage and handling of flammable and combustible liquids) and AS 3780 (the storage and handling of corrosive substances).

Re-use of waste materials generated onsite

A flowchart for removing liquid from a bund is included in Figure 7.1. It is stated that water from a bund could potentially be reused for garden use or within the wet scrubber, pending confirmation that the water does not contain visible hydrocarbon 'rainbows'. Even without a visible sheen hydrocarbons may still be present in the bund water at concentrations posing a potential risk to the environment. Applying these waters to exposed soils (e.g. a garden) could present a risk to the environment. Therefore the water should not be re-used for this purpose.

Similarly, should Downer re-use this water in their wet scrubber, they will need to be certain that this does not impact on the effectiveness of the scrubber operations (e.g. through verification emissions testing).

Asbestos

Page 35 of the OEMP notes that if asbestos containing materials (ACM) is observed during unloading of RAP deliveries, suitably trained personal will remove ACM from the site. What is not made clear is if the remainder of the material will be retained and used at the facility. If it is, the EPA considers this practice to be in contravention of Section 144AAB of the POEO Act, which prohibits recycling and reuse of Asbestos Waste. In the event that ACM is observed during unloading at the premises, then the load would be considered Asbestos Waste and will need to be quarantined and subsequently removed offsite to an appropriate disposal facility.

Should this not occur and this waste be mixed with the larger RAP stockpile, then the larger RAP stockpile will be deemed asbestos waste and will need to be disposed offsite. The EPA will be checking compliance with Section 144AAB during site inspections.

Dust Management

Section 10.3.4 of the OEMP advises that a key performance indicator in relation to dust is no 'excessive' dust is visible beyond the boundary. The EPA's position is that no dust should be leaving the premises. This will be included as a licence condition.

ANNEX K – EMERGENCY MANAGEMENT PLAN

ABN: 66 008 709 608

Emergency Management Plan

Rosehill Sustainable Road Resource Centre

Lot 6, 9 Devon Street Rosehill NSW 2142

Revision Status

Issue/ Version Date	Summary of Section Changes	Reviewed By	Approved By
1. 1/11/2021	New Operational Site	Bradley Dentice	Jason Hearn

TABLE OF CONTENTS

1 PURPOSE AND SCOPE

The purpose of this plan is to ensure that systems are in place at the site to minimise the potential impacts associated with emergency events.

If an emergency event occurs the priorities must be:

1. The safety of all persons on site (including visitors and contractors).
2. The safety of nearby residents.
3. Minimum impact on the environment.
4. Normal business operations are returned to normal as soon as possible.

The scope of works for this project includes, but not necessarily be limited to the provision of all labour, materials, plant, equipment, supervision and all other things necessary to perform the work as required by the business unit. In particular, the work involves the following:

- Asphalt Production
- Material Repurposing (Reconomy)
- Recycled Asphalt Repurposing (RAP)
- Quality Testing (Laboratory)

2 SITE EMERGENCY PROFILE

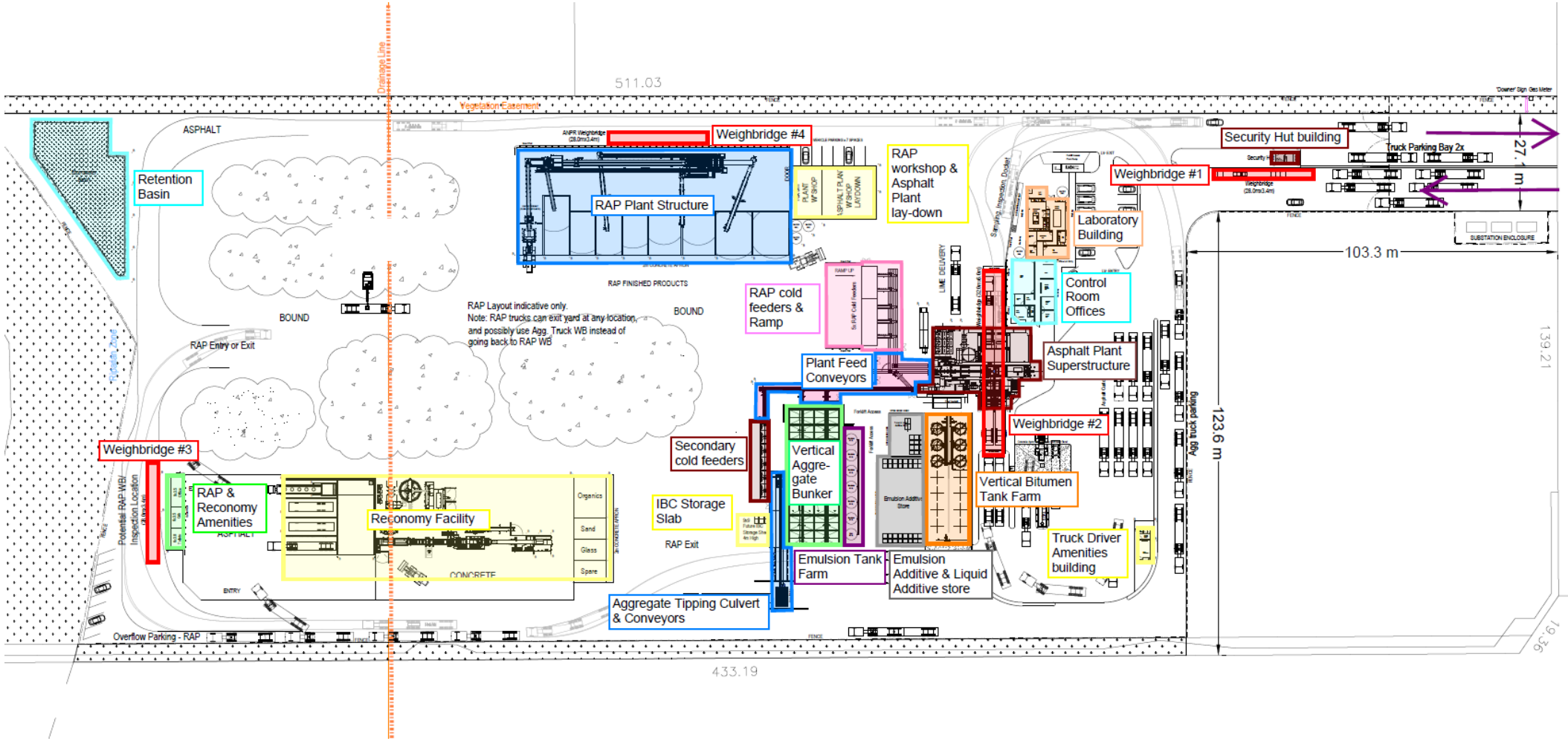
2.1 Site Details

Site Name:	Sustainable Road Resource Centre
Address:	Lot 6, 9 Devon Street, Rosehill NSW 2142
Phone:	02 9897 4338
Buildings and Structures:	▪ Security Hut ▪ Single Floor Production Office and Laboratory Building ▪ Dangerous goods container ▪ Laboratory Storage container ▪ Drivers Lounge ▪ Diesel Tank ▪ Rotary Drier / Mixer ▪ Cold Feed Bins and Conveyors ▪ Fly Ash/Lime/Silos ▪ Asphalt Plant Electrical Control Room ▪ Bitumen Tank Storage ▪ Vertical Bunkers Structure ▪ Toner Liquid Additive Store Shed ▪ Emulsion Tank Storage

Buildings and Structures (continued):	▪ IBC Storage Shed ▪ Detritus Recycling (Reconomy) Structure ▪ Reconomy Amenities ▪ RAP Structure & Asphalt Laydown Annex		
Shift Details & Hours of Occupancy	**Shift Name**	**Hours**	**No. of People**
	Day	6am – 5.00pm (Mon to Sat)	Approx. 25-30
	Night	7.00pm – 3.00am (Sun to Fri)	Approx. up to 13 (dependent on clients production requirements)
Security Service Provider:	Spotless Security – (02) 9816 9200		
Fire and Emergency Equipment Contact:	Hix Group - (02) 4721 7500		

2.2 Site Location

2.3 Site Layout



2.4 Details of Neighbouring Facilities

Neighbouring Facilities	Contact Person & Phone number	Mechanism for Raising the Alarm and Ongoing Communication	Circumstance for Raising the Alarm
Rosehill Gardens	Mostyn Copper 1300 729 668	Phone	Emergency, Smoke, Fire, Bomb & Armed Threat
Rosehill Distribution Centre	Peter Small (Charter Hall) 02 8651 9481	Phone	Emergency, Smoke, Fire, Bomb & Armed Threat
James Hardie	Grant Overton 13 11 03	Phone	Emergency, Smoke, Fire, Bomb & Armed Threat
VIVA Energy	Adam Speers	Phone	Emergency, Smoke, Fire, Bomb & Armed Threat
Goodman	Brendon Quinn 02 9230 7400	Phone	Emergency, Smoke, Fire, Bomb & Armed Threat

3 COMMUNICATION OF THIS PLAN

This EMP shall be communicated to personnel through site induction, at Toolbox and Pre-Start meetings and will be displayed on site and contained within the Site Zero Harm Management Plan (ZHMP). Site specific evacuation procedures (incl. muster points and the identities of ERT personnel) will be displayed on noticeboards and in prominent positions throughout the site/buildings.

4 EMERGENCY ORGANISATION & RESPONSIBILITIES

4.1 Site Management

General Requirements

- Be fully conversant with the requirements of this Plan.
- Ensure the EMP is fully implemented, monitored and adjusted to suit the requirements of the operations system and the client's requirements.
- Ensure the requirements of the Management System are fully complied with when administering the Emergency Response Plan.
- Ensure all employees are conversant with their responsibilities and duties under the Emergency Response Plan.

Communication

- Ensure any bulletin or information pertaining to emergency plans and management is placed on the Zero Harm Notice Board and other noticeboards.
- Maintain lists of employees' and contractors' emergency contacts/next of kin either on site or via the HR system. Ensure that relevant emergency contacts are notified in case of an emergency.

Notify senior management of any emergency in accordance with **DG-ZH-PR006 Incident Management Procedure**. Only authorised spokespeople may liaise with the Media (refer ***DG-ZH-ST013 Zero Harm Worker Consultation Standard*** and the Downer Group Media Policy).

Training

- Educate supervisory personnel in accordance with plan requirements, statutory obligations, and relevant procedures contained in the Integrated Management System (IMS).
- Have been inducted into Downer Australia safety and environmental management systems and procedures.

4.2 Yard Foreman / Supervisor

The Supervisor will be responsible for the day to day operations of the project, ensuring project operations comply with all relevant obligations for the period of this contract. The Supervisor has been inducted into Downer Australia Integrated Management Systems and Procedures, they will also receive a higher level of project specific Emergency Preparedness and Incident Management training while onsite.

Accountable to the Project Manager for:

General

- Being familiar with the requirements of this EMP.
- Ensuring incidents are managed and strictly supervised in accordance with the EMP, company policies and procedures.
- Being familiar with legislation and codes of practice relevant to this role, and ensuring the requirements of the same are bought to the attention of interested parties and implemented as is practicable across the project site.

Communication

- Ensuring the requirements of the Emergency Response Plan are communicated to all personnel, subcontractors and where appropriate, visitors to site through on site daily Pre Start meetings, Site Inductions, weekly Toolbox Meetings and Safe Work Method Statement (SWMS) review on commencement of new works with the potential to impact personnel and the environment.
- Any external contact will be communicated to the client via the Project Manager or their delegate.

4.3 Employees, Contractors and Visitors

On identification of a situation requiring emergency response each employee has the responsibility to immediately notify the site supervisor or delegate. In the event of a serious situation, or a situation requiring immediate medical response, the employee shall utilise this "Plan" to make direct contact with the closest medical facility.

When directed by the Chief Warden or his/her delegate, it is the responsibility of each person to evacuate the workplace via the nearest safe exit/route, after turning off any machinery in use and proceed to the designated external muster point and stay there until given further instruction.

4.4 Emergency Response Team

The emergency team is tasked with co-ordination and control of the response to an emergency. Where an evacuation is required, the team will be responsible for accounting for all personnel and for any actions deemed necessary to limit the impact of the emergency on the site and its personnel.

Members of the emergency team assume authority over all personnel within the scope of their responsibilities. They are accountable to other members of the team within the hierarchy and to members of the Emergency Services (Ambulance, Fire, Police, etc.).

Emergency Response Team Hierarchy

5. Chief Warden: Project Manager, otherwise Project Superintendent
6. Area Warden: Supervisors
7. ERT Advisor / Support: Zero Harm Representative (ZHR) or other nominated workers with a minimum current Senior First Aid (Level 2) qualification

In the absence of a member of the Emergency team, the site Senior Manager will appoint the next most senior member of the team to assume the role of the absent member. In the absence of the Site Manager, the Warden whose area of responsibility encompasses the emergency location shall assume the role of Emergency Controller.

Emergency Team members shall report planned absences (i.e. annual leave, sick leave) to that position. In cases where only one or two wardens are on site, such as back shifts or weekends, the warden/s will be required, in addition to their role, to ensure that appropriate emergency services are contacted.

4.5 Chief Warden

A person designated with the authority to assume overall coordination of any emergency response within the premises.

- Put on their helmet and vest
- Immediately attend the Emergency Assembly Area
- Ascertain the nature and scope of the emergency
- Ensure or initiate an appropriate response to the emergency
- Ensure the emergency services have been notified
- Notify adjacent facilities if the emergency is likely to effect those properties
- Establish and maintain regular communication with area wardens
- Initiate an emergency evacuation if deemed necessary
- Brief the emergency services on arrival and formally hand over control of the incident to the combating agency

4.6 Deputy / Area Warden

Person designated with the authority to assist the Chief Warden and to direct Emergency Procedures within a defined area of the premises.

- Put on their helmet and vest
- Contact the Chief Warden by whatever means available and then act on all instructions received.
- Implement emergency procedures for that area
- Commence emergency evacuation of the area , if the situation warrants such action
- Advise the Chief Warden on the situation and any actions taken.
- Confirm before departure that the area is fully evacuated as far as practicable
- Ensure Visitors Book is taken to Emergency Assembly Area
- Conduct a head count on exiting the building of all staff in their area and report result to chief warden.

4.7 First Aid Personnel

Designated persons who hold current accreditation in Level 2 First Aid.

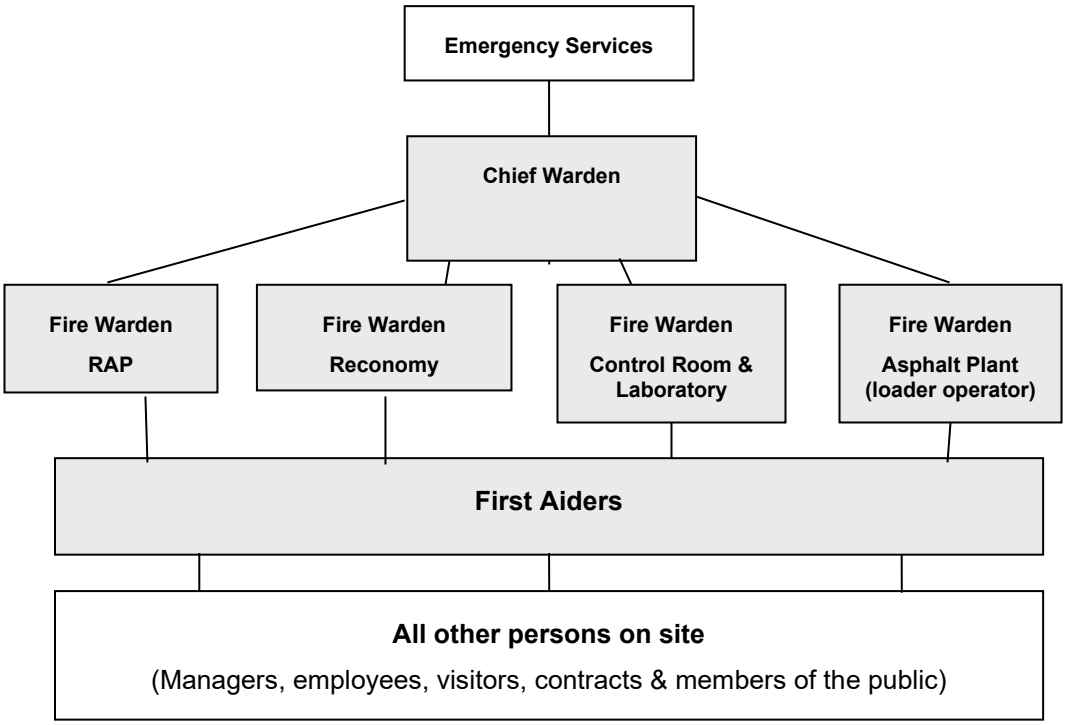
5 EMERGENCY RESPONSE TEAM (ERT)

The Emergency Response Team (ERT) is responsible for taking control of the site after the occurrence of an emergency event until such time either:

- external emergency services (e.g. police, fire services or Workplace health and safety authority) take control of the site; or
- the event subsides.

Roles and Reporting Structure

The following figure illustrates the roles of the ERT and the reporting structure that exists in the event of an emergency



Selection Criteria for Team Members

Persons appointed to roles on the ERT will be:

- physically capable of performing their duties
- have leadership qualities and command authority
- have maturity of judgement, good decision-making skills and capable of remaining calm under pressure
- be available to undertake their duties; and
- be willing to undertake routine training

Authority

During emergencies, instructions given by the Warden personnel takes precedence over the normal management authority structure.

The Warden will act to make sure that the health and safety of people takes precedence over the protection of assets, environmental considerations, production operations and business continuity.

Warden Members

The following personnel make up the emergency response team.

Shift A (Day Shift)			
Area	**Role**	**Name**	**Contact**
Site	Chief Warden	Elizabeth Kennedy	TBC
Asphalt Production	Warden	Plant Operator	TBC
Reconomy	Warden	Matthew Wade	0419244748
Laboratory	Warden	Daniel Hogan	0437 513 295
RAP Production	Warden	Loader Operator	TBC

Shift B (Night Shift)			
Area	**Role**	**Name**	**Contact**
Site	Chief Warden	Night Shift Security Gate Attendee	TBC
Asphalt Production	Warden	Night Shift Plant Operator	TBC
Reconomy	Warden	Shane Foxwell	0433170008
Laboratory	Warden	Night Shift Lab Technician	TBC
RAP Production	Warden	Night Shift Loader Operator	TBC

Role	General Responsibilities
Chief Warden	▪ Lead and coordinate response to an emergency. ▪ Effectively communicate with personnel and external parties. ▪ Be familiar with the site/ operation/ project. ▪ Effectively communicate with personnel and external parties as directed. ▪ Notify of an emergency and/ or initiate emergency response.
Fire Warden	▪ Assist the Chief Warden and direct emergency procedures within a defined area of the operation.
Workers	▪ Notify of an emergency. ▪ Follow instructions provided by the Wardens.

6 EMERGENCY TRAINING AND AWARENESS

All Personnel shall be provided with general Emergency Management Training as part of the site induction training process, and such training shall cover as a minimum:

- the locations of all emergency equipment and the correct method for its use.
- fire risk awareness training to encourage awareness of the dangers presented by fire and the means for preventing it.

Personnel who have assigned responsibilities in an emergency situation (i.e. ERT, Fire Wardens, Evacuation Wardens) shall be inducted into the emergency management plan and provided with accredited training.

Refer to the Facilities specific Training Needs Analysis/ Skills matrix for training schedule and completed training. This is to include emergency pollution response.

Requirements	Who Should Attend	Frequency	Training Provider
Site emergency systems: ▪ Alarms ▪ Communications ▪ Fire detection ▪ Fire suppression	▪ Spotless	As per systems frequency	Spotless
Site/ area evacuation drills	▪ All persons on site	Bi-Annually	Downer
Emergency Response Training	▪ All Production Personnel	Bi-Annually	Registered Training Organisation
Fire Warden	▪ All Production Personnel	Yearly	Registered Training Organisation

7 EMERGENCY FACILITES & EQUIPMENT

7.1 Fire Fighting Equipment

The following requirements for fire equipment shall be taken into consideration:

- Location - extinguishers and hoses are to be placed in readily accessible locations and in areas where risk of fire is likely.

  In addition, Portable extinguishers and fire blankets are present on all Oxy-Acetylene Mobile Trolleys, and portable extinguishers are present on all Mobile Plant.
- Access - clear access is to be maintained around fire extinguishers and hoses at all times.
- Signage - signage is to be provided at each location, indicating the type of fire extinguisher and fire types that they are suited for.
- Mounting - Fire extinguishers are to be mounted on purpose made hooks or brackets and suspended above the floor.
- Inspection - Fire extinguishers are to be inspected and serviced every 6 months.

Fire Suppression Systems Details

- Nitrogen dosing located as part of AMMANN equipment at top drum
- Portables fire extinguishers on all levels of the Asphalt plant and surrounds (C02, Dry Chemical ABE & Foam AFF 90ltr)
- Portable powder fire extinguishers in electrical rooms
- Portable C02 fire extinguishers around diesel tank and bitumen tanks
- Portable fire extinguishers and Fire blankets in all buildings (offices and amenities)
- Hydrants around plant, main control at front gate as per diagram below

Hydrants and Hose Reel Details

- Mains are located at front gate on southern side
- 8 x Hydrants located around Asphalt plant
- Hose Reels located around plant and on plant – 20 in total

(Please refer to the site map for location)

7.2 First Aid Facilities

First Aid provisions will be maintained and accessible to personnel for the duration of the project, and all necessary training will be organised and communicated through Pre-Start / Toolbox Meetings, Inductions and information placed on Noticeboards. First aid kits are in the Control Room, Workshop, Site Office and Laboratory. (Please refer to the site map for location)

First aid requirements are assessed upon reviewing applicable legislation and using the First Aid Needs Assessment Form at project setup and during review. First aid services and arrangements shall consider the types of hazards to persons at the workplace, potential activities to be performed, and the number of persons at the workplace and the risk level of identified hazards.

First Aid provisions will be maintained and accessible to personnel for the duration of the project, and all necessary training will be organised and communicated through Pre-Start / Toolbox Meetings, Inductions and information placed on Noticeboards.

First Aid kit locations for this site are

- Security Hut
- Asphalt Plant Control Room

- Laboratory
- Drivers Amenities/Lounge
- Reconomy Structure
- RAP Structure
- Laydown Structure
- Reconomy Amenities

7.3 Emergency Showers and Eyewash Stations

Safety showers and eye wash facilities shall be inspected, tested and cleaned.

3 safety showers are located on site. One near the lime storage silos, and two near the bitumen loading area next to the bitumen tank farm.

- Safety showers and eye wash facilities shall be inspected, tested and cleaned in accordance with DA-ZH-PR116 Zero Harm Inspections & Observations and conducted in line with the relevant DA-ZH-FM015.6 Emergency Equipment Testing Register.
- Sustainable Road Resource Centre has 2 safety showers. Located at tank farm and near the lime silo loading point behind the laboratory
  (Please refer to the site map for location)

7.4 Spill Response Kits

Spill response equipment will be provided commensurate with nature, quantity and risk of substances in each area. The Spill Response Equipment Needs Assessment Form has been be used to determine the number, location and type of spill kits required.

The spill kit locations are as per below

- Near the Dangerous goods container
- Near the Diesel tank/ refuelling area
- Near the Bitumen load out area
- Between the Additive and Liquid store area
- Near the RAP screening area
- Near the IBC Store
- In the Lab
- Near Reconomy control panel
- Near Drivers Amenities

(Please refer to the site map for location)

7.5 Emergency Signs & Lighting

Emergency signs as per Australian Standards for Workplace facilities

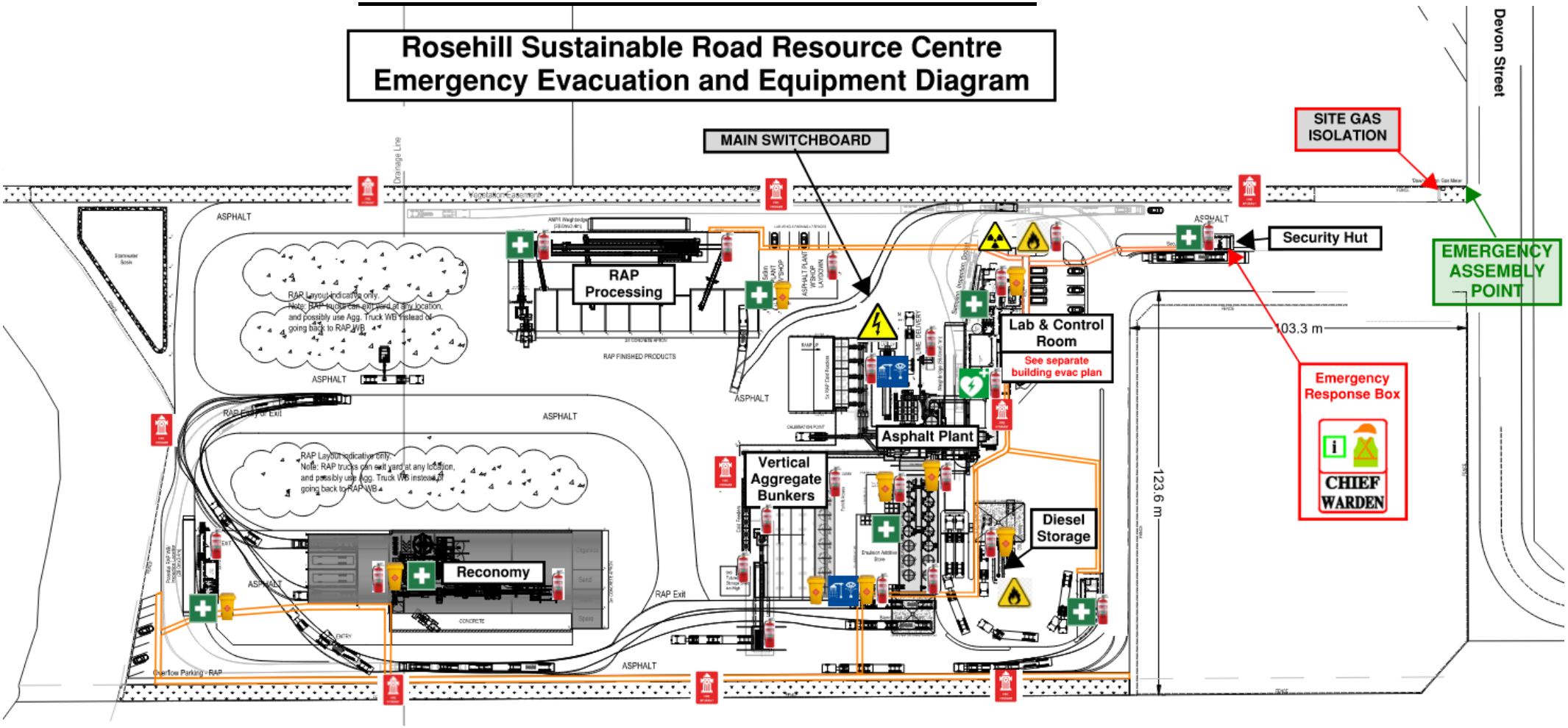
Emergency Lighting

- Illuminated exit lights on all exits of enclosed building
- Flood lights on plant

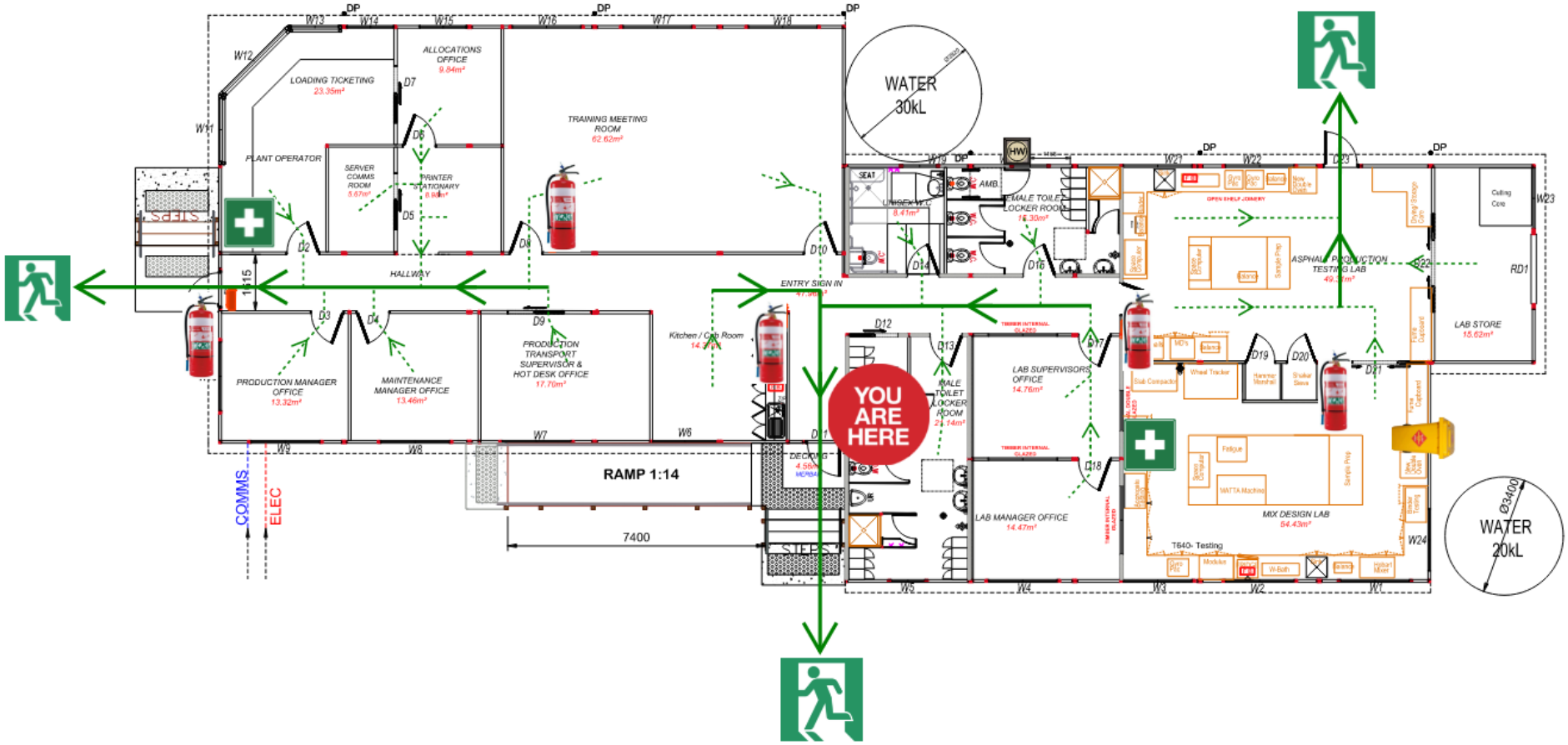
Emergency Exits

- Evacuation Signs located in all areas showing emergency exits

Rosehill Sustainable Road Resource Centre Emergency Evacuation and Equipment Diagram



Rosehill Office & Laboratory
Emergency Evacuation and Equipment Diagram



Legend

Building Exit | Main Evacuation Route | Room Exits | Fire Extinguisher | First Aid Kits | Spill Kit Station

9 EVACUATION PROCEDURE

Evacuation Instructions

All attempts to respond to an emergency should always ensure personal safety and only be attempted if within the capabilities of the individual.

If an Emergency situation arises…

- The alarm will be raised by sounding the portable horn 3 times.
- Personnel are to prepare for Evacuation (shutdown plant and equipment if safe to do so) and await further instruction.
- Chief Warden determines appropriate action in line with nature of emergency & initiates evacuation procedure.
- Fire Warden(s) responds to emergency.
- Fire Wardens commences immediate evacuation of all site offices and directs personnel to nearest exit points. UHF Communication with Loader, RAP Facility, Reconomy Site & Trucks in yard.
- UHF Communication with LAB (Main Office), Lab Personnel to sound portable horn 3 times, to initiate evacuation of Main Office Building and all areas are clear of personnel
- Wardens to take Visitors book & Site Register of workers and contractors on site to Emergency Assembly / Muster Point
- Fire Wardens checks all areas clear of personnel.
- Fire Wardens directs and follows all personnel to Emergency Assembly / Muster point.
- Fire Wardens advises Site Supervisor all areas are clear.
- Fire Wardens hold personnel in muster area until directed by the Site Supervisor or Emergency Services Personnel.

Mechanism to Account for Persons

- Pre- start sign on from each Department Building, visitor's book.
- Full Control Room Office Evacuation

Evacuation Strategies for Occupants/Visitors with Disabilities or Mobility Impaired Persons

Details of persons with disabilities or any mobility impairment whether permanent or temporary are to be kept on a register maintained by the Fire Wardens. In the event of an emergency such people are to be assisted by a Fire Warden or a nominated staff member to a place of safety.

10 EMERGENCY EVENT HAZARD RESPONSE

The following table provides a list of potential foreseeable emergency events and the response/ rescue method and equipment required for each. Refer to the operation's risk register for the risk rating/ level for each event.

Emergency Event	Response/ Rescue Method	Response/ Rescue Equipment
Aircraft accidents	1. Assist any person in immediate danger or who is injured (Call ambulance if anybody is injured) 2. Evacuate building 3. Call Emergency Services (Call '000')	
Armed intrusion	1. Notify the Police by dialling "000" (112 for mobiles) and request assistance 2. Do not say or do anything that may encourage irrational behaviour 3. Alert other personnel in your vicinity of the threat 4. Evacuation should be considered (if safe to do so)	
Bomb or suspicious packages	1. Do not touch it. 2. Clear the area. 3. Notify the **Fire wardens** and your Supervisor; and 4. Prevent other people from entering the area near the suspected bomb/substance. 5. Call Emergency Services (Call '000')	
Bomb threat	1. Remain Calm 2. Always treat the call as genuine. 3. Prolong the conversation and Do Not Hang Up The Phone. 4. Attract Attention Of Second Person 5. Do not alert the caller to your actions. 6. Get a second person to call your Supervisor or Emergency Team Member. 7. Be Attentive 8. Note any distinguishing background noises, music, traffic/other. 9. Note the voice characteristics of the caller. 10. Does the caller indicate knowledge of your workplace or building? 11. As soon as possible the details are to be recorded. 12. Notify your Supervisor. 13. Notify Project Manager 14. Call Emergency Services 000 (where determined necessary). 15. To follow instructions from the Emergency Team Leader, security, police or other emergency service personnel.	

Emergency Event	Response/ Rescue Method	Response/ Rescue Equipment
Confined spaces emergency	1. Do not enter the confined space 2. Check for immediate danger to you and the injured person 3. If safe for standby person; commence rescue as per rescue plan 4. If not possible to conduct rescue, stay with personnel that is in confined space 5. Call Emergency Services (Call '000') 6. Advise the site Manager and first aider on site 7. Ensure the area is made safe (block off or barricade) and do not disturb the area 8. Appoint a person to the front gate to direct the ambulance/fire personnel and restrict entry to site.	
Discharge of substance to drains	1. Identify the substance if possible 2. Wear appropriate PPE 3. Follow emergency procedure as per SDS sheets which are in the batch office 4. Contain the substance 5. Bund the area with equipment from the spill kit (check site map for location) 6. Block off or barricade area 7. Ensure appropriate fire extinguishers are nearby in case fire breaks out 8. Advise site manager 9. Alert neighbours, EPA and Downer ZH manager	
Electrocution	1. Check for immediate danger to you and the injured person. Do not touch the injured person. 2. Call Emergency Services (Call '000') 3. Advise the site Manager and first aider on site 4. Turn off all electrical sources 5. Appoint a person to the front gate to direct the ambulance/fire personnel and restrict entry to site.	
Explosion	1. Assist any person in immediate danger or who is injured (Call ambulance if anybody is injured) 2. Evacuate building 3. Call Emergency Services (Call '000')	

Emergency Event	Response/ Rescue Method	Response/ Rescue Equipment
Fatality	1. Check for immediate danger to you and the injured person 2. Call Emergency Services (Call '000') 3. Advise the site Manager and first aider on site 4. Ensure the area is made safe (block off or barricade) and do not disturb the area 5. Post a person in a safety vest at the front gate to direct the ambulance/fire personnel and restrict entry to site. 6. Initiate Downer crisis management protocol (Area Manager to conduct)	
Fire (inside facilities)	1. Assist any person in immediate danger or who is injured (Call ambulance if anybody is injured) 2. If the fire is small attempt to put fire out with fire extinguisher (familiarize yourself with the location of fire extinguishers) 3. If the fire is too large activate the fire alarm system by pushing the button on 2 of the signed manual call points throughout the plant. One at the control room below the control room and the other inside the main office entry, 4. If the fire is in a building close all doors as everybody is evacuated to stop the fire from spreading 5. Call the fire brigade.	Fire Extinguisher Fire Alarm System
Fire (on adjoining property)	1. Assist any person in immediate danger or who is injured (Call ambulance if anybody is injured) 2. If the fire is small attempt to put fire out with fire extinguisher (familiarize yourself with the location of fire extinguishers) 3. If the fire is too large contact Fire Service on 000	Fire Extinguisher
Flood	1. Monitor BOM or weather sites 2. Visual inspections of roadways and tank farm 3. Evacuate plant and staff before flooding escalates 4. Ensure site shutdown and locked prior to leaving 5. Advise the Area Manager	

Emergency Event	Response/ Rescue Method	Response/ Rescue Equipment
Injury	1. Check for immediate danger to you and the injured person 2. Stay with the injured person if possible 3. Don't move the injured person if possible 4. Call the site first aider to administer immediate first aid 5. Call the ambulance 6. Advise the Manager or emergency co-ordinator on site 7. Ensure the area is made safe (block off or barricade) and do not disturb the area 8. Post a person in a safety vest at the front gate to direct the ambulance and restrict entry to site.	First Aid Kit
Medical emergency	1. Make the area safe. 2. Immediately call external emergency services and the First Aid Personnel for assistance. 3. When contacting emergency services, state the following: Site Name, Address, State and incident details Stay in communication until told otherwise. 4. First Aid Personnel will attend and assist (conduct DRSABC as appropriate until emergency services arrive). 5. If conscious, try to ascertain what condition the affected person is suffering. 6. Remain with the casualty and await emergency services arrival.	First Aid Kit
Mobile or fixed plant emergency	1. Check for immediate danger to you and the injured person if any 2. Isolate relevant plant & machinery 3. Stay with the injured person if possible 4. Don't move the injured person if possible 5. Call the site first aider to administer immediate first aid 6. Call the ambulance 7. Advise the site Manager 8. Ensure the area is made safe (block off or barricade) and do not disturb the area	First Aid Kit

Emergency Event	Response/ Rescue Method	Response/ Rescue Equipment
Motor vehicle Incident / Traffic Incident	1. Make the area safe and contact Emergency Services if necessary; 2. Ensure you and your passenger can move to a safe area (if not injured) 3. Notify Emergency Services if there are injuries 4. When contacting Emergency Services, state the following: • Your name • Company name • Type of incident • Address of incident and nearest cross street, state and suburb • Types of injuries, property damage or environmental harm sustained • Any other relevant information 5. Stay in communication until told otherwise. 6. Ensure all vehicles involved in the accident have their ignitions switches turned off; 7. Extinguish any fires if safe to do so; 8. First aid treatment to be administered if qualified to do so. Do not move casualties unless absolutely necessary; 9. Immediately report the incident to the Fire wardens and to your supervisor. 10. Where possible, do not leave causalities alone; 11. Place warning signs across the road to warn other traffic; 12. Await emergency services arrival.	First Aid Kit Fire Extinguisher (if necessary)
Personal threat	1. Ensure your Supervisor is notified immediately 5. Notify the Police by dialling “000” (112 for mobiles) and request assistance 6. Do not say or do anything that may encourage irrational behaviour 7. Alert other personnel in your vicinity of the threat 8. Evacuation should be considered (if safe to do so)	
Pressurised gas emergency	1. Delivery of LPG Using a Road Tanker. WORK METHOD STATEMENT of Origin Gas 2. If leak occurs Isolate the Gas supply at the source (if safe to do so) 3. Notify the Fire Brigade by dialling “000” (112 for mobiles) 4. Shutdown the air conditioning to prevent the spread of any flammable or toxic gases (in the case of air con gas leak) 5. Remove any ignition sources (if safe to do so) 6. Evacuate to safe area and contact the Responsible Manager 7. Await advise from emergency services 8. Contact the Responsible Manager	

Emergency Event	Response/ Rescue Method	Response/ Rescue Equipment
Radiation device leak	1.Notify RSO (await further instructions) Daniel Hogan – 0437 513 295 2. Evacuate to safe area and contact the Responsible Manager	
Severe weather/ storm damage	1. Monitor BOM or weather sites 2. Visual Inspections of drains and waterways 3. Turn power to plant off 4. Ensure site shutdown and locked prior to leaving 5. Advise the Area Manager	
Spill of hazardous substance (on site)	1. Identify the substance if possible 2. Wear appropriate PPE 3. Remove injured person if any, from the path of the substance 4. Follow emergency procedure as per SDS sheets which are in the batch office 5. Contain the substance 6. Bund the area with equipment from the spill kit (check site map for location) 7. Block off or barricade area 8. Ensure appropriate fire extinguishers are nearby in case fire breaks out 9. Advise site manager	PPE Spill Kit Fire Extinguisher if necessary
Toxic emission to atmosphere	1. Identify the substance if possible 2. Notify Management and Zero Harm 3. Follow emergency procedure as per SDS sheets which are located in the batch office 4. Contain the substance, if possible. 5. Alert neighbours, EPA and SafeWork NSW	
Unauthorised contamination of water	1. Identify the substance if possible 2. Wear appropriate PPE 3. Follow emergency procedure as per SDS sheets which are located in the batch office 4. Contain the substance 5. Bund the area with equipment from the spill kit (check site map for location) 6. Block off or barricade area 7. Ensure appropriate fire extinguishers are nearby in case fire breaks out 8. Advise site manager 9. Alert neighbours, EPA and SafeWork NSW	

Emergency Event	Response/ Rescue Method	Response/ Rescue Equipment
Uncontrolled Release of Stored Energy	1. Check for immediate danger to you and the injured person 2. If possible stay with personnel that is injured 3. Call Emergency Services (Call '000') 4. Advise the Manager or senior team members on site 5. Ensure the area is made safe (block off or barricade) and do not disturb the area 6. Appoint a person to the front gate to direct the ambulance/fire personnel and restrict entry to site.	
Working at heights emergency	1. Check for immediate danger to you and the injured person 2. If safe for standby person; commence rescue as per rescue plan 3. If possible stay with personnel that is injured 4. Call Emergency Services (Call '000') 5. Advise the Manager and first aider on site 6. Ensure the area is made safe (block off or barricade) and do not disturb the area 7. Post a person in a safety vest at the front gate to direct the ambulance/fire personnel and restrict entry to site.	

11 EMERGENCY PREPAREDNESS PROCEDURES

Testing Emergency Response Procedures

Emergency evacuation and response drills will be conducted at regular intervals to verify the effectiveness of response arrangements and refresh emergency responders in requirements and their functions.

As a minimum:

- evacuation drills will be conducted six monthlies at each Building and department.
- response procedures for emergency scenarios with a high likelihood of occurring, as identified in the Emergency Management Plan, will be tested six monthlies
- records of emergency evacuation and response drills will be maintained and stored six monthlies
- evacuation and response drills will be assessed by the Supervisor to identify any deficiencies or improvements required and the assessment documented; and
- where deficiencies or improvements are identified, the Supervisor/Manager will generate an action plan and monitor progress to completion.

Emergency Preparedness includes all activities that focus on essential emergency response capabilities through the development of plans, procedures, the organisation and management of resources, and associated training and education.

The major risks to human health, property and the environment identified for the project are; located in section 9

12 EMERGENCY CONTACTS

Downer Australia Internal Emergency Contacts			
24-Hour Emergency Number 1300 366 538			
Administration (contact number and hours): 02 9897 4333 between 7am and 5pm			
Downer Rosehill contacts	**Contact No.**	**After Hours No.**	**Details**
Sydney / Newcastle Surfacing Manager - Darren Prosser	0419 302 046	0419 302 046	
Production Manager – Paul Sherry	0419 789 505	0419 789 505	
Recycling / Maintenance Manager – Roy Stiff	0407 228 098	0407 228 098	
Mick Flynn - Reconomy	0419 202 669	0419 202 669	
Chief Fire Warden – Gordon Mclisky	0439 702 110		All Incidences and Emergencies
Emergency Response Team (ERT)	02 98974351		All Incidences and Emergencies
First Aid Officer – Matthew Wade	0419 244 748		First Aid
Downer Australia External Emergency Contacts			
Ambulance, Fire, Police	**000** **Mobile: 112**		**Life Threatening Emergencies**
Fire Brigade - Silverwater 122 Adderley Street Silverwater	02 9647 1246	02 9647 1246	Fire and Chemical spills
Police - Granville 2 Carlton Street Granville	02 9897 4199	02 9897 4199	Security matters
Medical			
Public Hospital - Westmead Hawkesbury Rd & Darcy Road, Westmead	02 9845 5555	02 9845 5555	Serious Injury
Medical Centre – Merrylands Family Practice 189 Merrylands Road Merrylands	1300 637 000	1300 637 000	Injury
Poisons Information Centre	13 11 26	13 11 26	Poisons Information
Other Authorities as required by legislation **Reportable following instruction with Regional Zero Harm Manager or delegate**			

State Emergency Services	13 25 00	13 25 00	Notifiable incidents immediately
Local Council - Parramatta	1300 617 058	1300 617 058	Notifiable incidents immediately
Department of Public Health	02 9845 5555	02 9845 5555	Notifiable incidents immediately
Workplace Safety Regulatory Body (eg WorkSafe)	13 10 50	13 10 50	Notifiable incidents immediately
Environment Protection Authority	131 555	131 555	Notifiable incidents immediately
Supply Authorities:			**Supply Issues**
Electricity - Endeavour	131 003	131 003	Electricity
Gas - Jemena	131 009	131 009	Gas
Water – Sydney Water	13 20 92	13 20 92	Water

13 EMERGENCY EVENT PUBLIC INFORMATION SOURCES

Organisation	Medium	Contact
NSW Ministry for Police and Emergency Services	Website	www.nsw.gov.au
NSW State Emergency Service (SES)	Website	www.ses.nsw.gov.au
NSW Rural Fire Service	Website	www.rfs.nsw.gov.au
NSW Police Force	Website	www.police.nsw.gov.au
NSW Ambulance	Website	www.ambulance.nsw.gov.au
Bureau of Meteorology	Website	www.bom.gov.au

14 EMERGENCY RESPONSE TEAM ACKNOWLEDGEMENT

As a member of the Emergency Response Team for Rosehill Asphalt Plant , by signing this Emergency Management Plan I acknowledge that I have read the site-specific plan in full and understand the designated responsibilities of my role.

Name	Role in Emergency Response Team	Date	Signature
Gordon McLisky	Chief Warden (Day)		
Tracey Tanner	Chief Warden (Night)		
Barry Wood	Zero Harm Advisor		
Jimal Saada	Area Warden (Night)		
Daniel Hogan	Area Warden – Radiation Safety Officer		
Stephanie Loukis	Area Warden		
Matthew Wade	Area Warden		
Daniel Constable	Area Warden		

15 DOCUMENT CONTROL

Hard copies

Copy No.	Issued To	Organisation & Title	Hard Copy or Digital	Storage Location	Contact Details
1	Sustainable Road Resource Centre	Emergency Management Plan	Hard Copy	Control Room	Paul Sherry
2	ZH Management	ZH State Manager	Digital	Digital	Kevin Fonti

ANNEX B –SPECIFIC EMERGENCY RESPONSE PROCEDURE – MEDICAL EMERGENCY/ SERIOUS INJURY

Step	Action	Key Points
1	Raise the alarm and get assistance.	▪ Ring 000. Request ambulance and state nature of illness /injury. ▪ Give physical site address: ▪ (insert site address here). ▪ Inform First Aider and Supervisor. ▪ Arrange for someone to meet the emergency services and guide them to the incident location.
2	Chief Warden	▪ Confirm 000 has been called. ▪ Initiate Emergency Management Plan if required. ▪ Liaise with emergency services.

3	First Aid
	Consider:
	▪ Isolation of hazardous energy
	▪ Confined spaces
	▪ Heights
	▪ Mobile plant
		▪ If it is an electrical incident – ensure electricity is isolated.
		▪ Ensure your own safety first.
		▪ Apply DRABCD:
		  ▪ Danger
		  ▪ Response
		  ▪ Airways
		  ▪ Breathing
		  ▪ Circulation (including significant blood loss)
		  ▪ Defib.
		▪ If patient is not breathing start CPR (30 compressions: 2 breaths).

4	Contain scene	Do not interfere with scene unless it is necessary for patient or others safety.

ABN: 66 008 709 608

Emergency Services Information Package

Rosehill Sustainable Road Resource Centre

Lot 6, 9 Devon Street Rosehill NSW 2142

Revision Status

Issue/ Version Date	Summary of Section Changes	Reviewed By	Approved By
1. 1/11/2021	New Operational Site	Bradley Dentice	Jason Hearn

TABLE OF CONTENTS

1 SITE EMERGENCY PROFILE

1.1 Site Details

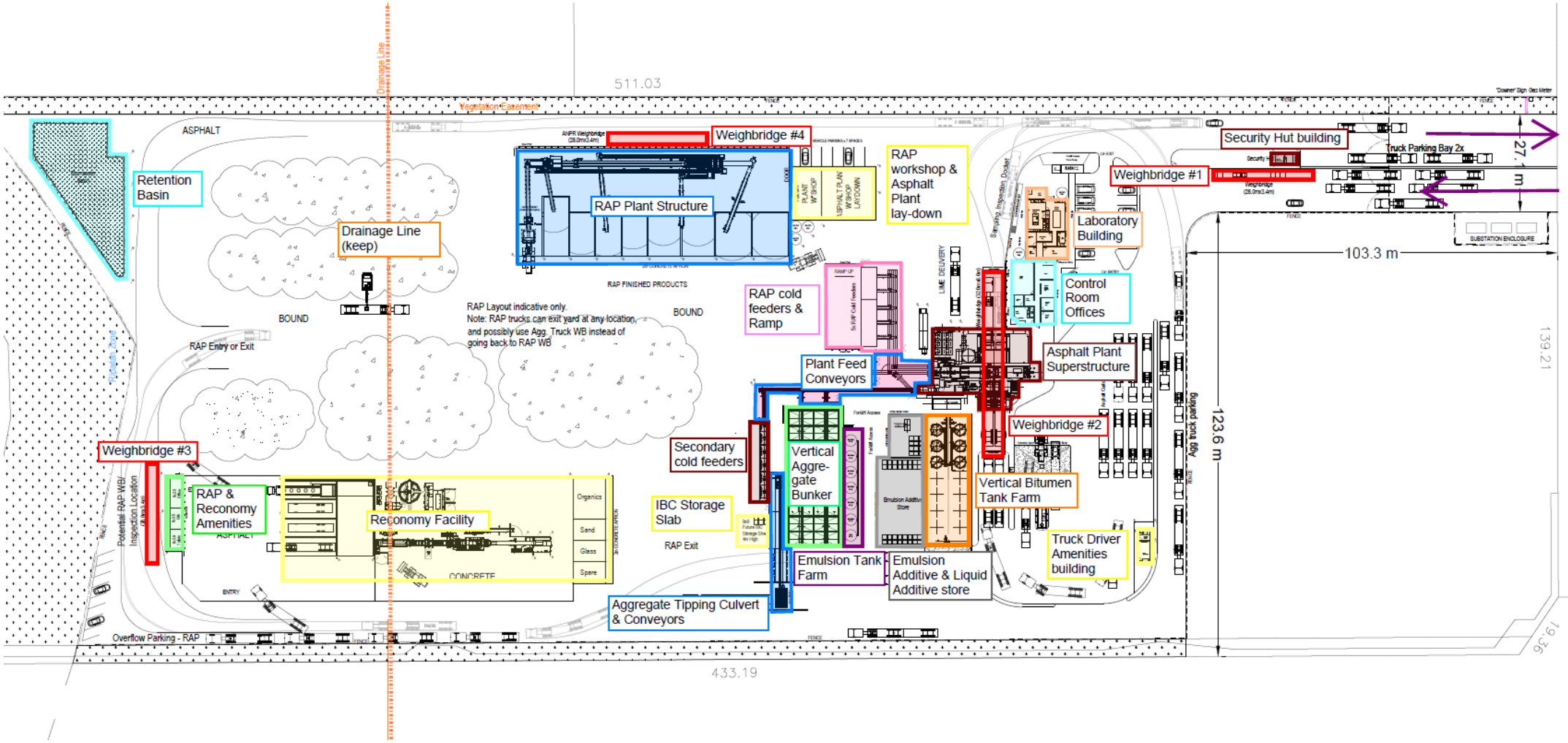
Site Name:	Sustainable Road Resource Centre		
Address:	Lot 6, 9 Devon Street, Rosehill NSW 2142		
Phone:	02 9897 4338		
Buildings and Structures:	▪ Security Hut ▪ Single Floor Production Office and Laboratory Building ▪ Dangerous goods container ▪ Laboratory Storage container ▪ Drivers Lounge ▪ Diesel Tank ▪ Rotary Drier / Mixer ▪ Cold Feed Bins and Conveyors ▪ Fly Ash/Lime/Silos ▪ Asphalt Plant Electrical Control Room ▪ Bitumen Tank Storage ▪ Vertical Bunkers Structure ▪ Toner Liquid Additive Store Shed ▪ Emulsion Tank Storage		
Buildings and Structures (continued):	▪ IBC Storage Shed ▪ Detritus Recycling (Reconomy) Structure ▪ Reconomy Amenities ▪ RAP Structure & Asphalt Laydown Annex		
Shift Details & Hours of Occupancy	**Shift Name**	**Hours**	**No. of People**
	Day	6am – 5.00pm (Mon to Sat)	Approx. 25-30

	Night	7.00pm – 3.00am (Sun to Fri)	Approx. up to 13 (dependent on clients production requirements)
Security Service Provider:	Spotless Security – (02) 9816 9200		
Fire and Emergency Equipment Contact:	Hix Group - (02) 4721 7500		

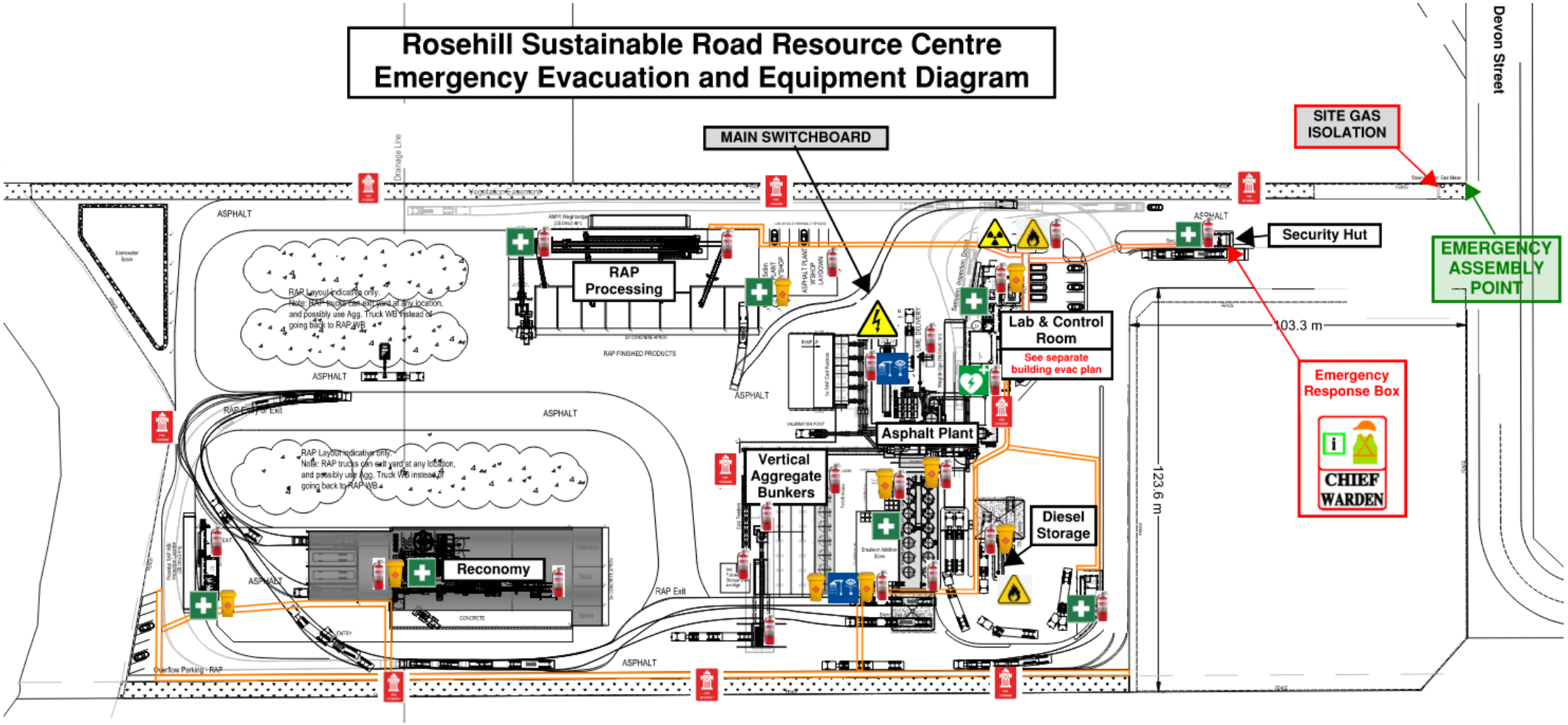
1.2 Details of Neighbouring Facilities

Neighbouring Facilities	Contact Person & Phone number	Mechanism for Raising the Alarm and Ongoing Communication	Circumstance for Raising the Alarm
Rosehill Gardens	Mostyn Copper 1300 729 668	Phone	Emergency, Smoke, Fire, Bomb & Armed Threat
Rosehill Distribution Centre	Peter Small (Charter Hall) 02 8651 9481	Phone	Emergency, Smoke, Fire, Bomb & Armed Threat
James Hardie	Grant Overton 13 11 03	Phone	Emergency, Smoke, Fire, Bomb & Armed Threat
VIVA Energy	Adam Speers	Phone	Emergency, Smoke, Fire, Bomb & Armed Threat
Goodman	Brendon Quinn 02 9230 7400	Phone	Emergency, Smoke, Fire, Bomb & Armed Threat

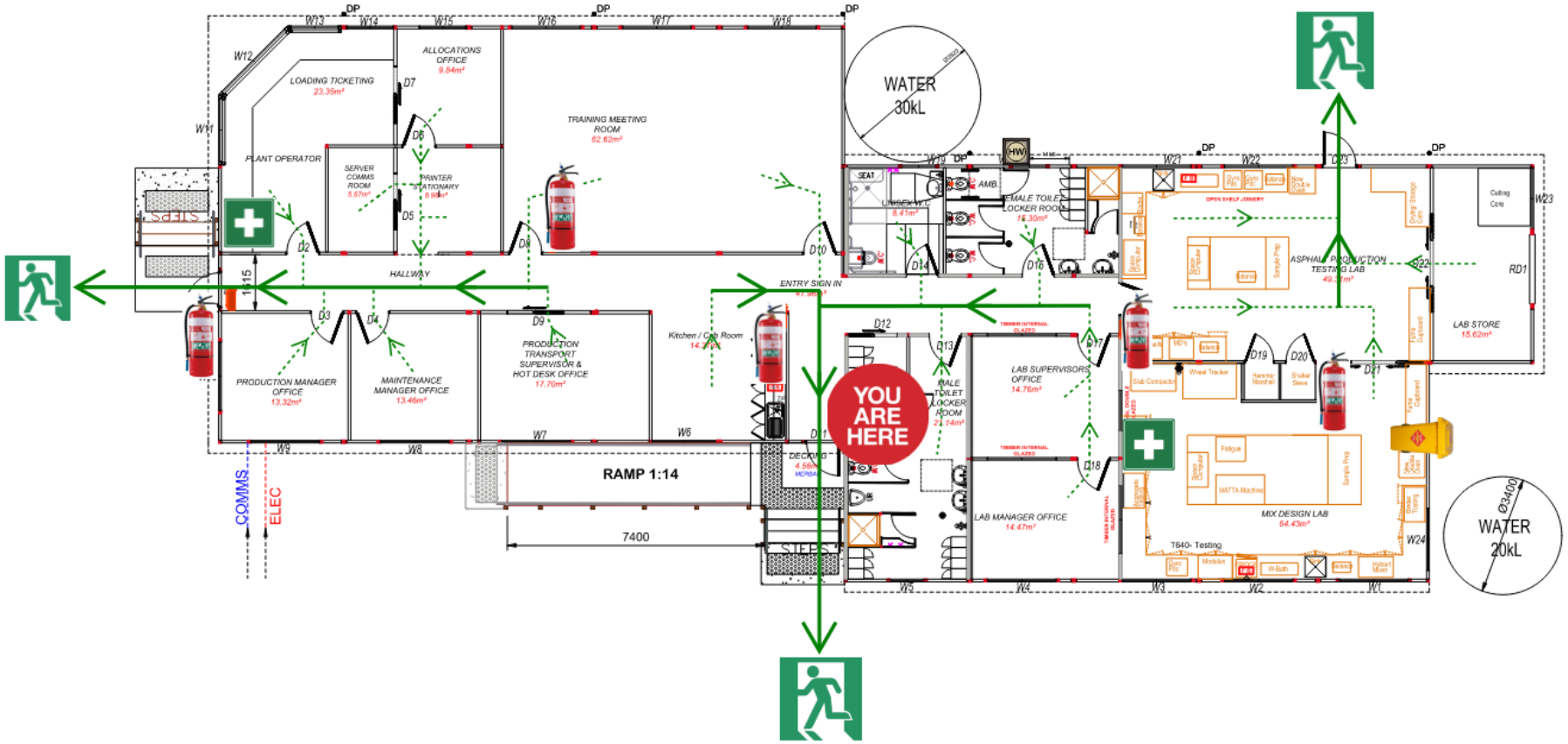
1.4 Site Layout



Rosehill Sustainable Road Resource Centre Emergency Evacuation and Equipment Diagram



Rosehill Office & Laboratory
Emergency Evacuation and Equipment Diagram



Legend

Building Exit | Main Evacuation Route | Room Exits | Fire Extinguisher | First Aid Kits | Spill Kit Station

2 EVACUATION PROCEDURE

Evacuation Instructions

All attempts to respond to an emergency should always ensure personal safety and only be attempted if within the capabilities of the individual.

If an Emergency situation arises…

- The alarm will be raised by sounding the portable horn 3 times.
- Personnel are to prepare for Evacuation (shutdown plant and equipment if safe to do so) and await further instruction.
- Chief Warden determines appropriate action in line with nature of emergency & initiates evacuation procedure.
- Fire Warden(s) responds to emergency.
- Fire Wardens commences immediate evacuation of all site offices and directs personnel to nearest exit points. UHF Communication with Loader, RAP Facility, Reconomy Site & Trucks in yard.
- UHF Communication with LAB (Main Office), Lab Personnel to sound portable horn 3 times, to initiate evacuation of Main Office Building and all areas are clear of personnel
- Wardens to take Visitors book & Site Register of workers and contractors on site to Emergency Assembly / Muster Point
- Fire Wardens checks all areas clear of personnel.
- Fire Wardens directs and follows all personnel to Emergency Assembly / Muster point.
- Fire Wardens advises Site Supervisor all areas are clear.
- Fire Wardens hold personnel in muster area until directed by the Site Supervisor or Emergency Services Personnel.

Mechanism to Account for Persons

- Pre- start sign on from each Department Building, visitor's book.
- Full Control Room Office Evacuation

Evacuation Strategies for Occupants/Visitors with Disabilities or Mobility Impaired Persons

Details of persons with disabilities or any mobility impairment whether permanent or temporary are to be kept on a register maintained by the Fire Wardens. In the event of an emergency such people are to be assisted by a Fire Warden or a nominated staff member to a place of safety.

3 EMERGENCY CONTACTS

Downer Australia Internal Emergency Contacts			
24-Hour Emergency Number 1300 366 538			
Administration (contact number and hours): 02 9897 4333 between 7am and 5pm			
Downer Rosehill contacts	**Contact No.**	**After Hours No.**	**Details**
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Recycling / Maintenance Manager – Roy Stiff	0407 228 098	0407 228 098	
Mick Flynn - Reconomy	0419 202 669	0419 202 669	
Chief Fire Warden – Elizabeth Kennedy	02 98974351		All Incidences and Emergencies
Emergency Response Team (ERT)	02 98974351		All Incidences and Emergencies
First Aid Officer – Matthew Wade	0419 244 748		First Aid
Downer Australia External Emergency Contacts			
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Electricity - Endeavour	131 003	131 003	Electricity
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Water – Sydney Water	13 20 92	13 20 92	Water

ANNEX L – SITE AUDIT STATEMENT

NSW Site Auditor Scheme

Site Audit Statement

A site audit statement summarises the findings of a site audit. For full details of the site auditor's findings, evaluations and conclusions, refer to the associated site audit report.

This form was approved under the *Contaminated Land Management Act 1997* on 12 October 2017.

For information about completing this form, go to Part IV.

Part I: Site audit identification

Site audit statement no. 055-2127799

This site audit is a:

- ✔ statutory audit
- ☐ ~~non-statutory audit~~

within the meaning of the *Contaminated Land Management Act 1997*.

Site auditor details

(As accredited under the *Contaminated Land Management Act 1997*)

Name Andrew Kohlrusch

Company GHD

Address 133 Castlereagh Street, Sydney

Postcode 2000

Phone 9239 7187

Email andrew.kohlrusch@ghd.com

Site details

Address Devon Street, Rosehill Postcode 2142

Property description

(Attach a separate list if several properties are included in the site audit.)

Part Lot 100 in DP 1168951 – a survey drawing is included in Attachment A of this site audit statement (referred to as the Stage 1 Area)

Local government area City of Parramatta Council

Area of site (include units, e.g. hectares) 6.998 hectares

Current zoning IN3 - Heavy Industrial under the Parramatta Local Environmental Plan 2011

Regulation and notification

To the best of my knowledge:

- ✔ **the site is** the subject of a declaration, order, agreement, proposal or notice under the *Contaminated Land Management Act 1997* or the *Environmentally Hazardous Chemicals Act 1985,* as follows: (provide the no. if applicable)
  - ❑ Declaration no. 20131110
  - ❑ Order no. Preliminary Investigation Order 20121001
  - ~~❑ Proposal no.~~
  - ~~❑ Notice no.~~

~~❑ **the site is not** the subject of a declaration, order, proposal or notice under the *Contaminated Land Management Act 1997* or the *Environmentally Hazardous Chemicals Act 1985.*~~

To the best of my knowledge:

- ✔ the site **has** been notified to the EPA under section 60 of the *Contaminated Land Management Act 1997*

~~❑ the site **has not** been notified to the EPA under section 60 of the *Contaminated Land Management Act 1997.*~~

Site audit commissioned by

Name Adam Speers

Company Viva Energy Australia Pty Ltd

Address Level 31 (Suite 2), Governor Macquarie Tower, 1 Farrer Place, Sydney NSW

Postcode 2000

Phone +61 400 214 857

Email adam.speers@vivaenergy.com.au

Contact details for contact person (if different from above)

Name

Phone

Email

Nature of statutory requirements (not applicable for non-statutory audits)

☐ ~~Requirements under the *Contaminated Land Management Act* 1997 (e.g. management order; please specify, including date of issue)~~

☐ ~~Requirements imposed by an environmental planning instrument (please specify, including date of issue)~~

✔ Development consent requirements under the *Environmental Planning and Assessment Act 1979* (please specify consent authority and date of issue)

Development Consent no. SSD9302 granted 7 May 2020 by a delegate of the Minister for Planning and Public Spaces

☐ ~~Requirements under other legislation (please specify, including date of issue)~~

Purpose of site audit

☐ ~~**A1** To determine land use suitability~~

OR

✔ **A2** To determine land use suitability subject to compliance with either an active or passive environmental management plan

Intended uses of the land: Commercial/Industrial.

OR

(Tick all that apply)

☐ ~~**B1** To determine the nature and extent of contamination~~

~~**B2** To determine the appropriateness of:~~

☐ ~~an investigation plan~~

~~a remediation plan~~

☐ ~~a management plan~~

☐ ~~**B3** To determine the appropriateness of a **site testing plan** to determine if groundwater is safe and suitable for its intended use as required by the *Temporary Water Restrictions Order for the Botany Sands Groundwater Resource 2017*~~

☐ ~~**B4** To determine the compliance with an approved:~~

☐ ~~**voluntary management proposal** or~~

☐ ~~**management order** under the *Contaminated Land Management Act 1997*~~

☐ ~~**B5** To determine if the land can be made suitable for a particular use (or uses) if the site is remediated or managed in accordance with a specified plan.~~

~~Intended uses of the land:~~

Information sources for site audit

Consultancies which conducted the site investigations and/or remediation:

Environmental Resources Management Australia Pty Ltd (ERM)

Titles of reports reviewed:

- ERM (2020a). *Clyde Western Area Remediation Project - Drainage Decommissioning Sampling Analysis & Quality Plan*, 2 November 2020 (**the Drainage SAQP**)
- ERM (2020b). *Clyde Western Area Remediation Project, Stage 1 – Validation Report*, 10 December 2020 (**the Stage 1 Validation**)
- ERM (2020c). *Clyde Western Area Remediation Project, Stage 1 Stage 1 Drainage Decommissioning Validation Report*, 21 December 2020 (**the Drainage Validation**)
- ERM (2020d). *Clyde Western Area Remediation Project, Stage 1 Long Term Environmental Management Plan*, 17 December 2020 (**the LTEMP**)

Other information reviewed, including previous site audit reports and statements relating to the site:

The outcome of reviewing the Stage 1 RAP that formed the basis of the remediation and validation was presented in the following documents prepared by Andrew Kohlrusch, NSW EPA accredited site auditor (0403):

Site Audit Statement (SAS) number 043-2127799, dated 22 June 2020

Site Audit Report (SAR) - *Viva Energy Clyde Western Area Remediation Project – Stage 1 - Durham Street, Rosehill, NSW – Site Audit Report*, dated 22 June 2020

Site audit report details

Title Viva Energy Clyde Western Area Remediation Project - Stage 1 Remedial and Validation Works - Devon Street, Rosehill, NSW – Site Audit Report

Report no. 2127799 Date 23 December 2020

Part II: Auditor's findings

Please complete either Section A1, Section A2 or Section B, not more than one section. (Strike out the irrelevant sections.)

- Use **Section A1** where site investigation and/or remediation has been completed and a conclusion can be drawn on the suitability of land uses **without the implementation** of an environmental management plan.
- Use **Section A2** where site investigation and/or remediation has been completed and a conclusion can be drawn on the suitability of land uses **with the implementation** of an active or passive environmental management plan.
- Use **Section B** where the audit is to determine:
    - (B1) the nature and extent of contamination, and/or
    - (B2) the appropriateness of an investigation, remediation or management plan[1], and/or
    - (B3) the appropriateness of a site testing plan in accordance with the *Temporary Water Restrictions Order for the Botany Sands Groundwater Source 2017*, and/or
    - (B4) whether the terms of the approved voluntary management proposal or management order have been complied with, and/or
    - (B5) whether the site can be made suitable for a specified land use (or uses) if the site is remediated or managed in accordance with the implementation of a specified plan.

[1] For simplicity, this statement uses the term 'plan' to refer to both plans and reports.

Section A1

I ~~certify that, in my opinion:~~

~~The **site is suitable** for the following uses:~~

~~(Tick all appropriate uses and strike out those not applicable.)~~

- ☐ ~~Residential, including substantial vegetable garden and poultry~~
- ☐ ~~Residential, including substantial vegetable garden, excluding poultry~~
- ☐ ~~Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry~~
- ☐ ~~Day care centre, preschool, primary school~~
- ☐ ~~Residential with minimal opportunity for soil access, including units~~
- ☐ ~~Secondary school~~
- ☐ ~~Park, recreational open space, playing field~~
- ☐ ~~Commercial/industrial~~
- ☐ ~~Other (please specify):~~

_____

~~**OR**~~

- ☐ ~~I certify that, in my opinion, the **site is not suitable** for any use due to the risk of harm from contamination.~~

~~Overall comments:~~

_____

_____

_____

_____

_____

_____

Section A2

I certify that, in my opinion:

Subject to compliance with the **attached** environmental management plan[2] (EMP), the site is suitable for the following uses:

(Tick all appropriate uses and strike out those not applicable.)

- ☐ ~~Residential, including substantial vegetable garden and poultry~~
- ☐ ~~Residential, including substantial vegetable garden, excluding poultry~~
- ☐ ~~Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry~~
- ☐ ~~Day care centre, preschool, primary school~~
- ☐ ~~Residential with minimal opportunity for soil access, including units~~
- ☐ ~~Secondary school~~
- ☐ ~~Park, recreational open space, playing field~~
- ✔ Commercial/industrial
- ☐ ~~Other (please specify):~~

EMP details

Title *Clyde Western Area Remediation Project, Stage 1 Long Term Environmental Management Plan*

Author ERM

Date 17 December 2020 No. of pages 78

EMP summary

This EMP (attached) is required to be implemented to address residual contamination on the site.

The EMP: (Tick appropriate box and strike out the other option.)

- ☐ ~~requires operation and/or maintenance of **active** control systems~~[3]
- ✔ requires maintenance of **passive** control systems only[3].

[2] Refer to Part IV for an explanation of an environmental management plan.
[3] Refer to Part IV for definitions of active and passive control systems.

Purpose of the EMP:

The aims of the LTEMP prepared by ERM are to:

- Summarise background environmental information conditions at the site, and provide a mechanism to inform the Land Custodian, workers and managers of the potential risks to human health and / or the environment arising from contact with residual contamination;
- Outline methods and procedures that will avoid and / or mitigate adverse effects on human health and / or the environment;
- Provide a methodology for the appropriate environmental management of excavation works that may encounter residual contaminated soil and / or groundwater;
- Provide environmental requirements for the sourcing and placement of backfill material;
- Discuss safety measures / considerations for dealing with potentially contaminated soil / groundwater; and
- Outline restrictions to potential future land uses.

Description of the nature of the residual contamination:

The residual contamination present on the Site comprised:

- Oily water / sludge associated with former underground drainage infrastructure;
- Asbestos formwork attached to remaining underground building foundations;
- Hydrocarbon impacted soils; and
- Residual hydrocarbon impacted groundwater.

A detailed description of residual contamination and the potential human health risks associated with intrusive excavation works is presented within Section 4.0 and Section 5.0 of the LTEMP. A copy of the LTEMP is presented as Attachment B of this SAS.

The location and extent of residual contamination within the Stage 1 Area is illustrated in Attachment A of this SAS.

Summary of the actions required by the EMP:

Based on the nature and extent of residual contamination identified within the Stage 1 Area the following management controls are required:

- Non-Intrusive works – No management controls are required.
- Intrusive Excavation Works – Implementation of environmental management controls as detailed within Section 7 of the LTEMP. A copy of the LTEMP included in Attachment B.

How the EMP can reasonably be made to be legally enforceable:

All requirements are legally enforceable via Condition B10(a) of the State Significant Development Consent 9302 issued under Section 4.38 of the Environmental Planning and Assessment Act 1979 (the 'EP&A Act'), as outlined below:

"*B10. Upon completion of the Site Audit Statement and Site Audit Report, the Applicant must: (a) Implement the approved LTEMP (b) Provide evidence to the Planning Secretary that the LTEMP is listed on the relevant planning certificate for the land, issued under section 10.7 of the EP&A Act*".

Additionally, as per condition B10 (b), Parramatta Council will be requested to add a notation to the planning certificate for the site under section 10.7(5) of the EP&A Act confirming that the property is subject to the LTEMP.

How there will be appropriate public notification:

Notification of the LTEMP will be placed on the Section 10.7(5) planning certificate.

Overall comments:

The requirements of the LTEMP will ensure appropriate identification and management of remaining infrastructure and residual contaminated soils/groundwater.

Groundwater should not be extracted within the Stage 1 Area for any purpose without further assessment.

Construction of basements should not be allowed within the Stage 1 Area without further assessment.

Section B

Purpose of the plan[4] which is the subject of this audit:

I certify that, in my opinion:

(B1)

☐ The nature and extent of the contamination **has** been appropriately determined

☐ The nature and extent of the contamination **has not** been appropriately determined

AND/OR (B2)

The investigation, remediation or management plan is appropriate for the purpose stated above

☐ The investigation, remediation or management plan **is not** appropriate for the purpose stated above

AND/OR (B3)

☐ The site testing plan:

☐ **is** appropriate to determine

☐ **is not** appropriate to determine

if groundwater is safe and suitable for its intended use as required by the *Temporary Water Restrictions Order for the Botany Sands Groundwater Resource 2017*

AND/OR (B4)

☐ The terms of the approved voluntary management proposal* or management order** (strike out as appropriate):

☐ **have** been complied with

☐ **have not** been complied with.

*voluntary management proposal no.

**management order no.

AND/OR (B5)

☐ The site **can be made suitable** for the following uses:

(Tick all appropriate uses and strike out those not applicable.)

☐ Residential, including substantial vegetable garden and poultry

☐ Residential, including substantial vegetable garden, excluding poultry

☐ Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry

☐ Day care centre, preschool, primary school

☐ Residential with minimal opportunity for soil access, including units

[4] For simplicity, this statement uses the term 'plan' to refer to both plans and reports.

- ❑ Secondary school
- ❑ Park, recreational open space, playing field
- ❑ Commercial/industrial
- ❑ Other (please specify):

IF the site is remediated/managed* in accordance with the following plan (**attached**):

*Strike out as appropriate

Plan title

Plan author

Plan date No. of pages

SUBJECT to compliance with the following condition(s):

Overall comments:

Part III: Auditor's declaration

I am accredited as a site auditor by the NSW Environment Protection Authority (EPA) under the *Contaminated Land Management Act 1997.*

Accreditation no. 0403

I certify that:

- I have completed the site audit free of any conflicts of interest as defined in the *Contaminated Land Management Act 1997,* and
- with due regard to relevant laws and guidelines, I have examined and am familiar with the reports and information referred to in Part I of this site audit, and
- on the basis of inquiries I have made of those individuals immediately responsible for making those reports and obtaining the information referred to in this statement, those reports and that information are, to the best of my knowledge, true, accurate and complete, and
- this statement is, to the best of my knowledge, true, accurate and complete.

I am aware that there are penalties under the *Contaminated Land Management Act 1997* for wilfully making false or misleading statements.

Signed 

Date 23 December 2020

Part IV: Explanatory notes

To be complete, a site audit statement form must be issued with all four parts.

How to complete this form

Part I

Part I identifies the auditor, the site, the purpose of the audit and the information used by the auditor in making the site audit findings.

Part II

Part II contains the auditor's opinion of the suitability of the site for specified uses or of the appropriateness of an investigation, or remediation plan or management plan which may enable a particular use. It sets out succinct and definitive information to assist decision-making about the use or uses of the site or a plan or proposal to manage or remediate the site.

The auditor is to complete either Section A1 or Section A2 or Section B of Part II, **not** more than one section.

Section A1

In Section A1 the auditor may conclude that the land is *suitable* for a specified use or uses OR *not suitable* for any beneficial use due to the risk of harm from contamination.

By certifying that the site is *suitable*, an auditor declares that, at the time of completion of the site audit, no further investigation or remediation or management of the site was needed to render the site fit for the specified use(s). **Conditions must not be** imposed on a Section A1 site audit statement. Auditors may include **comments** which are key observations in light of the audit which are not directly related to the suitability of the site for the use(s). These observations may cover aspects relating to the broader environmental context to aid decision-making in relation to the site.

Section A2

In Section A2 the auditor may conclude that the land is *suitable* for a specified use(s) subject to a condition for implementation of an environmental management plan (EMP).

Environmental management plan

Within the context of contaminated sites management, an EMP (sometimes also called a 'site management plan') means a plan which addresses the integration of environmental mitigation and monitoring measures for soil, groundwater and/or hazardous ground gases throughout an existing or proposed land use. An EMP succinctly describes the nature and location of contamination remaining on site and states what the objectives of the plan are, how contaminants will be managed, who will be responsible for the plan's implementation and over what time frame actions specified in the plan will take place.

By certifying that the site is suitable subject to implementation of an EMP, an auditor declares that, at the time of completion of the site audit, there was sufficient information satisfying guidelines made or approved under the *Contaminated Land Management Act 1997*

(CLM Act) to determine that implementation of the EMP was feasible and would enable the specified use(s) of the site and no further investigation or remediation of the site was needed to render the site fit for the specified use(s).

Implementation of an EMP is required to ensure the site remains suitable for the specified use(s). The plan should be legally enforceable: for example, a requirement of a notice under the CLM Act or a development consent condition issued by a planning authority. There should also be appropriate public notification of the plan, e.g. on a certificate issued under s.149 of *the Environmental Planning and Assessment Act 1979*.

Active or passive control systems

Auditors must specify whether the EMP requires operation and/or maintenance of active control systems or requires maintenance of passive control systems only. Active management systems usually incorporate mechanical components and/or require monitoring and, because of this, regular maintenance and inspection are necessary. Most active management systems are applied at sites where if the systems are not implemented an unacceptable risk may occur. Passive management systems usually require minimal management and maintenance and do not usually incorporate mechanical components.

Auditor's comments

Auditors may also include **comments** which are key observations in light of the audit which are not directly related to the suitability of the site for the use(s). These observations may cover aspects relating to the broader environmental context to aid decision-making in relation to the site.

Section B

In Section B the auditor draws conclusions on the nature and extent of contamination, and/or suitability of plans relating to the investigation, remediation or management of the land, and/or the appropriateness of a site testing plan in accordance with the *Temporary Water Restrictions Order for the Botany Sands Groundwater Source 2017*, and/or whether the terms of an approved voluntary management proposal or management order made under the CLM Act have been complied with, and/or whether the site can be made suitable for a specified land use or uses if the site is remediated or managed in accordance with the implementation of a specified plan.

By certifying that a site *can be made suitable* for a use or uses if remediated or managed in accordance with a specified plan, the auditor declares that, at the time the audit was completed, there was sufficient information satisfying guidelines made or approved under the CLM Act to determine that implementation of the plan was feasible and would enable the specified use(s) of the site in the future.

For a site that *can be made suitable*, any **conditions** specified by the auditor in Section B should be limited to minor modifications or additions to the specified plan. However, if the auditor considers that further audits of the site (e.g. to validate remediation) are required, the auditor must note this as a condition in the site audit statement. The condition must not specify an individual auditor, only that further audits are required.

Auditors may also include **comments** which are observations in light of the audit which provide a more complete understanding of the environmental context to aid decision-making in relation to the site.

Part III

In **Part III** the auditor certifies their standing as an accredited auditor under the CLM Act and makes other relevant declarations.

Where to send completed forms

In addition to furnishing a copy of the audit statement to the person(s) who commissioned the site audit, statutory site audit statements must be sent to

- the **NSW Environment Protection Authority**:
  nswauditors@epa.nsw.gov.au or as specified by the EPA

  AND
- the **local council** for the land which is the subject of the audit.

Attachment A - Figures

GRAND PARADE

238.42

101
DP 1168951

465.765

642.985

DURHAM STREET

101
DP 809340

2
DP 224288

458.43

1 DP 383675

1 DP 190873

M.G.A. NORTH (ZONE 56)

(H)

(J)

MARK

WATER

HIGH

MEAN

RIVER

DEVON STREET

COLQUHOUN STREET

493.715 (G)

139.21 (G)

21.455

120.76

152.4

(B)

60.96

21
60.04ha
BY DED'N

(K)

STAGE 1 AREA

6
6.998ha
(INCLUDING RIPARIAN SETBACK)

429.82

(L)

511.03

5
28.07ha
(INCLUDING RIPARIAN SETBACK)

(A)

259.08

2
DP 864567

121.08

(C)

171.59

130.09

(M)

40m RIPARIAN SETBACK IS

(M)

BOUNDARY

DUCK

NOTES:
1. ALL DIMENSIONS SHOWN HEREON ARE APPROXIMATE AND SUBJECT TO FINAL SURVEY
2. NO CADASTRAL SURVEY HAS BEEN UNDERTAKEN

(A) EASEMENT TO DRAIN WATER 10.2 & 13.4 WIDE (AC 424785)
(B) EASEMENT 6.095 WIDE (B309159) – SYDNEY WATER PIPELINE
(C) EASEMENT TO DRAIN WATER 13.4 WIDE (AC424784)
(G) PROPOSED EASEMENT FOR SERVICES 5 WIDE
(H) PIPELINE EASEMENT (V540637 & V540638)
(J) PIPELINE EASEMENT (V22813)
(K) PIPELINE EASEMENT WHOLE OF LOT (R297864)
(L) EASEMENT FOR OVERLAND FLOW 5 WIDE
(M) EASEMENT FOR PEDESTRIAN ACCESS 40 WIDE & VARIABLE WIDTH

10 20 30 40 50 Table of mm 90 100 110 120 130 140

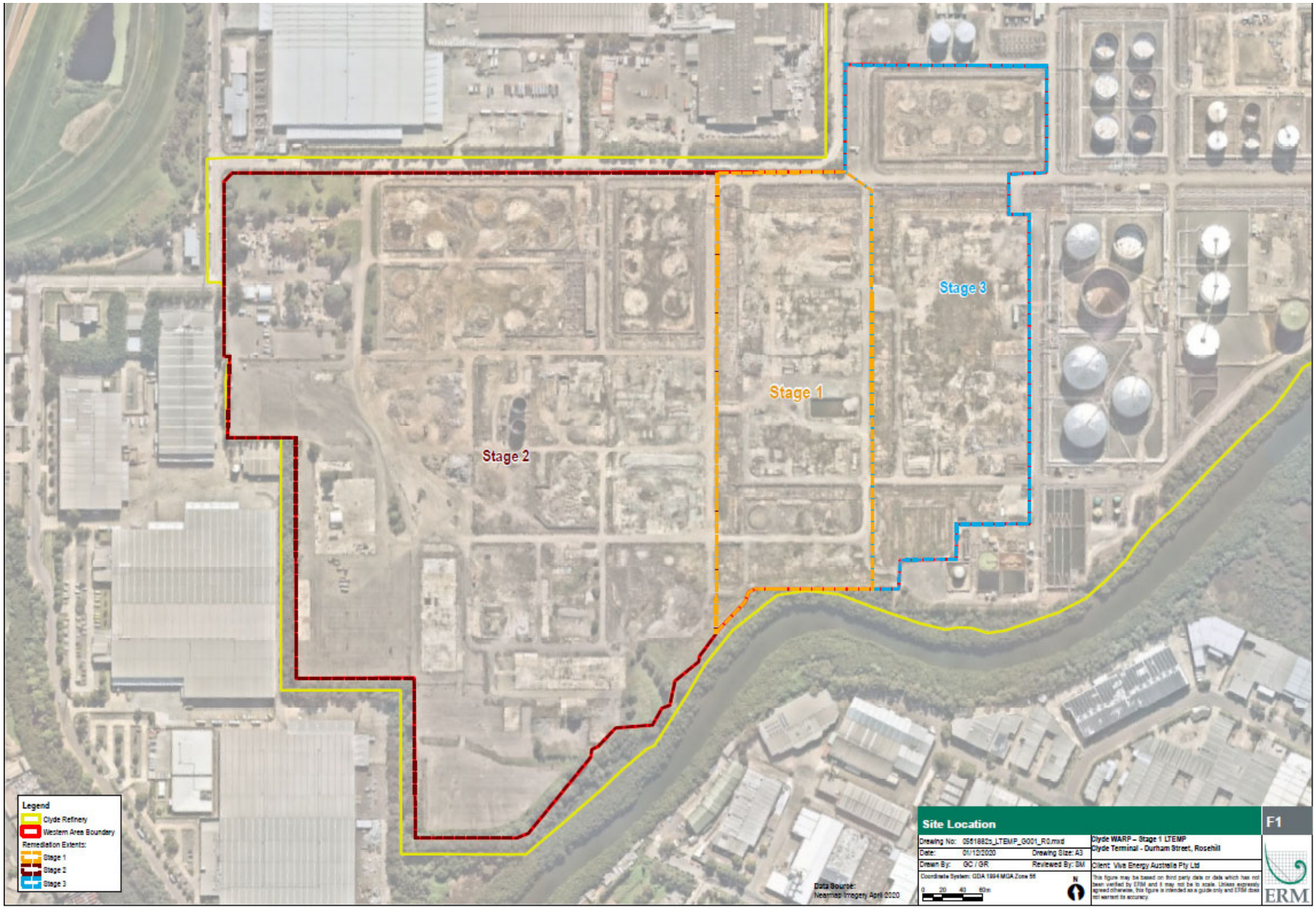
Surveyor: GREGORY K OXLEY
LandPartners PTY LTD
PO BOX 1144 DUNDAS 2117
Date of Survey: –
Surveyor's Ref: SY074707.000.11

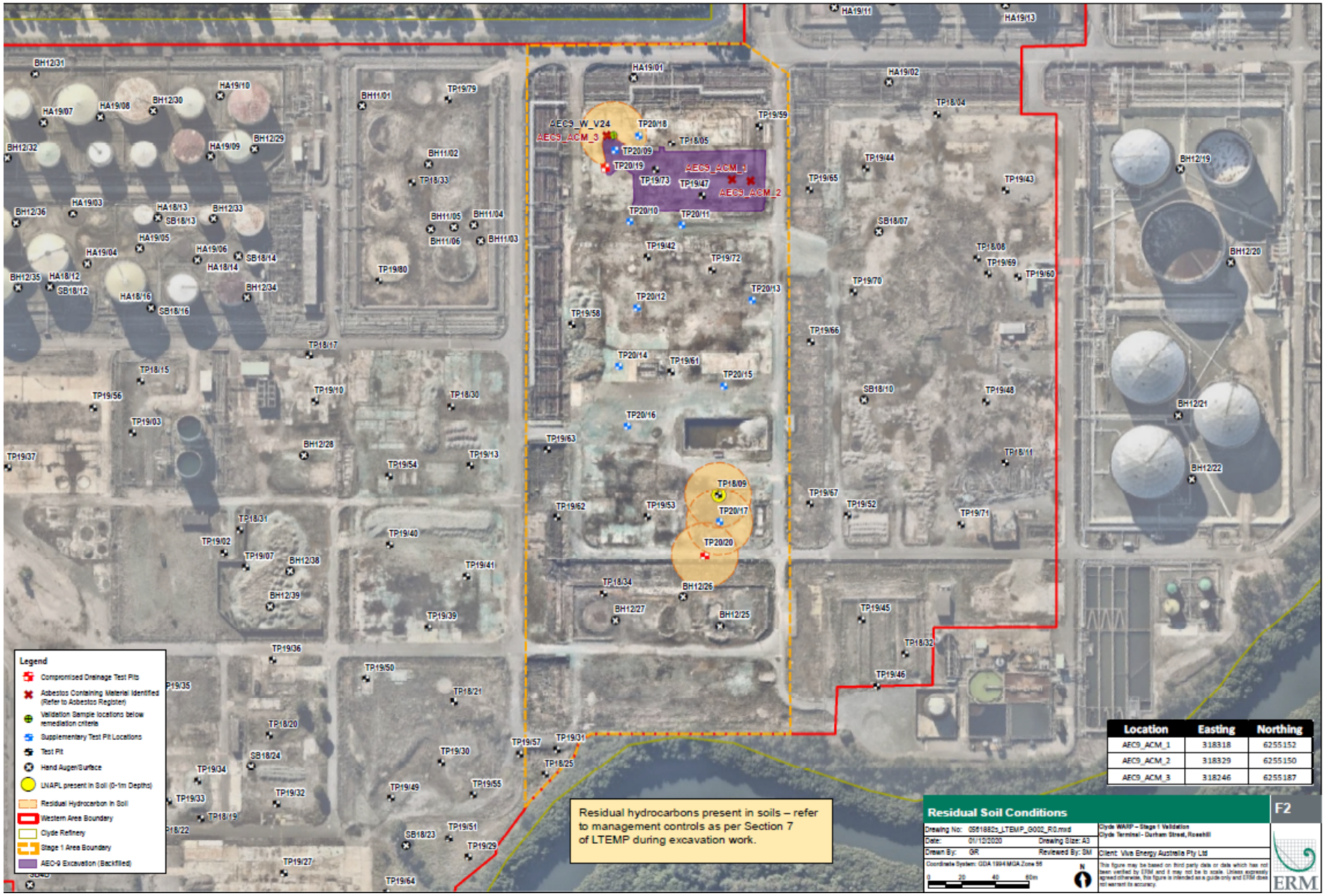
PLAN OF SUBDIVISION OF LOT 100 IN DP 1168951

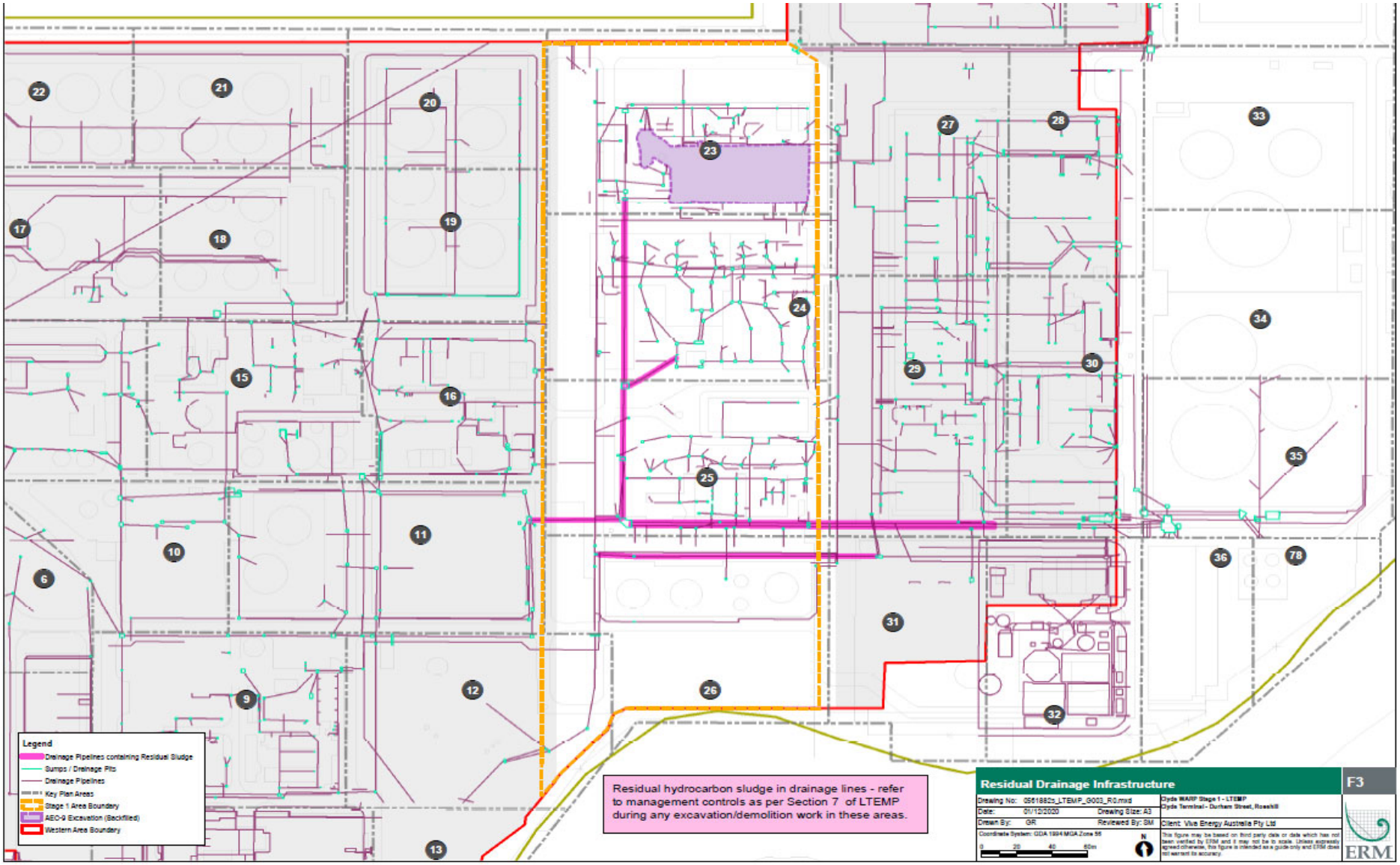
LGA: CITY OF PARRAMATTA
Locality: ROSEHILL
Subdivision No:
Lengths are in metres. Reduction Ratio 1:4000

Registered

DP


Stage 3
Stage 1
Stage 2
Legend
Clyde Refinery
Western Area Boundary
Remediation Extents:
Stage 1
Stage 2
Stage 3
Site Location
F1
Clyde WARP – Stage 1 LTEMP
Clyde Terminal - Durham Street, Rosehill
Client: Viva Energy Australia Pty Ltd
Data Source:
Nearmap Imagery April 2020
ERM


Legend
Compromised Drainage Test Pits
Asbestos Containing Material Identified (Refer to Asbestos Register)
Validation Sample locations below remediation criteria
Supplementary Test Pit Locations
Test Pit
Hand Auger/Surface
LNAPL present in Soil (0-1m Depths)
Residual Hydrocarbon in Soil
Western Area Boundary
Clyde Refinery
Stage 1 Area Boundary
AEC-9 Excavation (Backfilled)
Residual hydrocarbons present in soils – refer to management controls as per Section 7 of LTEMP during excavation work.
Location | Easting | Northing
AEC9_ACM_1 | 318318 | 6255152
AEC9_ACM_2 | 318329 | 6255150
AEC9_ACM_3 | 318246 | 6255187
Residual Soil Conditions
F2
Clyde Terminal - Durham Street, Rosehill
Client: Viva Energy Australia Pty Ltd
ERM


Legend
Drainage Pipelines containing Residual Sludge
Sumps / Drainage Pits
Drainage Pipelines
Key Plan Areas
Stage 1 Area Boundary
AEC-9 Excavation (Backfilled)
Western Area Boundary
Residual hydrocarbon sludge in drainage lines - refer to management controls as per Section 7 of LTEMP during any excavation/demolition work in these areas.
Residual Drainage Infrastructure
F3
ERM