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Patons Lane Resource Recovery Centre – Integrated Water and Leachate Plant Modifications – Modification Report SRC Operations Pty Ltd

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Report version	Authors	Date	Reviewer	Approved for issue	Date
Draft V1	E. Larson, Dr M. Jackson	18/12/2022	Dr M.Jackson	Dr M.Jackson	18/12/2022
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Declaration

Project details	
Project name	Patons Lane Resource Recovery Centre – Integrated Water and Leachate Plant Modifications
Application number	MP09_0074 (Mod 2)
Address of the land in respect of which the development application is made	123-179 Patons Lane, Orchard Hills (Lot 40, DP 738126)
Applicant details	
Applicant name	SRC Operations Pty Ltd
Applicant address	305 Parramatta Rd, Auburn NSW 2144
Details of person by whom this Modification Report was prepared	
Name	Erik Larson and Dr Mark Jackson
Address	Suite 102, Level 1, 25-29 Berry St, North Sydney NSW 2060
Professional qualifications	Erik Larson: B.Sc. Natural Resources Planning, CPESC Dr Mark Jackson, Director and Principal Consultant, B.Sc (Hons), PhD, Grad. Cert. Mgmt., Exec. Masters Public Admin., Certified Environmental Practitioner CEnvP (1542), Impact Assessment Specialist (IA11071), NSW Registered Environmental Assessment Practitioner REAP (R80020).
Declaration by registered environmental assessment practitioner	
Name	Dr Mark Jackson
Registration number	R80020
Organisation registered with	Environment Institute of Australia and New Zealand (EIANZ)
Declaration	The undersigned declares that this Modification Report: • has been prepared in accordance with the *Environmental Planning and Assessment Regulation* 2021; • contains all available information relevant to the environmental assessment of the development, activity or infrastructure to which the report relates; • does not contain information that is false or misleading; • addresses the Planning Secretary's environmental assessment requirements (SEARs) for the project; • identifies and addresses the relevant statutory requirements for the project, including any relevant matters for consideration in environmental planning instruments; • has been prepared having regard to the Department's State Significant Development Guidelines - Preparing a Modification Report; • contains a simple and easy to understand summary of the project as a whole, having regard to the economic, environmental and social impacts of the project and the principles of ecologically sustainable development; • contains a consolidated description of the project in a single chapter of the Modification Report; • contains an accurate summary of the findings of any community engagement; and • contains an accurate summary of the detailed technical assessment of the impacts of the project as a whole.
Signature	
Date	22/12/22

Executive Summary

The Patons Lane Resource Recovery Centre (PLRRC) is located at 123-179 Patons Lane, Orchard Hills (Lot 40, DP 738126) within the former Erskine Park Quarry owned by Bingo Patons Lane Pty Ltd (a wholly owned subsidiary of Bingo Industries). The site is operated by SRC Operations Pty Ltd. The applicant is SRC Operations Pty Ltd.

The PLRRC operates under a State Significant Development approval (MP09_0074) as a resource recovery centre and landfill for commercial and industrial (C&I) and construction and demolition (C&D) wastes (non-putrescible general solid waste). The approval was granted in August 2012 by the NSW Land and Environment Court. Since that time there have been changes to market conditions, Bingo's broader network operations and the NSW waste management regulatory framework that have highlighted the need for Bingo to adjust their site operations at the PLRRC.

This Modification Proposal aims to improve the quality of recovered soils, sands and aggregates from processing of general solid waste (soils) and building and demolition waste to protect human health and the environment. This plant and investment will help Bingo improve the quality of recovered soils, sands and aggregates, increase diversion rates and better deliver on the objectives of the NSW Government's *Waste and Sustainable Materials Strategy 2041. Stage 1 – 2021-2027*. NSW currently has an under supply of processing capacity for general solid waste resource recovery, therefore the modified development will provide additional processing capacity to ensure more wastes are recovered and re-used and less are sent to landfill. The Modification Proposal also seeks to upgrade the landfill leachate treatment system to achieve improved water quality outcomes related to the landfill. Provision of a leachate treatment plant would improve the reliability and efficacy of the leachate management system, bringing the site in line with modern best practice and improving environmental outcomes.

The proposed elements of the integrated water treatment management system upgrades would include an additional new raw leachate dam, new contact waters dam, Leachate Treatment Plant (LTP), Recycling Water Treatment Plant (RWTP) infrastructure to support the resource recovery centre, and a future connection to sewer and potable water.

The RWTP will assist in removing silt loads within process water from the resource recovery centre, enabling reuse of this water in the system. This upgrade to the RWTP is required to ensure adequate treatment of wash water for reuse in an NSW EPA approved resource recovery trial. The trial will identify if the Facility's processes are suitable to accept and treat materials classified as general solid waste (GSW). The upgrades to the RWTP and water reuse will allow additional resource recovery of aggregates, sands, ferrous and non-ferrous metals that would otherwise be lost to landfill. The proposed plant and equipment investment by SRC Operations Pty Ltd will improve the quality and quantity of recovered soils, sands and aggregates, increase landfill diversion rates, provide alternate products to virgin excavated natural materials and assist in delivering the objectives of the NSW Government's *Waste and Sustainable Materials Strategy 2041 Stage 1 – 2021-2027.* Provision of the LTP will improve the reliability and efficacy of the leachate management system, bringing the site in line with modern best practice and improving environmental outcomes.

The Modification Proposal is in line with the strategic goals of the Greater Sydney Region Plan and will provide additional means for the recovery of soil, sand and aggregates for regional markets, diversion of waste from landfill and protection of water quality. The proposal will assist NSW in reaching an 80% recovery rate by 2030 through continued operation of the PLRRC and supply of additional recycled sands and aggregates (that would otherwise go to landfill) to the building industry.

The plant, equipment and investment proposed by SRC Operations Pty Ltd will maximise the quantity and quality of treated soils, sands and aggregates recycled for use in construction and infrastructure projects. High-quality recovered products including course and fine sands and aggregates will support a diverse range of commercial, residential and large-scale infrastructure projects such as the Western Sydney aerotropolis, Sydney Metro and Western Sydney Airport Stations - all of which are located within close proximity to the Site.

Given there are no additional waste tonnages or significant changes to the existing PLRRC or landfill site layout, a modification to the current development consent (MP09_0074) under Section 4.55(1A) of the *Environmental Planning and Assessment Act* 1979 is sought. This modification report has been prepared with regard to the *State Significant Development Guidelines – Preparing a Modification Report*, Appendix E to the *State Significant Development Guidelines* (December 2021).

The Modification Report provides an overview of the potential impacts of the development and how the impacts will be minimised, including mitigation measures and monitoring required. A summary of the assessment is provided below in Table E1.

Table E1. Summary of the development features of the Modification Proposal compared to the approved project (MP09_0074), and net change in impacts.

Element	Approved (MP09_0074)	Approved (MP09_0074) + Modification Proposal	Net change in impacts
Infrastructure	• Existing weighbridges (to be refurbished); • New site office and car parking areas; • Site office for recycling facility, truck wheel wash, workshop and water management structures; • Dams for storage of leachate and collection/storage or stormwater; and • Internal road network.	• Existing weighbridges (to be refurbished); • New site office and car parking areas; • Site office for recycling facility, truck wheel wash, workshop and water management structures; • Dams for storage of leachate and collection/storage or stormwater; • Internal road network; • Leachate Treatment Plant (LTP); • Recycling Water Treatment Plant (RWTP) infrastructure to support the soil wash plant; • Sand conveyor; and • Connection to sewer.	• Additional water management systems to support existing approved activities; • Additional infrastructure will not create additional impacts significantly above those in the original approval.
Operating hours	• 0700 to 1800 Monday to Friday; • 0800 to 1400 Saturday; and • Closed on Sundays and public holidays.	• 0700 to 1800 Monday to Friday; • 0800 to 1400 Saturday; and • Closed on Sundays and public holidays.	• Nil
Air quality	• The findings of the air quality impact assessment indicate that the levels of all air pollutants assessed are below the DECCW Approved Methods at all residential and industrial locations surrounding the PLRRC during operations. • Odour levels at the nearest sensitive receptors were predicted to be below the most stringent DECCW assessment criterion.	• The findings of the air quality impact assessment indicate that the levels of all air pollutants assessed are below the NSW EPA air quality criteria as published in the '*Approved Methods for the Modelling and Assessment of Air Quality in NSW*' at all residential and industrial locations surrounding the PLRRC. • Odour levels at the nearest sensitive receptors were predicted to be below the most stringent assessment criterion.	• The incremental impacts associated with the Modification Application are expected to be neutral when compared to the current approved project.
Noise and vibration	• The predicted operational noise levels for the Site shows compliance with the operational	• The predicted operational noise levels for the Site shows compliance with the	• The incremental impacts associated with the Modification Application

Element	Approved (MP09_0074)	Approved (MP09_0074) + Modification Proposal	Net change in impacts
	approval noise limits for the day, evening, night and morning shoulder assessment periods. • The predicted construction noise levels associated with the construction of the PLRRC are compliant with the operational approval noise limits.	operational approval noise limits for the day, evening, night and morning shoulder assessment periods. • The predicted construction noise levels associated with the construction of the Modification Proposal are compliant with the operational approval noise limits.	are expected to be neutral when compared to the current approved project.
Hazard and risk	• The approved project is not deemed hazardous or potentially hazardous under SEPP 33.	• The Modification Proposal is not deemed hazardous or potentially hazardous under SEPP 33.	• Nil.
Soil and water	• The approved project would not result in significant changes to stormwater runoff quantity or quality.	• The Modification Proposal would not result in significant changes to stormwater runoff quantity or quality.	• Nil change to the Site's stormwater quality and runoff quantity; • Nil change to groundwater; • The water balance for the Site indicates that in a wet or average year there is sufficient water available on site to support operation of the Modification Proposal. During dry periods there is a shortfall in water availability if the Site is reliant solely on surface runoff water and baseflow from the local catchment and stored in site dams post implementation of the Modification Proposal. However, this would be managed via establishment of a potable water connection to the Site
Biodiversity	• The approved project is not anticipated to not have any significant impacts upon any threatened species, endangered ecological communities or populations or their habitat. The vegetation within the adjacent Department of Defence land would not be adversely affected in any significant way, have any significant impact upon ecological values of the area and the environmental risk is considered to be negligible.	• The area in the RRC subject to the Proposal is devoid of ecological values; • The Modification Proposal is not anticipated to not have any significant impacts upon any threatened species, endangered ecological communities or populations or their habitat. The vegetation within the adjacent Department of Defence land would not be adversely affected in any significant way. have any	• Nil.

Element	Approved (MP09_0074)	Approved (MP09_0074) + Modification Proposal	Net change in impacts
		significant impact upon ecological values of the area and the environmental risk is considered to be negligible.	
Traffic	• 250 heavy vehicle movements per day.	• Increase to 256 heavy vehicle movements per day; • Small allowance for additional vehicle movements associated with water tankers to import water during dry years.	• Nil impacts to standard heavy vehicle movements. • Small addition of approximately 6 trucks/day (0.5 trucks per hour) during dry years for tankering water onto the Site to meet shortfall requirements (if a potable supply does not become available).
Aboriginal cultural heritage	• The area of the Site inside the perimeter landscaping bund is comprehensively disturbed and considered to have a nil-low potential for Aboriginal objects to be located within it. The approved project is not anticipated to have any significant impact upon Aboriginal heritage and the overall environmental risk is negligible. • No structures or relics of European heritage interest were observed on the Site.	• The area of the Site inside the perimeter landscaping bund is comprehensively disturbed and considered to have a nil-low potential for Aboriginal objects to be located within it. The approved project is not anticipated to have any significant impact upon Aboriginal heritage and the overall environmental risk is negligible. • No structures or relics of European heritage interest were observed on the Site.	• Nil.
Visual	• The combination of distance, berm height and the filtering effect of the forested area along Site perimeter provide an effective mitigation of any visual impacts associated with the project. The project will not result in any additional visual impacts.	• The combination of distance, berm height and the filtering effect of the forested area along the Site perimeter provide an effective mitigation of any visual impacts associated with the Modification Proposal, which will not result in any additional visual impacts; and • Part of the RWTP would sit at approximately 4.5m above the tallest bund height surrounding the recycling area.	• The perimeter landscape bund faces surrounding the PLRRC, and the existing vegetation along these bunds, provide acoustic and visual protection when viewed from external locations such as The Vines Estate. There would be little or no visibility of the Modification Proposal activities from The Vines Estate or other areas of the surrounding landscape.
Cumulative Impacts	• There are no predicted cumulative impacts as a result of the approved project.	• There are no predicted cumulative impacts as a result of the Modification Proposal	• Nil.
Cost	• The capital investment value for the approved project was $12,336,800 (ex. GST).	• The capital investment value for the Modification Proposal is $22,410,765 (ex. GST).	• The additional plant and investment will help Bingo improve the quality of recovered soils and aggregates, increase

Element	Approved (MP09_0074)	Approved (MP09_0074) + Modification Proposal	Net change in impacts
			diversion rates and better deliver on the objectives of the NSW Government's Waste and Sustainable Materials Strategy 2041. Stage 1 – 2021-2027.

There are minimal net changes in impacts between the approved project (MP09_0074) and Modification Proposal.

This modification report concludes that the proposed infrastructure would have a neutral or beneficial impact when compared to the existing approval in terms of environmental, social and economic outcomes. The project will involve the creation of an estimated 20 full-time and 60 part-time jobs during construction over a 6-month period. The project will be operated by existing staff at the site. The project will involve a Capital Investment Value of $22,410,765 with flow on economic benefits to the Western Sydney community.

The Modification Proposal is minor and considered to be substantially the same as the original consent (MP09_0074) and is therefore recommended for approval.

CONTENTS

1. Introduction

1.1. Applicant Details

The application details in relation to the Modification Proposal are:

- Full name(s): SRC Operations Pty Ltd
- Postal address: PO Box 7, Enfield NSW 2136
- ABN: 36 612 974 366
- Nominated contact: Mr Brad Searle - Environment, Approvals and Regulatory Compliance Manager
- Contact details: 0408 204 054, brad.searle@bingoindustries.com.au
- Site owner(s): Bingo Patons Lane Pty Ltd

The site owner's letter of consent is contained in Appendix H.

1.2. Modification Proposal Overview

The Patons Lane Resource Recovery Centre (PLRRC) is a resource management facility located at 123-179 Patons Lane, Orchard Hills (Lot 40, DP 738126) within the former Erskine Park Quarry owned by Bingo Patons Lane Pty Ltd (a wholly owned subsidiary of Bingo Industries). See Figure 1.1 for a Site location map and Figure 1.2 for an aerial view of the Site.

The PLRRC operates under a State Significant Development approval (MP09_0074) as a resource recovery centre and landfill for commercial and industrial (C&I) and construction and demolition (C&D) wastes (non-putrescible general solid waste) as documented in the Further Modified Preferred Project Report (FMPPR) prepared by R.W. Corkery (September 2011).

Since the existing approval was granted for the Facility by the NSW Land and Environment Court, there has been changes to market conditions, Bingo's broader network operations and the NSW waste management regulatory framework. These changes have highlighted the need for Bingo to adjust site operations at the Facility.

This Modification Proposal aims to improve the quality of recovered soils, sands and aggregates from processing of general solid waste (soils) and building and demolition waste, to protect human health and the environment. This plant and investment will help Bingo improve the quality of recovered soils, sands and aggregates, increase diversion rates and better deliver on the objectives of the NSW Government's *Waste and Sustainable Materials Strategy 2041, Stage 1 – 2021-2027.*

The Modification Proposal also seeks to upgrade the landfill leachate treatment system to achieve improved water quality outcomes related to the landfill. Provision of a leachate treatment plant would improve the reliability and efficacy of the leachate management system, bringing the site in line with modern best practice and improving environmental outcomes.

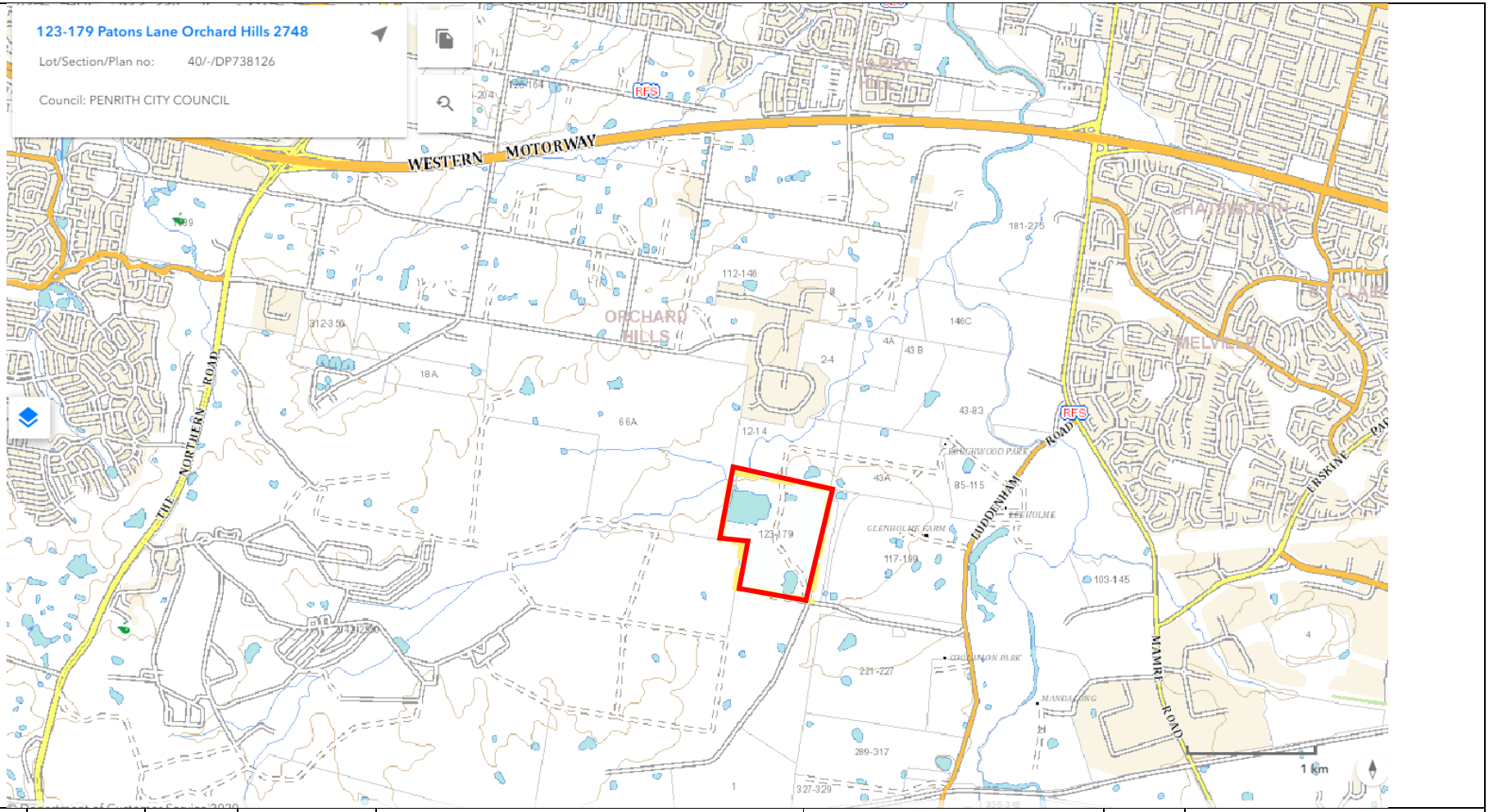
The proposed elements of the integrated water treatment management system are shown in Figure 1.3 and include an additional new raw leachate dam, new contact water dam, Leachate Treatment Plant (LTP), Recycling Water Treatment Plant (RWTP) infrastructure to support the resource recovery centre, and a future connection to sewer and potable water.

The RWTP is proposed to be located north-east of the existing PLRRC buildings and within the confines of the earthen bunds of the PLRRC. Existing dual sand conveyors are considered part of the RWTP and will be regularised as part of this Modification Proposal. The proposed LTP is proposed to be located to the north-east of the proposed raw leachate

dam and a potential future sewer connection point near the existing site entrance. The compound and infrastructure layout are indicative and subject to final contractor requirements and detailed design.

The upgrade of water management infrastructure to support the PLRRC and ongoing landfill operations will not result in changes to the approved types or volumes of waste accepted at the Facility under the existing Project Approval.

Figure 1.1. PLRRC location map, site boundary is shown in red.



Date	Revision	Drawn By	Site description	Jackson Environment and Planning Pty Ltd	Client	SRC Operations Pty Ltd
07/11/22	Revision A	E. Larson	123-179 Patons Lane, Orchard Hills (Lot 40 DP 738126)	Strategy | Infrastructure | Compliance | Procurement A: Suite 102, Level 1, 25-29 Berry St, North Sydney NSW 2060 E: admin@jacksonenvironment.com.au T: 02 8056 1849 W: http://www.jacksonenvironment.com.au	Project	Patons Lane Modification Proposal
					Title	PLRRC location map
					Scale	See map
					Source	NSW espatial viewer

Figure 1.2. PLRRC aerial view, site boundary is shown in red.

Date	Revision	Drawn By	Site description
07/11/22	Revision A	E. Larson	123-179 Patons Lane, Orchard Hills (Lot 40 DP 738126)

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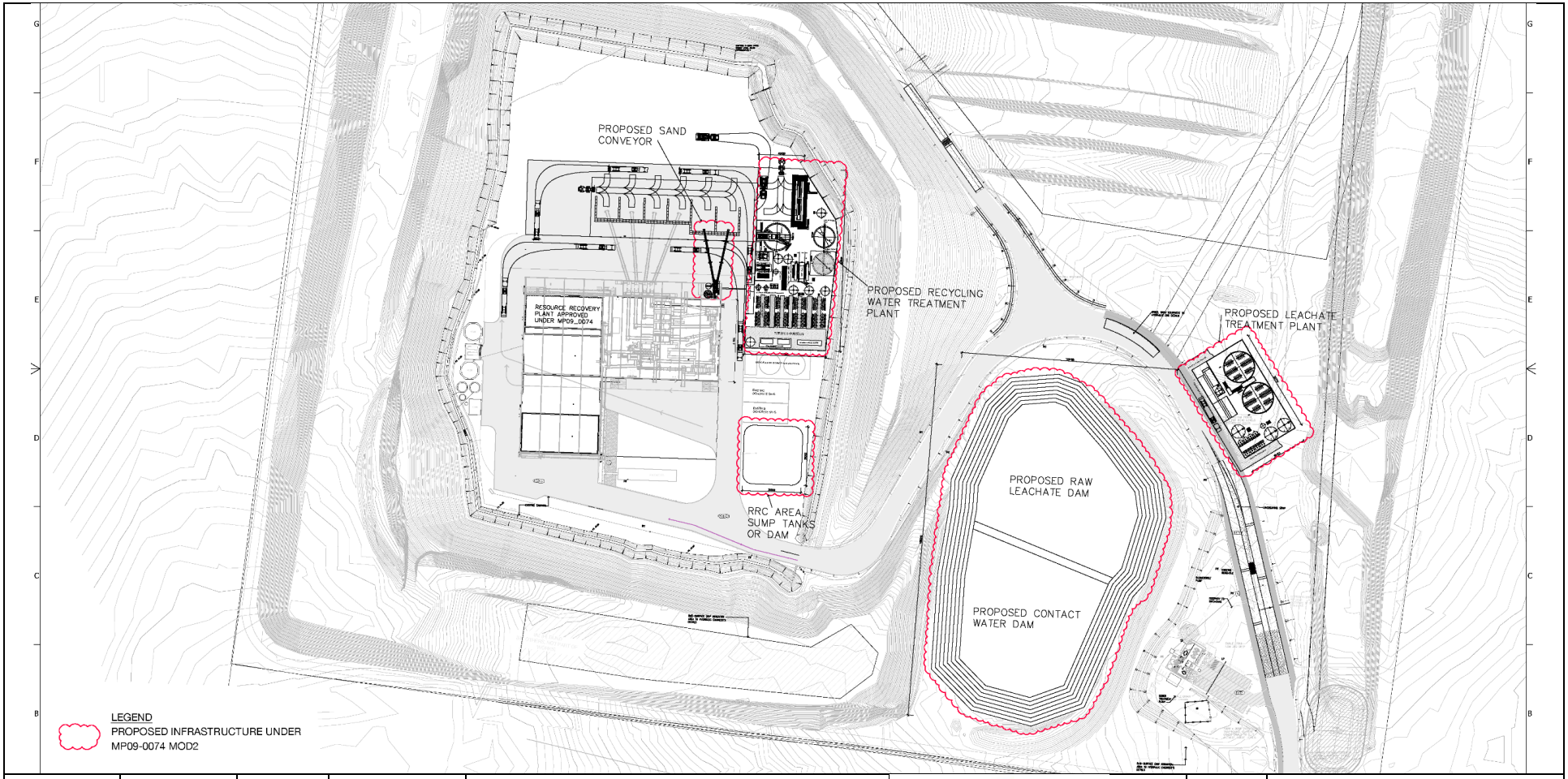
Client	SRC Operations Pty Ltd
Project	Patons Lane Modification Proposal
Title	PLRRC location map
Scale	See map
Source	Nearmap

Figure 1.3. Overview of the proposed integrated water management systems, proposed site modifications are outlined in red.



Date	Revision	Drawn By	Site description	Jackson Environment and Planning Pty Ltd	Client	SRC Operations Pty Ltd
07/11/22	Revision A	E. Larson	123-179 Patons Lane, Orchard Hills (Lot 40 DP 738126)	Strategy | Infrastructure | Compliance | Procurement A: Suite 102, Level 1, 25-29 Berry St, North Sydney NSW 2060 E: admin@jacksonenvironment.com.au T: 02 8056 1849 W: http://www.jacksonenvironment.com.au	Project	Patons Lane Modification Proposal
					Title	Modifications proposed overview
					Scale	NTS
					Source	Bingo Industries

1.3. Modified Project Summary

The major components of the original approval in comparison to the Modification Proposal are summarised in the Table 1.1. The Modification Proposal includes additional ancillary infrastructure to support PLRRC water management and landfill leachate water management infrastructure.

Note that soil, sands and aggregates have been added under the description of "types of waste recycled". This is not considered a new change, but a clarification of an already approved type of waste that is recycled under the existing consent (MP09_0074). Section 2.4.4 of the Further Modified Preferred Project Report (September 2011) includes the following statement:

> *"The Proponent is committed to maximising waste diversion from landfill. Throughout the life of the Project, new products would continue to be investigated as markets and additional resource recovery exemptions are introduced and new re-processing and recycling technologies become available. Particular emphasis would be placed upon reducing the quantity of low level contaminated soils emplaced on site and maximising the quantity of treated soils removed off site."*

Therefore, the soil wash plant and associated equipment, including the beneficial recovery of soils, sands and aggregates, are considered approved under the existing consent (MP09_0074).

Table 1.1. Comparison of the scope of the existing approval under MP09_0074 to the Modification Proposal. Proposed additions/changes the project description shown in red.

Aspect	Scope of the existing approval under MP09_0074	Existing approval under MP09_0074 + Scope of the Modification Proposal
Project summary	Construction and operation of a waste recovery and disposal facility at the former Erskine Park Quarry site adjacent to Patons Lane, Orchard Hills.	No changes.
Landfill area	Total Capacity: 4.3 million tonnes (excluding landfill caps) Operational Life: 25 years including capping and revegetation Maximum Final Landform Elevation: 57 m ADH Staging: The landfill will consist of three waste cells, divided into various sub-cells. The recycling and re-processing area will be refilled with on-site clay and shale materials.	No changes.
Waste	Total Input: up to 450 000 tonnes per annum Waste Recycled: up to 350 000 tonnes per annum Waste Landfilled: up to 205 000 tonnes per annum Types of Waste Received: general solid (non-putrescible) waste, including up to 100 000 tpa of contaminated soil which meets this waste classification. The general solid (non-putrescible) waste would predominantly comprise C&D and C&I wastes.	Total Input: up to 450 000 tonnes per annum Waste Recycled: up to 350 000 tonnes per annum Waste Landfilled: up to 205 000 tonnes per annum Types of Waste Received: general solid (non-putrescible) waste, including up to 100 000 tpa of contaminated soil which meets this waste classification. The general solid (non-putrescible) waste would predominantly comprise C&D and C&I wastes. Types of Waste Recycled: C&D wastes such as soils, sands, aggregates, concrete, bitumen, bricks and

Aspect	Scope of the existing approval under MP09_0074	Existing approval under MP09_0074 + Scope of the Modification Proposal
	Types of Waste Recycled: C&D wastes such as concrete, bitumen, bricks and roofing tiles; C&I waste such as metals, wood, plastics and cardboard. Types of Waste Landfilled: only waste classified as general solid (non-putrescible) and asbestos recovered from the bund walls on site.	roofing tiles; C&I waste such as metals, wood, plastics and cardboard. Types of Waste Landfilled: only waste classified as general solid (non-putrescible) and asbestos recovered from the bund walls on site.
Site access	Site access would be via Patons Lane. The Proponent proposes to complete the construction and sealing of the 1.3km section of Patons Lane between Luddenham Road and the Project Site entrance.	No changes.
Recycling and reprocessing area	Area: approximately 5.6ha Components: Various buildings (recycling facility warehouse, C&I waste storage building, office, mobile C&D recycling equipment and outdoor product bays	No changes.
Ancillary infrastructure	Existing weighbridges (to be refurbished); New site office and car parking areas; Site office for recycling facility, truck wheel wash, workshop and water management structures; Dams for storage of leachate and collection/storage or stormwater; Internal road network.	Existing weighbridges (to be refurbished); New site office and car parking areas; Site office for recycling facility, truck wheel wash, workshop and water management structures; Internal road network; Water Management Systems: • Leachate Treatment Plant (LTP), Recycling Water Treatment Plant (RWTP) infrastructure to support the soil wash plant, sand conveyors, and a connection to sewer; • Dams for storage of leachate and collection/storage of stormwater including raw leachate dam, and contact water dam associated with water management systems.
Clay/shale extraction	Total resources proposed to be extracted from Cells 1, 2 and 3 (following the same sequence as the emplacement cells) to an average depth of 28m AHD Clay/shale extracted: 5,200,000 tonnes. Clay/shale dispatched from site: 3,150,000 tonnes (2,184,000 of light-firing clay/shale). Maximum resource export rate 160,000 tonnes per annum. Clay/shale on-site use: 2,050,000 tonnes. Cell 4 – 994,000 tonnes light firing shale available for future extraction	No changes.

Aspect	Scope of the existing approval under MP09_0074	Existing approval under MP09_0074 + Scope of the Modification Proposal
Amenity bund walls	Acoustic mounds and existing bund walls around the perimeter of the operational areas will provide noise protection and visual screening. All mounds and bund walls would be removed when no longer needed for noise mitigation. Details of the mounds and bund walls are as follows: • Northern Face and bund - reprofiled during the site establishment phase with on-site VENM • Central acoustic mound – VENM • Southern acoustic mound - VENM Recycling and re-processing area acoustic mound - VENM to be constructed during the site establishment phase • Eastern face • Southern face • South-western face	No changes.
Employment	Construction: 10-15 people Operation: 20 people full time + up to 10 part-time contractors	Construction: 20 full time and up to 60 part time people Operation: No change.
Hours of operation	Construction: • Monday to Friday 7am to 6pm; and • Saturday 8am to 2pm Operation: • Monday to Friday 7am to 6pm; and • Saturday 8am to 2pm	Construction: • Monday to Friday 7am to 6pm; and • Saturday 8am to 2pm Operation: • Monday to Friday 7am to 6pm; and • Saturday 8am to 2pm
Heavy vehicle movements	250 heavy vehicle movements per day	256 heavy vehicle movements per day

1.4. Approvals Background

The Site is approved as an integrated resource recovery operation and landfill under Project Approval MP09_0074:

- Landfilling activities within a total void space of 4.3 million tonnes;
- Acceptance of up to 450,000 tonnes per annum (tpa) of C&D and C&I waste with 350,000 tpa of resource recovery and landfilling of up to 205,000 tpa;
- including up to 100 000 tpa of contaminated soil (non-putrescible general solid waste) which meets this waste classification;
- Resource recovery activities within the Recycling and Reprocessing Area (RRA);
- Clay / shale extraction; and
- Ancillary infrastructure.

The PLRRC was originally approved under Part 3A (now repealed) of the Environmental Planning & Assessment Act 1979 (EP&A Act). Project Approval MP09_0074 (the Approval) was granted in August 2012 by the Land and Environment Court for the establishment and operation of the Resource Recovery Centre (RRC) and the landfilling of commercial and industrial (C&I) and construction and demolition (C&D) waste types (general solid waste (non-putrescible)). The Approval was subsequently modified in March 2016 to allow for changes to site establishment activities. This modification was an administrative modification to provide appropriate contingencies for the site establishment program.

Following the discontinuation of the transition arrangements for Part 3A projects, the project was deemed to be State Significant Development (SSD).

Site establishment works commenced on 19 April 2018 with the majority of works completed in April 2019. Operation of the site commenced in August 2019. Environmental Protection Licences for landfill and resource recovery centre were issued by the Environment Protection Authority in June and July 2019, respectively.

Since commencing operations in August 2019, the site has only received waste intermittently at both the landfill and RRC. The landfill is not currently operational and is forecast to recommence by July 2023.The RRC to date has been operating with a focus on processing recovered aggregates (<60mm) sourced from Bingo's network of transfer stations and recycling facilities. There are no outstanding EPL compliance issues for the RRC (EPL 21259) or the landfill (EPL 20814).

See Table 1.2 for a full summary of the approvals on the Site.

Table 1.2. History of approvals for 123-179 Patons Lane Orchard Hills (Lot 40 DP 738126).

Date Approved	Development Application No.	Description of approved activity or development
23/11/1981	116/80	Extraction of sand and shale.
21/03/2003	DA03/0273	Weighbridge installation.
23/06/2003	DA03/0627	Realignment of Patons Lane and construction of a new intersection at the corner of Patons Lane and Luddenham Rd.
12/07/2012	MP09_0074	Orchard Hills Waste Facility. Approval granted by the Land and Environment Court for the establishment and operation of the Resource Recovery Centre (RRC) and the landfilling of commercial and industrial (C&I) and construction and demolition (C&D) waste types (general solid waste (non-putrescible)).
30/03/2016	MP09_0074 (MOD 1)	Changes to site establishment activities.
02/04/2019	DA18/1129	Septic installation and install and construct a waste treatment device / on-site sewage management system).

1.5. Current EPL Allowed Uses

The Site operates under two Environment Protection Licences, one for the Patons Lane Landfill operations (EPL 21259) and one for the Patons Lane Resource Recovery Centre (EPL 21259). No variations to either EPL is sought or required under this Modification Proposal.

Further details regarding the Soil Wash Trial approved under EPL 21259 that relate to the Modification Proposal are provided below.

1.5.1. EPA Approved Soil Wash Trial

In May 2020 an application for a variation to the EPL 21259 was submitted to the NSW Environment Protection Authority (EPA). The application sought approval to receive soils (as General Solid Waste non-putrescible) for the purpose of conducting a wash plant trial. The trial proposed to separate the soil, sand and aggregate into certain recovered particle size fractions suitable for use in construction applications. The aim of the trial was to increase the rate of diversion of waste from landfill. EPA approved a variation to the licence on 9 August 2021.

Condition L2.1 of the facility's current Environmental Protection Licence (EPL 21259) provides for the acceptance of, among others, soil which meets Contaminant Threshold 1 (CT1) requirements of the NSW EPA waste classification guidelines. The approved wash plant trial allows acceptance and recovery via washing of the General Solid Waste (GSW) materials. Wet separation plants have been developed in Europe and represents state-of-the-art technology for maximising the recovery of soil, sand and aggregate from general solid waste comprising mainly soil from building sites.

SRC Operations Pty Ltd plans to carry out this trial to identify if the facility's current processes are suitable to accept and treat materials classified as GSW. The purpose and design of the trial considers the environment by minimising water usage (by maximising the re-use of water within the process), increasing resource recovery and reducing waste to landfill. If successful, a permanent amendment to EPL 21259 would be sought to accept soils classified as GSW for the purpose of waste storage and resource recovery.

In the trial, soils are washed using the existing approved infrastructure within the RRC as part of a process to render soils otherwise destined for landfill, as suitable for recycling and reuse. It has been identified that to support these activities within the Patons Lane RRC further improvements to the water management system are required to ensure water from operations can be appropriately managed to support the attainment of higher resource recovery rates.

To maximise the efficacy of the wash plant trial it is proposed that a thickener, filter press and filtration system are installed within the water management system to further clean the water used within the resource recovery activities. Water will be reused within the washing plant to minimise the amount of water needed and required to be disposed.

1.6. Department of Planning and Environment Modification Assessment Requirements

The Department of Planning and Environment issued an email dated 19th July 2022 detailing the department's environmental assessment requirements for the Modification Proposal. These are summarised in Table 1.3. below.

Table 1.3. Department of Planning and Environment Assessment Requirements.

No.	Requirement	Response	Where addressed.
1	Detailed description of the proposed modification (including information on existing consents, need for modification, site plans, CIV etc). Is the site still being utilised for clay/shale extraction activities (as approved under the MP09_0074 consent), and if so, how do these operations relate to the RRF operations and proposed modification?	This modification report provides full details of the Modification Proposal. The Site is still used for extraction which will continue to form an essential part of the landfill and PLRCC operations. The proposed leachate treatment plant will directly improve water quality and water management during operations.	This report Section 3
2	Water Management (details of nearby water resources, site water balance, details of stormwater/wastewater / leachate management systems – including characterisation of water quality at point of discharge, and any mitigation/management and monitoring measures)	A specialist assessment has been prepared to update the water balance and address potential water quality impacts.	Section 7.4 Appendix F
3	Air Quality and Odour (quantitative assessment of air quality, dust and odour impacts with appropriate mitigation, management and monitoring measures)	A specialist air quality impact assessment has been prepared for the Modification Proposal.	Section 7.2 Appendix D
4	Noise (quantitative assessment of construction, operational and transport noise and vibration impacts)	A specialist noise and vibration impact assessment has been prepared for the Modification Proposal.	Section 7.3 Appendix E
5	Traffic and Transport (traffic types / volumes generated during construction and operation, swept paths, details of loading / unloading / queuing, swept path diagrams for entry / exiting and manoeuvring etc).	An assessment of traffic and transport has been provided in this Modification Report.	Section 7.7
6	Visual (impacts of project on amenity of surrounding area)	An assessment of potential visual impacts has been prepared as part of this modification report.	Section7.6
7	In addition to assessment of key environmental risks for the Modification Proposal, consideration should also be given to cumulative impacts from surrounding developments.	An assessment of potential cumulative impacts has been prepared as part of this modification application.	Section 8.4
8	Consultation with relevant Government authorities, service providers, community groups and affected surrounding landowners. Details of the consultation process and issues raised should be detailed in the modification report. Confirm and provide details of whether consultation has already been undertaken (or commenced) with the EPA regarding the soil washing trial and subsequent potential amendments to the EPL 21259.	Consultation with the NSW EPA, Penrith Council, Sydney Water and the Community Liaison Committee has been undertaken.	Section 5

1.7. Project Approval Pathway

The Modification Proposal will not result in any significant negative impacts that cannot be adequately mitigated or managed and will provide beneficial impacts to water quality by improving leachate management from the landfill, and resource recovery by improving the soil wash system ability to treat and reuse water for recovery of aggregates.

The Modification Proposal can be undertaken in a manner which will not adversely impact on natural resources but will promote the economic use of the land in a manner which will provide an improved level of resource management, employment and economic benefits for Western Sydney.

The use of the site remains the same as provided in the existing Project Approval MP09_0074.

The Modification Proposal will be substantially the same development as the development for which consent was originally granted and involve minimal environmental impact.

Given there are no additional waste tonnages or significant changes to the existing PLRRC or landfill site layout, and would involve minimal environmental impact, a modification to the current Development Consent (MP09_0074) under Section 4.55(1a) of the *Environmental Planning and Assessment Act 1979* is sought. The proposed planning pathway has been agreed in consultation with DPE.

1.8. Approvals Subject to Separate Assessment

The Site connection and discharge of surplus treated leachate to sewer is subject to a separate trade waste agreement with Sydney Water. The Modification Proposal includes the treatment and tankering of treated leachate water until a sewer connection is provided.

Leachate from the Site is not released to the environment and is currently tankered off-site under the existing approval (as there is no sewerage system connection currently available at the site).

2. Strategic Context

2.1. Greater Sydney Region Plan

The *Greater Sydney Region Plan, A Metropolis of Three Cities* is built on a vision of three cities where most residents live within 30 minutes of their jobs, education and health facilities, services and great places.

The *Greater Sydney Region Plan*, A Metropolis of Three Cities has the following objectives:

- Sets a 40-year vision (to 2056) and establishes a 20-year plan to manage growth and change for Greater Sydney in the context of social, economic and environmental matters;
- Informs district and local plans and the assessment of planning proposals;
- Assists infrastructure agencies to plan and deliver for growth and change and to align their infrastructure plans to place-based outcomes; and
- Informs the private sector and the wider community of the growth management and infrastructure investment intentions of government.

The *Greater Sydney Region Plan* applies to the Greater Sydney Region, and sets the planning framework for the districts which make up the region.

The demand for industrial and urban services land across Greater Sydney is driven by these different locational needs and infrastructure requirements. Urban services identified in the plan include the provision of waste and recycling services dispersed across Greater Sydney on varied sized lots, close to surrounding residential and commercial centres they directly serve, and reliance on proximity to markets.

The Modification Proposal is in line with the strategic goals of the *Greater Sydney Region Plan* and would provide additional means for the recovery of soil, sand and aggregates for regional markets, diversion of waste from landfill and protection of water quality.

2.1. NSW EPA Strategic Plan 2021-24

The NSW State Government has committed to ambitious targets for recycling across the State. The published *NSW EPA Strategic Plan 2021-24* is intended to complement the NSW Premier's priority for quality local environments and the NSW Government Net Zero Plan. It connects with other supporting plans for a better environment including the Clean Air Strategy, the Waste and Sustainable Materials Strategy, draft NSW Water Strategy and the EPA's Regulatory Strategy.

This plan replaces the previous *NSW EPA Strategic Plan 2017-2021* and is meant to be a broad plan covering five areas of focus for the next three years. This includes taking action to reduce the harmful impact of waste and drive behaviours that create a circular economy. The outcomes proposed for the 'waste' focus area are as follows:

- The harmful impacts of waste are reduced and waste minimised;
- Community and industry actively contribute to a circular economy; and
- Resilient systems and robust markets are available to keep waste materials circulating and to de-carbonise the NSW economy.

In accordance with the *NSW Waste and Sustainable Materials Strategy 2041* priorities, the NSW EPA has focused on investing in recycling infrastructure, behaviour change, developing markets for recycled materials and building capacity for regional planning.

The Modification Proposal will assist in achieving the aims of the EPA Strategic Plan, improve the quality of recovered soils, sands and aggregates from processing of building waste, and protect human health and the environment.

Whilst EPA withdrew their proposal to revoke the *Recovered Fines Order* 2014, the plant, equipment and investment proposed by Bingo will improve the quality of recovered soils, sands and aggregates, increase diversion rates and assist in delivering on the objectives of the NSW Government's *Waste and Sustainable Materials Strategy 2041*.

2.2. NSW Waste and Sustainable Materials Strategy 2041

This strategy updates NSW's previous strategy: the Waste Avoidance and Resource Recovery Strategy 2014–2021.

The *NSW Waste and Sustainable Materials Strategy 2041: Stage 1 – 2021-2027* outlines the actions NSW will take over the next six years – the first phase of the strategy – to deliver on a set of long-term objectives. The strategy is supported by $356 million in funding to help deliver priority programs and policy reforms, including:

- Phasing out problematic single-use plastic items;
- Financial incentives for manufacturers and producers to design out problematic plastics;
- Having government agencies preference recycled content and invest in research and pilots for recycling innovation;
- Introducing tighter environmental controls for energy from waste in NSW, with further consideration of planning and infrastructure needs underway;
- Mandating the source separation of food and garden organics for households and selected businesses; and
- Incentivising biogas generation from waste materials.

Specific targets focus on the environmental benefits and economic opportunities in how we manage our waste, and includes the following:

- Reduce total waste generated by 10% per person by 2030;
- Have an 80% average recovery rate from all waste streams by 2030;
- Significantly increase the use of recycled content by governments and industry;
- Phase out problematic and unnecessary plastics by 2025;
- Halve the amount of organic waste sent to landfill by 2030;
- Reduce litter by 60% by 2030 and plastics litter by 30% by 2025; and
- Triple the plastics recycling rate by 2030.

The Modification Proposal would assist in reaching an 80% recovery rate by 2030 by continuing to operate the PLRRC whilst protecting water quality and by supplying additional recycled sands and aggregates (that would otherwise go to landfill) for use in the building industry. The additional plant, equipment and investment from Bingo will improve the quality of recovered soils and aggregates and increase landfill diversion rates.

To complement this strategy, the NSW EPA also released the following documents:

- *NSW Plastics Action Plan*, which sets out how we will phase out problematic plastics, tackle litter from plastic items like cigarette butts, and support innovation and research; and
- N*SW Waste and Sustainable Materials Strategy: A guide to future infrastructure needs*, which sets out the investment pathway required for NSW to meet future demand for residual waste management and recycling.

2.3. NSW Waste and Sustainable Materials Strategy: A guide to Future Infrastructure Needs

The *NSW Waste and Sustainable Materials Strategy: A guide to future infrastructure needs* is a supplement to the *NSW Waste and Sustainable Materials Strategy 2041.* The guide outlines the emerging needs in NSW's waste and circular economy infrastructure network. The needs have been grouped by material types with a focus on materials commonly found in municipal solid waste (MSW) and commercial and industrial (C&I) waste streams. Significant gaps exist in our system for the reprocessing of some of these materials that have historically been exported for processing.

The guide sets out how the NSW Government will support the development of new infrastructure through facilitating infrastructure, e.g., through planning activities; investing in high priority projects; strategically planning for infrastructure with local communities; and aligning policy and regulation with the Strategy. The three key areas of focus, based on extensive analysis of material flows, current and planned capacity, and proposed policy changes, are residual waste, organics and plastics.

The relatively high commerciality of construction and demolition waste processing, driven by the waste levy and the value of the outputs, has led to high recycling rates and strong investment in the sector.

The PLRRC processes both C&D waste and C&I waste. The Modification Proposal would deliver further circular economy benefits by increasing landfill diversion rates, improve the quality of recovered soils, sands and aggregates, and continuing to support the use of recovered and recycled products in industry.

2.4. Orchard Hills Precinct Plan

Orchard Hills is one of six Greater Penrith to Eastern Creek (GPEC) precincts and a priority urban release area as it will be home to a Sydney Metro – Western Sydney Airport station. As part of the precinct planning, the NSW Department of Planning and Environment have released a discussion paper to collect feedback from the community on their early planning findings and ideas, and to identify potential areas for change and others to remain the same.

The PLRRC is located in 'Neighbourhood G' as identified in the discussion paper. This area is noted to be affected by several constraints that could limit future development. The PLRRC is noted in the Precinct Plan as being an established industry in "Neighbourhood G', and any proposed future land uses around the site will consider the PLRRC.

The Outer Sydney Orbital Stage 1 corridor traverses through this neighbourhood, as does the Metro line and stabling yards. The discussion paper further notes that development around the PLRRC, electricity substation and TransGrid site and interconnected electricity transmission easements is not anticipated in the immediate future. This would leave adequate buffering between the PLRRC and local sensitive receivers over the longer term.

Ongoing investigations are expected to assess the nature of these constraints and the capacity of the land to support new development will be progressed through the precinct planning process.

The PLRRC is well positioned to provide valuable services and support for resource recovery as future development progresses in the Orchard Hills area, and as development of the Western Sydney Airport continues.

3. Description of the Modification Proposal

3.1. Key Features of the Site and Surrounds

The Site covers an area of 60ha and comprises lot 40 DP 738126 and is located at 123-179 Patons Lane, Orchard Hills. Access to the Site is off Patons Lane, which runs off Luddenham Road. Patons Lane is a public road that extends from Luddenham Road to just past the entrance to the Site. Luddenham Road connects with Mamre Road to the north about 5km from the Site and provides access to the Great Western Highway and the M4 Motorway.

3.1.1. Adjoining Premises and Sensitive Receivers

A residential subdivision known as “the Vines Estate’ is located approximately 500m from the northern boundary of the Site. The subdivision was approved on 25 September 1989. There are 117 lots within the Vines Estate which are predominantly large allotments (800-1000m^2) developed with two storey houses. There are views to the Site from some of the Vines Estate. Development further to the north is predominantly detached houses on large allotments.

Rural residential properties are located to the east of the Site including 'Roughwood Park' and along Luddenham Road.

Immediately to the west, the site adjoins land owned by the Department of Defence which contains significant areas of protected native vegetation.

To the south, along Patons Lane, is a former horse stud and further to the south is the Twin Creeks housing estate.

3.1.2. Important Natural or Built Features

The Site has been fully developed, with the only areas of remnant natural vegetation occurring in the riparian zone of Blaxland Creek. The adjacent properties to the north and east have been cleared for pasture, but dense woodland on Commonwealth land to the west retains a significant area of Cumberland Plain Woodland.

There has been significant alteration to the ground surface within the existing quarry, both from quarrying and from the construction of surrounding amenity bunds, and from access tracks into the quarry, midway along the northern boundary, and for the site entrance in the south-eastern corner.

The relatively undisturbed areas comprise of a narrow perimeter strip (outside the perimeter bunds), although it too would have been subject to tree-clearing, ploughing and disturbance in the past before the quarry existed and by vehicular traffic during quarry operations.

The Site is adjacent to lands that are mapped as containing High Biodiversity Values (HBV), including for:

- Threatened species or communities with potential for serious and irreversible impacts; and
- Biodiverse riparian land.

A small section of Blaxland Creek that clips the north-western most corner of the Site is mapped HBV land. A small section of HBV land is mapped on the boundary to the Patons Lane easement just south of the Site. The Modification Proposal does not include any additional work in these areas and will not impact these lands.

3.1.3. Identified Risks or Hazards

No additional risks or hazards outside of those identified in the environmental assessment for MP09_0074 have been identified. A preliminary risk evaluation is provided in Section 7.5.

3.1.4. Planning Agreements

There are no identified agreements (e.g. Voluntary planning agreements; Negotiated agreements with landowners or benefit sharing schemes) with other parties in relation to the properties.

3.2. Infrastructure Requirements

This Modification Proposal aims to assist SRC Operations Pty Ltd in achieving higher resource recovery rates and diversion from landfill of washed aggregates, sands and soils waste streams via upgrades to the soil wash plant and installation and operation of a RWTP. The applicant also seeks to upgrade the landfill leachate treatment system to achieve improved water quality outcomes related to the landfill. Provision of a LTP would improve the reliability and efficacy of the leachate management system, bringing the site in line with modern best practice and improving environmental outcomes.

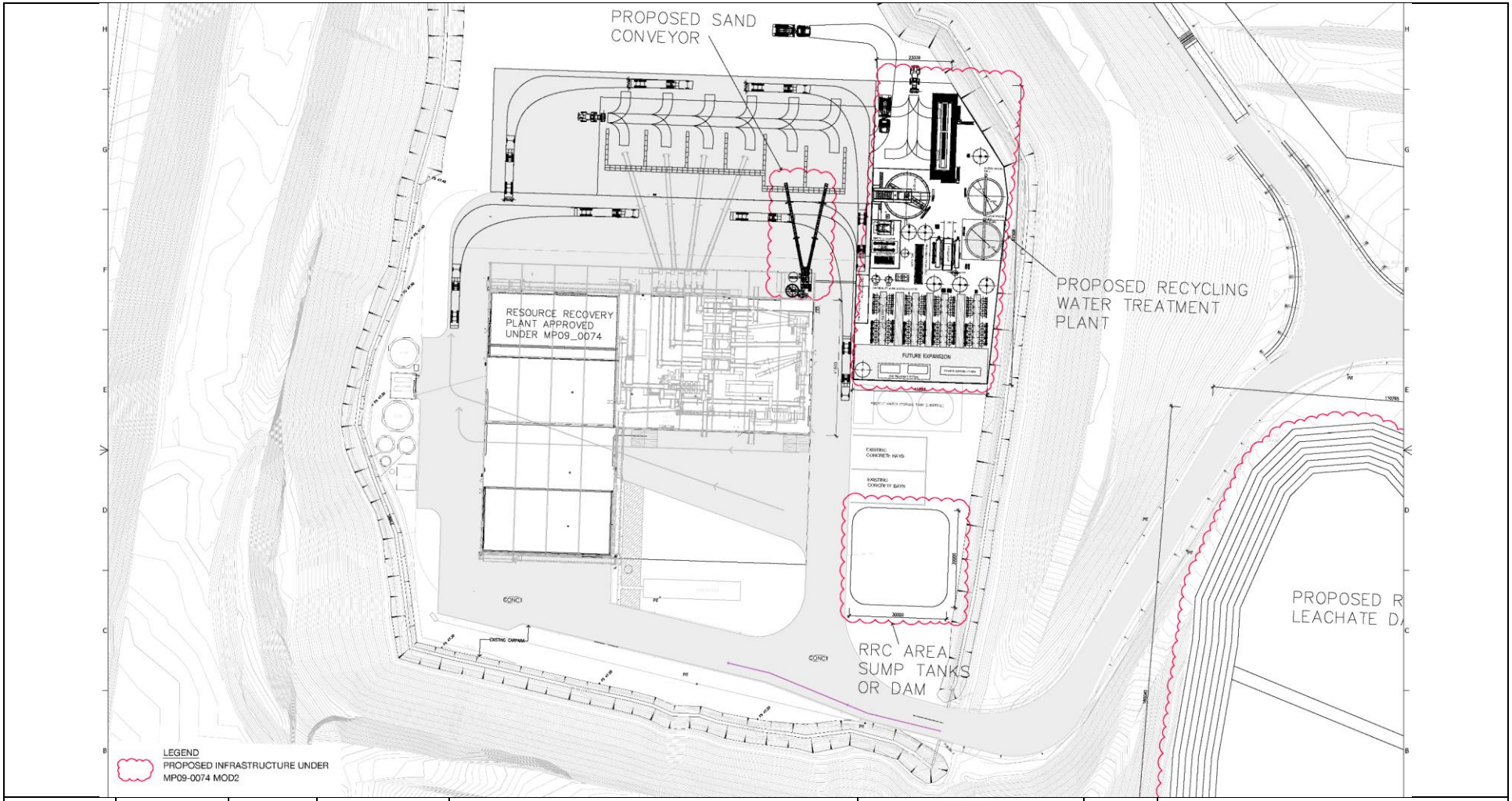
The proposed elements of the LTP water management upgrade systems will include a new raw leachate dam, contact water dam, leachate treatment plant and connection to sewer.

The RWTP is proposed to be located on the north-east corner of the existing PLRRC buildings and within the confines of the earthen bunds of the PLRRC. Existing dual sand conveyors are considered part of the RWTP and will be regularised as part of this Modification Proposal.

The proposed LTP is to be located to the north-east of the proposed Raw Leachate Dam and a potential future sewer connection point. The compound and infrastructure layout are indicative and subject to final contractor requirements and detailed design.

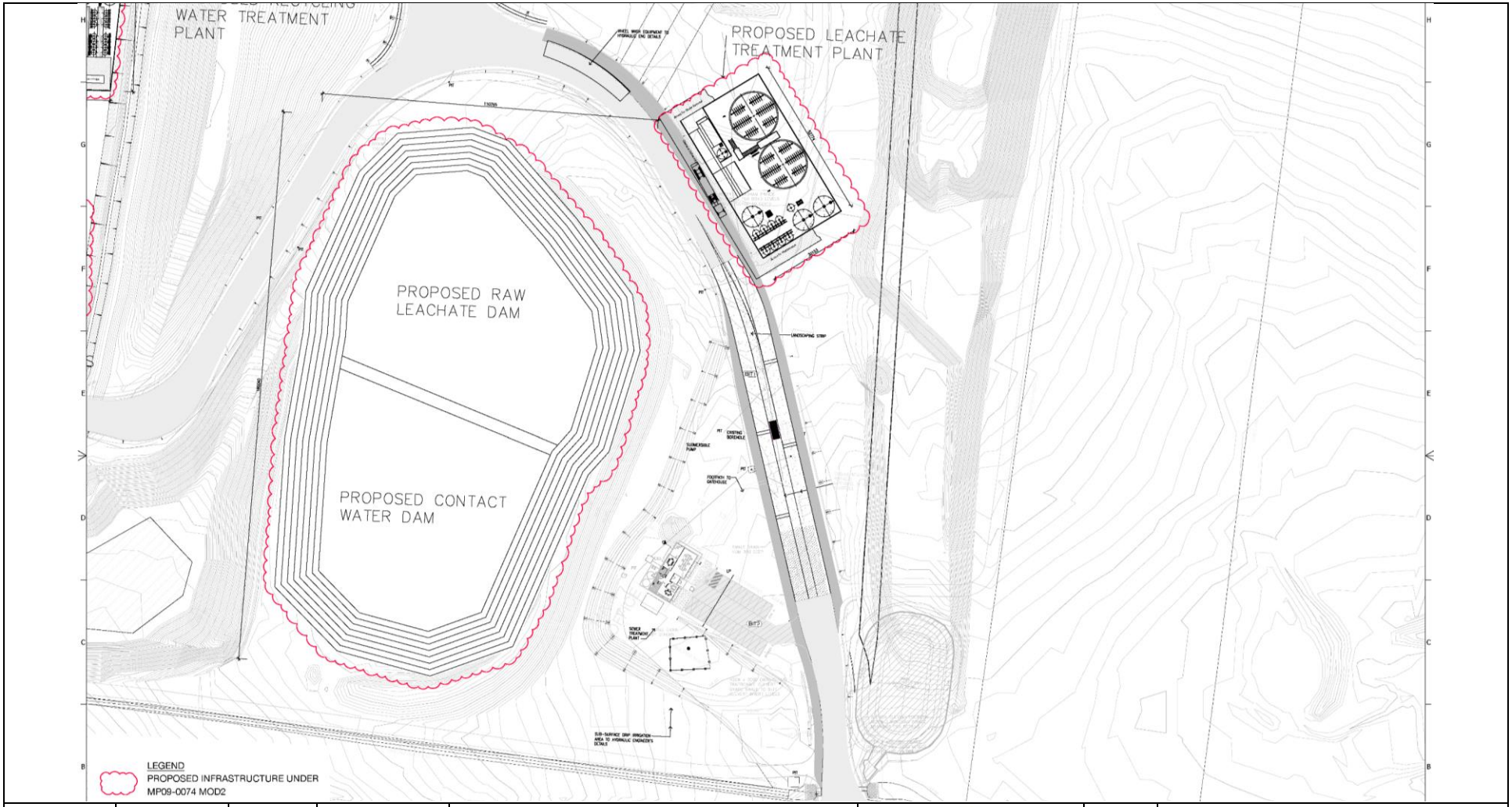
Indicative locations and layouts of the RWTP and the LTP, including process flow diagrams, are shown in Figure 3.1 through Figure 3.7.

Figure 3.1. Indicative layout of the proposed Recycling Water Treatment Plant (RWTP) (subject to detailed design).



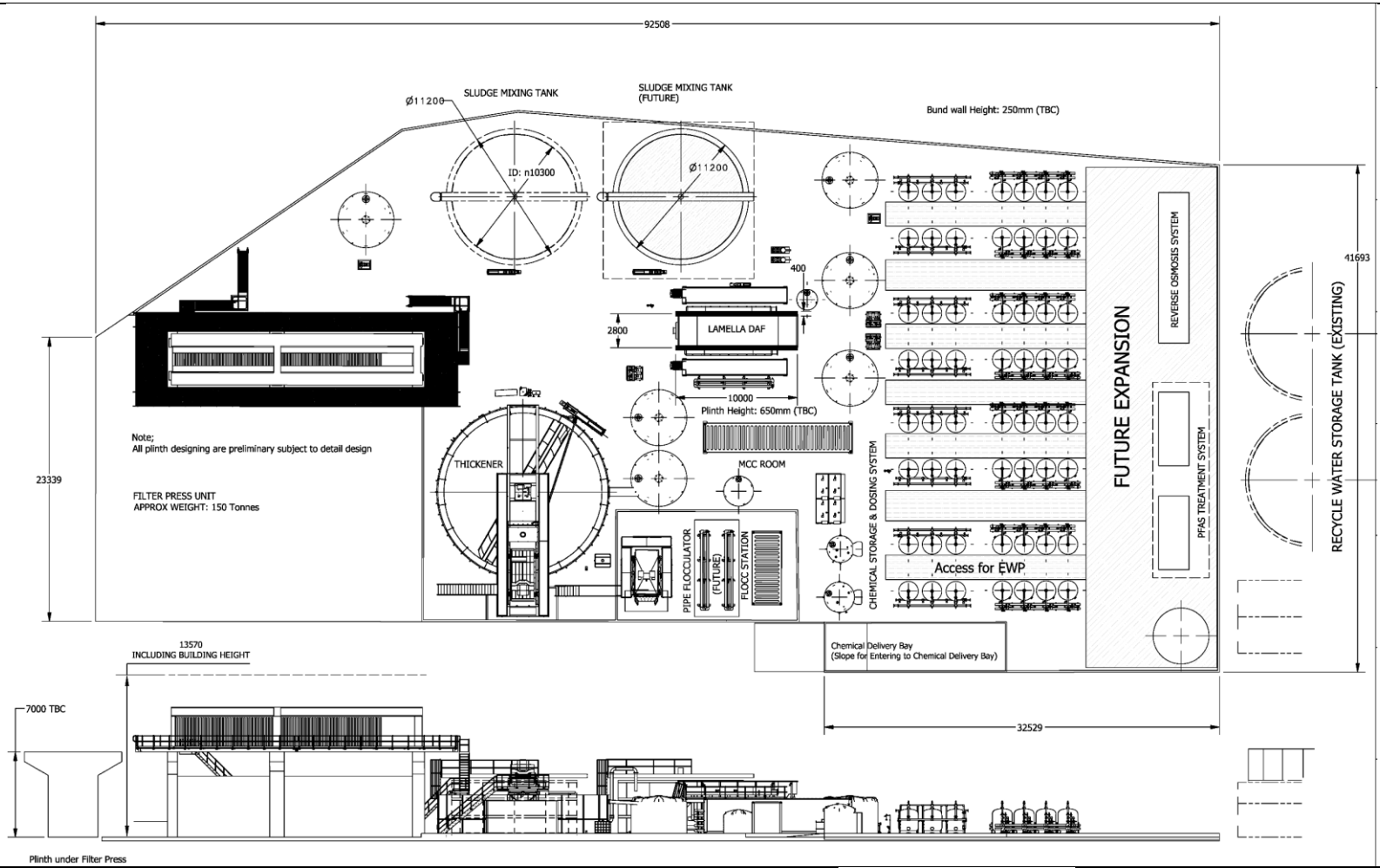
Date	Revision	Drawn By	Site description	Jackson Environment and Planning Pty Ltd		Client	SRC Operations Pty Ltd
07/11/22	Revision A	E. Larson	123-179 Patons Lane, Orchard Hills (Lot 40 DP 738126)	Strategy | Infrastructure | Compliance | Procurement A: Suite 102, Level 1, 25-29 Berry St, North Sydney NSW 2060 E: admin@jacksonenvironment.com.au T: 02 8056 1849 W: http://www.jacksonenvironment.com.au		Project	Patons Lane Modification Proposal
						Title	Proposed RWTP overview
						Scale	NTS
						Source	Bingo Industries

Figure 3.2. Indicative layout of the proposed Landfill Leachate Treatment Plant (LTP) (subject to detailed design).



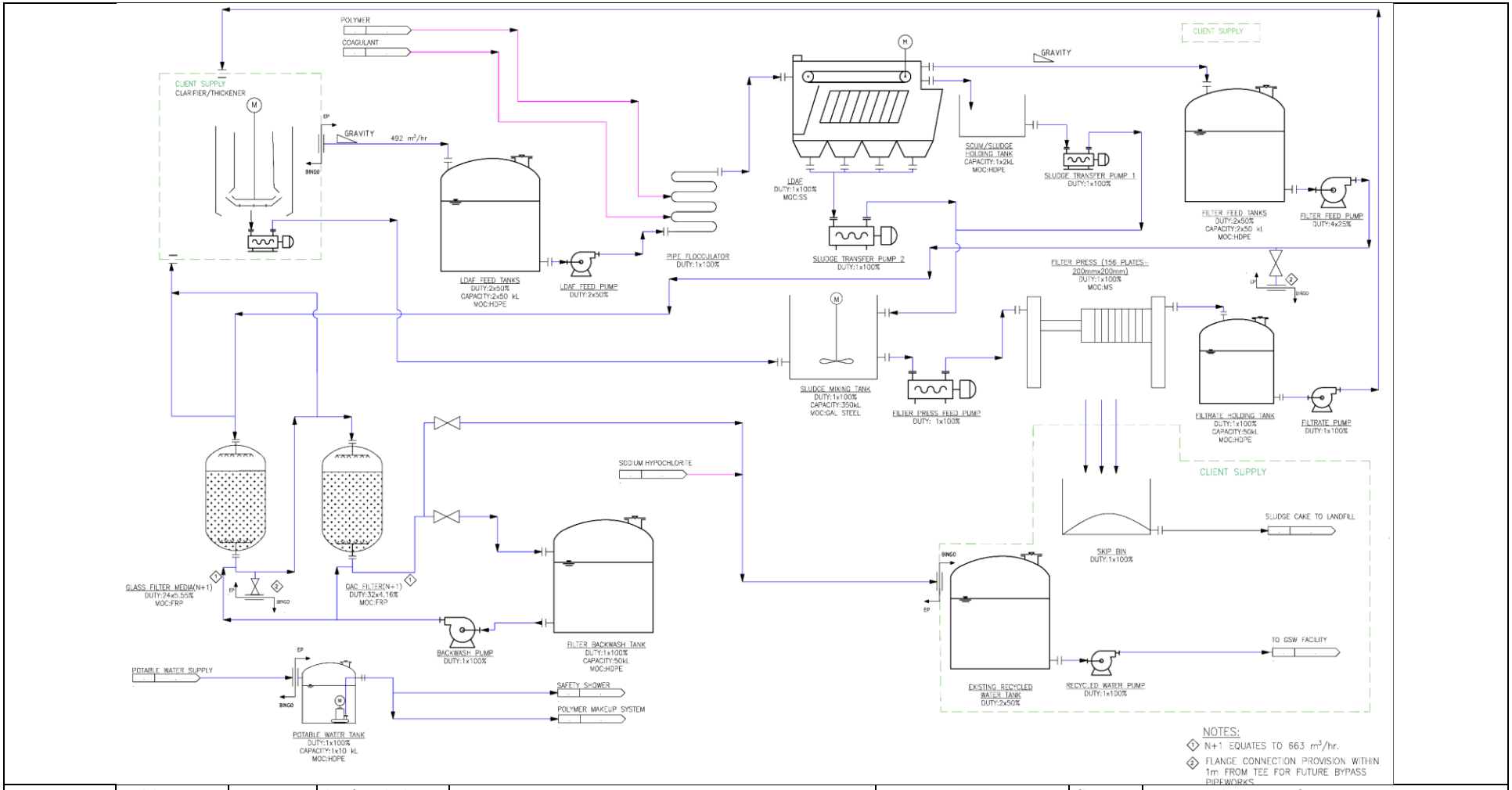
Date	Revision	Drawn By	Site description	Jackson Environment and Planning Pty Ltd		Client	SRC Operations Pty Ltd
07/11/22	Revision A	E. Larson	123-179 Patons Lane, Orchard Hills (Lot 40 DP 738126)	Strategy | Infrastructure | Compliance | Procurement A: Suite 102, Level 1, 25-29 Berry St, North Sydney NSW 2060 E: admin@jacksonenvironment.com.au T: 02 8056 1849 W: http://www.jacksonenvironment.com.au		Project	Patons Lane Modification Proposal
						Title	Modifications proposed LTP overview
						Scale	NTS
						Source	Bingo Industries

Figure 3.3. Indicative layout of the proposed Recycling Water Treatment Plant (RWTP). Full scale concept plans are provided in Appendix B.



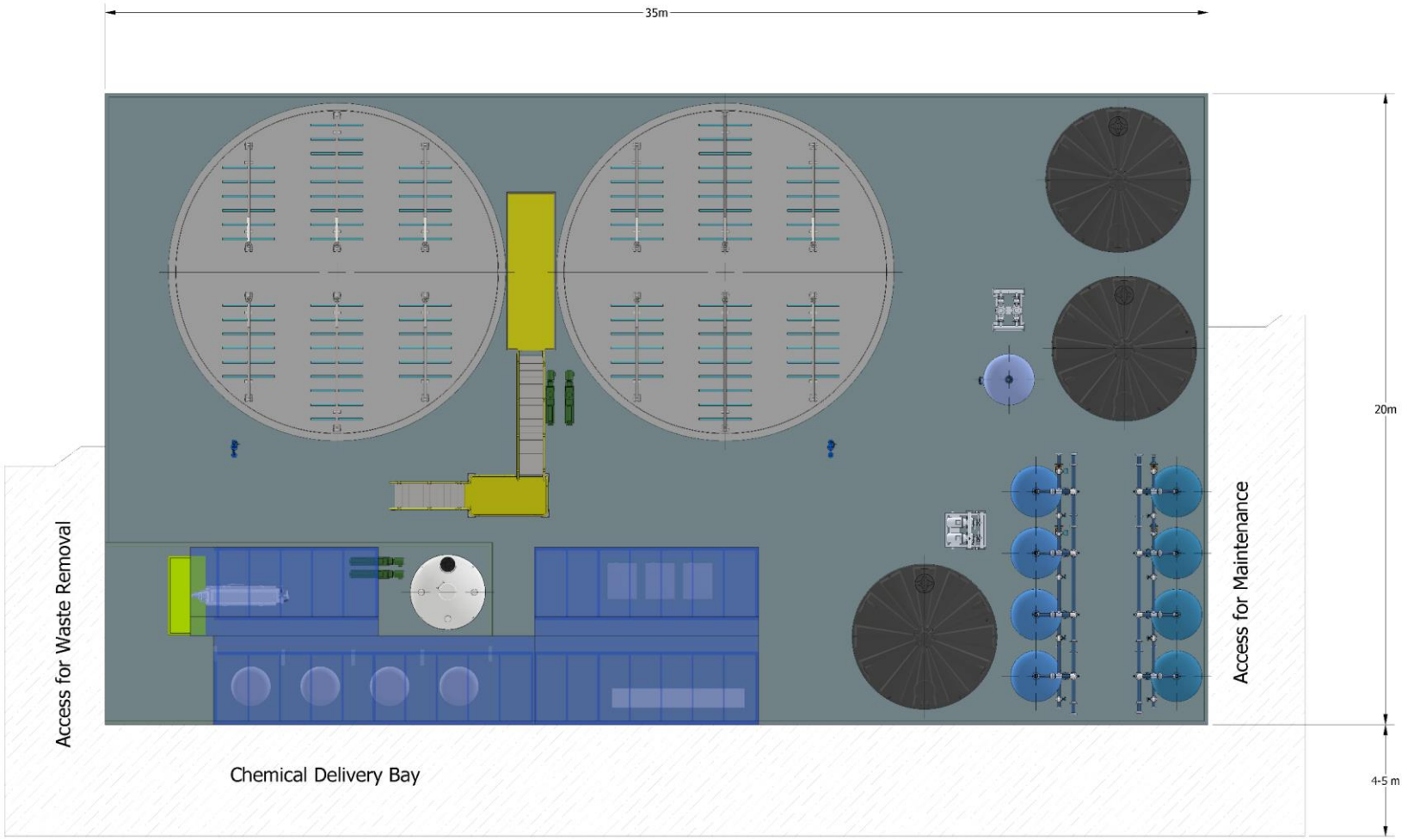
Date	Revision	Drawn By	Site description	Jackson Environment and Planning Pty Ltd	Client	SRC Operations Pty Ltd
07/11/22	Revision A	E. Larson	123-179 Patons Lane, Orchard Hills (Lot 40 DP 738126)	Strategy | Infrastructure | Compliance | Procurement A: Suite 102, Level 1, 25-29 Berry St, North Sydney NSW 2060 E: admin@jacksonenvironment.com.au T: 02 8056 1849 W: http://www.jacksonenvironment.com.au	Project	Patons Lane Modification Proposal
					Title	RWTP details
					Scale	NTS
					Source	Bingo Industries

Figure 3.4. RWTP process details. Full scale concept plans are provided in Appendix B.



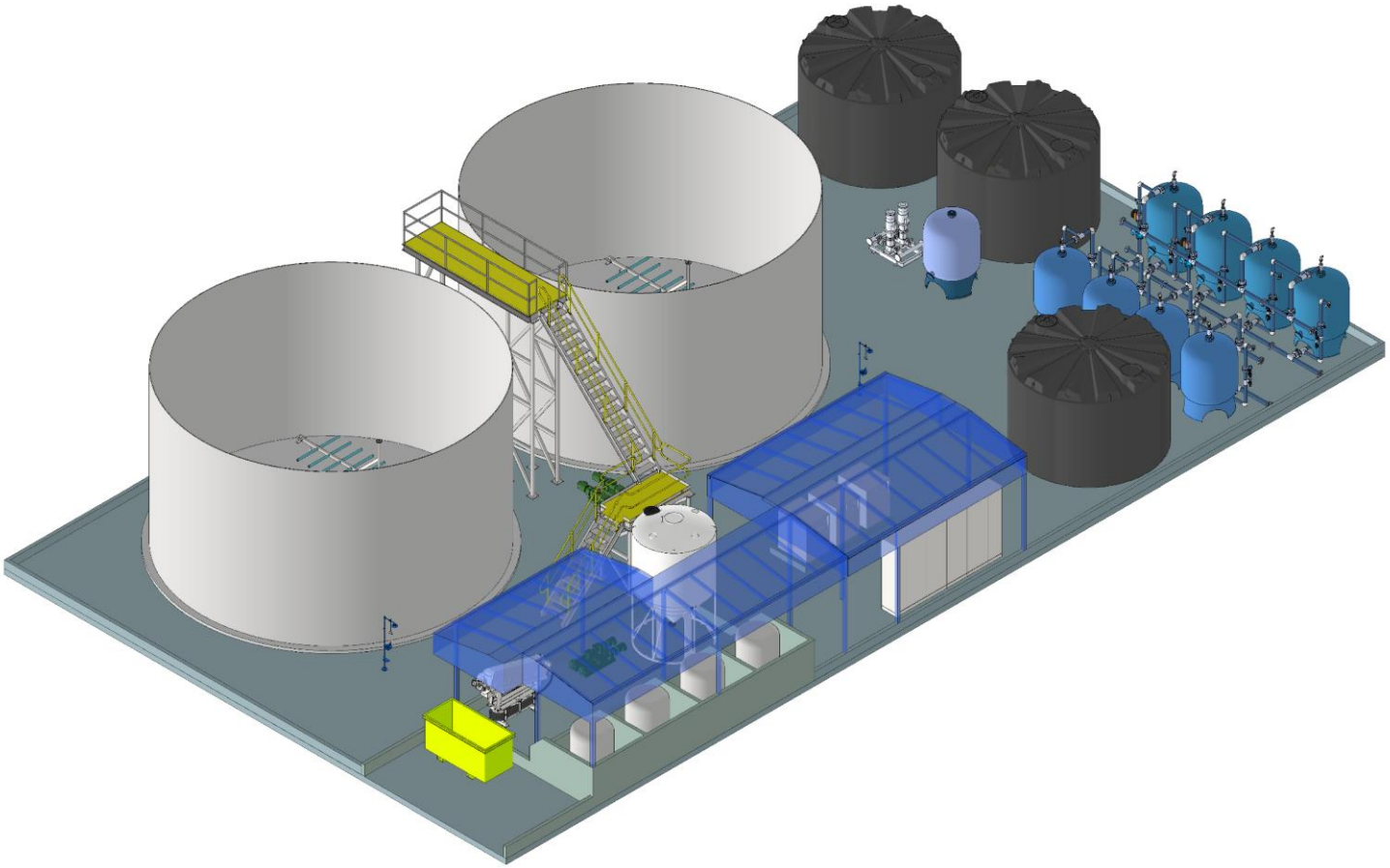
Date	Revision	Drawn By	Site description	Jackson Environment and Planning Pty Ltd		Client	SRC Operations Pty Ltd
07/11/22	Revision A	E. Larson	123-179 Patons Lane, Orchard Hills (Lot 40 DP 738126)	Strategy | Infrastructure | Compliance | Procurement A: Suite 102, Level 1, 25-29 Berry St, North Sydney NSW 2060 E: admin@jacksonenvironment.com.au T: 02 8056 1849 W: http://www.jacksonenvironment.com.au		Project	Patons Lane Modification Proposal
						Title	RWTP process concept
						Scale	NTS
						Source	Bingo Industries

Figure 3.5. LTP conceptual design details. Full scale concept plans are provided in Appendix B.



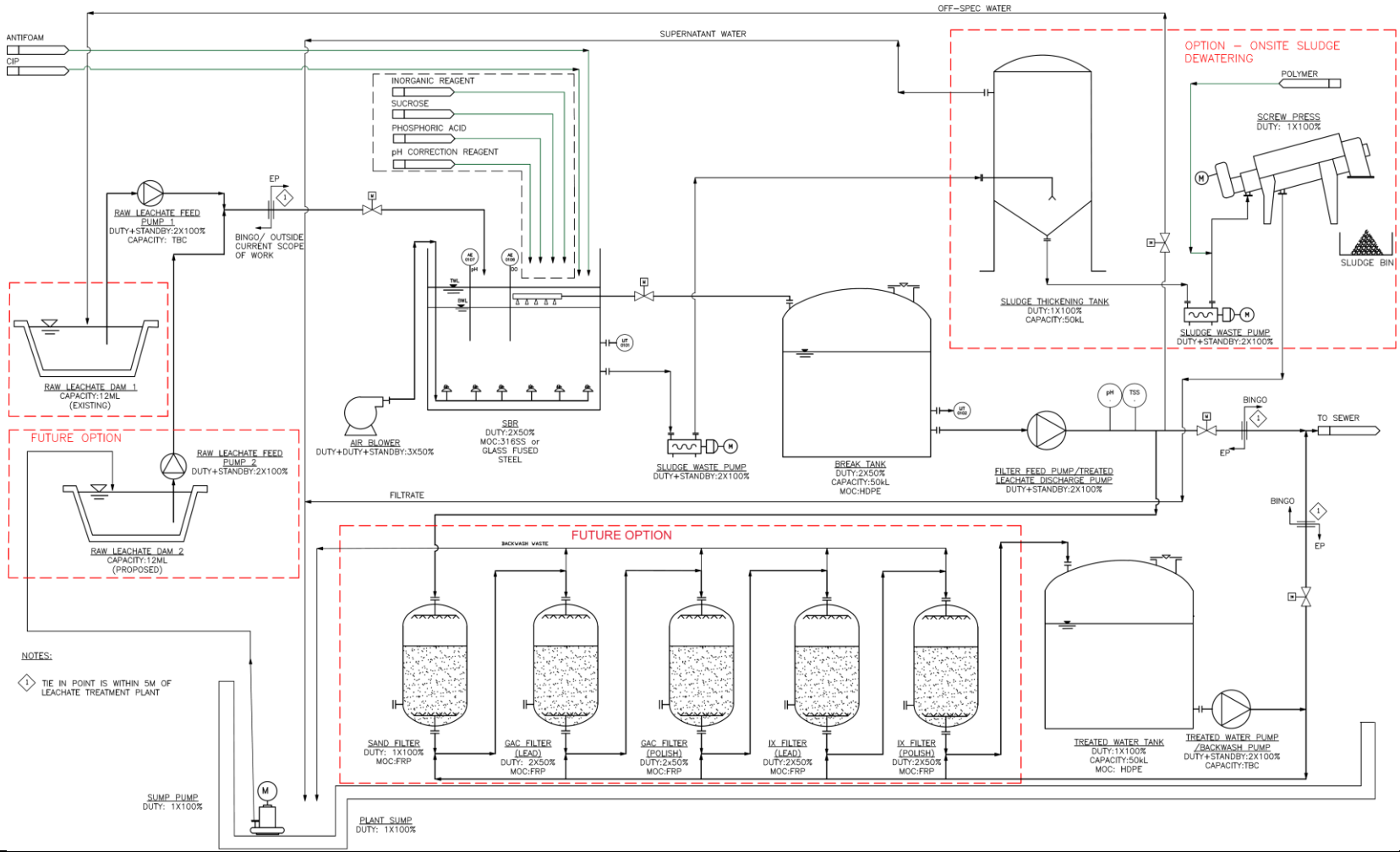
Date	Revision	Drawn By	Site description	Jackson Environment and Planning Pty Ltd		Client	SRC Operations Pty Ltd
07/11/22	Revision A	E. Larson	123-179 Patons Lane, Orchard Hills (Lot 40 DP 738126)	Strategy | Infrastructure | Compliance | Procurement A: Suite 102, Level 1, 25-29 Berry St, North Sydney NSW 2060 E: admin@jacksonenvironment.com.au T: 02 8056 1849 W: http://www.jacksonenvironment.com.au		Project	Patons Lane Modification Proposal
						Title	LTP conceptual design
						Scale	NTS
						Source	Bingo Industries

Figure 3.6. LTP conceptual oblique detail. Full scale concept plans are provided in Appendix B.



Date	Revision	Drawn By	Site description	Jackson Environment and Planning Pty Ltd		Client	SRC Operations Pty Ltd
07/11/22	Revision A	E. Larson	123-179 Patons Lane, Orchard Hills (Lot 40 DP 738126)	Strategy | Infrastructure | Compliance | Procurement A: Suite 102, Level 1, 25-29 Berry St, North Sydney NSW 2060 E: admin@jacksonenvironment.com.au T: 02 8056 1849 W: http://www.jacksonenvironment.com.au		Project	Patons Lane Modification Proposal
						Title	LTP conceptual design oblique
						Scale	NTS
						Source	Bingo Industries

Figure 3.7. Leachate Treatment Plant (LTP) conceptual process details. Full scale concept plans are provided in Appendix B.



Date	Revision	Drawn By	Site description	Jackson Environment and Planning Pty Ltd		Client	SRC Operations Pty Ltd
22/12/22	Revision A	E. Larson	123-179 Patons Lane, Orchard Hills (Lot 40 DP 738126)	Strategy | Infrastructure | Compliance | Procurement A: Suite 102, Level 1, 25-29 Berry St, North Sydney NSW 2060 E: admin@jacksonenvironment.com.au T: 02 8056 1849 W: http://www.jacksonenvironment.com.au	JACKSON ENVIRONMENT AND PLANNING STRATEGY | INFRASTRUCTURE | COMPLIANCE | PROCUREMENT	Project	Patons Lane Modification Proposal
						Title	LTP detailed concept
						Scale	NTS
						Source	Bingo Industries

3.2.1. Recycling Water Treatment Plant (RWTP)

Current processes on the Site include recovery of reusable aggregates and sand from C&D waste through a washing and classification process.

To maximise the reuse of water in the soil wash plant, a thickener, filter press and filtration system is proposed to be installed within the water management system. The additional water treatment would produce water at quality specifications for reuse within the washing plant. This would reduce the amount of supplemental water required for the soil wash plant and reduce the volume of water required to be disposed.

Upgrade to the soil wash plant is also required to ensure adequate treatment of soil wash water for reuse in a NSW EPA approved resource recovery trial. Bingo has approval from the EPA to trial the recovery of aggregates from general solid waste (non-putrescible) soils that meet contaminant threshold (CT1) classification. The trial will identify if the facility's processes are suitable to accept and treat materials classified as general solid waste (GSW). If successful, a permanent amendment to EPL 21259 would be sought to accept soils classified as GSW for the purpose of waste storage and resource recovery.

The GSW will undergo dry solids screening then run through the same washing process as the C&D waste to recover the reusable fines (sand and aggregates). The output of the washer will be a tailings water stream, which would be treated for reuse in the soil wash system.

Soil Wash Trial Background

In May 2020 an application for a variation to the PLRRC Environment Protection Licence (EPL) 21259 was submitted to the NSW EPA. The application sought approval to receive soils (non-putrescible GSW) for the purpose of conducting a wash plant trial. The trial proposes to separate the soil, sand and aggregate into certain recovered particle size fractions suitable for use in construction applications. EPA approved a variation to the licence on 9 August 2021.

Condition L2.1 of the facility's current EPL 21259 approves the acceptance of soil that meets Contaminant Threshold 1 (CT1) requirements for the purposes of the wash plant. Wet separation plants have been developed in Europe and represent state-of-the-art technology for maximising the recovery of soil, sand and aggregate from general solid waste comprising mainly soil from building sites.

The trial aims to render soils, otherwise destined for landfill, as suitable for recycling and reuse. To support these activities at the PLRRC the soil wash water treatment improvements as described in this Modification Proposal are required to ensure reuse water can be appropriately managed and water quality specifications can be met to support the attainment of higher resource recovery rates.

Upgraded Soil Wash Water Treatment Design

The recycled water treatment plant will provide water quality to a specification suitable for washing aggregates and coarse and fine sand recovery process for GSW and <60mm C&D waste. The plant will function to treat the possible range of contaminants of concern and solids loading which may report to the wastewater stream.

The current system includes a waste material feed of 150 t/hr through a washing and classification process. This occurs via an existing "log washer" which can handle up to 520 m^3/hr of recycled water.

The incoming solid wastes will be categorised as GSW based on the NSW Waste Classification Guidelines, Part 1. Additional quality limits and other acceptance parameters may be put in place by Bingo to control the classification of the waste tailings sludge stream for disposal, or to operate within the limits posed by the treatment process.

The wastewater carried over from the washing process will be treated in a thickener for further solids removal. The thickener underflow (sludge) will be dewatered for disposal using a filter press. The thickener has a solids loading limit

of 60,000 mg/L (as total suspended solids, TSS), and the washer is limited to a flow capacity of 520m^3/h. The thickener has the capacity to process up to 800m^3/h (at 60,000 mg/L TSS), so the downstream dewatering and overflow wastewater treatment process should allow for future expansion if needed.

The dewatering of the thickener underflow will target the minimisation of moisture content, as far as practical, to minimise the disposal mass of the dewatered solids. The basis of design assumes a 35% moisture content, however vendors for the system will be asked to aim for a lower moisture content where possible and review the implications on the mass flows, particularly for the thickener overflow.

The disposal cost of the dewatered solids will also be determined by the contaminant loads in the solids. However, SRC Operations Pty Ltd will control, manage, and only accept incoming waste of the specified and approved quality to avoid the resulting sludge being classified as restricted waste.

The thickener overflow will be treated by filtration system for reuse in the log washer, which will be topped up from alternative sources as needed. These could include, stormwater collected in the site clean water dam(s), a future potable water connection, water tankered to site and other sources such as recycled water from a nearby Sydney Water treatment plant. The treatment plant performance will be required to meet the following primary objectives:

- To meet the solids loading and sizing rate for the log washer sprays (TSS = 100mg/L and a maximum particle size of 90µm);
- To avoid accumulation of salts or other parameters which may result in the process failing (e.g. scaling); and
- To avoid posing a risk to the health and safety of personnel who might be working on or near the log washer and exposed to the sprayed water.

The thickener infeed will also include a trash screen to collect floating debris. Based on the PSD data provided in Table 3.1, finer particle removal equipment will be achieved using a Dissolved Air Flotation (DAF) technology.

Table 3.1. RWTP Influent Particle Size Data for <60 mm waste.

Sample Location	Sample	D90 (µm)	D50 (µm)	D10(µm)
RWTP Influent	Unflocculated	30.4	5.6	0.58
	Flocculated	36.1	4.9	<0.58

The main processing and treatment steps and mass balance being considered are shown in the block flow diagram in Figure 3.8 and Table 3.2. The mass balance is presented as an hourly rate for a washing stage that will run for 10 hours per day. Storage and processing times for the downstream dewatering and RWTP plant may include storage to allow for operation over shorter or longer durations.

Figure 3.8. Block flow diagram for GSW washing and wash water treatment.

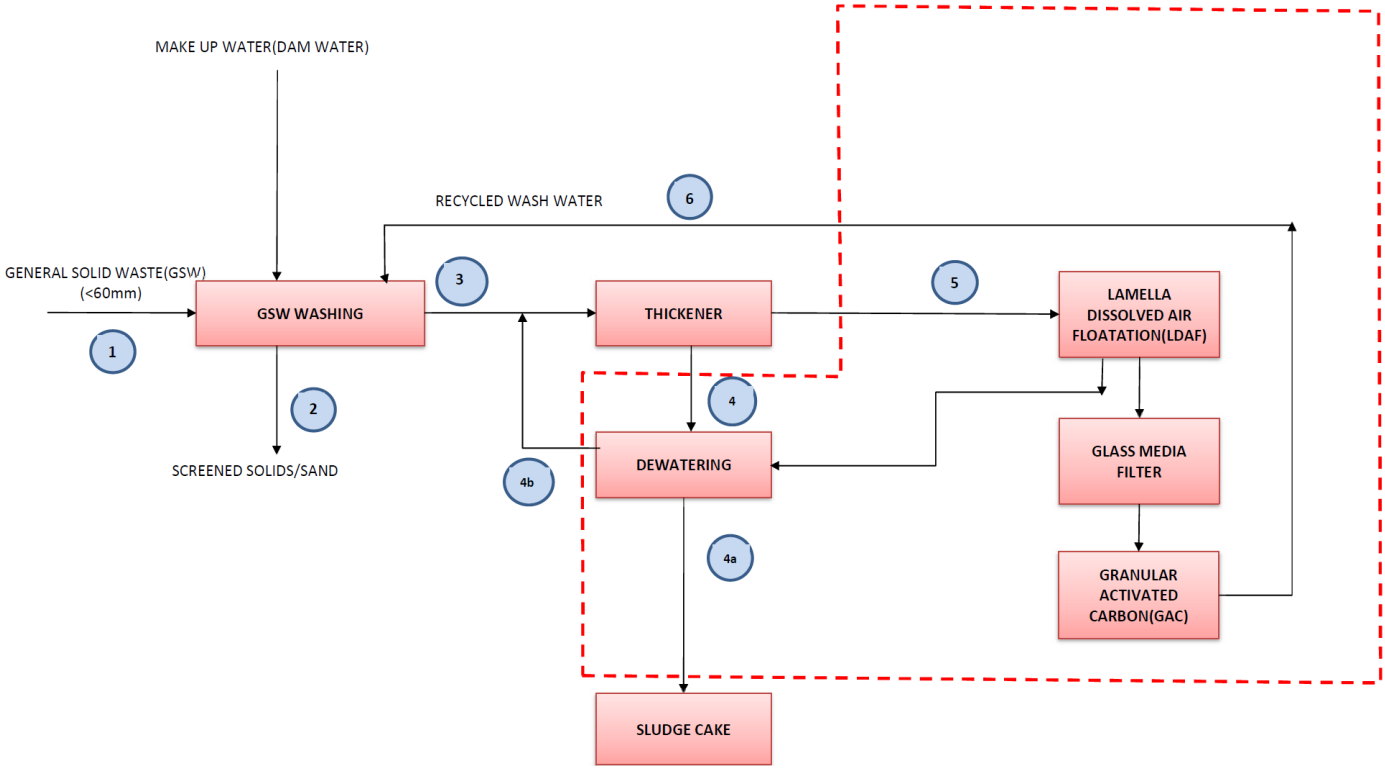


Table 3.2. Stream table for GSW washing and wash water treatment.

Stream	Units	1	2	3	4	4a	4b	5	6
Water / liquid flow	t/h	0	12	508	86	16	70	492	492
Dry solids flow	t/h	150	120	30	30	30	0.05	0.05	0.05
Total flow	t/h	150	132	538	116	46	70	492	492

The treated effluent will be recycled for use in the log washer, blended with stormwater to make up for losses in the process. The exact specifications for each stream will be determined during detailed design of the water recycle treatment process. However, the following additional specifications are being targeted for the detailed design.

The recycled water quality was based on minimizing the risk to human health and safety, minimum wash-plant specification requirement, RWTP performance and longevity of exposed equipment.

As part of the system, multi media filters and granular activated carbon filters will be used to treat the water to ensure it is suitable for reuse in the washing process.

Monitoring

Per the approved *Patons Lane GSW Wash Plant Project Trial Monitoring Plan* (BECA 2021), the following sample points have been adopted for the project trial. Sample points are associated with key stages of the resource recovery process, being:

- Pre-screening of received GSW materials;
- Washing of materials at the washing plant;
- Treatment of wash water at the water treatment facility; and
- Final screening and separation of GSW materials.

Output – Recovered Aggregates and Fines

Recovered aggregates will be assessed against table 1 of the *Recovered Aggregate Order 2014* under Part 9, Clause 93 of the *Protection of the Environment Operations (Waste) Regulation* 2014.

Recovered sands will be assessed against table 1 of the "batch process" in the *Recovered Fines Order 2014* (Refer to Appendix A – Adopted Screening Levels) under Part 9, Clause 93 of the *Protection of the Environment Operations (Waste) Regulation* 2014.

Material that does not meet the resource recovery order requirements will initially be assessed against other standards including the Recovered fines specification for Alternative Daily Cover and or the Waste Classification Guidelines for lawful disposal.

3.2.2. Landfill Leachate Treatment Plant (LTP)

A leachate treatment plant is proposed to manage landfill leachate (from landfill operations only) and the current operational constraints associated with the existing leachate management system. This infrastructure is separate to the wash plant.

Heavy rainfall in the first quarter of 2022 placed substantial pressure on the existing approved leachate management system. The rainfall has stressed the need for improvements to support future landfill operations and minimise potential environmental impacts. The current system of pumping leachate from the landfill to an aerated leachate pond faces maintenance and operations challenges including siltation of the settlement dams, associated operational and maintenance issues.

The leachate treatment system is expected to comprise a leachate treatment plant with associated filters and chemical dosing systems. See Figure 3.2 for a conceptual process flow diagram.

The LTP will implement best practice technology including a sequencing batch reactor (SBR), biological removal of organics and nutrients, and media filtration for removing dissolved contaminants if required.

The sequencing batch reactor (SBR) is a fill-and draw activated sludge system for wastewater treatment. In this system, wastewater is added to a single "batch" reactor, treated to remove undesirable components, and then discharged. Equalization, aeration, and clarification can all be achieved using a single batch reactor. To optimize the performance of the system, two or more batch reactors are used in a predetermined sequence of operations. SBR systems have been successfully used to treat both municipal and industrial wastewater. The difference between SBR and a conventional activated sludge system is that SBR performs equalization, biological treatment, and secondary clarification in a single tank using a timed control sequence.[1]

The process will also have the capability for future addition of media filtration, including a sand filter, granular activated carbon (GAC), and other media for polishing prior to discharge (i.e. via trade waste agreement with Sydney Water).

[1] US EPA (1999). *Wastewater Technology Fact Sheet Sequencing Batch Reactors.* Internet publication: https://www3.epa.gov/npdes/pubs/sbr_new.pdf.

3.2.3. Ancillary Infrastructure

The proposed leachate treatment plant would improve the effectiveness of the leachate management system and prepare the Site for connection and discharge of surplus treated leachate to sewer subject to a trade waste agreement with Sydney Water.

Currently excess leachate water is tankered off site. The Modification Proposal includes the treatment and tankering of treated leachate water until a sewer connection is provided.

Existing dual sand conveyors for transferring recovered product from the RRC to the product storage area are considered part of the RWTP and will be regularised as part of this Modification Proposal.

3.3. Construction Works

Construction activities will take an estimated 6 months and will include:

Phase 1 General Construction and Drainage Works

Site mobilisation:

- Services search;
- Establishment of environmental management measures including erosion and sediment controls;
- Establish site access, laydown areas; and
- Establishment of stockpile sites.

Grading & civil works:

- Site stripping, clearing and rubbish removal;
- Cut and fill earthworks (limited);
- Construction of stormwater drainage; and
- Trench, backfill site services.

Pavement works:

- Construction access and paving tie in to existing hardstand.

Phase 2: Erection of Plant/Equipment

New LTP works:

- Pour concrete foundations;
- Erection of structural steel and concrete / steel LTP structures; and
- Installation of connections, piping, plumbing and hydraulics.

New WWTP works:

- Pour concrete foundations;
- Erection of structural steel and concrete / steel LTP structures;
- Installation of connections, piping, plumbing and hydraulics; and
- Testing, commissioning and performance tests.

Phase 3: Modification of Dam 1

Construction of new leachate dam and contact water dam:

- Pump out of remaining water in existing Dam 1;
- Regrading;
- Installation of water/soil barrier;

- Installation of connections, piping, plumbing and hydraulics.

Phase 4: Connection to Sewer

Construction of new sewer connection to Sydney Water (subject to separate approval):

- Installation of connections, piping, plumbing and hydraulics.

Construction time periods will be:

- 0700 to 1800 hrs Monday to Friday;
- 0800 to 1300 hrs on Saturdays; and
- No construction works on Sundays or public holidays

Where Out-of-Hours Works (OOHWs) are required (for emergency works, oversized equipment delivery, etc) they would be subject to separate approval on a case-by-case basis.

3.4. Operational Hours

Operations approved under the existing State Significant Development approval (MP09_0074) are as follows:

- 0700 to 1800 Monday to Friday;
- 0800 to 1400 Saturday; and
- Closed on Sundays and public holidays.

The above hours of approved operation would not change under the Modification Proposal.

3.5. Easements, Licences or Covenants

No easements, restrictions, and covenants affect the site. Survey and concept plans are provided in provided in Appendix B.

4. Planning and Legislative Requirements

4.1. Commonwealth Legislation

The Commonwealth *Environment Protection and Biodiversity Conservation Act* 1999 (EPBC Act) came into force from 16 July 2000. The EPBC Act requires actions which are likely to have a significant impact on matters of National Environmental Significance, or which have a significant impact on Commonwealth land, to be referred to the Commonwealth Minister for the Environment for approval.

The nine matters of National Environmental Significance protected under the EPBC Act are:

- World heritage properties;
- National heritage places;
- Wetlands of international importance (listed under the Ramsar Convention) ;
- Listed threatened species and ecological communities;
- Migratory species protected under international agreements;
- Commonwealth marine areas;
- The Great Barrier Reef Marine Park;
- Nuclear actions (including uranium mines); and
- A water resource, in relation to coal seam gas development and large coal mining development.

The Site adjoins Commonwealth land (Department of Defence) which contains biodiversity protected under the EPBC Act. However, the FMPPR (September 2011) predicted low levels of impact for matters relating to flora, fauna, noise and air quality, and it was determined in consultation with the Department of Defence that it was not necessary to refer the Project under the EPBC Act.

The Modification Proposal includes only plant and equipment modifications and adjustments within the existing disturbed footprint of the existing approved Site. Therefore, no National Environmental Significance matters are likely to be impacted and no referral under the EPBC Act is required.

4.2. NSW State Legislative Requirements

4.2.1. Environmental Planning and Assessment Act 1979

Part 5 of the *Environmental Planning and Assessment Act* 1979 (EP&A Act) and the accompanying Regulation provide the framework for environmental planning in NSW. It includes provisions to ensure that proposals which have the potential to impact the environment are subject to detailed assessment and to provide opportunity for public involvement.

The Modification Proposal is consistent with the overall objectives of the *Environmental Planning and Assessment Act* 1979 and is considered capable of fulfilling the statutory requirements. The Modification Proposal is not expected to result in any significant negative impacts that cannot be adequately mitigated or managed and may provide beneficial impacts to water quality by improving leachate management from the landfill, and resource recovery by improving the soil wash system ability to treat and reuse water for recovery of sands and aggregates.

This Modification Report confirms that the Modification Proposal can be undertaken in a manner which will not adversely impact on natural resources but will promote the economic use of the land in a manner which will provide an improved level of resource management, employment, and economic benefits for Western Sydney.

The use of the site remains the same as provided in the existing Project Approval MP09_0074.

4.2.1.1. Substantially the Same Development

The proposed development as modified will be substantially the same development as the development for which consent was originally granted and involve minimal environmental impact. Given there are no additional waste tonnages or changes to the existing site layout, a modification to the current Development Consent (MP09_0074) under Section 4.55(1A) of the *Environmental Planning and Assessment Act 1979* is sought.

A consent authority must also take into consideration matters listed in section 4.15(1) of the EP&A Act that are relevant to the proposed development. The relevant sections are listed and addressed in Table 4.1.

Table 4.1. Provisions of EP&A Act Section 4.15.

Section	Provision	Where addressed.
1(a)i	Any environmental planning instrument,	The relevant *planning instruments* are addressed in Section 4.3.
1(a)ii	Any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Planning Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved),	Not Applicable.
1(a)iii	Any development control plan,	The Modification Proposal is consistent with the Penrith DCP 2014. See Section 4.5.
1(a)iv	The regulations (to the extent that they prescribe matters for the purposes of this paragraph), that apply to the land to which the development application relates,	*Environmental Planning and Assessment Regulation* 2021 is addressed in Section 4.2.2.
1(b)	The likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,	The assessment in this Modification Report predicts minimal environmental impact and in some cases beneficial effects from the Modification Proposal.
1(c)	The suitability of the site for the development,	The Site is already approved and operating as a landfill and resource recovery facility under the existing consent (MP09_0074A). There are no proposed changes to operational hours, waste types to be received, or approved use of the Site.
1(d)	Any submissions made in accordance with this Act or the regulations.	Submissions from Penrith Council and the EPA have been addressed in Section 5. The assessment requirement matters form the NSW Department of Planning and Environment email dated 19 July 2022 are addressed in Section 1.6.

The water management activities proposed to manage potential water impacts from landfilling and resource recovery activities were considered within the original approval. The facility when modified would be considered to be substantially the same as originally proposed. As such, a modification under Section 4.55 of the *Environmental Planning and Assessment Act* 1979 would likely be required for its construction and operation.

The Modification Proposal would ensure water from the washing trial and ongoing landfilling operations can be appropriately managed now and into the future whilst providing additional contingency to manage extreme events and shifts in weather patterns related to climate change.

4.2.2. Environmental Planning and Assessment Regulation 2021

While the EP&A Act provides the overarching framework for the planning system in NSW, *the Environmental Planning and Assessment Regulation* 2021 (the EP&A Regulation) supports the day-to-day requirements of this system. It supplements the broader provisions of the Act and covers matters such as local environmental plans and development control plans, which are used by councils to manage growth and development using land use zoning, development standards and other planning mechanisms. It also contains key operational provisions relating to the development assessment and consent process, requirements associated with development contributions, and fees for planning services.

There is no change to the approved use of the PLRRC. The Modification Proposal is for water management activities to manage potential water impacts from landfilling and resource recovery activities that are within the scope of the original approval. There is no significant change or intensification to the currently approved use of the PLRRC arising from the Modification Proposal. This includes no significant changes or intensifications to:

- Waste and recycling activities;
- Landfill disposal activities;
- Small addition in traffic movements to account for water deficit in dry years; or
- Operating hours (except for operation of the LTP).

4.2.3. Protection of the Environment Operations Act 1997

The *Protection of the Environment Operation Act* 1997 (POEO Act) prohibits any person from causing pollution of waters, or air and provides penalties for air, water and noise pollution offences. Section 48 of the Act requires a person to obtain an Environment Protection Licence from the NSW Environment Protection Authority before carrying out any of the premise-based activities described in Schedule 1 of the Act.

The Site operates under two Environment Protection Licences, one for the Patons Lane Landfill operations (EPL 20814) and one for the Patons Lane Resource Recovery Centre (EPL 21259).

No variations to either EPL is sought or required under this Modification Proposal.

4.2.4. Protection of the Environment Operations (Waste) Regulation 2014

During 2013-14 the EPA carried out an extensive review and consultation process on NSW's waste regulatory framework. The result was the *Protection of the Environment Operations (Waste) Regulation* 2014 (the Waste Regulation).

The Waste Regulation improves the EPA's ability to protect human health and the environment and paves the way for a modern and fair waste industry in NSW. The EPA rolled out the new rules stipulated under the Waste Regulation in stages over 2014-2017.

These changes include amended thresholds for environment protection licences and reforms to the waste levy system.

The Waste Regulation is supported by the Waste levy guidelines. These guidelines specify how to measure waste to calculate waste levy liability, the deductions waste operators can claim, and the EPA's requirements for records, surveys and reports. All licensed processing, disposal, recycling and storage facilities within the metropolitan levy area or regional levy area are subject to the levy system.

Furthermore, scheduled waste facilities in a levy-payable area must ensure that there is a weighbridge installed at the facility. An existing weighbridge is installed and currently operating at the Site.

The Waste Regulation also sets out the requirements for the lawful classification and use of recovered materials to protect human health and the environment.

The existing operation produces recovered materials for use in construction in accordance with the *Recovered Aggregates Order* 2014 and *The "Continuous Process" Recovered Fines Order* 2014. The Modification Proposal will assist the applicant to produce more recovered materials which will comply with these orders, and therefore increase the diversion of waste from landfill.

4.2.5. Biodiversity Conservation Act 2016

The purpose of the *Biodiversity Conservation Act* 2016 is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development, to:

- Conserve biodiversity at bioregional and State scales;
- Maintain the diversity and quality of ecosystems and enhance their capacity to adapt to change and provide for the needs of future generations;
- Improve, share and use knowledge, including local and traditional Aboriginal ecological knowledge, about biodiversity conservation;
- Support biodiversity conservation in the context of a changing climate;
- Support collating and sharing data, and monitoring and reporting on the status of biodiversity and the effectiveness of conservation actions;
- Assess the extinction risk of species and ecological communities, and identify key threatening processes, through an independent and rigorous scientific process;
- Regulate human interactions with wildlife by applying a risk-based approach;
- Support conservation and threat abatement action to slow the rate of biodiversity loss and conserve threatened species and ecological communities in nature;
- Support and guide prioritised and strategic investment in biodiversity conservation;
- Encourage and enable landholders to enter into voluntary agreements over land for the conservation of biodiversity;
- Establish a framework to avoid, minimise and offset the impacts of proposed development and land use change on biodiversity;
- Establish a scientific method for assessing the likely impacts on biodiversity values of proposed development and land use change, for calculating measures to offset those impacts and for assessing improvements in biodiversity values;
- Establish market-based conservation mechanisms through which the biodiversity impacts of development and land use change can be offset at landscape and site scales;
- Support public consultation and participation in biodiversity conservation and decision-making about biodiversity conservation; and
- Make expert advice and knowledge available to assist the Minister in the administration of this Act.

The *Biodiversity Conservation Act* 2016 and the supporting Regulations establish a modern and integrated legislative framework for land management and biodiversity conservation. Biodiversity elements include major innovations to offsetting and private land conservation, as well as improvements to threatened species conservation and how we manage human-wildlife interactions. The Act and its Regulations are administered by the Office of Environment and Heritage.

The Modification Proposal does not require any clearing of any vegetation. No remnant vegetation exists in the areas proposed for disturbance and additional infrastructure. No further biodiversity studies are required.

4.3. Environmental Planning Instruments and Policies

4.3.1. State Environmental Planning Policy (Transport and Infrastructure) 2021

The aim of the *State Environmental Planning Policy (Transport and Infrastructure)* 2021 (Infrastructure SEPP) is to facilitate the effective delivery of infrastructure across NSW by improving regulatory certainty and efficiency through a consistent planning regime for infrastructure and the provision of services, and by providing greater flexibility in the location of infrastructure and service facilities.

Other key aims of the Infrastructure SEPP are to allow for the efficient development, redevelopment or disposal of surplus government owned land, and identify the environmental assessment category into which different types of infrastructure and services development fall (including identifying certain development of minimal environmental impact as exempt development). The Infrastructure SEPP also seeks to help proponents identify matters to be considered in the assessment of development adjacent to particular types of infrastructure development and providing for consultation with relevant public authorities about certain development during the assessment process or prior to development commencing.

Section 2.121 of the Infrastructure SEPP specifies proposed development of particular size and capacity whereby a DA is required to be submitted to the Roads and Maritime Services (Roads and Maritime) for comment. The Modification Proposal does not seek to intensify the current use of the Site, nor will it generate any additional traffic. Therefore, the proposed development is not considered to trigger Clause 2.121 of the Infrastructure SEPP.

Section 2.152 of Infrastructure SEPP sets out that 'waste or resource management facilities' are permissible in RU2 Rural Landscapes zones, as:

- Under section 2.152(c) of the Infrastructure SEPP, RU2 Rural Landscape are a prescribed zone for "waste or resource management facilities"; and
- Under Section 2.152(1) of the Infrastructure SEPP, 'waste or resource management facilities' are permissible in a "prescribed zone".

The existing PLRRC, and the Modification Proposal, are therefore permissible with consent under the Infrastructure SEPP.

4.3.2. State Environmental Planning Policy (Precincts - Western Parkland City) 2021 (the Aerotropolis SEPP)

Obstacle Limitation Surface

Western Sydney Airport's (WSA) protected airspace is known as the Obstacle Limitation Surface (OLS) and has been declared under the provisions of the federal *Airports Act* 1996 and *Airports (Protection of Airspace) Amendment*

Regulation 1996. The declaration of the OLS balances the need to ensure a safe operating environment for aircraft with the community's need for clarity about development surrounding the airport.

The OLS is designed to protect aircraft flying in visual conditions in close proximity to the WSA. The OLS defines a volume of airspace above a set of surfaces that are primarily modelled upon the layout and configuration of the confirmed Stage 1 and proposed long-term runways.

Development that infringes on the airport's protected airspace is called a controlled activity and can include, but is not limited to:

- Permanent structures, such as buildings, intruding into the protected airspace;
- Temporary structures such as cranes intruding into the protected airspace; or
- Any activities causing intrusions into the protected airspace through glare from artificial light or
- Reflected sunlight, air turbulence from stacks or vents, smoke, dust, steam or other gases or particulate matter.

A developer or builder wishing to carry out a controlled activity within the airport's protected airspace, may need to apply to WSA Co to carry out the activity and to make an application in writing.

OLS height limits of objects is based on an aerodrome elevation of 80.5 metres (AHD) at the Aerodrome Reference Point (ARP). The OLS elevation at the Site is 230.5 AHD. Ground level at the Site is approximately 50m AHD. Therefore OLS height relative to ground level is approximately 180.5m. This does not affect the Proposal as the Modification Proposal buildings will be much lower in height.

Wildlife Buffer Corridor

The Site is within the 13km Wildlife Buffer Zone mapping under the *SEPP (Precincts— Western Parkland City)* 2021. A written assessment of the wildlife that is likely to be present on the land and the risk of the wildlife to the operation of the Airport must be provided by the applicant, including consultation with relevant agencies. Development likely to attract pests and birdlife around the airport will be prohibited.

The objective of this part is to regulate development on land surrounding the Airport where wildlife may present a risk to the operation of the Airport.

2) *Development consent must not be granted to relevant development on land in the 13 km wildlife buffer zone unless the consent authority—*
   a) *has consulted the relevant Commonwealth body, and*
   b) *has considered a written assessment of the wildlife that is likely to be present on the land and the risk of the wildlife to the operation of the Airport provided by the applicant, which includes—*
      i. *species, size, quantity, flock behaviour and the particular times of day or year when the wildlife is likely to be present, and*
      ii. *whether any of the wildlife is a threatened species, and*
      iii. *a description of how the assessment was carried out, and*
   c) *is satisfied that the development will mitigate the risk of wildlife to the operation of the Airport, including, for example, measures relating to—*
      i. *waste management, landscaping, grass, fencing, stormwater or water areas, or*
      ii. *the dispersal of wildlife from the land by the removal of food or the use of spikes, wire or nets.*
3) *Despite subsection (2), development for the following purposes is prohibited on land in the 3 km wildlife buffer zone—*
   a) *livestock processing industries,*
   b) *turf farming,*

c) waste or resource management facilities that consist of outdoor processing, storage or handling of organic or putrescible waste.

Fauna habitat on the Site is highly modified, consisting of large areas of bare ground as a result of past quarrying activities with little subsequent regeneration. Artificial dams on the Site are a habitat type that is abundant in surrounding lands, common in shallow farm dams and dam fringes in the region.

The existing non-putrescible landfill and PLRRC is approved, and the modifications proposed to the Site's water management systems will provide higher levels of resource recovery and of leachate treatment including off-site disposal of treated leachate. The air quality impact assessment (AQIA) shows very low odour profiles and no offsite odour impacts predicted from the Modification Proposal. Therefore, the Modification Proposal is unlikely to attract vectors to the Site and is unlikely to have impacts on wildlife.

The Modification Proposal is unlikely to enhance the risk of attracting bird flocks or threatened species, therefore no further assessment is considered necessary.

4.3.3. State Environmental Planning Policy (Resilience and Hazards) 2021

Hazardous and Offensive Development

State Environmental Planning Policy (Resilience and Hazards) 2021 (SEPP 33) outlines the requirements for a Preliminary Hazard Analysis screening test, required to be undertaken for hazardous and potentially hazardous industries.

A potentially hazardous industry is defined within SEPP 33 as a development for the purpose of any industry which, if the development were to operate without employing any measures to reduce or minimise its impact, would pose a significant risk to human health, life or property, or to the biophysical environment.

Part 3 of SEPP 33 applies to:

(a) development for the purposes of a potentially hazardous industry, and
(b) development for the purposes of a potentially offensive industry, and
(c) development notified, for the purposes of this Part, by the Director in the Gazette as being a potentially hazardous or potentially offensive development.

The Modification Proposal would be to modify certain water management activities to manage potential water impacts from landfilling and resource recovery activities that were considered within the original approval.

A preliminary risk screening analysis has been prepared in accordance with *State Environmental Planning Policy No. 33 – Hazardous and Offensive Development* and *Applying SEPP 33* (DoP, 2011).

The Proposal is not considered potentially hazardous or offensive industry. Therefore, a Preliminary Hazard Analysis is not required for the Modification Proposal application.

Contamination

Under *State Environmental Planning Policy (Resilience and Hazards)* 2021 (Hazards SEPP) applicants for consent must carry out a preliminary site investigation for any development consent sought on land previously used for activities that may cause contamination.

Specifically, Clause 4.6 of Hazards SEPP requires the approval authority to have regard to certain matters before granting approval. These matters include:

- Whether the land is contaminated;
- Whether the land is, or would be, suitable for the purpose for which development is to be carried out; and
- If remediation is required for the land to be suitable for the proposed purpose, whether the land will be remediated before the land is used for that purpose.

Hazards SEPP also imposes obligations to carry out any remediation work in accordance with relevant guidelines, developed under the *Contaminated Lands Management Act* 1995 and to notify the relevant council of certain matters in relation to any remediation work.

The Modification Proposal seeks to construct additional water treatment and water management facilities on the Site with some ground disturbance expected.

A contamination investigation by Douglas Partners in February 2012 associated with MP09_0074 noted that the Site is not considered to pose a potentially significant threat to human health or the environment.

No further contamination assessment is deemed necessary. During construction, the unexpected contamination finds procedure (Appendix 9 of the *Patons Lane Resource Recovery Centre Contamination & Asbestos Management Plan, 2019* [2]) will be implemented.

4.3.4. State Environmental Planning Policy (Industry and Employment) 2021

The relevant aim of *State Environmental Planning Policy (Industry and Employment)* 2021 (Industry SEPP) is to ensure that signage is compatible with the desired amenity and visual character of an area, provides effective communication in suitable locations and is of a high-quality finish and design. This Policy does not regulate the content of signage and does not require consent for a change in the content of signage.

Part 3.2 of the Industry SEPP details the requirements that a consent authority must be satisfied with prior to granting development consent:

> *A consent authority must not grant development consent to an application to display signage unless the consent authority is satisfied:*
>
> *(a) that the signage is consistent with the objectives of this Policy as set out in clause 3.1 (1) (a), and*
> *(b) that the signage the subject of the application satisfies the assessment criteria specified in Schedule 5.*

Part 3.7 of the Industry SEPP details advertisements to which this Part applies and states:

This Part applies to all signage to which this Policy applies, other than the following:

> *(a) business identification signs,*
> *(b) building identification signs,*
> *(c) signage that, or the display of which, is exempt development under an environmental planning instrument that applies to it,*
> *(d) signage on vehicles*

[2] https://patonslane.com.au/wp-content/uploads/2019/09/CONTAMINATION-ASBESTOS-MANAGEMENT-PLAN-STAGE-1-WORKS-PATONS-LANE-RESOURCE-RECOVERY-CENTRE.pdf

The Industry SEPP does not apply to the proposed development, as the Modification Proposal does not include signage.

4.3.5. State Environmental Planning Policy (Planning Systems) 2021

The Modification Report operates under an existing State Significant Development approval (MP09_0074) as a resource recovery centre and landfill for commercial and industrial (C&I) and construction and demolition (C&D) wastes (non-putrescible general solid waste).

The use of the site remains the same as provided in the existing Project Approval MP09_0074.

The Modification Proposal will be substantially the same development as the development for which consent was originally granted and involve minimal environmental impact as assessed in this Modification Report.

Given there are no additional waste tonnages or significant changes to the existing PLRRC or landfill site layout, and would have a minimal environmental impact, a modification to the current Development Consent (MP09_0074) under Section 4.55(1A) of the *Environmental Planning and Assessment Act 1979* is sought.

4.3.6. State Environmental Planning Policy (Resources and Energy) 2021

Chapter 3 - Extractive industries in Sydney area aims to:

> *(a) to facilitate the development of extractive resources in proximity to the population of the Sydney Metropolitan Area by identifying land which contains extractive material of regional significance, and*
>
> *(b) to permit, with the consent of the council, development for the purpose of extractive industries on land described in Schedule 3 or 4, and*
>
> *(c) to ensure consideration is given to the impact of encroaching development on the ability of extractive industries to realise their full potential, and*
>
> *(d) to promote the carrying out of development for the purpose of extractive industries in an environmentally acceptable manner, and*
>
> *(e) to prohibit development for the purpose of extractive industry on the land described in Schedule 5 in the Macdonald, Colo, Hawkesbury and Nepean Rivers, being land which is environmentally sensitive.*

The Modification Proposal does not seek to change the existing approval conditions or operations with regards to extraction at the Site.

4.3.7. State Environmental Planning Policy (Biodiversity and Conservation) 2021

This SEPP incorporates previous SEPPs and Regional Environmental Plans relating to native vegetation clearing in urban and environmental areas (see Scenario 1), koala habitat protection, the Sydney drinking water catchment and the Hawkesbury-Nepean River. It also contains rules for koala habitat protection (essentially, the former provisions of both State Environmental Planning Policy (Koala Habitat Protection) 2020 and State Environmental Planning Policy (Koala Habitat Protection) 2021).

The PLRRC is a highly cleared and disturbed site. The Modification Proposal does not require any clearing of vegetation and will not disturb Blaxland Creek (situated in the northwest corner) or the adjacent Department of Defense lands containing biodiversity values.

4.4. Penrith Local Environmental Plan 2010

The following section provides the local planning and legislative framework for the proposed development. The purpose of this section is to outline the approval process and identify the applicable local planning controls that relate to the *Penrith Local Environmental Plan* 2010 (Penrith LEP).

4.4.1. Zone Objectives

The Modification Proposal would be undertaken on land zoned RU2 in accordance with the Penrith LEP. The objectives of zone RU2 Rural Landscapes are:

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
- To maintain the rural landscape character of the land.
- To provide for a range of compatible land uses, including extensive agriculture.
- To minimise conflict between land uses within the zone and land uses within adjoining zones.
- To preserve and improve natural resources through appropriate land management practices.
- To ensure development is compatible with the environmental capabilities of the land and does not unreasonably increase the demand for public services or public facilities.

The Modification Proposal is located within the RU2 Rural Landscape zone only. Whilst a small area of the lot on which the PLRRC is located is zoned C2 Environmental Conservation (in the north west of the site adjacent to Blaxland Creek), no work is proposed in this zone.

4.4.2. Land Use Permissibility

This development is proposed on land zoned as RU2 Rural Landscapes under the *Penrith Local Environmental Plan* 2010. The facility can be defined as a 'Waste or resource management facility', which is described under the definitions of the *Penrith Local Environmental Plan* 2010 as:

"Waste or resource management facility means any of the following-

- A resource recovery facility,
- A waste disposal facility,
- A waste or resource transfer station,
- A building or place that is a combination of any of the things referred to in paragraphs (a)-(c)"

In the as RU2 Rural Landscapes land use zone, 'waste or resource management facilities' are prohibited development under the *Penrith Local Environmental Plan* 2010. However, under section 2.152 of the *State Environmental Planning Policy (Transport and Infrastructure)* 2021 the use is permissible with consent in RU2 Rural Landscapes zonings. *State Environmental Planning Policy (Transport and Infrastructure)* 2021 supersedes the local environmental plan.

4.4.3. Section 5.21 Flood planning

As provided in Figure 4.1., a small area in the north-west corner of the Site, discharging into Blaxland Creek is located in a mapped flood planning area per the Penrith Council LEP flood planning map. As such, the land is subject to Clause 5.21 in *Penrith Local Environmental Plan* 2010 and *Penrith Development Control Plan* 2014 Section C3.5 Flood Planning.

Section 5.21(2) states that development consent must not be granted to development on land the consent authority considers to be within the flood planning area unless the consent authority is satisfied the development:

a) Is compatible with the flood function and behaviour on the land, and

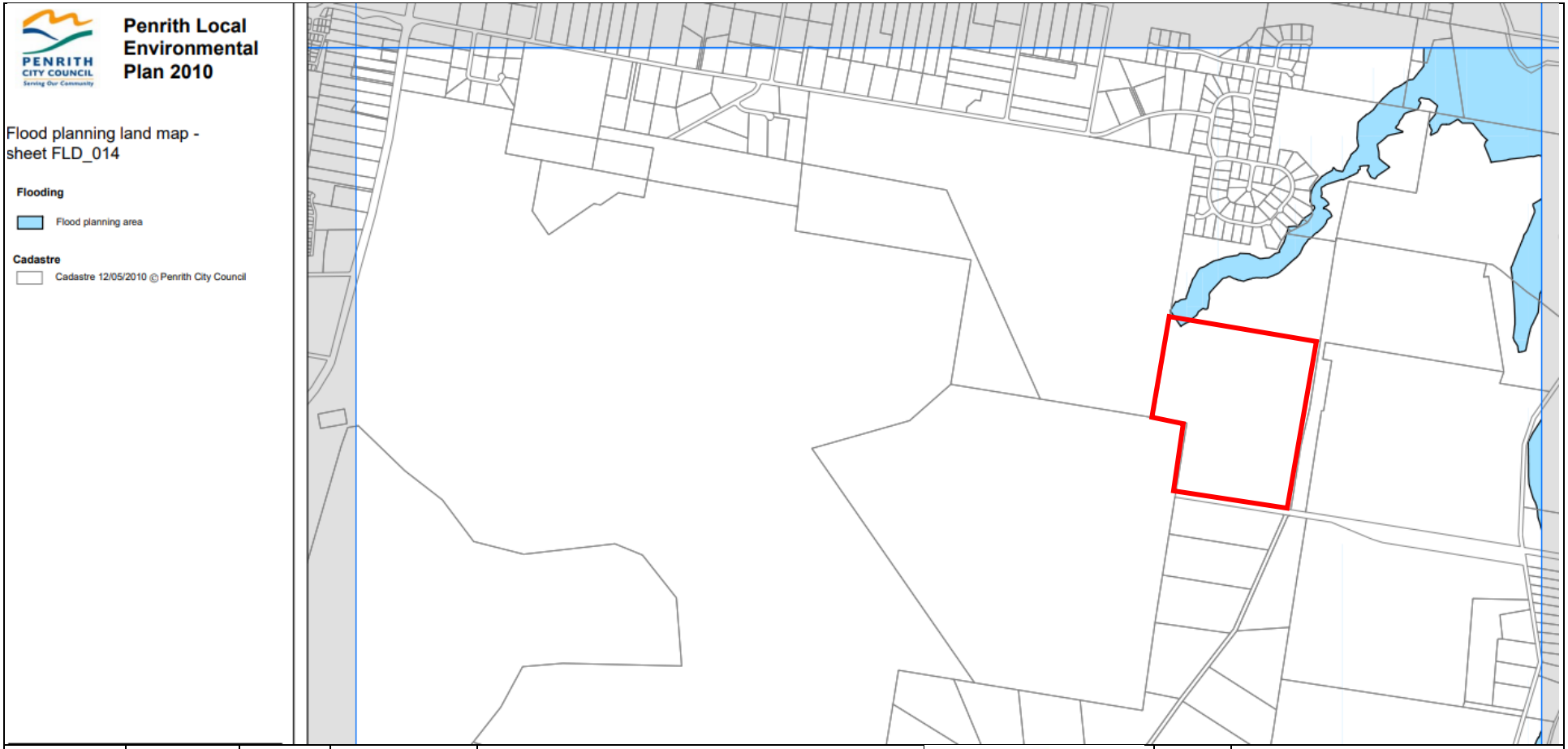
b) Will not adversely affect flood behaviour in a way that results in detrimental increases in the potential flood affectation of other development or properties, and
c) Will not adversely affect the safe occupation and efficient evacuation of people or exceed the capacity of existing evacuation routes for the surrounding area in the event of a flood, and
d) Incorporates appropriate measures to manage risk to life in the event of a flood, and
e) Will not adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses.

As no modifications to landform are proposed in this area of the site this clause does not apply to the Modification Proposal.

4.4.4. Section 7.1 Earthworks

The Modification Proposal involves earthworks associated with the construction of the LTP and RWTP facilities. Proposed erosion and sediment controls for the development are discussed in the Soil and Water Impact Assessment (Appendix F) and summarised in Section 7.4.

Figure 4.1. Penrith LEP flood planning land map. Site shown in red.



Date	Revision	Drawn By	Site description
07/11/22	Revision A	E. Larson	123-179 Patons Lane, Orchard Hills (Lot 40 DP 738126)

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Client	SRC Operations Pty Ltd
Project	Patons Lane Modification Proposal
Title	Modifications proposed overview
Scale	NTS
Source	Bingo Industries

4.5. Penrith Development Control Plan 2014

The purpose of the *Penrith Development Control Plan* 2014 (Penrith DCP) is to regulate effective and orderly development in the City of Penrith by providing objectives, zones, and development standards. The Site is zoned RU2 Rural Landscape and C2 Environmental Conservation. No work is planned on C2 zoned land. The relevant section of the Penrith DCP based on the use of the land for the proposed development is considered D1 Rural Land Uses, along with the standard city-wide controls set forth in Part C.

Consideration of all relevant aspects of the Penrith DCP has be carried out in preparing this Modification Report for the Modification Proposal. Sections and provisions of the DCP relevant to the proposal are summarised in Table 4.2.

Table 4.2. Relevant provisions of the *Penrith Development Control Plan* 2014.

DCP Section	Provision	Status
C1	Site Planning and Design Principles	Complies. No changes are proposed to the Site existing perimeter bunds approved under MP09_0074, which provide visual screening of Site activities for the surrounding landscape and region. Considering the distance to the nearest public spaces are over 1km distant, and the existing landscape bunding surrounding the PLRRC and the recycling area, the additional proposed infrastructure is considered to have negligible visual impacts on the surrounding landscapes. Site Plans and elevations are provided in Appendix B. A Visual Impact Assessment is provided in Section 7.6.
C2	Vegetation Management	Complies. The Site has been historically cleared. Existing perimeter bunds approved under MP09_0074 surrounds the Site. A rehabilitation plan is in place from the PLRRC with plans for progressive vegetation of the finished landfill cells once landfilling has recommenced. No landscape plans are required for the Modification Proposal.
C3	Water Management	Complies. The Modification Proposal will improve water management and water quality outcomes. No discharges are proposed or would occur in excess of those already assessed in the original EIS under MP09_0074. A water quality impact assessment and a water balance report as provided in Appendix F.
C4	Land Management	Complies. The Site operates under an existing SSD approval (MP09_0074) that permit the use of the Site for landfilling and resource recovery activities. Minimal excavation is proposed for the Modification Proposal. Existing approved environmental management plans are currently in use for the Site.
C5	Waste Management	Complies. No hazard waste will be generated from the Proposal and no additional on-site sewerage is required. Existing approved environmental management plans and standard operating procedures (SOPs) for operational waste management at the Site. A summary provided in Section 7.1 of this Modification Report.

DCP Section	Provision	Status
C6	Landscape Design	Complies. No changes are proposed to the Site existing perimeter bunds approved under MP09_0074, which provide visual screening of Site activities for the surrounding landscape and region. No additional landscaping is proposed.
C7	Culture and Heritage	N/A – No heritage occurs on the Site or will be impacted.
C8	Public Domain	N/A – No public domain occurs on the Site or will be affected by the Proposal.
C9	Advertising and Signage	N/A – No additional signage is proposed.
C10	Transport, Access and Parking	Complies. The Modification Proposal does not seek to alter the existing access arrangements for the Site which are currently provided from Patons Lane. A small addition of approximately 6 trucks/day (0.5 trucks per hour) during dry years for tankering water onto the Site to meet shortfall requirements will be required if a potable supply does not become available. This would have negligible or minimal impact on traffic during the operational stage over what is already approved under MP09_0074, and will not significantly increase the demand for car parking over that already provided on-site.
C11	Subdivision	N/A – No subdivision proposed.
C12	Noise and Vibration	Complies. A noise and vibration impact assessment is provided in Appendix E and summarised in Section 7.3.
C13	Infrastructure and Services	Complies. No easements will be affected by the Proposal. Existing site services are adequate with no additional services required. Separate application to Sydney Water will be made for a trade waste agreement for discharge of treated leachate via the proposed LTP.
D1.1	Rural Character	Complies. No changes are proposed to the Site existing perimeter bunds approved under MP09_0074, which provide visual screening of Site activities for the surrounding rural landscape and region. Considering the distance to the nearest public spaces are over 1km distant, and the existing landscape bunding surrounding the PLRRC and the recycling area, the additional proposed infrastructure is considered to have negligible visual impacts on the surrounding landscapes. Site Plans and elevations are provided in Appendix B. A Visual Impact Assessment is provided in Section 7.6.
D1.2	Rural Dwellings and Outbuildings	N/A - No rural dwellings proposed.
D1.3	Farm buildings	N/A – No farm buildings proposed.
D1.4	Agricultural Development	N/A – No agricultural development proposed.
D1.5	Non-Agricultural Development	Complies. The Site and land use activities are permissible under the Infrastructure SEPP. The Modification Proposal will provide improved water quality outcomes and increase the quality and quantity of recovered materials whilst diverting additional waste from landfill.

DCP Section	Provision	Status
D5.9	Extractive Industries – Scenic Values	Complies. The Site operates under an existing SSD approval (MP09_0074) that permit the use of the Site for landfilling and resource recovery activities. (a) A Visual Assessment is provided in Section 7.6. (b) The Proposal is to improve water quality outcomes and resource recovery rates with additional plant and equipment within the existing footprint of the PLRRC. (c) Existing Site perimeter bunds provide for screening of the new (and existing) plant and equipment. (d) Rehabilitation of the Site is ongoing under existing approvals and management plans.

5. Engagement

With the addition the LTP and the RWTP to the water management systems on the Site, the Modification Proposal will improve the quality of recovered soils, sands and aggregates from processing of building waste whilst protecting human health and the environment. Matters raised by stakeholders during the project consultation process have been addressed in this Modification Report. Ongoing community consultation is recommended post-approval as part of the existing Community Liaison Committee.

5.1. Methodology

Consultation with DPE occurred via a meeting to discuss the Modification Proposal on the 5 May 2022. A briefing note was provided to DPE on the 25 May 2022 outlining the Modification Proposal requirements, the proposed approval pathway and environmental assessment strategy. The DPE issued informal environmental assessment requirements via email on 19 July 2022. These are reproduced in this Modification Report in Table 1.3.

The Modification Proposal has included consultation with the NSW EPA, Penrith Council, Sydney Water, and the Community Liaison Committee (CLC).

Agency Consultation included provision of a letter describing the Modification Proposal and seeking feedback. The letters were emailed on Monday 14th November 2022. The consultation letters can be found in Appendix C. Two weeks were requested for the EPA and council to provide feedback regarding the Modification Proposal.

During the meeting with the CLC, Bingo provided details on the Modification Proposal and solicited direct feedback from members.

A web-based meeting was held with Sydney Water on 5th December 2022 seeking advice regarding potential future connections to recycled and potable water at the Site.

5.2. Community Liaison Committee

Consent requirement of MP09_0074 (Schedule 5) is to establish and operate a Community Liaison Committee (CLC) comprising representatives of the Modification Report, the local community and Penrith Council.

Brad Searle (Environment, Approvals and Regulatory Compliance Manager for Bingo Industries) presented the Modification Proposal to the Patons Lane CLC on Tuesday 8th November 2022. No feedback was raised during the update to CLC members.

5.3. Consultation Results

One response was received by email on 17 November 2022 from Penrith Council.

During the CLC meeting there were no comments or feedback regarding the Modification Proposal.

No comments were received from the EPA regarding the Modification Proposal.

Sydney Water provided contact details regarding a potential connection to Sydney Water's recycled water network and their proposed Upper South Creek Advanced Water Recycling Plant (AWRC). The AWRC plant is to be located in the Twin Creeks area to the south of the PLRRC and is expected to come online in 2026. A potable water connection will be established to the PLRRC in the near term.

The results of consultation are summarised in Table 5.1 along with any actions that will or were taken to address them.

Table 5.1. Summary of feedback from consultation.

Source	Feedback	Response	Where addressed in this Modification Report
NSW EPA			
1	No feedback was received from the EPA, though Bingo advised EPA that it would be pleased to discuss the application post-lodgement.	Applicant to present the Modification Proposal to EPA post-lodgement should this be requested.	NA
Penrith Council			
2	As per the SSD guidelines for preparing a modification report, the application is to be accompanied by a Modification Report rather than an SEE and is to be structured as per Appendix A of the afore mentioned guidelines.	This modification assessment report has been prepared in accordance with Appendix E (State significant development guidelines – preparing an modification report) of the State Significant Development Guidelines.	This report.
3	The application is to address SEPP (Resilience and Hazards) 2021	SEPP (Resilience and Hazards) 2021 has been addressed in this report.	Section 4.3.3
4	The application is to include a detailed statutory compliance table as an Appendix to the Report. The table must identify all the relevant statutory requirements and indicate where they have been addressed in the Report. The Report is to include a table of all proposed condition amendments to the consent, being the subject of the modification.	Planning and legislation requirements are addressed in detail in this report. An additional summary table is also provided.	Section 4 and Appendix A
5	Any application is to address the relevant planning legislation including although not limited to the EP&A Regulation, Section 4.55 of the Act, permissibility, and the relevant provisions of SEPP (Precincts – Western Parkland City) 2021 including Chapter 4 Aerotropolis and Section 4.22.	Planning and legislation requirements are addressed in detail in this report. An additional summary table is also provided.	Section 4 and Appendix A
6	The proposal will need to address the environmental impacts of the development including airport safeguarding, traffic, noise, lighting impacts, odour, stormwater, water management and air quality.	Potential impacts are addressed in detail in this report.	Section 7
7	All reports including those that address Section 4.22 of SEPP Precincts will need to be prepared by suitably qualified and experience consultants.	Noted.	Covering pages of this report and Section 4.3.2

Source	Feedback	Response	Where addressed in this Modification Report
8	The applicant is encouraged to liaise with NSW EPA, Sydney Water, WSA Co and TfNSW including Metro/OSO teams and the community.	Engagement with the community commensurate with the Modification Proposal has been undertaken.	Section 5
9	A Visual Impact Assessment and high-quality landscape plan will be required. The proposal is to address PLEP and DCP provisions as may apply.	A visual impact assessment has been prepared as part of this modification application report. A landscape plan is not deemed required as no part of the Modification Proposal is in the public view and the development is within the existing disturbed footprint and operational areas of the Modification Report.	Section 7.6
10	CIV and cost of works are to be addressed.	A CIV has been prepared.	Section 5 and Appendix G
11	All matters raised by DPE are to be addressed.	DPE matters have been addressed in this report.	Section 1.6
12	Any application is to address applicable development contributions.	Development contributions, if any, will be determined in consultation with DPE and Penrith Council as part of the assessment process.	NA
Community Liaison Committee			
13	BINGO provided an overview of the Modification Proposal at the CLC meeting on 8 November 2022. No issues were identified by the CLC, and no direct feedback was provided during the CLC meeting.	NA	NA
Sydney Water			
14	Sydney Water provided contact details regarding a potential connection to Sydney Water's recycled water network and their proposed timeline for the Upper South Creek Advanced Water Recycling Plant (AWRC).	Noted for ongoing consultation with Sydney Water staff.	This section.
NSW Department of Planning and Environment (DPE)			
15	Consultation with DPE occurred via a meeting to discuss the Modification Proposal on the 5 May 2022. The DPE issued informal environmental assessment requirements via email on 19 July 2022.	A briefing note was provided to DPE on the 25 May 2022 outlining the Modification Proposal requirements, the proposed approval pathway and environmental assessment strategy. This Modification	This Modification Report Table 1.3.

6. Capital Investment Value

A Capital Investment Value (CIV) Estimate was prepared by Muller Partnership in accordance with the NSW Planning Circular PS 10-008: New definition of capital investment value.

The total estimated project costs (excluding GST) is estimated to be $22,410,765. A summary is provided in Table 6.1 below.

Table 6.1. Capital Investment Value summary.

Ref	Description	Cost ($) (ex. GST)
1.0	Demolition and Site Preparation	$24,147
2.0	Wash Water Treatment Plant and buildings	$9,991,876
3.0	Sand Conveyors	$498,165
4.0	Leachate Treatment Plants and Building	$3,903,602
5.0	Leachate Dams (Raw Leachate Dam and Contact Water Dam)	$1,466,797
6.0	RRC area Sump Tanks / Dam	$543,665
7.0	Preliminaries, Overheads & Margin (12%)	$1,971,390
8.0	Deign contingency - 5%	$919,982
9.0	**TOTAL CONSTRUCTION COST [EXCL. GST]**	**$19,319,625**
10.0	Escalation at 5% PA for one year	$965,981
11.0	Professional fees (6%)	$1,159,177
12.0	Locality Index	Excl.
13.0	Construction contingency 5%	$965,981
14.0	Authority Fees	Excl.
15.0	Client Costs	Excl.
16.0	GST	Excl.
15.0	**TOTAL PROJECT COST [EXCL. GST]**	**$22,410,765**

A copy of the full CIV assessment report is provided at Appendix G.

7. Assessment of Impacts

7.1. Waste Management

This section assesses waste management including planned demolition and construction for the Proposal and operations of the Site.

7.1.1. Methodology

This waste management section was compiled using the following steps:

1. Estimate waste stream types and amounts based on the site activities – during both construction and operational phases;
2. Identify management options for each waste stream suitable within the regulatory framework;
3. Select most appropriate waste management option for each waste stream, aiming to recover as much waste as possible.

7.1.2. Existing Environment

The PLRRC's existing waste operations are managed through a number of waste management standard operating procedures (SOPs) employed for the Site, and through the approved *Waste and Resource Recovery Monitoring Program*[3].

A full description of the existing site and regional surrounds are provided in Section 3.1.

7.1.3. Impact Assessment

7.1.3.1. Demolition Phase

The development phase of the Modification Proposal does not involve the demolition of any significant built structures.

7.1.3.2. Construction Phase

Construction of the Modification Proposal will generate construction waste. Construction activities are detailed in Section 3.3.

The waste streams generated on site during the construction phase is summarised in Table 7.1 below.

No trees/shrubs need to be removed during the works as the site is already disturbed and developed. It is projected that any surplus soil from grading works will be nominal and reused on site as necessary for landscaping.

Minor amounts of concrete, timber, metal and plastics will be generated during the construction of the amenities building, storage shed and workshop including the solar and weighbridge installations. These wastes will be segregated to maximise recycling, stored separately in hook lift bins, and will be transported off-site for recycling at a lawful facility.

The overall waste recovery rate during the construction phase is estimated to be more than 99%. Residual waste (except putrescible) will be collected in a separate hook lift bin for disposal in the onsite licensed landfill. Other recovered materials will be sent for further processing to EPA licenced facilities in the region (Eastern Creek).

[3] https://patonslane.com.au/wp-content/uploads/2020/08/Patons-Lane-WRRMP_Rev-C.pdf

Table 7.1. Estimated waste generation during the construction phase.

Waste Type	Waste Identified	Waste Description	Reuse/recycling/ Disposal Method	Suggested Receiving Facility	Tonnes	Recycling rate
General Solid Waste (non-putrescible)	Soil	Soil removed for grading, drainage, paving and footings	On-site recycling	PLRRC onsite reuse	4,720	100%
	Construction waste – "heavy"	Asphalt, concrete, bricks from the installation of foundations, retaining walls, services and plant and equipment	On-site recycling	PLRRC	30	95%
	Construction waste - metal	Ferrous metal off-cuts, mainly from building/ shed construction	On-site recycling	PLRRC	20	100%
	Construction waste – "light"	Timber, packaging, glass, plastic, rubber, plasterboard, and ceramics	On-site recycling	PLRRC	10	50%
	Grit, sediment, litter and gross pollutants	Collected in, and removed from, stormwater treatment devices and/or stormwater management systems	On-site recycling	PLRRC onsite reuse	10	100%
General Solid Waste (putrescible)	Site office waste	Generated from worker's lunches.	Off-site landfill	Eastern Creek RRC	0.5	0%
TOTAL Amount of waste generated (tonnes)						4,790.50
TOTAL Amount of waste recycled (tonnes)						4,783.50
Overall recycling rate						**99.85%**

7.1.3.3. Operational Phase

It should be noted that the Modification Proposal does not seek approval for changes to the approved total annual waste receival or processing amounts. The proposed RWTP and sand conveyors would allow more efficient use of onsite water reuse within the soil wash water systems and higher resource recovery rates and diversion from landfill of washed aggregates and soils waste streams. The proposed LTP and associated new leachate and contact water dams would allow Bingo to achieve improved water quality outcomes related to the landfill.

The Site operates under an existing *Waste and Resource Recovery Monitoring Program* (July 2019)[4] for tracking inbound waste and outbound recovered products. The PLRRC also operates under two existing Environment Protection Licences, one for the Patons Lane Landfill operations (EPL 21259) and one for the Patons Lane Resource Recovery Centre (EPL 21259).

Bingo implements a certified ISO 14001 Environmental Management System (EMS) that establishes and maintains an effective system for the management of environmental impacts and is designed to promote excellence in environmental management through a process of continual improvement. The Site uses an approved set of Standard Operating Procedures (SOPs) for waste management.

The PLRRC does not accept waste from members of the public. The receival, inspections, waste classification and monitoring procedures are provided in the PLRRC's approved *Waste and Resource Recovery Monitoring Program*. The program includes all required mitigation measures, auditing and reporting requirements approved under MP09_0074. The program outlines the process for the management of all inbound waste in accordance with the *Standards for Managing Construction Waste in NSW* (April 2019).

7.1.3.4. The "continuous process" recovered fines order 2014

The "continuous process" recovered fines order 2014 issued by the EPA under clause 93 of the *Protection of the Environment Operations (Waste) Regulation* 2014 (Waste Regulation), imposes the requirements that must be met by suppliers of" continuous process" recovered fines to which 'the "continuous process" recovered fines exemption 2014' applies. The requirements of this order apply in relation to the supply of "continuous process" recovered fines for application to land for the purposes of construction or landscaping.

Soils recovered will be under CT1 thresholds and meet the definition of recovered fines screened using a "continuous process" under the order. Recovered fines means a soil or sand substitute with a typical maximum particle size of 9.5 mm that is derived from the continuous processing of mixed construction and demolition waste including residues from the processing of skip bin waste.

7.1.3.1. LTP and RWTP Sludge Management

The filter press is expected to produce a maximum of 30 tonnes per hour of dry solids (46 tonnes per hour wet weight) that is classified as GSW with a proportion of the overall quantity of sludge committed to landfill. Spent filter media is also expected to be GSW, however the quantities will be nowhere near the amounts produced by the filter press.

7.1.3.2. Office Operations

The Modification Report has one small existing office at the front of the Site with separate mixed recycling and waste bins in the office lunchroom. Any putrescible waste goes to a facility that is appropriately licenced to accept that waste.

7.1.4. Mitigation Measures

Table 7.2 lists a set of mitigation measures to reduce waste and improve recycling outcomes during construction.

[4] https://patonslane.com.au/wp-content/uploads/2020/08/Patons-Lane-WRRMP_Rev-C.pdf

Table 7.2. Construction waste management mitigation measures.

No.	Control Measures and Safeguards	Timing	Responsibility
WM1	Waste management and minimisation will form part of an overall Construction Environmental Management Plan (CEMP) and include the following waste measures: • The induction program (which includes environmental due diligence training). All Project and site personnel will be trained in the requirements of this document including minimising wastes, recognising which types of materials are recyclable and their obligations to use recycling facilities provided on site; • Clearly assign and communicate responsibilities to ensure that those involved in the construction are aware of their responsibilities in relation to the waste management plan; • Waste management areas will be adequately managed to prevent sediment runoff and dust generation; • Construction Method Statements (CMS) will include practices to minimise waste generation and to maximise recycling and reuse of materials including oils, greases, lubricants, timber, glass, and metal; and • Spill kit to be present on site in the case of any fuel leaks of plant and equipment during the construction phase of the development.	Prior to construction.	Site Manager

7.1.5. Conclusion

An assessment of waste generation and recycling during the construction and operational stages of the Modification Proposal has been performed. The Site will continue to operate under the existing approved *Waste and Resource Recovery Monitoring Program* and will continue to implement its existing Environmental Management System (EMS) for operations.

Waste will be appropriately managed during construction of the Modification Proposal using the identified mitigation measures, with more than 99% of waste recycled during construction. The proposed RWTP will allow more efficient use of onsite water reuse within the soil wash water systems and higher resource recovery rates and diversion from landfill of washed aggregates and soils waste streams. The proposed LTP and associated new leachate and contact water dams would allow the Site to achieve improved water quality outcomes related to the landfill.

The study found that the Modification Proposal will have minimal impacts on waste management during the construction stage, and has the potential to reduce waste disposed to landfill during the operational phase through the increased recovery of washed aggregates and soils.

7.2. Air Quality

An air quality impact assessment (AQIA) has been prepared by RWDI Australia Pty Ltd and is summarised in this section. The full air quality study can be found in Appendix D of this Modification Report.

7.2.1. Methodology

The NSW EPA's *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (2022) (Approved Methods) provides applicable impact assessment criteria for a number of air pollutants. Air quality criteria are benchmarks set to protect the general health and amenity of the community in relation to ambient air quality. The AQIA identifies the pollutants of interest and the applicable impact assessment criteria for the Modification Proposal.

Dust, Odour, and particulate matter are the major air pollutants associated with the Proposal. Specifically, the following pollutants are identified for assessment:

- Dust, including:
  - Particulate matter (PM2.5 and PM10);
  - Total suspended particulates (TSP);
  - Deposited dust; and
- Odour

The AQIA used CALPUFF for dispersion modelling for the dust assessment and to predict off-site odour levels from the Modification Proposal.

The existing concentrations of dust and particulate matter is taken from the nearest AQMS, located at St. Mary's Station. The St. Mary's monitoring station is located approximately 2 kilometres north-east of the Site.

Long-term meteorological data for the area surrounding the Proposal Site is available from the Bureau of Meteorology (BoM) operated Automatic Weather Station (AWS) at the Penrith Lakes AWS. The Penrith Lakes AWS is located approximately 11 km north-west of the Site and records observations of meteorological data including wind speed, wind direction, temperature, humidity, and rainfall.

The AQIA models the original approved project's worst-case scenario plus the Modification Proposal against ambient background air quality. These are checked against the relevant NSW guidelines. The worst-case scenario under the approved project is *Scenario 3B – Stage 2A Waste Operations* in the original air quality assessment (PAEHolmes, 2010).

Assessment Criteria

In most situations, odour will be comprised of a cocktail of many substances that is referred to as a complex mixture of odorous pollutants, or more simply odour. Odour less than one odour unit (1 OU) would not be detectable to most people. The NSW criteria for acceptable levels of odour range from 2 to 7 OU, with the more stringent 2 OU criteria applicable to densely populated urban areas, and the 7 OU criteria applicable to sparsely populated rural areas, as outlined below. The land use immediately surrounding the site is largely rural/rural-residential, therefore, in accordance with the criteria in Table 7.3, an odour impact assessment criterion is 7.0 OU.

Table 7.3. Impact assessment criteria – Complex Mixture of Odorous Pollutants.

Population of affected community	Impact assessment criteria (OU)*
Urban (≥~2000) and/or schools and hospitals	2.0
~500	3.0
~125	4.0
~30	5.0

Population of affected community	Impact assessment criteria (OU)*
~10	6.0
Single rural residence (< ~2)	7.0

The criteria presented in the Approved Methods are consistent with the National Environment Protection Council's (NEPC), *National Environment Protection (Ambient Air Quality) Measure*, 2021 (NEPM).

Table 7.4 summarises the air quality goals for dust and particulate matter that are relevant to this study. The air quality goals relate to the total concentrations of dust and particulate matter in the air and not just that from the Modification Proposal. Therefore, some consideration of background levels needs to be made when using these goals to assess impacts.

Table 7.4. Impact Assessment Criteria – Dust and Particulate Matter

Pollutant	Averaging Period	Impact	Criteria
Particulate Matter ≤ 2.5 µm ($PM_{2.5}$)	24-hours	Total	25 µg/m^3
	Annual	Total	8 µg/m^3
Particulate Matter ≤ 10 µm (PM_{10})	24-hours	Total	50 µg/m^3
	Annual	Total	25 µg/m^3
Total Suspended Particulates (TSP)	Annual	Total	90 µg/m^3
Deposited Dust	Annual	Incremental	2 g/m^2/month
	Annual	Total	4 g/m^2/month

The assessment criteria provided in Table 7.4 originate from *Schedule 4 - Specific Environmental Conditions* within the *Land & Environment Court Proceedings No. 10928 of 2010* which prescribes the relevant environmental conditions including:

- *Condition 12 – Odour Discharge Limits: The Proponent shall not cause or permit the emission from the site of offensive odours as defined under Section 129 of the POEO Act.*\
- *Condition 13 – Dust and Particulate Matter Limits: The Proponent shall ensure that dust and particulates generated by the Project do not exceed the criteria listed in tables 4, 5 and 6 at any residence or on more than 25 percent of any privately owned land surrounding the Site.*

The *PLRRC Air Quality and Greenhouse Management Plan* (Todoroski, 2019) addresses dust and particulate matter management. The facility currently employs all feasible and practicable measures to minimise any visible dust emissions from the site.

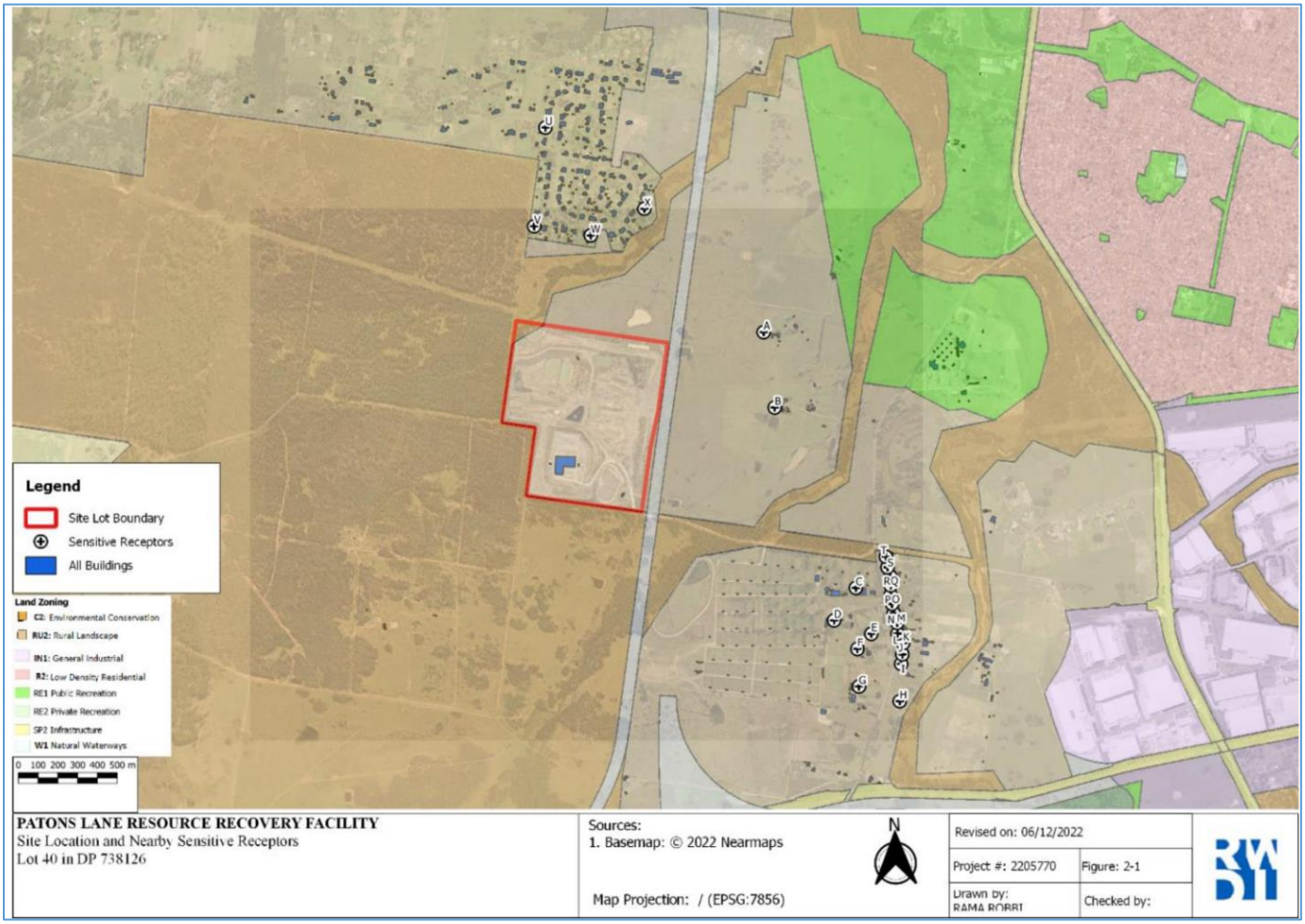
7.2.2. Existing Environment

The land use immediately surrounding the site is largely rural/rural-residential in character comprising a mix of open grazing land, vegetated areas, and residential development. Immediately to the north and east of the site are rural properties (including "Roughwood Park" and "Glenholme Farm") containing residences and outbuildings with similar land holdings further to the north-east and south-east of the site. Approximately 500 m further north of the site is a residential subdivision known as the "The Vines" containing large, detached residences. "The Vines" were approved by Penrith Council on 4 July 1988 after the quarry on the project site was in existence. Further to the south-east are rural-residential properties with frontage to Luddenham Road.

Adjoining to the west and south of the site is heavily vegetated land owned by the Commonwealth which is used by the Australian Defence Force. The locations of all nearby sensitive receptors are identified in Table 2-1 and shown in Figure 7.1.

Temperature data recorded at the Penrith Lakes AWS indicates that January is the hottest month of the year, with a mean daily maximum temperature of 31.1°C. July is the coolest month with a mean daily minimum temperature of 5.4°C. February is the wettest month with an average rainfall of 122.1 mm falling over 11.7 days. There are, on average, 130.8 rain days per year, delivering 740 mm of rain. Most of the winds through this region are largely blow towards Southwest quadrants.

Figure 7.1 Air quality sensitive receptors in the vicinity of the PLRRC used for modelling in the NVIA (Source: RWDI).



A summary of the PM2.5 and PM10 monitoring result collected at the St. Mary's AQMS during the modelling year (2018) is presented in Table 7.5.

Table 7.5. 2018 Particulate Matter Monitoring Results – St. Mary's AQMS.

Statistic	St. Mary's AQMS	
	$PM_{2.5}$	PM_{10}
24-hour average, max	82.5	100.5
24-hour average, max complying [a]	23.2	47.6
24-hour average, 99th percentile max complying [a]	23.0	47.1

Statistic	St. Mary's AQMS	
	$PM_{2.5}$	PM_{10}
24-hour average, 95th percentile max complying [a]	22.7	46.7
24-hour average exceedances	3	2
Annual average	7.7	19.4

Ambient 24-hour average $PM_{2.5}$ and PM_{10} concentrations at St. Mary's AQMS exceeded the 25 µg/m^3 and 50 µg/m^3 on a number of occasions. As noted in the *NSW Annual Air Quality Statement* 2018, particle pollution was elevated in 2018 due to "… more frequent exceptional events, such as dust storms, bushfires, and hazard reduction burns."

Table 7.6 summarises the background air quality adopted for assessment purposes. For 24-hour average PM2.5 and PM10, contemporaneous (Level 2) assessments have been conducted whereby the measured ambient concentrations at the St. Mary's AQMS are added to the dispersion model results for each day of the simulation.

Table 7.6. Background Air Quality Adopted for Assessment.

Pollutant	Averaging Period	Adopted Background Concentration/Level
$PM_{2.5}$	24-hours	Contemporaneous
	Annual	7.7
PM_{10}	24-hours	Contemporaneous
	Annual	19.4
TSP	Annual	48.4
Deposited Dust	Annual	2.15

7.2.3. Impact Assessment

Operations

The significant sources of dust/particulate emissions associated with the operation of the Proposal are identified as:

- Loading, Unloading, Screening and Processing material;
- Truck movements on paved and unpaved roads; and
- Wind Erosion emissions.

The approach taken for the operational dust assessment is as follows:

- **Scenario A** – Estimate annual dust emissions of each activity associated with worst case scenario of the previously approved operations as per 2012 approval by PAE Holmes (scenario 3b);
- **Scenario B** – This is a combination of Scenario A and the dust emissions from the Modification Proposal which is mainly from the screening process and sand conveyor systems;
- Provide emissions and meteorological information to a computer-based dispersion model to predict dust concentrations in the region and at nearest sensitive receptors for the above scenarios; and
- Compare predicted concentrations with relevant air quality criteria.

The estimated dust emissions associated with the various operational activities as modelled are provided in Table 6-1 of the AQIA (Appendix D). A detailed emissions inventory is provided in Appendix B of the AQIA.

The results of the AQIA show that the worst case scenario under the approved consent plus the Modification Proposal (Scenario B) is not predicted to result in any additional exceedances of the impact assessment criteria for $PM_{2.5}$ and PM_{10} concentrations compared to background levels. Therefore, in accordance with the Approved Methods, no additional measures are needed to reduce $PM_{2.5}$ or PM_{10} emissions.

The Modification Proposal would have a small effect on annual average $PM_{2.5}$ and PM_{10} concentrations and would comply with the impact assessment criteria under Scenario B. Although background concentration is very high, the contribution from the approved worst-case operations plus proposed modifications to annual average PM2.5 and PM10 is approximately 4% and 7.2% respectively, of the impact assessment criteria (at receptor W).

The predicted TSP concentrations and deposited dust levels also comply with the impact assessment criteria under Scenario B.

The full results for dust and particulates assessment modelling of Scenario B at each receptor are presented in Table 3-4, Table 3-5, and Table 3-6 of the AQIA (Appendix D). Contour plots of incremental 24-hour average $PM_{2.5}$ and PM_{10} are presented in Appendix C of the AQIA.

The lowest and highest results for each air pollutant for all potential receptors is provided in Table 7.7, Table 7.8 and

Table 7.9 below. Full results for each receptor are provided in the AQIA (Appendix D).

Table 7.7. Predicted range of 24-hour Average PM2.5 and PM10 Concentrations at all Sensitive Receptors.

Range of results for all Receptors	Predicted Range of the Maximum 24-hour Average $PM_{2.5}$ (µg/m³)			Predicted Range of the Maximum 24-hour Average PM_{10} (µg/m³)		
	Highest Predicted Increment (worst-case Operations) in Scenario B	Background (local ambient air quality)	Scenario B + Background	Highest Predicted Increment (worst-case Operations) in Scenario B	Background (local ambient air quality)	Scenario B + Background
	1.08 - 3.55	2.00 - 4.60	4.57 - 7.03	6.74 - 22.93	8.80 - 21.50	22.53 - 37.59
Criteria	-	-	**25**	-	-	**50**

Table 7.8. Predicted range of Annual Average PM2.5 and PM10 Concentrations at all Sensitive Receptors.

Range of results for all Receptors	Predicted Range of the Annual Average $PM_{2.5}$ (µg/m³)		Predicted Range of the Annual Average PM_{10} (µg/m³)	
	Increment (Existing Approved worst-case Operations + Proposed Modifications)	Increment + Background	Increment (Existing Approved worst-case Operations + Proposed Modifications)	Increment + Background
	0.04 - 0.27	7.736 - 7.976	0.23 – 1.79	19.59 – 21.15
Criteria	-	**8**	-	**25**

Table 7.9. Predicted Annual Average TSP Concentrations and Deposited Dust Levels at Sensitive Receptors.

Range of results for all Receptors	Predicted Range of the Annual Average TSP (µg/m³)		Predicted Range of the Annual Average Deposited Dust (g/m²/month)	
	Increment (Existing Approved worst-case Operations + Proposed Modifications)	Increment + Background	Increment (Existing Approved worst-case Operations + Proposed Modifications)	Increment + Background
	0.37 – 3.32	48.77 – 51.72	0.010 – 0.148	2.160 – 2.298
Criteria	-	**90**	**-**	**4**

Odour

The significant sources of odour associated with the operation of the Modification Proposal are identified below:

- Odour form the RWTP and LTP; and
- Odour from the Proposed Leachate Dam.

The landfill is categorised as a Class 2 landfill, signifying that no putrescible waste will be accepted. Nevertheless, odours can be produced over time from biodegradable material. In practice, Class 2 landfills have historically accepted a wider range of materials than those proposed to be accepted as part of this project. However, it has been assumed, for the purposes of this assessment, that odour emissions for historical Class 2 landfills are relevant. These emissions will be referred to as "standard" Class 2 odour emissions.

The AQIA (Appendix D) provides the quantitative information on each odour source used in the dispersion modelling. These include capped cells, existing and proposed leachate dams and the LTP.

The results in odour impact assessment show that the Modification Proposal is not predicted to result in any exceedances of the impact assessment criteria for Odour concentration (7 OU). The highest predicted 1-hour average 99th percentile ground level odour concentrations at all receptors under Scenario B (worst case operations including the Modification Proposal) ranged from 0.047 OU to 0.253 OU, and all were less than 1 OU. See Table 3-8 of the AQIA for individual results at each nominated receptor. Therefore, in accordance with the Approved Methods, no additional measures are needed to reduce odour emissions.

Construction

A summary of potential construction emissions is provided below:

- Minor dust emissions from staging works;
- Dust emissions from earthworks and civil works;
- Minor Exhaust emissions from vehicles and equipment's; and
- Minor dust emissions from the construction of structure.

Excavation is the only construction stage with potential to release dust emissions. Minor dust emission is expected from all other construction stages.

Based on the proposed works, and the advice in the IAQM guidance document, it is considered unlikely that these works would result in unacceptable air quality impacts.

7.2.4. Mitigation Measures

No additional mitigation measures over the existing approval conditions and environmental commitments included in the existing and approved *Air Quality and Greenhouse Management Plan* (2019) for the Site are recommended.

Activities during construction are consistent with PLRRC's operations and therefore the existing dust controls implemented for site operations are equally relevant to the construction phase.

7.2.5. Conclusion

An assessment of air quality and odour impacts during the construction and operational stages of the Modification Proposal has been performed. The Site will continue to operate under the existing approved *Air Quality and Greenhouse Management Plan* (2019) and will continue to implement its existing Environmental Management System (EMS) for operations.

Air quality impacts associated with the operation of the Modification Proposal in addition to the worst-case approved existing operations for landfilling, quarrying and resource recovery operations are predicted to comply with relevant impact assessment criteria.

The study found that the Modification Proposal will have minimal impacts on air quality and odour during the construction stage, and will have negligible impact on air quality and odour during the operational stage.

7.3. Noise and Vibration

A noise and vibration impact assessment (NVIA) has been prepared by RWDI Australia Pty Ltd and is summarised in this section. The full air quality study can be found in Appendix D of this Modification Report.

7.3.1. Methodology

The NSW Noise Policy for Industry 2017 (NPfI) provides a framework for assessing environmental noise impacts from industrial premises and industrial development proposals in the state of New South Wales. Whilst specifically aimed at assessment and control of noise from industrial premises regulated by the EPA, the policy is also appropriate for use by the Department of Planning & Environment (DPE) when assessing major development proposals and also by local councils when assessing development applications.

The NPfI documents a procedure for assessment and management of industrial noise which involves the following steps:

- Determining the project noise trigger levels for a development;
- Predicting or measuring noise produced by the development (having regard to any associated annoying characteristics and prevailing meteorological effects);
- Comparing the predicted or measured noise levels with the project noise trigger level and assessing impacts and the need for noise mitigation and management measures;
- Considering any residual noise impacts following the application of feasible and reasonable noise mitigation measures;
- Setting statutory compliance levels that reflect the best achievable and agreed noise limits for development; and
- Monitoring and reporting environmental noise levels from the development.

The NVIA predicts noise at sensitive receivers using noise modelling/prediction software (CadnaA software (Version 2022 MR1) using the CONCAWE prediction algorithm).

The modelling assumptions and inputs are provided in full in Section 8 of the attached NVIA (Appendix E). Validation measurements were performed at seventeen (17) locations at the Site to validate the noise model. The validation points were chosen at distances sufficient enough for sources from the Site to be clearly audible. Eight of the locations were located at the top of the landscape bund surrounding the recycling area, and all locations had a clear line-of-sight of the site operations.

The NSW EPA released the Interim Construction Noise Guideline (ICNG) in July 2009 for the management of construction works noise (State of NSW and Department of Environment & Climate Change NSW, 2009). A quantitative construction noise assessment method is considered appropriate since the construction works will occur for more than 3 weeks. Construction is assumed to be during standard construction hours only.

Given the distance between the nearest receivers and the sources are in the order of 500 to 1,000 metres, vibration would not have sufficient energy to travel such large distances. Given this, further assessment of vibration is not required.

The Site is currently approved to operate a maximum of 250 heavy vehicle movements per day. The small contingency addition of 6 heavy vehicles addition per day to the approved operational traffic movements for the Site is considered minimal and would only be implemented if a potable water connection is not feasible. Hence an assessment of operational road traffic noise is not deemed necessary.

7.3.2. Existing Environment

The existing and approved *Patons Lane Resource Recovery Centre Operational Noise Management Plan* (July 2019) establishes the PLRRC's noise monitoring program to fulfil the environmental obligations of the Site. A review of noise monitoring between 1 June 2018 and 17 June 2022 indicate that the site activities are mainly inaudible (typically less than LAeq 30 dB) for majority of the sample period. When audible, site operations were only audible occasionally at a low level of noise. Measurements did not indicate the presence of any low frequency, tonality or other NpfI noise modification factors.

Since the site noise was mainly inaudible during the measurement period, the monitoring data from the unattended monitors has been utilised to obtain the background noise levels in the area. The period of June 2021 to May 2022 was chosen since it is considered to be representative of the current background conditions in the area surrounding the PLRRC.

The land use immediately surrounding the site is largely rural/rural-residential in character comprising a mix of open grazing land, vegetated areas, and residential development.

Immediately to the north and east of the site are rural properties (including "Roughwood Park" and "Glenholme Farm") containing residences and buildings with similar land holdings further to the north-east and south-east of the site. Approximately 500m further to the north of the site is a residential subdivision known as the "The Vines" containing large, detached residences within a RU 4 – primary production small lots zone. "The Vines" was approved by Penrith Council on 4 July 1988, after the quarry on the project site was in existence. Further to the south-east are rural-residential properties having frontage to Luddenham Road. Residences to the east and south-east are within RU 2 – rural landscape zone. Adjoining to the west and south of the site is heavily vegetated land owned by the Commonwealth which is used by the Australian Defence Force.

The Sydney Metro-Western Sydney Airport line is the new metro railway line which will service Greater Western Sydney and the new Western Sydney International (Nancy-Bird Walton) Airport. It is currently under construction and is to be operated to the east of the PLRRC. The stabling and maintenance facility is also to be located in close proximity to the site (see Figure 3 2). It is expected that the acoustic amenity level in this area is likely to increase over time due to the rail operation.

The Site was granted an Environment Protection License (EPL) 20814 by NSW EPA on 8 November 2016 to carry out extractive activities and waste disposal. The conditions relevant to noise in EPL 20814 include sound pressure noise level limits at sensitive receptors R2, R4, R6, R7, R8, and C12A.

Schedule 4 – Specific Environmental Conditions within the Land & Environment Court Proceedings No. 10928 of 2010 prescribes a number of relevant environmental conditions including:

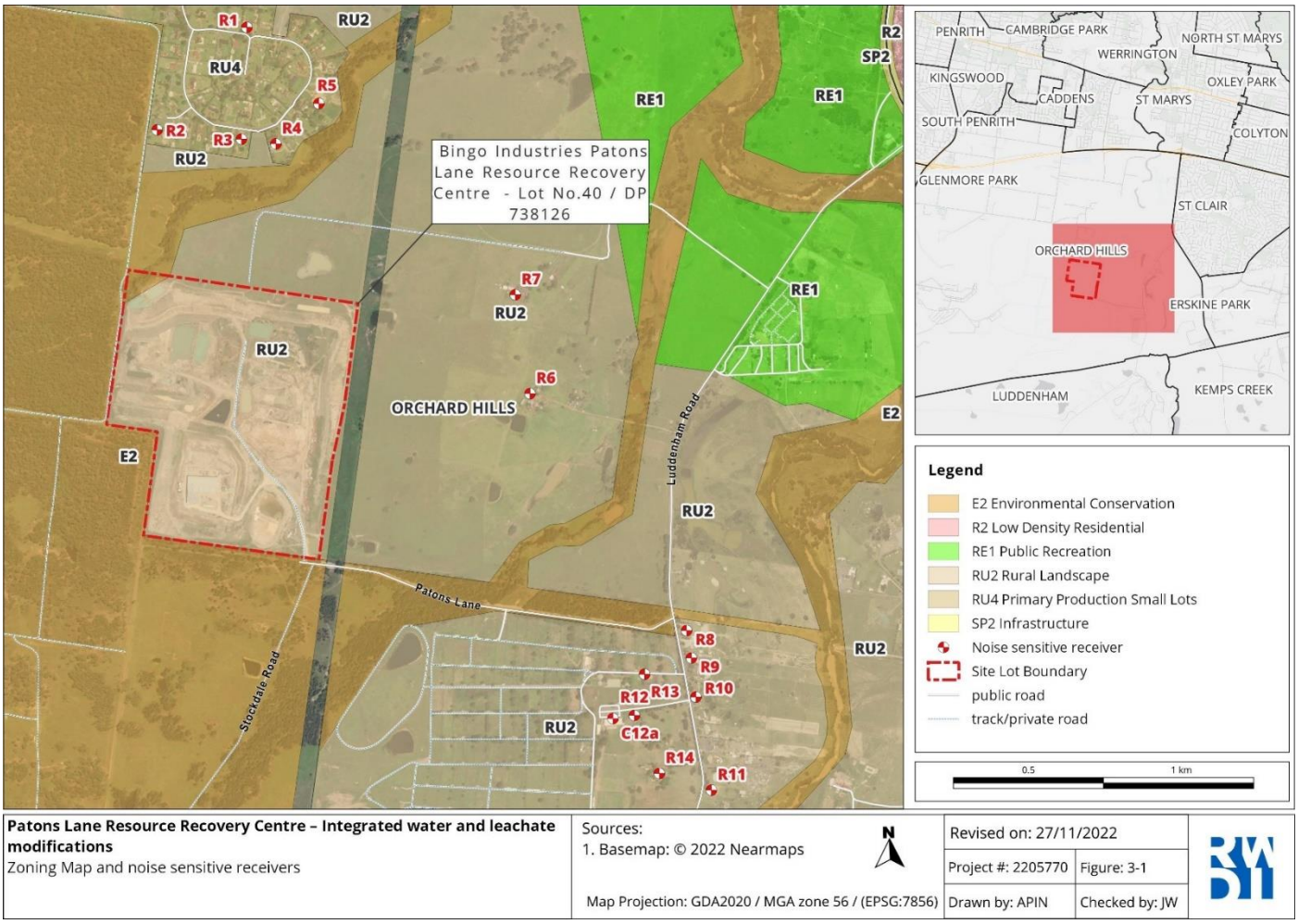
- Condition 21 – operational noise limits;
- Condition 23 – operating hours; and
- Condition 27 operational noise management plan content requirements.

Considering that the noise limits specified in EPL 20814 and the conditions of consent are based on background noise levels conducted more than 10 years ago (i.e., June 2009 and July 2011), updated noise criteria based on recent background noise levels measured between 2021 and 2022 have been prepared. The noise criteria for the Site operations with the Modification Proposal are discussed in Section 7.3.3.

These noise levels have been obtained through the PLRRC noise monitoring program that is conducted to fulfil the environmental obligations of site establishment and existing operations. In accordance with the *PLRRC Operational Noise Management Plan*, dated 11 July 2019 prepared by Arcadis.

In comparison to the 2009/2011 noise monitoring conducted for the original assessment (detailed in the *Consolidated Acoustic Report* No.09154-FM-CAR prepared by Wilkinson Murray dated 14 February 2012), the RBLs calculated are similar in value. Also it is noted that the original assessment was conducted in accordance with the *Industrial Noise Policy* (2000), however the current assessment is conducted in accordance with the *Noise Policy for Industry* (2017). Hence there are minor differences in the method to obtain the noise trigger levels.

Figure 7.2. Noise sensitive receptors in the vicinity of the PLRRC used for modelling in the NVIA (Source: RWDI).



7.3.3. Impact Assessment

The project noise trigger level represents the level that, if exceeded, may indicate a potential noise impact upon a community. It is a benchmark or objective and is not intended for use as a mandatory requirement. The project noise trigger level is the lower of the intrusiveness noise levels and the amenity noise levels for each receiver.

The intrusiveness noise level represents short term changes in the noise level and is derived from measurements of existing background noise levels at locations representative of a receiver. The intrusiveness noise is aimed at limiting the degree of change a new noise source introduces to an existing environment.

The recommended amenity noise level (ANL) is aimed at limiting continuing increases in noise levels from the application of intrusiveness level alone. This approach limits the ambient noise within an area from all industrial noise sources combined below the recommended amenity noise levels as specified in table 2.2 of the NpfI.

The project noise trigger levels are summarised in Table 7.10.

Table 7.10. Noise trigger levels applicable for the project.

Receiver ID	Intrusive Criteria $L_{Aeq,15\ min}$ dBA			Amenity Criteria $L_{Aeq,\ 15\ min}$ dBA			Project Trigger Levels $L_{Aeq,15\ min}$ dBA		
	D	E	N	D	E	N	D	E	N
Residential[1]	40	40	37	48	43	38	**40**	**40**	**37**
Commercial	-[2]	-[2]	-[2]	63			**63**		

Note 1 This is obtained after calculating minimum RBLs for each monitoring location for each season. Where appropriate, the minimum RBLs set in the NpfI have been utilised. Also where exceeded above the day time intrusiveness levels, the evening project intrusiveness levels have been set to not exceed the day time intrusiveness levels.

Note 2 Intrusive criteria are applicable only to residential receivers

Note 3 D: daytime (7.00am – 6.00pm)

E: evening time (6.00pm – 10.00pm)

N: night-time (10.00pm – 7.00am)

Since the landfill is currently not operational and is subject to a management decision from SCR Operations Pty Ltd, noise scenarios have been prepared with and without the landfill activities. For the purposes of the noise assessment, the following scenarios have been utilised to predict the noise levels at the receivers:

- **Validation Model – Existing approved Resource Recovery Centre Operations Only – without mobile plant:** This model represents the existing Patons Lane Resource Recovery Centre and its associated noise sources excluding mobile plant. Validation of this model involves comparison of short-term operator attended noise measurements of the existing operations with the predicted levels from this model. If required, this model will be adjusted to be representative of measurements.
- **Scenario A – Existing Approved Resource Recovery Centre operations without landfill and extraction activities:** This model represents the validated noise model with the approved operations (i.e. includes mobile plant) and without the landfill based activities.
- **Scenario B – Existing Approved Resource Recovery Centre operations with landfill and extraction activities:** This model represents the combination of Scenario A along with the landfill based activities.
- **Scenario C – Modification Proposal and all approved operations – resource recovery, landfill and extraction:** This model is a combination of Scenario B and the Modification Proposal.
- **Scenario D – Approved resource recovery operations and Modification Proposal only:** This model is a combination of Scenario A and the Modification Proposal.

Note that Scenario C is the worst-case scenario, which includes all activities approved under MP09_0074 (resource recovery, extraction and landfilling) for the Site in addition to the Modification Proposal.

The predicted noise was analysed at each receiver and modifying factors were determined quantitatively in accordance with the NpfI.

- Tonality (T): Narrow band analysis indicated no presence of significant tonal noise under both standard and adverse meteorological conditions;
- Low frequency (LF): Low frequency analysis indicates no requirement for a low frequency modification factor under both standard and adverse meteorological conditions;
- Intermittency (I): There are no site sources at night which attract the intermittent correction, which is meant to apply to repeated sudden and periodic step changes in noise that might occur from loud equipment that regularly cycles on and off;

- Duration (D): No duration factors were applied since there are no one-off and unusual events occurring on site.

Continuous Operations

The NVIA analysis found that the site sources are compliant at all receiver conditions for all scenarios and meteorological conditions modelled. Table 8-5 in the NVIA summarises the predicted noise levels for continuous operation of the Site for the scenarios B, C and D for all assessed receivers. Noise contour plots are presented in Appendix D of the NVIA for all scenarios for the relevant time periods.

Table 7.11 summarises the worst results modelled under Scenario C for a residential and commercial receiver. The worst case residential sensitive receiver was R4, and for commercial C12. Both were compliant with the noise criteria. All other modelling results were below the result for R4.

Table 7.11. Predicted noise levels for continuous operations under worst case scenario (Scenario C) for the worst affected receivers.

Receiver ID	Predicted noise levels for continuous operation for Scenario C $L_{Aeq,\ 15\ min}$ dBA			Project Trigger Levels $L_{Aeq,15\ min}$ dBA		
	D	E	N	D	E	N
R4 (Residential)	34 (35)[1]	<20	<20	40	40	37
C12 (Commercial)	30 (30)	<20	<20	63		

Note 1: Predictions for adverse meteorological conditions are within brackets.

The NVIA also analysed potential sleep disturbance considering the proposed operation of rotary lobe blowers 24/7. The potential for sleep disturbance due to site operations at night-time is very low. Table 8-6 in the NVIA identifies that night-time predictions at all receivers are well below the adopted sleep disturbance screening level criteria.

Construction

Construction of the Modification Proposal is proposed to take place during standard work hours only. Hence the Construction noise management levels (CNMLs) have been based upon the Day time RBLs for the residential receivers. Table 7.12 summarises the construction noise management levels for the project. Receivers R12 and C12 were the worst affected receivers during the modelled construction stages. The results show both are compliant with the relevant CNMLs, and therefore all receivers are compliant.

Table 7.12. Project Construction Noise Management Levels (CNMLs) and results at worst affected receivers.

Receiver ID	Type of receiver	Period of Noise Exposure	Project CNMLs $L_{Aeq,15min}$ dBA	Predicted Construction Noise Level at the worst-affected receivers	
				C12	R12
All residential R1 to R14	Residential	Recommended Standard Hours	Noise affected 45 dBA Highly noise affected 75 dBA	-	30 (30)
Croatian Cultural Association C12a	Commercial	All periods	70 dBA external	31 (31)	-

Note 1: Predictions for adverse meteorological conditions are within brackets.

The potential construction noise impacts at sensitive receivers were predicted using a noise model representative of the construction stages for the proposed development. The NVIA concluded that construction noise is unlikely to cause any impacts to nearby receivers and is below the CNMLs at all receiver locations. Table 9-3 of the NVIA details predicted construction noise levels for all receivers.

Traffic

The Site is currently approved to operate a maximum of 250 heavy vehicle movements per day. The small contingency addition of 6 heavy vehicles addition per day to the approved operational traffic movements for the Site is considered minimal and would only be implemented if a potable water connection is not feasible. Hence an assessment of operational road traffic noise is not deemed necessary. Hence an assessment of operational road traffic noise is not required.

Operational Vibration

The Modification Proposal primarily involves the use of fixed plant such as shakers and mobile plant such as excavators, skid steers, forklift, front end loaders etc. Among these sources, shakers are likely to generate vibration if inadequately isolated for vibration, however, given the distance between the nearest receivers and the sources are in the order of 500 to 1000 m, the vibration would have insufficient energy to travel such large distances. Given these factors, no further assessment of vibration is required.

7.3.4. Mitigation Measures

The Site operates under an existing and approved *Traffic Noise Management Plan* (Arcadis, July 2019) and *Traffic Noise Management Plan* (Arcadis, July 2019) that include environmental commitments and monitoring measures to meet regulatory requirements. No further mitigation measures are recommended.

7.3.5. Conclusion

An assessment of noise and vibration impacts during the construction and operational stages of the Modification Proposal has been performed. The Site will continue to operate under the existing approved *Patons Lane Resource Recovery Centre Operational Noise Management Plan* (July 2019) and will continue to implement its existing Environmental Management System (EMS) for operations.

Noise impacts associated with the operation of the Modification Proposal in addition to the worst-case approved existing operations for landfilling, quarrying and resource recovery operations are predicted to comply with relevant impact assessment criteria. Additional road traffic noise generated during construction from the Project will be minimal and meet relevant noise goals. Vibration impacts during construction and operation were found to be nil.

The study found that the Modification Proposal will have minimal impact on noise and vibration during the construction stage, and will have negligible impact on noise and vibration during the operational stage.

7.4. Soil and Water

A soil and water impact assessment (SWIA) including an updated water balance for the Site has been prepared by Rhelm Pty Ltd and is summarised in this section. The full soil and water study can be found in Appendix F of this Modification Report.

7.4.1. Methodology

To complete the SWIA the following approach was adopted:

- Review of information for the existing conditions and the Modification Proposal;
- Review of existing regulatory requirements;
- Investigation of the existing conditions as it relates to on-site surface water management, including analysis of water quantity and water quality, and an assessment of the water-related requirements for the Modification Proposal; and
- Description of management measures, where these are required, and the expected outcomes of the implementation of these measures.

The stormwater management software MUSIC (v6.3.0) was used to simulate water quality characteristics of runoff generated from the site catchment and assess the effectiveness of surface water management measures.

The MUSIC model has been used to assess stormwater discharges only. It is assumed that any runoff that becomes leachate or contact water will be stored in the site leachate management measures and removed via tankering or future sewer connection, with no overflows into the site stormwater management system.

Daily rainfall data from the St Marys Bowling Club meteorological station (Station 067024) was used for the MUSIC model. The historic rainfall data was analysed over a 51-year period from 01/01/1900 to 31/03/1951.

Source node pollutant parameters were derived from Penrith City Council's MUSIC nodes and the NSW MUSIC Modelling Guidelines (BMT WBM, 2015), with stochastic pollutant generation selected for the analysis. Adopted rainfall/runoff parameters for un-disturbed soils were obtained from the MUSIC modelling toolkit for Wianamatta-South Creek (DPE, 2022).

The MUSIC model was also used for the purpose of a site water balance assessment for the existing and proposed scenarios. The adopted 51-year time series is inclusive of a sufficient number of wet, dry and average rainfall years to enable the assessment of the site water balance over a full range of climatic conditions.

7.4.2. Existing Environment

The site is located within the catchment of Blaxland Creek, an ephemeral creek which flows to South Creek, a tributary of the Hawkesbury/Nepean River system. Blaxland Creek generally flows in a north- easterly direction.

Defence Establishment Orchard Hills (DEOH) is a major Defence facility that has been operational since 1945 and is located directly upstream of the project site with Blaxland Creek and its tributaries running through the centre of the site (GHD, 2019b).

With respect to overall water management, the Site has no existing potable water supply and relies on rainfall, captured stormwater re-use and groundwater extraction (under Water Access Licence 24329) and potable water delivery (by tanker). The Site also has no existing connection to the Sydney Water sewerage system.

Currently the Site has a number of constructed water management dams/basins/tanks that serve the purpose of either:

- Stormwater runoff capture and treatment in a range of dams known as Dams 1, 2a, 2b, 2c, 3, 4, 5 and 6 (generally treatment by settlement and losses from the surface by evaporation);
- Leachate storage in an existing leachate dam (dealing with leachate from the landfill portions of the site); or
- Soil wash water storage tanks (within the RRC area).

There are three licenced wet weather discharge points from the site under EPL 20814 (one also included in EPL 21259) as follows:

- Dam 2 in the northwest corner of site to Blaxland Creek via an engineered spillway,
- Dam 3 in the northeast corner of the site to an unnamed tributary of Blaxland Creek, and
- Dam 6 in the southeast corner of the site to an unnamed tributary of South Creek.

Water from the sediment dams is reused on site where possible for operational purposes (e.g. dust suppression). Water not re-used is transferred to external dams (Dam 2 series, being 2a, 2b, 2c) beyond the bunds and discharged if above the design rainfall event or otherwise once testing for appropriate water quality has been undertaken.

These licensed discharge point dams, along with other surface water dams, are shown in Figure 7.3.

The current water management configuration is largely consistent with the Year 1 configuration reported in the *Orchard Hills Waste and Resource Management Facility – Surface Water Assessment* (GSS Environmental & BMT WBM, 2010). Key areas of difference between the existing site conditions and the GSS Environmental & BMT WBM (2010) Year 1 scenario include the following:

- Stormwater discharges only occur via passive (gravity) overflows rather than additional pumped low flow discharges (to ensure the conditions of the EPL are met), and
- Surface contact water collected in the Cell 1 sump is pumped to the existing leachate dam and tankered off site rather than being directed to Dam 4 (also to ensure the conditions of the EPL are met).

Leachate from the Site's landfill is currently tankered off-site for disposal at an EPA-licenced facility (as there is no sewerage system connection currently available at the Site). The Site office has a rainwater tank that captures roof runoff for toilet flushing and an on-site sewerage system for treatment and disposal (including a sub-surface irrigation area adjacent to the southern boundary.).

The recycling building has rainwater tanks that capture roof runoff, used for dust suppression for operations within the building (via an indoor overhead sprinkler system).

SRC Operations Pty Ltd sources water entitlements through Water Access Licence (WAL) 24329. WAL 24329 nominates water supply works approval 10WA109407 (issued 1 July 2011, expires 30 June 2024), to extract up to 16 ML of groundwater annually from the Sydney Basin Central Groundwater Source. Water rules for extractions of water from this groundwater source are set under the Greater Metropolitan Region Groundwater Sources 2011.

The Site is located in the Wianamatta-South Creek catchment where stormwater management plans for development are required to comply with the technical guidance for achieving Wianamatta-South Creek stormwater management targets (Wianamatta-South Creek Guidelines) (DPE, 2022). These guidelines were issued in September 2022.

7.4.1. Impact Assessment

There are no significant proposed changes to the footprint of the operation or to any operational procedures that would adversely impact surface water quality leaving the Site. Localised increases in runoff generation within the Site could be expected due to the slight increase in impervious area associated with the proposed treatment plant slabs. however, this will be offset by the additional stormwater catchments draining to the leachate management system with the proposed upgrades.

The RWTP will further clean the water used within the resource recovery activities, maximise the efficacy of the soil wash plant and maximise water reuse within the wash plant. This will reduce the amount of water needed and required to be disposed. Overall, the RWTP is expected to improve the water quality and reduce the water quantity leaving the recycling area and entering the site stormwater management measures.

The proposed LTP is expected to improve the effectiveness of leachate management from the landfill and permit the Site to potentially connect and discharge surplus leachate to sewer. Leachate water is separated from surface water and will be tankered off site prior to the future sewer connection. As such, leachate water quality is not included in this surface water quality analysis.

Figure 7.3. Existing water management dams (with mapped water courses shown as blue lines).

7.4.1.1. Surface Water Quality

Table 7.13 below summarises the results of the MUSIC water quality assessment for the existing and Modification Proposal scenarios, including the percentage reduction compared to untreated catchment runoff.

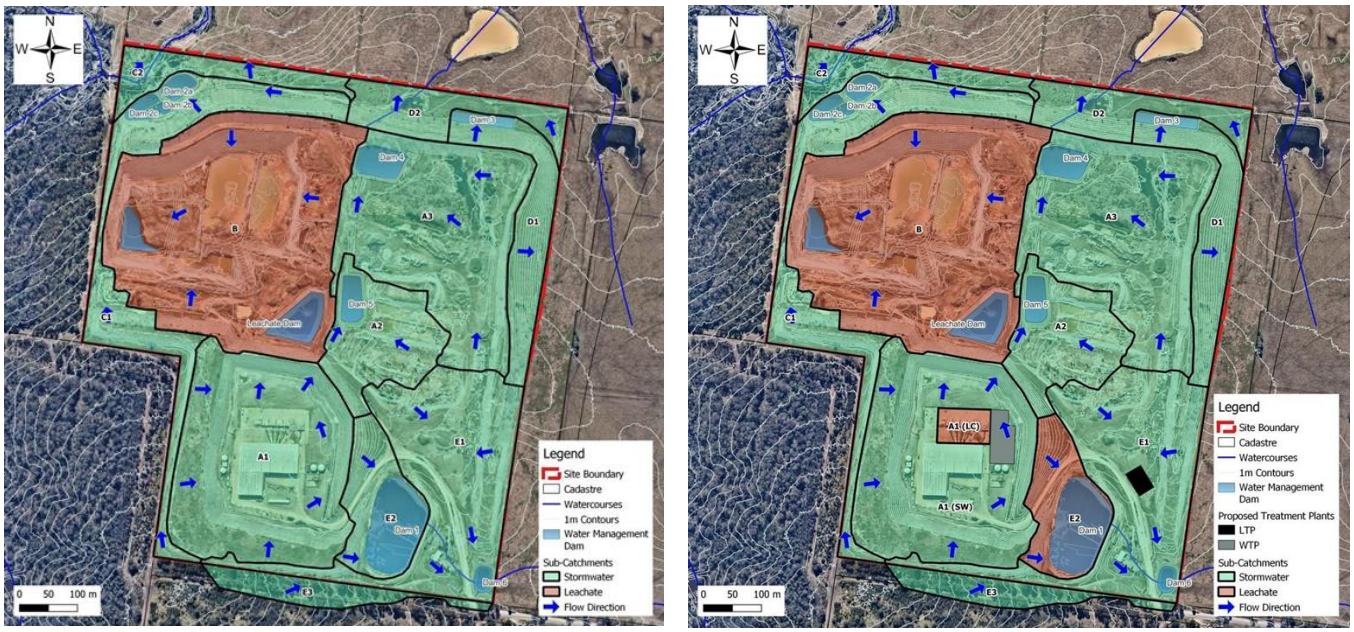
The results show an improvement in overall water quality associated with the Modification Proposal. This is a result of the additional catchment areas draining to leachate management measures rather than the stormwater network, the increased stormwater re-use associated with the wash plant, and the change in land use over the footprint of the proposed treatment plants (see Figure 7.5). This reduction in stormwater flows and pollutant generation outweighs the increase runoff associated with the additional impervious surfaces of the two proposed treatment plants.

The percentage reduction in pollutant loading compared to an un-treated scenario is compliant with reduction targets specified in Chapter C3 of the Penrith DCP 2014 and Table 3 of the *Technical guidance for achieving Wianamatta-South Creek stormwater management targets* (DPE, 2022) for both the existing and post-modification scenarios.

Table 7.13. Site Water Quality Results.

Pollutant	Catchment (un-treated) Loads (kg/yr)		Outflow Loads (kg/yr)2		Percentage Reduction	
	Existing	Proposed	Existing	Proposed	Existing	Proposed
Total Suspended solids (TSS)	72,300	63,900	7,510	6,060	89.6	90.5
Total Phosphorus (TP)	42.0	36.0	8.63	7.16	79.5	80.1
Total Nitrogen (TN)	226	195	83.4	67.7	63.0	65.2

Figure 7.4. Pre- and Post Modification Sub-catchments (Modification Proposal is on the right).



7.4.1.2. Water Balance

Rainfall depths for 90th percentile, 10th percentile and 50th percentile rainfall years were obtained from Bureau of Meteorology statistics (Station 067024) to represent wet, dry and average rainfall years, respectively. This provides an assessment of the Site's water balance over a full range of climatic conditions, see Table 7.14.

Table 7.14. Wet, Dry and Average Year Rainfall Depths.

	Wet Year	Dry Year	Average Year
Rainfall (mm)	1040	498	768
Representative Year	1949	1939	1945

The MUSIC model simulates stormwater catchment runoff generation, storage and re-use but does not consider any groundwater extraction permitted under WAL 24329. It is assumed that these inflows would only be used to meet water demands when a deficit occurs and not have a significant impact on site hydrology. Water usage and discharge from the proposed washing plant has also been excluded from the MUSIC model as this is a closed loop system with water sourced from and discharged to the proposed leachate management system. Refer to the Leachate Water Balance Assessment GHD (2022) for details of the water balance for the site leachate management system.

The detailed results of the MUSIC model including inputs, outputs and losses are provided in the SWIA (Appendix F). Table 7.15 and Table 7.16 below provide a summary of the total water excess/deficit in the wet, dry and average rainfall years for the existing and proposed (Modification Proposal) scenarios, respectively. Results have been provided for two material processing rate scenarios nominated by SRC Operations:

- Maximum processing rate (220,000 tonnes/year of material) – 112.9 kL/day; and
- Standard processing rate (120,000 tonnes/year of material) – 63.2 kL/day.

These are average daily re-use volume for three material processing rate scenarios nominated by the proponent.

Table 7.15. Water Surplus/Deficit – Existing Scenario.

Parameter	Wet Year	Dry Year	Average Year
Re-Use Requested (ML/yr)3	33.2	34.3	34.7
Re-Use Supplied (ML/yr)	32.7	23.3	31.9
Surplus/Deficit (ML/yr)	-0.5	-11.0	-2.8

Table 7.16. Water Surplus/Deficit – Proposed Scenario.

Parameter	Wet Year	Dry Year	Average Year
Re-Use Requested (ML/yr)3	74.5 (max) 56.2 (stnd)	75.6 (max) 57.4 (stnd)	76.0 (max) 57.7 (stnd)
Re-Use Supplied (ML/yr)	62.8 (max) 54.9 (stnd)	20.2 (max) 22.6 (stnd)	51.0 (max) 48.5 (stnd)
Surplus/Deficit (ML/yr)	-11.7 (max) -1.3 (stnd)	-55.4 (max) -34.8 (stnd)	-25.0 (max) -9.2 (stnd)

The results of the water balance assessment presented above suggest the Site generally operates on a slight water deficit under existing conditions when relying on water generated by stormwater catchments alone.

For the post-development scenario, the above results show a water deficit in dry years due to the water high demand from the RWTP when compared to the quantity of runoff and base flow generated from the site stormwater catchments when annual rainfalls are low.

The 16 ML/year groundwater extraction volume permissible under the Water Access Licence is sufficient to fill the annual water deficit in wet years for both the maximum and standard RWTP processing rates. In dry rainfall years and in average years at the maximum RWTP processing rate, the 16ML/year groundwater extraction substantially reduces the deficit; however, additional sources of water are required to meet the demand.

Additional water will be provided using a combination of the options below during dry years and when required at the maximum RWTP processing rate: Options for the additional water supply may include:

- Using water available under the existing Water Access Licence (WAL);
- Import of water (water tankering) and storage on site;
- A potable water connection (there is currently no potable water connection at the site, however an application with Sydney Water Corporation is currently underway and potable water connection will be in place by February 2023); or
- A regional recycled water connection (from the Upper South Creek Advanced Water Recycling Centre, when complete, which is currently estimated to be operational in 2026[5]).

7.4.1.3. Flow Duration Analysis

A flow duration analysis was undertaken in accordance with the *Technical guidance for achieving Wianamatta-South Creek stormwater management targets* (Wianamatta-South Creek Guidelines, DPE 2022). Existing and proposed scenario MUSIC modelling with an alternate meteorological template for Penrith for existing and proposed scenario was undertaken. Flow duration curves for the Site are shown in Table 7.5with green lines representing the target daily flow and flow exceedance ranges from the guidelines (DPE, 2022). The adopted wash plant processing rate was not found to have a significant impact on overall site flow duration curves and thus only those for the medium wash plant processing rate have been included.

The existing and proposed scenario flow duration curves shown in Figure 7.5 are outside the target ranges (shown as the green lines) due to the quantity of runoff being captured and re- used on site.

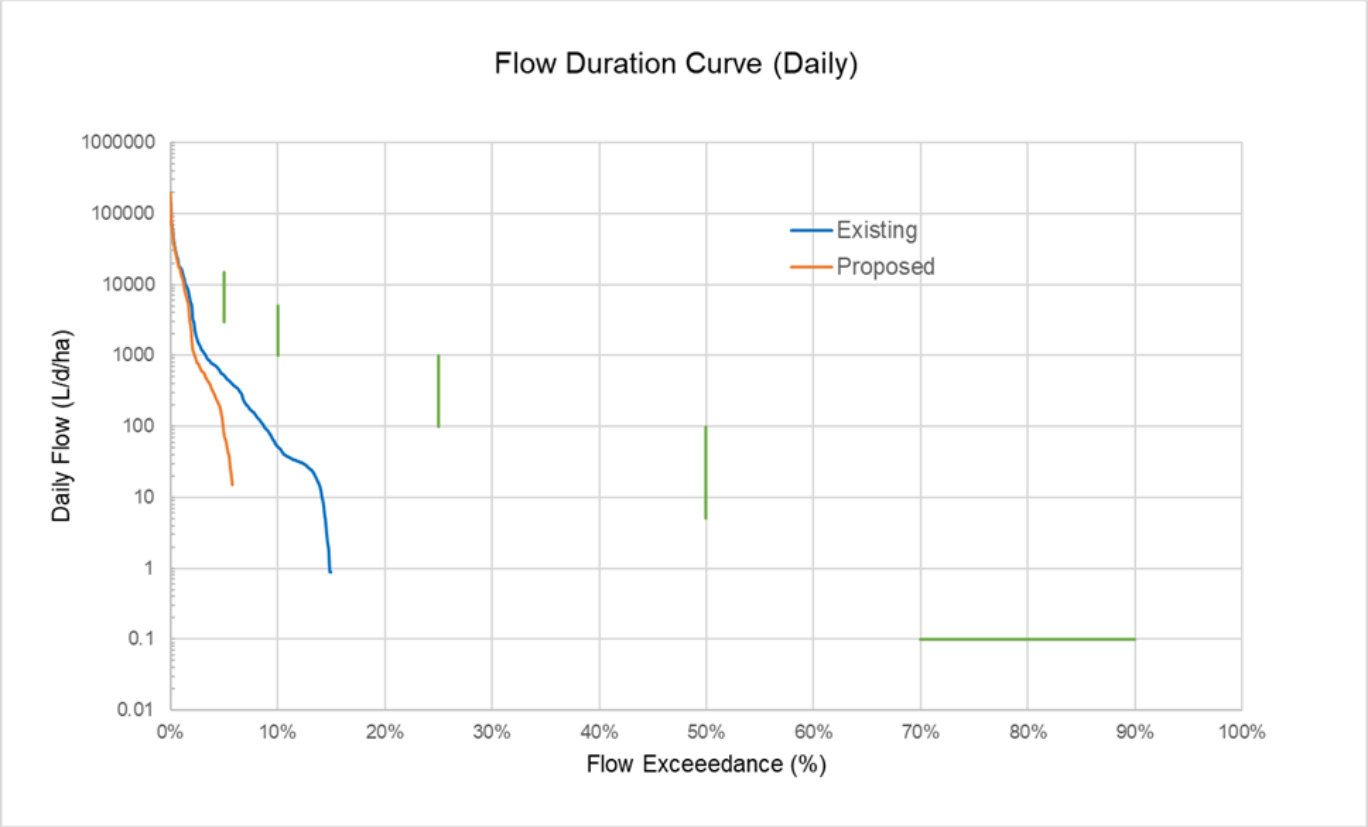
This is not unusual as the Site existing operations are conducted under a contemporary consent and flow duration requirements were not imposed under that consent. Further, the current EPLs in force for the operation effectively restrict discharges to manage the risk of water pollution.

Surface flow events are slightly less frequent in the proposed scenario due to the Dam 1 catchment being directed to the leachate management system (with no assumed overflow to the stormwater system) which reduces the Dam 6 overflow frequency.

The flow duration curves for the Site are typical of pervious catchments draining to first order streams where much of the day-to-day rainfall either infiltrates or evaporates. As such, the existing and proposed flow durations are considered more representative of both pre-developed and fully rehabilitated hydrologic conditions and are not likely to have an adverse impact on the South Creek environmental flow regime.

[5] https://www.sydneywatertalk.com.au/uppersouthcreek, accessed 30 November 2022.

Figure 7.5. Flow Duration Curves.



7.4.1.4. Other Potential Soil and Water Impacts

Given the modification works involve only minor changes to surface water infrastructure and changes to the leachate management system, which is not connected to the groundwater system, the Modification Proposal is not expected to intersect regional groundwater and there is no expected risk of adverse impacts on groundwater associated with the modification.

A number of existing erosion and sediment controls are in place at the site, as detailed in the existing and approved *Soil, Water and Leachate Management Plan* (GHD, 2019b) for the PLRRC. These include a number of sediment basins/dams as shown in Figure 7.3 that are managed for adequate sediment storage volumes. Despite this, it is recommended that silt fencing is installed on the downslope side of the proposed treatment plants during construction to minimise the sediment loading on Dam 5 and Dam 6 as well as on their associated upstream swales.

7.4.1.5. Water Quality Monitoring

EPL 20814 includes a number of water and leachate monitoring points and Bingo Industries publishes groundwater and surface water monitoring data required by their EPLs on their website. Details of existing soil, water and leachate management practices associated with the PLRRC operations can be found in the existing and approved *Soil, Water and Leachate Management Plan* (GHD, 2019). The existing consent (MP09_0074) contains a number of conditions with regards to the environmental management of the project.

Note that the current SWLMP (GHD, 2019b) does not align exactly with the current version of EPL 20814 (dated 20 August 2019) with regards to water monitoring requirements. For example, SWLMP (GHD, 2019b) indicates the surface water monitoring site frequency should be as follows:

> *Monthly during any pumped discharge and for overflow discharges also monthly within 24 hours after detection of an overflow discharge (during operational hours) whilst the overflow discharge occurs*

However, in EPL 20814 the frequency of surface water monitoring is required to be:

> *If discharges occur, the collection of samples within 24 hours of discharge and at a minimum of weekly intervals during discharge*

Once the SWLMP (GHD, 2019b) has been revised to align with the water monitoring requirements in EPL 20814, then no other changes are considered to be required to the surface water and groundwater monitoring requirements in the SWLMP due to the Modification Proposal.

There are no construction phase impacts to water quality monitoring other than short and temporary disruptions to required monitoring if Dam 1 is taken offline for a period of time during construction.

7.4.2. Mitigation Measures

Table 7.17 lists a set of mitigation measures recommended in addition to the already required to be implemented.

Table 7.17. Soil and water management mitigation measures.

No.	Control Measures and Safeguards	Timing	Responsibility
SW1	Update of the PLRRC Soil, Water and Leachate Management Plan to suit the Modification Proposal. This will include the nomination of suitable controls to manage construction and operational phase soil and water impacts	Construction	Site Manager
SW2	Temporary management of stormwater and leachate on site by other means to prevent pollution when Dam 1 is taken offline to construct and line the new leachate dam	Construction	Site Manager
SW3	Water level monitoring of Dam 1 and tankering or discharge to sewer when the dam exceeds 75% of maximum capacity in order to prevent leachate overflow events	Operations	Site Manager

7.4.3. Conclusion

The SWIA has confirmed that water quality and quantity from operation and construction of the Modification Proposal will comply with relevant legislative and regulatory guidelines.

A number of assessments have been undertaken of the performance of existing surface water management measures at the PLRRC including identifying any water-related constraints associated with the Modification Proposal.

The SWIA has concluded that the Modification Proposal is not constrained by any water quality or groundwater issues.

Water balance modelling revealed additional water sources will be required for the RWTP operation during dry years and also in average rainfall years when the plant is operating at maximum capacity.

7.5. Hazard and Risk

A Preliminary Hazard Analysis and Environmental Risk Assessment has been prepared to identify key potential impacts of the Modification Proposal, as well as potentially offensive or hazardous issues that need to be considered as part of the modification application process.

The assessment has been performed according to AS/NZS ISO 31000: 2009 Risk Management – Principles and Guidelines and the Preliminary Hazardous Analysis has been informed by the *Hazardous and Offensive Development Application Guidelines - Applying SEPP 33*[6]. We have also considered the following guidelines published by the NSW Department of Planning in 2011:

- *Hazardous Industry Planning Advisory Paper No 2 - Fire Safety Study Guidelines*[7];
- *Hazardous Industry Planning Advisory Paper No 3 - Risk Assessment*[8];
- *Hazardous Industry Planning Advisory Paper No 4 - Risk Criteria for Land Use Safety Planning*; and
- *Hazardous Industry Planning Advisory Paper No 6 - Hazard Analysis*[9] .

7.5.1. Methodology

The assessment has been performed to identify the risks posed to people, property and the environment, and to identify potential hazardous and offensive issues that need to be addressed as part of the modification to the development to ensure compliance with SEPP (Resilience and Hazards). The assessment also considers off-site risks to people, property and the environment (in the presence of controls) arising from atypical and abnormal hazardous events and conditions (i.e. equipment failure, operator error and external events). The hazard treatment measures that have been proposed assist in producing a 'low' level of risk in accordance with the risk acceptance criteria.

The methodology used to inform preliminary hazard analysis and environmental risk assessment has included the following steps:

- Identify and screen the hazards associated with the proposed development;
- Examine the maximum reasonable consequence of identified events;
- Qualitatively estimate the likelihood of events;
- Proposed risk treatment measures;
- Qualitatively assess risks to the environment, members of the public and their property arising from atypical and abnormal events and compare these to applicable qualitative criteria;
- Recommend further risk treatment measures if considered warranted; and

[6] NSW Department of Planning (2011). Hazardous and Offensive Development Application Guidelines - Applying SEPP 33. Published by the NSW Department of Planning. Internet publication: http://www.planning.nsw.gov.au/en/Policy-and-Legislation/~/media/3609822D91344221BA542D764921CFC6.ashx

[7] NSW Department of Planning (2011). Hazardous Industry Planning Advisory Paper No 2 - Fire Safety Study Guidelines. Published by the NSW Department of Planning. Internet publication: http://www.planning.nsw.gov.au/Policy-and-Legislation/~/media/CCC734E980C4427DB95D319DF073C41A.ashx

[8] NSW Department of Planning (2011). Hazardous and Offensive Development Application Guidelines- Risk Criteria for Land Use Safety Planning. Published by NSW Department of Planning. Internet publication: http://www.planning.nsw.gov.au/Policy-and-Legislation/~/media/0D39F08E7889409BBA1FA88D5FB859FD.ashx

[9] NSW Department of Planning (2011). Hazardous Industry Planning Advisory Paper No 6 - Hazard Analysis. Published by NSW Department of Planning. Internet publication: http://www.planning.nsw.gov.au/Policy-and-Legislation/~/media/3ACC37BE3EFE4BAAB3EBA5872AFBA8BD.ashx

- Qualitatively determine the residual risk assuming the implementation of the risk treatment measures.

It is important to note that this preliminary hazard analysis and environmental risk assessment has been undertaken at an early stage of the Modification Proposal to help inform key issues to be considered in the Modification Report. All hazards need to be identified, and an assessment of the resultant risk levels on a cumulative basis is also undertaken as part of the study.

7.5.1.1. Risk Management

The environmental risk assessment has been informed by AS/NZ 31000: 2009 *Risk Management Principles and Guidelines* and *Hazardous Industry Planning Advisory Paper No 3 - Risk Assessment* (NSW Department of Planning, 2011). The risk management process has been informed by the following elements:

- Establish the context;
- Identify the risks;
- Analyse the risks;
- Evaluate the risks; and
- Treat risks.

7.5.1.2. Risk Criteria

The following principles have been adopted to identify and assess risk in this study. This has been informed by the *Hazardous Industry Planning Advisory Paper No. 4 – Risk Criteria for Land Use Safety Planning*[10].

- The avoidance of all avoidable risks;
- The risk from a major hazard should be reduced wherever practicable, even where the likelihood of exposure is low;
- The effects of significant events should wherever possible be contained within the site boundary; and
- Where the risk from an existing installation is already high, further development should not pose any incremental risk.

7.5.1.3. Qualitative measurement of consequence, likelihood and risk

To undertake a qualitative risk assessment, it is useful to describe the levels of consequence of a particular event, and the likelihood or probability of such an event occurring. Risk assessment criteria have been developed in AS/NZS ISO 31000: 2009 which allows the risk assessor to develop risk criteria during the establishment of the context.

In according with AS/NZS ISO 31000: 2009, the following tables have been reviewed as part of establishing the context of the proposed development. These tables were considered to be consistent with the specific objectives of the preliminary hazard analysis and environmental risk assessment.

[10] NSW Department of Planning, 2011, *Hazardous Industry Planning Advisory Paper No. 4*, internet publication: http://www.planning.nsw.gov.au/~/media/Files/DPE/Other/hazardous-industry-planning-advisory-paper-no-4-risk-criteria-for-land-use-safety-planning-2011-01.ashx

Table 7.18. Qualitative measures of probability.

Event	Likelihood	Description
A	Almost certain	Happens often
B	Likely	Could easily happen
C	Possible	Could happen and has occurred elsewhere
D	Unlikely	Hasn't happened yet but could
E	Rare	Conceivable, but only in extreme circumstances

Table 7.19. Qualitative measures of maximum reasonable consequence.

Event	People	Environment	Asset / Production
1	Multiple fatalities	Extreme environmental harm (e.g. widespread catastrophic impact on environmental values of an area)	More than $1B loss or production delay
2	Permanent total disabilities, single fatality	Major environmental harm (e.g. widespread substantial impact on environmental values of an area)	$100M to $1B or production delay
3	Minor injury or health effects (e.g. major lost workday case / permanent disability)	Serious environmental harm (e.g. widespread and considerable impact on environmental values of an area)	$5M - $100M loss or production delay
4	Minor injury or health effects (e.g. restricted work or minor lost workday case)	Material environmental harm (e.g. localised and considerable impact on environmental values of an area)	$250K to $5M loss or production delay
5	Slight injury or health effects (e.g. first aid / minor medical treatment needed)	Minimum environmental harm (e.g. minor impact on environmental values of an area)	Less than $250K or production delay

Combining the probability and consequence tables, Table 7.20 provides a qualitative risk analysis matrix to assess risk levels.

Table 7.20. Qualitative risk analysis matrix used in this preliminary hazard analysis and environmental risk assessment.

		Probability[1]				
		A	B	C	D	E
Consequence	1	1 (H)	2 (H)	4 (H)	7 (M)	11 (M)
	2	3 (H)	5 (H)	8 (M)	12 (M)	16 (L)
	3	6 (H)	9 (M)	13 (M)	17 (L)	20 (L)
	4	10 (M)	14 (M)	18 (L)	21 (L)	23 (L)
	5	15 (M)	19 (L)	22 (L)	24 (L)	25 (L)

[1] Legend – L: low; M: Moderate; H: high; Risk numbering: 1 – highest; 25 – lowest risk. Colour coding: Green: tolerable risk; orange: ALARP – as low as reasonably practicable; red: intolerable risk.

Risk acceptance criteria for the proposed development have been formulated following consideration of the *Hazardous Industry Planning Advisory Paper No 4 - Risk Criteria for Land Use Safety Planning* (NSW Department of Planning and Environment, 2011d) and AS/NZS ISO 31000 2009 – *Risk Management Principles and Guidelines.*

In assessing the tolerability of risk from potentially hazardous development, both qualitative and quantitative aspects need to be considered. Relevant general principles considered in this study are documented in the *Hazardous Industry Planning Advisory Paper No. 4 – Risk Criteria for Land Use Safety Planning*[11].

7.5.2. Existing Environment

The Modification Report is located at 123-179 Patons Lane, Orchard Hills (Lot 40, DP 738126). A full site description and a detailed overview of the Modification Proposal is given in Section 3.

7.5.3. Impact Assessment

7.5.3.1. Hazardous materials stored on-site

The NSW Department of Planning (2011) in the SEPP (Resilience and Hazards) sets out a process for screening potentially hazardous materials that are stored on site as part of a proposed development.

Potential risk typically of holding certain types of hazardous materials on site depends on:

- The properties of the substance(s) being handled or stored;
- The conditions of storage or use;
- The quantity involved;
- The location with respect to the site boundary; and
- The surrounding land use.

Risk screening needs to be undertaken as part of the SEPP 33 guidelines based on an estimate of the consequences of fire, explosion or toxic release from material(s) being handled. It takes into account information from the proponent on the properties of the materials, quantity, type of storage or use, and location. A risk screening analysis in Table 7.21 summarises total storage limits for the proposed maximum amount of dangerous goods to be stored on the Site.

Storage of treatment plant chemicals would be in intermediate bulk containers (IBCs) in a bunded area or in self bunded tanks. These volumes are the max amount that would be stored on site at any one time. The following additional chemicals will be required under the Modification Proposal and have been assessed in Table 7.21 below with reference to the General Screening Threshold Quantities (Table 3) in *Applying SEPP 33 Guidelines* (2011).

RWTP:

- Coagulant: Ferric Chloride 40% or aluminium polychloride (approximately 11 kL);
- Flocculant: Magnafloc 4110 (BASF) (approximately 10,200 kg);
- Polymer: PolyDADMAC) (approximately 10,000 kg); and
- Disinfectant: Sodium Hypochlorite 12.5% Solution (approximately 10 kL)

LTP:

- Antifoam- 200 L;
- Flocculant- 200 kg;
- Sucrose / Molases- 2,000 L;
- Phosphoric Acid- 2,000 L;
- Caustic- 2,000 L; and
- Coagulant-1,000L.

[11] NSW Department of Planning, 2011, *Hazardous Industry Planning Advisory Paper No. 4*, internet publication: http://www.planning.nsw.gov.au/~/media/Files/DPE/Other/hazardous-industry-planning-advisory-paper-no-4-risk-criteria-for-land-use-safety-planning-2011-01.ashx

Table 7.21. Relevant SEPP 33 chemical storage limits and risk screening.

Name	DG Class	Packing Group	Max Onsite Storage	Maximum Onsite Tonnes	Threshold Limit[1]	Meets Threshold Requirement?
Ferric Chloride 40% (or aluminium polychloride) (Coagulant)	8	III	11,000 L	16.5	50 tonnes	Yes
Magnafloc 4110 (BASF) (Flocculant)	NA	NA	10,200 kg	NA	Not classified under Dangerous Goods	NA
PolyDADMAC (Polymer)	NA	NA	10,000 kg	NA	Not classified under Dangerous Goods	NA
Sodium Hypochlorite 12.5% Solution (Disinfectant)	8	II	10,000 L	12.2	25 tonnes	Yes
Antifoam	NA	NA	200 L	NA	– Not classified under Dangerous Goods	NA
Sucrose / Molasses	NA	NA	2,000 L	NA	– Not classified under Dangerous Goods	NA
Phosphoric acid, solution	8	III	2,000 L	3.6	50 tonnes	Yes
Sodium hydroxide (Caustic), solution	8	III	2,000 L	3.0	50 tonnes	Yes

Note 1: Reference Table 3: General Screening Threshold Quantities in Applying SEPP 33..
Note 2: The specific gravity of Ferric Chloride is approximately 1.5.
Note 3: The specific gravity of hypochlorite solution is approximately 1.22.
Note 4: The specific gravity of phosphoric acid is approximately 1.8.
Note 5: The specific gravity of sodium hydroxide is approximately 1.5.

All other hazardous materials and liquids used for plant and equipment including diesel, hydraulic oil, engine oil, gear oil, transmission oil, brake fluid, grease drum cartridges, degreasers and engine coolant are stored at in the existing maintenance workshop on the Site. This existing workshop is a bunded area and will also be used for maintenance of onsite plant/equipment.

7.5.4. Further hazard identification, scenarios, consequence, likelihood analysis and risk assessment

To help understand further hazards possible as part of the proposed development, a series of potential worst case scenarios have been assessed to determine possible consequences, likelihood and risk. The NSW Department of Planning's (2011) *Hazardous Industry Planning Advisory Paper No 6 - Hazard Analysis* has been used to assist in guiding this analysis.

As per the above guidelines, a qualitative assessment of the impacts of the largest possible event on people, plant and the environment has been conducted. The worst-case scenarios reflect any foreseeable factors that could exacerbate the severity of an accident, including abnormal process conditions, out of hours manning levels, and the potential for control measures to be disabled or rendered inoperable by the accident.

The worst case scenarios we have assessed include the following:

- Odour or noise from the RWTP or the LTP (or associated equipment) leading to staff health problems or offsite odour or noise impacts;
- Control system, pumps failure, software or operator failures leading to failure and/or leakage from the treatment plant(s) and odour, onsite staff health effects, or offsite environmental impacts;
- Slips or falls working from heights on plant / equipment and temporary or permanent injury or death;
- Possible collision of delivery vehicles with other on-site vehicles through driver error, or pedestrian, resulting in possible fire or death;
- Vehicle collision on entry to the Site, resulting in fire and possible death;
- Leaks / spills on vehicle entry to the Site, with potential impacts on stormwater and fire risk;
- Vehicle collision / damage causes spill / leak of hazardous material;
- Vehicle theft and malicious damage, leading to equipment failure and injury to person(s);
- Leaks / spills of treatment plant chemicals, with potential impacts on stormwater and human health risk;
- Vehicle theft and malicious damage in the facility, leading to equipment failure and injury to person(s);
- Vehicle collision between delivery vehicles with other on-site vehicles through driver error, or pedestrian, resulting in possible fire or death near the treatment plants;
- Leak / spill from vehicle collision with potential impacts on stormwater and fire risk; and
- Fire onsite due to spark or flame.

Prevention and treatment measures to reduce the likelihood and resulting consequences from these worst-case scenarios are mapped out in Table 7.22 below. A risk rating category has been prepared to understand the significance of these risks – on the environment and human health. The risk ratings estimated as part of the qualitative analysis are specified after implementation of the risk prevention, treatment and detection measures.

As a result of this analysis, it is suggested that the worst-case scenarios modelled with risk prevention, treatment and detection measures are all moderate or low risks. All risks are low except those that involve potential offsite amenity impacts with regards to water quality, noise or odour.

The proposed project is not considered a potentially hazardous development as per Figure 11 of SEPP33 Guidelines, so no further Preliminary Hazard Analysis or Multi-Level Risk Assessment has been performed.

However, we have identified a number of moderate risks to the environment, people and property, and these have been evaluated in this Modification Report or will be evaluated further. These risks are described in Section 7.5.5.

Table 7.22. Hazard identification, scenario, consequence, prevention/treatment measures and risk rating table.

Facility / event	Cause / comment	Possible scenarios, results & consequences	Prevention, Treatment Measures and Detection Protection Required	Likelihood	Consequence	Risk rating and category (after treatment measures)[1]
Control system, pumps failure, software or operator failures	Control system, pumps failure, software or operator failures leading to failure and/or leakage from the treatment plant(s) and onsite staff health effects, or offsite environmental impacts	Staff contact with hazardous chemicals / faulty plant/equipment leading to health impacts or injury or offsite noise, water quality or odour impacts.	• Ensure staff training and compliance with operational procedures • Regular equipment maintenance and safety inspections • Emergency Procedures and Pollution Incident Response Plan • Fire and Emergency Management Plan • Contact emergency services (NSW Fire Service) • Environmental management plans • Work health and safety procedures • Properly qualified and trained operators • Spill response equipment and training	Possible (C)	3	13 (Med risk)
Staff or operator failures during maintenance or operations	Slips or falls working from heights on plant / equipment and temporary or	Staff contact with hazardous chemicals / faulty plant/equipment leading to health impacts or injury or offsite noise,	• Correct operational procedures are implemented. • Regular staff training and compliance with operational procedures	Possible (C)	3	13 (Med risk)

Facility / event	Cause / comment	Possible scenarios, results & consequences	Prevention, Treatment Measures and Detection Protection Required	Likelihood	Consequence	Risk rating and category (after treatment measures)[1]
	permanent injury or death	water quality or odour impacts.	• Regular equipment maintenance, monitoring and safety inspections and checks • Emergency Procedures and Pollution Incident Response Plan • Fire and Emergency Management Plan • Environmental management plans • Work health and safety plan			
Vehicle collision	Possible collision of delivery vehicles with other on-site vehicles through driver error, or pedestrian, resulting in possible fire or death	Fire possible at entrance or outside of Modification Report, potentially spreading with flammable liquid. Possible impacts on stormwater from discharge of fire water. Death or injury to personnel	• Ensure vehicle speed limits and regular driver education • Firefighting equipment • Emergency Procedures and Pollution Incident Response Plan • Fire and Emergency Management Plan • Environmental management plans • Traffic management plans / • Work health and safety plan • Operator and driver training • Spill response equipment and	Unlikely (D)	3	17 (Low risk)

Facility / event	Cause / comment	Possible scenarios, results & consequences	Prevention, Treatment Measures and Detection Protection Required	Likelihood	Consequence	Risk rating and category (after treatment measures)[1]
			training • Contact emergency services (NSW Fire Service)			
Theft and/or malicious intent	Vehicle theft and malicious damage, leading to equipment failure and injury to person(s);	Collision causes leakage of hazardous material, vehicle fuel or oil onto handstand and possible stormwater impacts and a fire risk.	• Ensure Site is secured and monitored • Ensure vehicle speed limits and regular driver education • Firefighting equipment • Emergency Procedures and Pollution Incident Response Plan • Fire and Emergency Management Plan • Environmental management plans • Traffic management plan • Work health and safety plan • Operator and driver training • Spill response equipment and training • Emergency response • Communications • Spill containment and sweeping of hardstand • Contact emergency services	Possible (C)	5	22 (Low risk)

Facility / event	Cause / comment	Possible scenarios, results & consequences	Prevention, Treatment Measures and Detection Protection Required	Likelihood	Consequence	Risk rating and category (after treatment measures)[1]
			(NSW Fire Service)			
Fire	Fire caused by ignition source (e.g. spark)	Flammable materials (e.g. solvents, oils) catch fire due to spark from cigarette or hot work)	• Ensure strict non-smoking policy is enforced at all times • Follow correct procedures for full containment of any hot work • Staff training on correct storage and handling of flammable liquids • Firefighting equipment • Emergency Procedures and Pollution Incident Response Plan • Fire and Emergency Management Plan • Environmental management plans • Traffic management plans • Work health and safety plan • Operator and driver training • Spill response equipment and training • Contact emergency services (NSW Fire Service)	Possible (C)	4	18 (Low risk)

Risk rankings: 1, highest risk; 25, lowest risk. Colour coding: Green: tolerable risk; orange: ALARP – as low as reasonably practicable; red: intolerable risk.

7.5.5. Risks to the environment, people and property to be investigated in this Modification Report

The list of issues below (Table 7.23) have all been classified as moderate risk according to the risk assessment done. All risks that have been identified as low risk are within acceptable limits and will be controlled through the mitigation measures as defined in Section 9.

Table 7.23. Key risks to the environment, people and property to be considered in addition to the SEAR's requirements as part of this Modification Report.

Principal issue or risk	Description	Study to assess issue or risk
Odour /Noise	Failure of control systems or operator error leading chemical or leachate leakage, including potential odour impacts, noise or human health impacts	Air Quality Study (Appendix D) Noise and Vibration Study (Appendix E)
Water quality	Leak or discharge of hazardous materials, treatment plant chemicals or leachate leading to offsite impacts.	Water balance and soil and water impact assessment (Appendix F)

7.5.6. Mitigation Measures

Additional mitigation measures as recommended in the water quality assessment (Appendix F), and as summarised in this Modification Report, will be implemented.

7.5.7. Conclusion

The Modification Proposal is not considered a potentially hazardous development as per Figure 11 of SEPP33, so no further Preliminary Hazard Analysis or Multi-Level Risk Assessment has been performed.

7.6. Visual Impact Assessment

7.6.1. Methodology

This section provides a review of the Visual Assessment (September 2011) prepared by Richard Lamb & Associates and Dellara Pty Ltd for the original approval (MP09_0074). The results of the 2011 visual assessment have been assessed against the Modification Proposal.

Worth noting is that the original approval (MP09_0074) resulted in an increase in the scenic quality of the Site and surrounding areas primarily from the initial screening (landscape bunding) of all extraction and recycling activities, and from recontouring and rehabilitating the perimeter faces. This changed the Site from the appearance of a derelict quarry to one compatible with the surrounding rural lands.

The Land and Environment Court Judgement (July 2012) notes that the visual assessment Dr Lamb prepared included photomontages to illustrate the visual impacts of the proposal at different stages from five vantage points, including positions in Luddenham Road and the Vines Estate. The visual assessment was accepted to represent the likely visual impact of the original proposal.

7.6.2. Existing Environment

The landscape around the Site is largely rural with an isolated area of rural residential to the north (The Vines Estate). The land to the immediate north, east and south is rural with a mixture of grazing land and pasture, clustered dwellings and outbuildings, infrastructure such as the transmission lines and lattice towers, and more intensive agricultural activities. Areas of native vegetation are located within road corridors and along creek lines, fencing and small farms dams.

The Vines Estate sits approximately 500m from the boundary of the Site. The gentle internal topography of the estate largely reduces or prevents views of the Site. The original quarry was in existence prior to the subdivision and development of the Vines Estate and therefore has been part of the existing visual context of the estate since its inception.

To the west of the Site boundary are lands of dense native vegetation owned by the Commonwealth and managed by the Department of Defence.

East of Luddenham and Mamre Roads are residential developments associated with the established suburbs of St Clair and Erskine Park, the margins at approximately 2 to 2.5km from the Project Site.

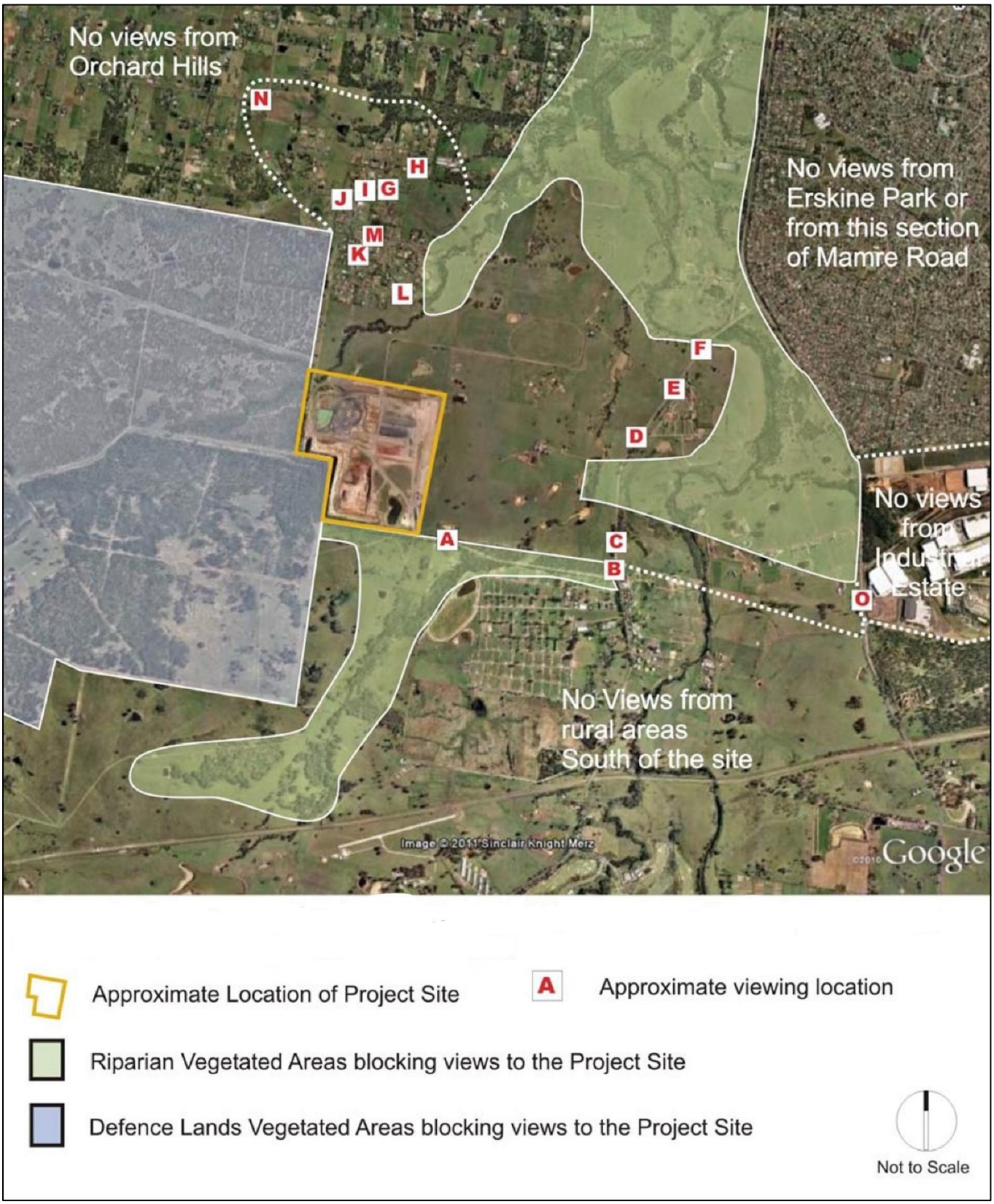
Acoustic mounds and existing bund walls around the perimeter of the operational areas provide noise protection and visual screening from the Site.

The recycling and re-processing area is located within the southwestern corner of the Site and accessed from the Patons Lane entrance. The area is located at levels (between 45 and 49m AHD) well below that of the view lines as assessed in the 2011 visual assessment, and importantly is located at the furthest distance to surrounding neighbours to the north and east.

These earth mounds are constructed to a maximum elevation of 57m AHD on the northern and eastern sides of the Recycling and Re-processing Area.

Figure 7.6 is taken from the 2011 visual assessment and is still applicable today as no significant landscape changes have occurred since the report was developed.

Figure 7.6. Representative public domain viewing locations and landscape elements (Source: Visual Assessment (September 2011) Lamb & Associates, Dellara Pty Ltd).



7.6.3. Impact Assessment

The key elements of the Modification Proposal are detailed in Section 3 of this Modification Report and the conceptual site plans can be found in Appendix B. The proposed elements of the integrated water treatment management system upgrades would include an additional new raw leachate dam, new contact water dam, Leachate Treatment Plant (LTP), Recycling Water Treatment Plant (RWTP) infrastructure to support the resource recovery activities, and a future connection to sewer (see Figure 1.3).

The existing approved building in the recycling area was designed/approved to be 9m high above the ground level, which is equal to the height of the bund (57m AHD).

The proposed RWTP includes an elevated filter press structure (see Figure 3.3) that is 13.57m high above the existing ground levels. Ground level sits at approximately 48m AHD within the recycling area. This puts the top of the structure at approximately 61.57m AHD. The surrounding landscape bund height (top of bund) surrounding the recycling area sits at 57m AHD. Therefore, the RWTP will sit at approximately 4.5m above the bund height.

There are few public domain viewing places from which the Site is visible and none with close views. There are no public recreation areas or parks from which the Site is significantly visible.

Public locations from which the Site is visible are restricted to a small number of local and sub-regional roads. These include views from a small section of Luddenham Road, a partial view at considerable distance from a section of Mamre Road and from parts of some of the streets within The Vines Estate such as Muscatel Way and Cabernet Circuit. There are also views from the elevated location at the intersection of Homestead and Calverts Roads, however the road makes a 90 degree turn at this location and a driver's view would not be focused on the direction of the Project Site. In addition, there is no public footpath along the road, no place to either conveniently or safely park a vehicle so as to take in the view, nor anything that indicates or invites a person to do so.

The number of external viewing locations are restricted as a result of the screening effects of intervening vegetation and existing buildings. The external landscape bund faces provide acoustic and visual protection when viewed from external locations such as from The Vines Estate. There would be little or no visibility of the Modification Proposal activities from The Vines Estate or other areas of the surrounding landscape.

Additional vegetation growth on the landscape bunds will become the only permanent feature of development on the Site in most views.

The closest private residence is over 500m away to the north from the nearest boundary of the Site, and over 1km away from the areas of development in the Site.

There are a relatively small number of individual locations within the visual catchment that could have visibility to Site activities following establishment of the landscaping bunds and the recycling area.

It is noted that none of the private property, particularly private dwellings and the recreational spaces associated with them (if they have views of the development) were rated as high sensitivity viewing places by the 2011 visual assessment. The overall visual sensitivity of the Site in relation to the public domain was judged in the original assessment for MP09_0074 to be Low on the scale from low to high (low end of the range). The scenic character of the immediate locality of the Site was considered to have a scenic quality rating of Moderate on a scale from high to low (ie, at the mid-range of the scale), when judged within a range of landscapes.

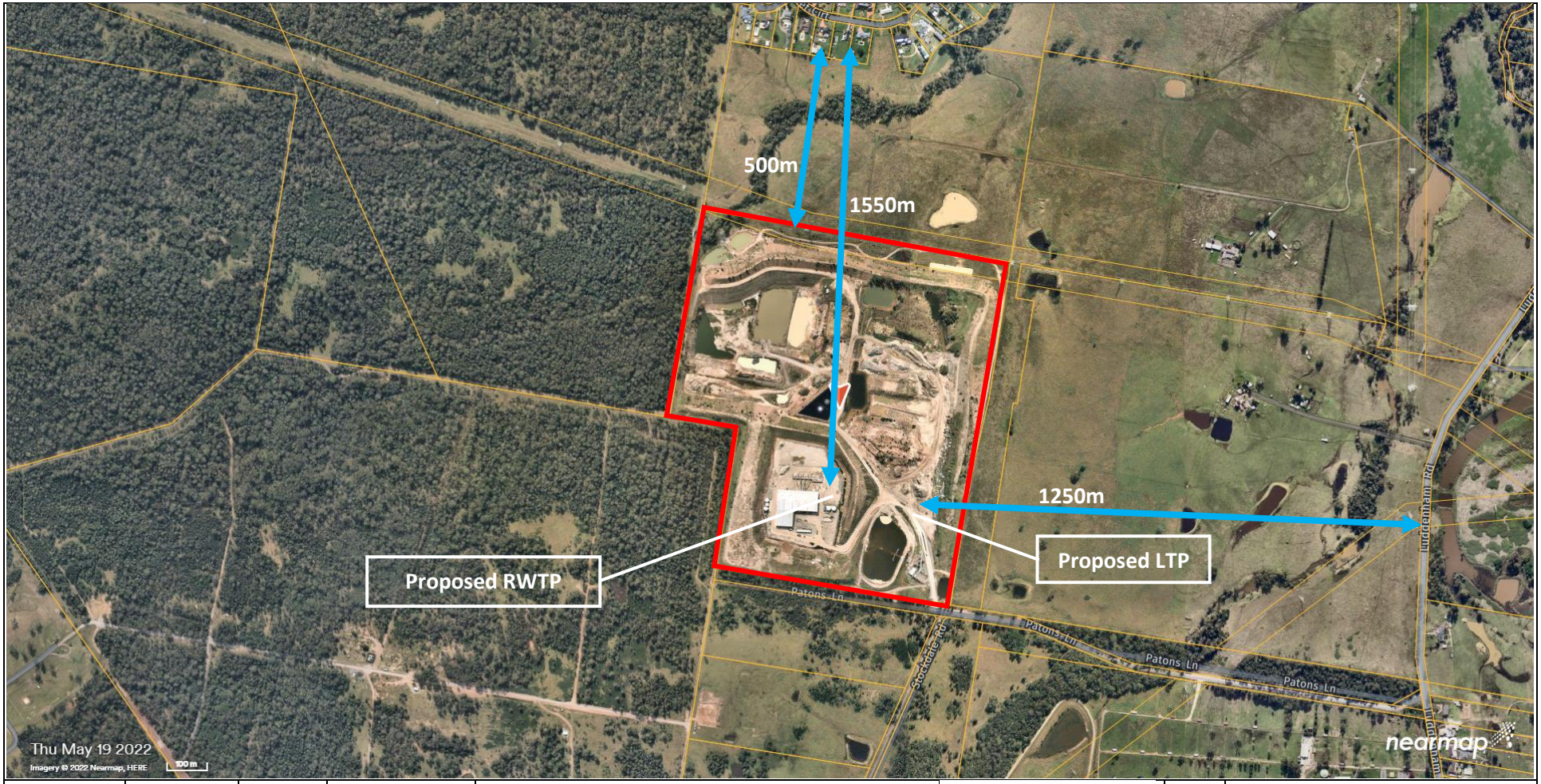
There are few residences at middle and distant viewing distances that have some visibility of the Site, and these are mostly isolated rural and semi-rural properties.

Figure 7.7 illustrates the large distance between the Site and the nearest dwellings and public vantage points. Figure 7.8 shows the proposed location of the RWTP and Figure 7.9 shows the proposed location of the LTP. Both illustrate the large landscape bunds in place at the PLRRC.

The height of the proposed structures within the recycling area are marginally taller than existing building, plant and equipment. However, considering the distance to the nearest public spaces are over 1km, and given the existing landscape bunding surrounding the PLRRC and the recycling area, the overall impact of these additions are considered minor.

The Modification Proposal would not significantly change the visibility of the PLRRC or increase the visual impacts of the operations on the Site.

Figure 7.7. Distances (in blue) from the nearest dwellings and public vantage points to the Modification Proposal development areas.



Date	Revision	Drawn By	Site description
07/11/22	Revision A	E. Larson	123-179 Patons Lane, Orchard Hills (Lot 40 DP 738126)

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Client	SRC Operations Pty Ltd
Project	Patons Lane Modification Proposal
Title	Visual assessment
Scale	See map
Source	Nearmap

Figure 7.8. Proposed location of the RWTP, showing existing landscape bund behind.

Figure 7.9. Proposed location of the LTP, showing the existing landscape bund behind (yellow outline).

7.6.4. Lighting

The project does not seek extension of operational activity hours. The existing consent (MP09_0074) includes a condition (Condition 44) that provides for any lighting associated with the Modification Report as follows:

> *The Proponent shall ensure that the lighting associated with the Project:*
>
> *a) complies with the latest version of AS 4282(INT) - Control of Obtrusive Effects of Outdoor Lighting; and*
> *b) is mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network.*

Therefor no further assessment of lighting is required.

7.6.5. Mitigation Measures

No additional mitigation measures are recommended. The existing consent conditions are considered adequate for the Modification Proposal. These include the abovementioned Condition 44, and Condition 24 regarding visual amenity (No stockpile of any material shall exceed RL 54m AHD).

7.6.6. Conclusion

The Modification Proposal would not change the final landform of the Site, a gently undulating and sloping pastoral landscape compatible within its existing visual setting.

Mature woodland and riparian vegetation on the northern and eastern perimeter faces are retained, and native vegetation will continue to be managed over the life of the Modification Report to encourage the establishment of permanent Cumberland Plain Woodland species and the longevity of the vegetation.

No unreasonable visual or amenity impacts are expected from the Modification Proposal. There is adequate visual protection and enhancement of the PRLLC as a result of the existing landscape bunds, existing regional landscape consisting of native vegetation, and the existing consent condition strategies to further reduce visual impacts.

The Modification Proposal will have an appearance or visual character similar to the approved project, and would not significantly detract from scenic qualities of this part of Orchard Hills. The Modification Proposal is considered compatible with the surrounding predominantly rural landscapes. When considered together, the overall visual impacts of the Modification Proposal are considered to be low to non-existent.

7.7. Traffic

7.7.1. Methodology

This section provides a review of the Traffic Assessment (February 2010) prepared by Traffic Solutions Pty Ltd for the original approval (MP09_0074). The results of the 2010 traffic assessment have been assessed against the Modification Proposal.

Estimates of traffic types and volumes, including swept paths, have also been assessed for the Modification Proposal.

7.7.2. Existing Environment

Mamre Road is classified as a State Road under the RTA's "Sydney and Surrounding State and Regional Roads plan – 1993" and Luddenham Road is classified a Regional Road. Patons Lane serves a local road function.

A review of the Authority's approved B-double routes plans shows that Luddenham Road and Patons Lane are not approved B-double roads at present.

The main features of the existing traffic controls in the vicinity of the Site are as follows.

- Mamre Road and Luddenham Road generally have an 80 km/h speed limit in the vicinity of this area, however, Luddenham Road, reduces to 60 km/h in the vicinity of Patons Lane;
- The intersection of Mamre Road and Luddenham Road is controlled by seagull Linemarking;
- The intersection of Luddenham Road and Patons Road has been reconstructed to provide a right turn treatment with a minor holding area in Luddenham Road for right-turning vehicles entering Patons Lane. Stop restrictions exist in Patons Lane at the intersection;
- Mamre Road and Luddenham Road generally have double white centre line marking, however, intermittent overtaking areas are provided;
- Patons Lane has double white centreline provided approaching its intersection with Luddenham Road; and
- Mamre Road and Luddenham Road provide one lane in each direction in the vicinity of the Site.

There are no restrictions on parking in the vicinity of the Site.

7.7.3. Impact Assessment

The PLRRC operates under the following existing and approved plans:

- Construction Traffic Management Plan prepared by Traffic Solutions P/l (July 2017);
- Traffic Noise Management Plan prepared by Arcadis (July 2019); and
- Transport Code of Conduct.

The Transport Code of Conduct must be signed by all drivers (construction and operation) acknowledging that there will be penalties for offending and reoffending drivers.

The management of the PLRRC expects all heavy vehicle contractors and heavy vehicle drivers delivering or collecting to and from the Site to abide by the Transport Code of Conduct which has a particular focus on minimising traffic impacts on neighbours, especially in relation to noise.

The Modification Proposal is estimated to produce the following construction traffic:

- Up to approximately 80 construction light vehicles attending the Site during construction (20FTE and 60 PTE); and
- Up to a nominal 20 heavy vehicle deliveries per construction work day.

Vehicle movements associated with construction of the Modification Proposal would be temporary and short term. It is not anticipated that these movements associated result in more than a minimal impact to the local and regional road network. During construction, traffic movements would be managed through a construction environmental management plan.

The Modification Proposal is estimated to produce the following additional operational traffic:

- Up to 6 heavy vehicles per day (0.5 trucks per hour given a 11 hr working day Mon-Fri) to transport loads of water to the Site during dry conditions to meet water demand shortfalls.

As identified in the soil and water assessment prepared by Rhelm (Appendix F), during a dry year with lower than average rainfall, additional water may be required to top-up captured surface water for use in Site activities. A potable water connection is not currently available at the Site but is anticipated to be available in 2023.

Table 4-15 of the SWIA report (Appendix F) notes that in a worst case dry year, there is a deficit of 55.4 ML of water to operate the wash plant. The existing water access licence covers 16ML, leaving a shortfall of 39.4 ML/yr. If water is tankered via truck (e.g. using 20,000 L/semi trailer tanker), and the RWTP operates a maximum of 6 days per week, this is equivalent to the plant operating 312 days per year.

To ensure water can continue to be provided to the Site if required an additional 6 heavy vehicle movements per day have been included in the Modification Proposal. This would increase the daily heavy vehicle limit within the approval from 250 to 256. These additional vehicles would only be required for short periods of time, during a dry year when rainfall frequencies are not sufficient to supply on-site water demand. Additionally, this would only be required if a potable water connection or alternative options are found to be not feasible.

The original consent identified that operations of the Site would maintain a 'very good Level of Service at the intersections modelled'. It is noted that off-site upgrades to the transport network having been made since the original approval, further improving the efficiency of the transport networks to the site. Given the minor increase in total daily vehicles (less than 2.5%), the existing high level of service at surrounding intersections and that additional vehicle movements would only be required infrequently, the operational vehicles associated with the Modification Proposal are not anticipated to have more than minimal impact.

Swept paths have been prepared for the Modification Proposal and are included in the Site Plans provided in Appendix B.

7.7.4. Mitigation Measures

During construction and operations, the traffic plans and programs listed above and approved under MP09_0074 will continue to be implemented.

Under the existing consent (MP09_0074), the following condition would increase to include 6 additional heave vehicle movements per day:

> *Condition 25: maximum of 256 daily heavy vehicle movements (including into and out of the site);*

No other measures are proposed.

7.7.5. Conclusion

An assessment of traffic impacts during the construction and operational stages of the Modification Proposal has been performed. The Site will continue to operate under the existing approved *Construction Traffic Management Plan*, *Traffic Noise Management Plan* and the *Transport Code of Conduct*. The Site will continue to implement its existing Environmental Management System (EMS) for operations.

An increase in small and heavily vehicles will occur during the construction phase, and these will be managed in accordance with the site's existing *Construction Traffic Management Plan.* The increase in staff vehicles attending the site during the operational phase is considered minor. A small increase in approved heavy vehicles from 250 to 256 would be required only if a potable water connection is not feasible.

The study found that the Modification Proposal will have minimal impact on traffic during the construction stage, and will have negligible or minimal impact on traffic during the operational stage.

7.8. Heritage

7.8.1. Methodology

This section provides a review of two previous studies including the Aboriginal Heritage Assessment (September 2009) and European Heritage Assessment prepared by Archaeological Surveys & Report Pty Ltd for the original approval (MP09_0074). The results of these studies have been assessed against the Modification Proposal.

The Aboriginal Heritage Assessment was undertaken after extensive consultation with the "registered Aboriginal stakeholders", and with the full participation of all "registered Aboriginal stakeholders".

7.8.2. Existing Environment

The Dharug people are the Traditional Custodians of the place we now call Orchard Hills.

The PLRRC site itself has been developed and the surviving areas of natural vegetation occurs in the riparian zone of Blaxland Creek. The adjacent properties to the north and east have been cleared for pasture, but dense woodland on Commonwealth land to the west retains a significant area of Cumberland Plain Woodland. The Site likely supported a similar vegetation regime to that on the Commonwealth land prior to settlement.

There has been significant alteration to the ground surface within the existing quarry, both from quarrying and from the construction of surrounding bunds, and from access tracks into Site including the main site entrance off Patons Lane.

The relatively undisturbed areas comprise of a narrow strip (outside the Modification Report site perimeter bunds), although it too would have been subject to tree-clearing, ploughing and other disturbance in the past before the quarry existed and by vehicular traffic during quarry operations.

A search of the State Heritage Inventory website found that there were no listings for structures or relics of heritage interest for Site in the State Heritage Register.

A search of the National Trust Register found that there were no listings for structures or relics of heritage interest for the Site in the Register of the National Estate.

The Orchard Hills Defence Site contains Orchard Hills Cumberland Plain Woodland, listed in the Australian Heritage Database. However the Modification Proposal would not disturb or impact this area.

An extensive Aboriginal Heritage Assessment was undertaken for the Original Consent. This assessment included searches of relevant databases and detailed site walk overs with registered Aboriginal stakeholders. The assessment identified two potential artefacts and a potential archaeological deposit in the far northwest of the Site. The assessment concluded that due to the disturbed nature of the site and the low value of the artefacts no further investigation was required, and there were no constraints on cultural grounds to development.

A search of the *Penrith Local Environmental Plan* 2010 found that the Project Site was not listed as a place of heritage interest.

7.8.3. Impact Assessment

As described above, a field survey was undertaken in June 2009 as part of the original study. A PAD was found on the northern bank of Blaxland Creek and two isolated artefacts were found along the perimeter access track.

No structures or relics of heritage interest were observed in the Site.

All of the disturbance proposed would be within the boundaries of the previously disturbed Site. It is highly unlikely that any items of Aboriginal Cultural significance, or of European heritage, would be disturbed due to the amount of historical disturbance to the Site. As such, no impacts to Aboriginal Cultural Heritage or European Heritage are predicted to occur during the construction or operational phases of the development.

7.8.4. Mitigation Measures

No additional mitigation measures over the existing approval conditions and environmental commitments are recommended.

7.8.5. Conclusion

An assessment of heritage impacts during the construction and operational stages of the Modification Proposal has been performed.

The study found that the Modification Proposal will be limited to previously disturbed areas only on the Site, and is likely to have nil impact on Aboriginal Cultural Heritage or European Heritage during the construction and operational stages of the development.

7.9. Biodiversity

7.9.1. Methodology

This section provides a review of the two previous studies including the Flora Assessment (September 2009) and Fauna Assessment (September 2009) prepared previously by Geoff Cunningham Natural Resources Pty Limited and Aquila Ecological Surveys, respectively, for the original approval (MP09_0074). The results of these studies have been assessed against the Modification Proposal. A desktop review of the relevant databases and nearby biodiversity areas also has been undertaken.

7.9.2. Existing Environment

Most of the Site is highly modified from its original condition. The areas proposed for additional development under the Modification Proposal do not harbor vegetation, are highly disturbed and are within existing operational areas of the Modification Report.

Figure 7.10 shows Biodiversity Values mapping taken from the NSW ePlanning spatial viewer. Areas mapped as containing biodiversity values are outside of the Site boundaries, primarily in the adjacent Department of Defense lands, except for a small portion along Blaxland Creek in the north-west corner of the Site.

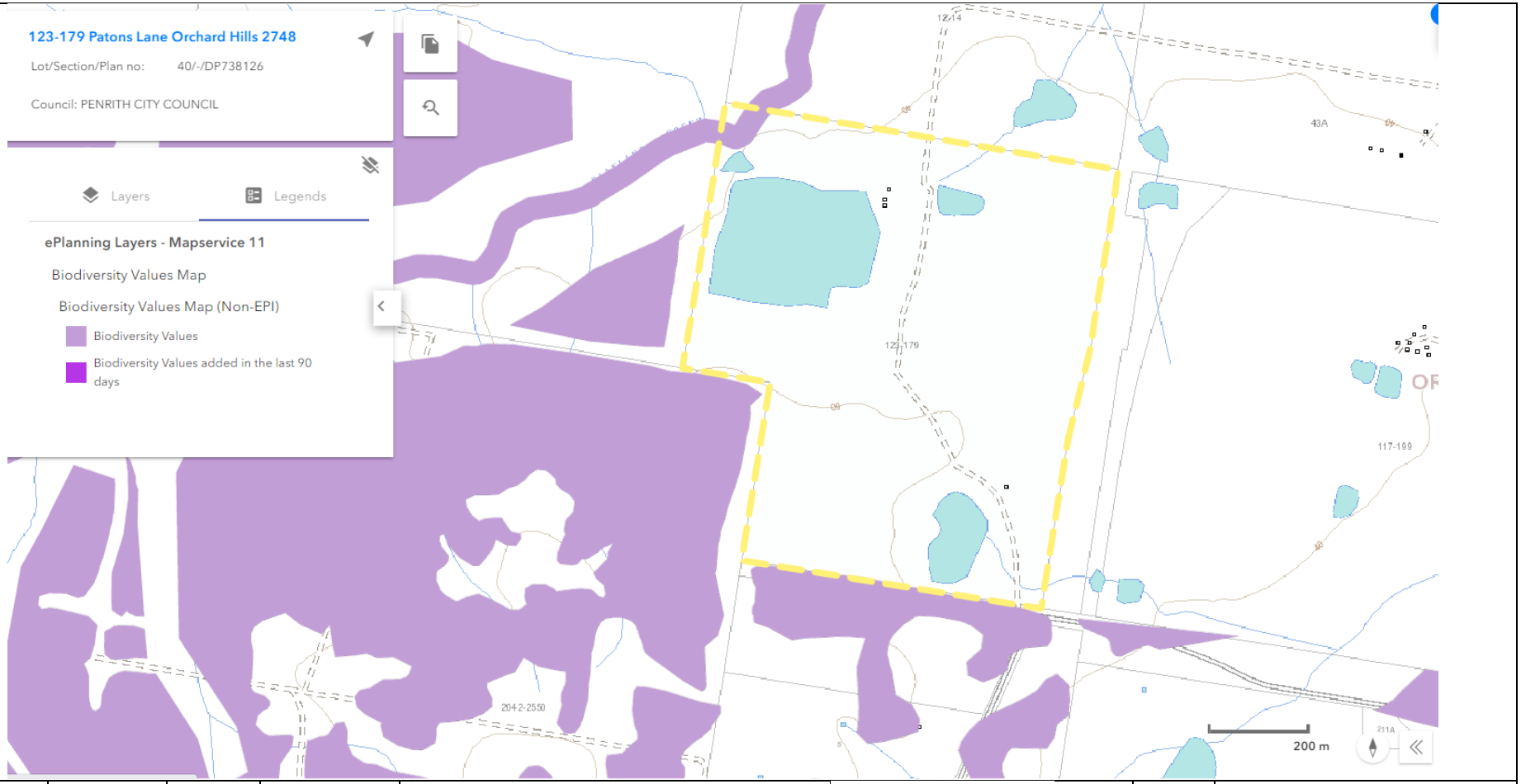
The 2009 flora and fauna studies found there is no suitable habitat present for flora or fauna species likely or predicted to occur in the vicinity. Field observations failed to record any threatened flora species. A remnant of the River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions community occurs in a narrow ribbon stand along Blaxland Creek beyond the proposed areas of disturbance.

There are no endangered flora or fauna populations or occurrences of critical habitat in any of the areas that would be developed under the Modification Proposal.

No threatened or migratory species listed under the EPBC Act were recorded within the Site, nor were any considered likely to occur in the studies. The studies also found that operational activities of the Modification Report are predicted not to have any adverse impact on fauna or fauna habitat on the adjoining Commonwealth Department of Defence land.

A referral under the EPBC Act was not required previously and is not considered necessary for the Modification Proposal.

Figure 7.10. Biodiversity Values mapping near the Site. Site is shown in yellow.



Date	Revision	Drawn By	Site description	Jackson Environment and Planning Pty Ltd		Client	SRC Operations Pty Ltd
07/11/22	Revision A	E. Larson	123-179 Patons Lane, Orchard Hills (Lot 40 DP 738126)	Strategy | Infrastructure | Compliance | Procurement A: Suite 102, Level 1, 25-29 Berry St, North Sydney NSW 2060 E: admin@jacksonenvironment.com.au T: 02 8056 1849 W: http://www.jacksonenvironment.com.au		Project	Patons Lane Modification Proposal
						Title	Biodiversity Values Mapping
						Scale	See map
						Source	NSW E-planning spatial viewer

7.9.3. Impact Assessment

The majority of the landscape within the Modification Report is highly modified. As shown in Figure 1.2 and Figure 1.3 in Section 1.2, the Modification Proposal is confined to existing disturbed, developed and operational areas of the Modification Report consisting of large areas of bare ground as a result of past quarrying activities with little subsequent regeneration.

Other than continuing to avoid any disturbance of the riparian woodland adjacent Blaxland Creek and the implementation of appropriate water management measures to prevent polluted discharge in line with current licenses and approvals, no further safeguards are considered necessary.

The Modification Proposal is highly unlikely to have a significant effect on any threatened and endangered species or their habitats.

7.9.4. Mitigation Measures

No additional mitigation measures over the existing approval conditions and environmental commitments are recommended.

7.9.5. Conclusion

An assessment of biodiversity impacts during the construction and operational stages of the Modification Proposal has been performed.

The study found that the Modification Proposal will be limited to previously disturbed areas only on the Site, and is likely to nil impact on biodiversity during the construction and operational stages of the development.

8. Justification of the Modification Proposal

8.1. Suitability of the Site

The PLRRC is an approved and already developed resource recovery centre and landfill for commercial and industrial (C&I) and construction and demolition (C&D) wastes (non-putrescible general solid waste).

The Site is well-suited for the Modification Proposal and sits near current and future development occurring in the Western Parkland City precinct. The Modification Proposal would reduce the quantity of soils landfilled and maximise the quantity and quality of treated soils recycled for use in construction and infrastructure projects across Greater Sydney and in NSW.

The Modification Proposal will support a diverse range of commercial, residential and large-scale infrastructure projects such as Western Sydney aerotropolis, Sydney Metro – Western Sydney Airport Stations all of which are located within close proximity to the site.

8.2. Sustainability

8.2.1. Environmental benefits

The facility will support the *NSW Waste and Sustainable Materials Strategy 2041* targets of an 80% recovery rate for all waste streams by 2030 and to increase the use of recycled content as it allows the PLRRC achieve higher resource recovery rates and diversion from landfill of washed aggregates and soils waste streams via upgrades to the soil wash plant. Provision of a LTP will improve the reliability and efficacy of the leachate management system, bringing the site in line with modern best practice and improving water quality outcomes.

8.2.2. Social and economic benefits

Increased investment in resource recovery infrastructure is good for public health and the economy. The resource recovery sector creates jobs and stimulates innovative technology, with studies indicating that the recycling industry creates three times the number of jobs as landfilling for every 10,000 tonnes of waste material processed[12].

During construction of the Modification Proposal, an estimated twenty (20) full-time and sixty (60) part-time workers would be required for construction of the RWTP and the LTP over a 6-month period.

The Modification Proposal would employ an additional two (2) full-time operators, one (1) full-time supervisor and two (2) part-time maintenance staff for the RWTP. In addition, the Modification Proposal would employ an additional one (1) full-time operator and two (2) part-time maintenance staff for the LTP. This is equivalent to approximately six (6) full-time equivalent jobs on an ongoing basis.

The project will involve a capital investment of $22,410,765 (ex. GST) (see Appendix G), helping to support local jobs and the local economy.

8.3. Ecologically Sustainable Development (ESD)

Ecologically Sustainable Development (ESD) involves the effective integration of social, economic and environmental considerations in decision-making processes. In 1992, the Commonwealth and all State and Territory governments endorsed the National Strategy for Ecologically Sustainable Development.

[12] Access Economics (2009). *Employment in waste management and recycling*, report to the Dept. of Environment, Water, Heritage and the Arts.

An important objective of the EP&A Act is "*to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment*."

Clause 7(1)(f) in Part 3 of Schedule 2 of the EP&A Regulation requires an environmental assessment to provide justification for a development with specific reference to the principles of ESD. Clause 7(4) sets forth the principles of ecologically sustainable development.

The Modification Proposal is considered ecologically sustainable, due to the social, economic and environmental benefits described in this Modification Report, and the mitigation measures put in place to protect from adverse impacts on the environment.

The intergenerational equity principle recognises that 'the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations'.

The Modification Proposal would not result in impacts that are likely to adversely impact on the health, diversity or productivity of the environment for future generations.

The additional proposed LTP and RWTP would improve water quality, increase the availability of recycled materials to be used in the construction industry and contribute to the circular economy.

The Modification Proposal is located on a highly disturbed area of land, that is approved for a material extraction, landfilling and resource recovery. No clearing of native vegetation is proposed. Approved progressive rehabilitation plans are in place that, once extraction and landfilling are complete, will establish native flora and fauna to the landscape.

The Modification Proposal provides increased recovery rates and improved water quality outcomes "in the most cost-effective way" and will enable the beneficial use of a facility that is already approved and established.

The Proposed Development imposes an economic capital cost on the proponent and provides for increased economic activity for a relatively low capital cost. Effects on environmental resources have been given appropriate valuation and assessed in this Modification Report.

The Modification Proposal is therefore consistent with the principles of ESD.

The Proposal has been designed with an objective of minimising potential impacts on the surrounding environment.

8.4. Cumulative Impact Assessment

The Modification Proposal does not propose to receive and process any additional waste tonnages at the PLRRC and would not only add a potential minor increase of six (6) additional heavy vehicles per day in operational traffic over that already approved in the existing consent (MP09_0074). This is only in the event that a potable water supply connection is not feasible. Only a short period of minor additional traffic generation would occur during construction.

Orchard Hills sits north of the (currently under construction) Western Sydney International (Nancy-Bird Walton) Airport (WSI), which is on track to begin operations in 2026.

Orchard Hills is one of the NSW's priority growth areas and precincts. In line with the 2022 Housing Package, the DPE will be conducting a range of studies to understand what infrastructure such as roads, parks and schools are needed and used by the current community and what will be needed for those who will call Orchard Hills home in the future.

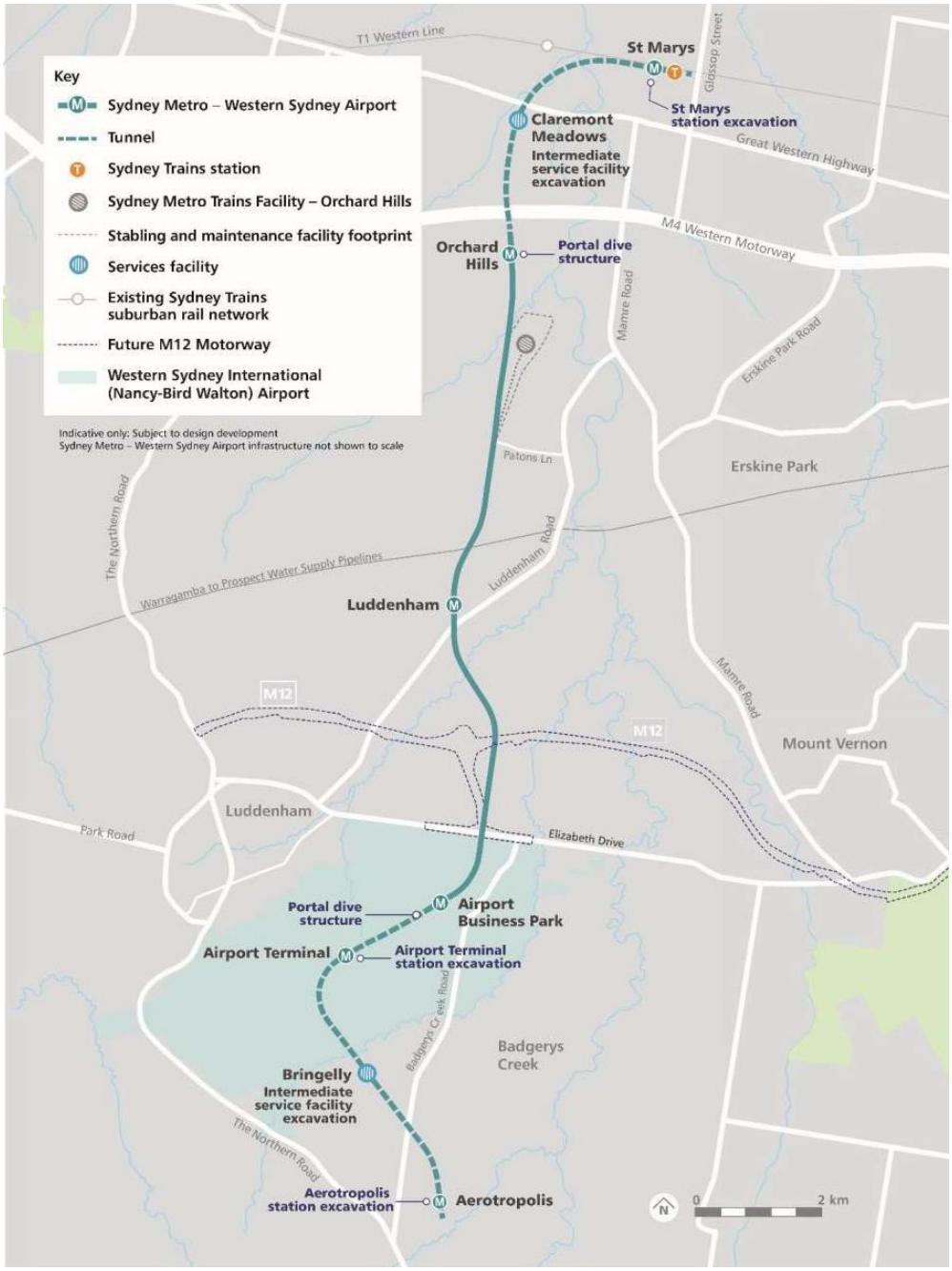
The DPE is preparing a discussion paper that will go on public exhibition in late 2022 with the community having an opportunity to provide feedback. Feedback provided on the discussion paper will also inform the draft Orchard Hills

Precinct Plan. The draft Orchard Hills Precinct Plan will go on public exhibition in 2023 and the community will again be invited to have their say.

The Sydney Metro-Western Sydney Airport line is the new metro railway line which will service Greater Western Sydney and the new Western Sydney International (Nancy-Bird Walton) Airport. It is currently under construction and is to be operated to the east of the PLRRC. The stabling and maintenance facility is also to be located in close proximity to the site (see Figure 8.1).

Considering the Western Sydney Airport and associated infrastructure being constructed over the next several years and the strategic planning occurring in the region, the PLRRC is well placed to provide business and the community with resource recovery services that promote achieving broader NSW circular economy objectives.

Figure 8.1. Sydney Metro- Western Sydney Airport line in relation to Patons Lane.



The Modification Proposal would not create any cumulative impacts considering other nearby and regional infrastructure and industrial projects that are proposed or in process.

8.5. Proposed Amendments to Existing Conditions and any Additional Proposed Conditions

Under the existing consent (MP09_0074), the following condition will need amendment in relation to the small increase in heavy vehicle movements to accommodate the tankering of water in a dry year for the RWTP (note: ~~strikethrough~~, text to be removed; red text is wording to add to the condition).

Condition 25: maximum of ~~250~~ 256 daily heavy vehicle movements (including into and out of the site).

No other amendments to the existing conditions of consent MP09_0074 are considered necessary except the addition of this Modification Report and accompanying specialist reports to Schedule 6.

9. Summary of Additional Proposed Mitigation Measures

Table 9.1 summarises the mitigation measures identified in this Modification Report to ameliorate impacts and safeguard the environment so that the desired environmental outcomes are achieved for the various components of the Modification Proposal.

Table 9.1. Additional mitigation measures for the Modification Proposal.

No.	Control Measures and Safeguards	Timing	Responsibility
WM1	Construction Environmental Management Plan (CEMPP) and include the following waste measures: • The induction program (which includes environmental due diligence training). All Project and site personnel will be trained in the requirements of this document including minimising wastes, recognising which types of materials are recyclable and their obligations to use recycling facilities provided on site; • Clearly assign and communicate responsibilities to ensure that those involved in the construction are aware of their responsibilities in relation to the waste management plan; • Waste management areas will be adequately managed to prevent sediment runoff and dust generation; • Construction Method Statements (CMS) will include practices to minimise waste generation and to maximise recycling and reuse of materials including oils, greases, lubricants, timber, glass, and metal; and • Spill kit to be present on site in the case of any fuel leaks of plant and equipment during the construction phase of the development.	Prior to construction.	Site Manager
SW1	Update of the PLRRC Soil, Water and Leachate Management Plan to suit the Modification Proposal. This will include the nomination of suitable controls to manage construction and operational phase soil and water impacts	Construction	Site Manager
SW2	Temporary management of stormwater and leachate on site by other means to prevent pollution when Dam 1 is taken offline to construct and line the new leachate dam	Construction	Site Manager
SW3	Water level monitoring of Dam 1 and tankering or discharge to sewer when the dam exceeds 75% of maximum capacity in order to prevent leachate overflow events	Operations	Site Manager

10. Conclusion

The Patons Lane Resource Recovery Centre (PLRRC) is a resource management facility located at 123-179 Patons Lane, Orchard Hills (Lot 40, DP 738126) within the former Erskine Park Quarry owned by Bingo Patons Lane Pty Ltd (a wholly owned subsidiary of Bingo Industries). The site is operated by SRC Operations Pty Ltd.

The PLRRC operates under a State Significant Development approval (MP09_0074) as a resource recovery centre and landfill for commercial and industrial (C&I) and construction and demolition (C&D) wastes (non-putrescible general solid waste).

Since the existing approval was granted for the PLRRC by the NSW Land and Environment Court, there has been changes to market conditions, Bingo's broader network operations and the NSW waste management regulatory framework. These changes have highlighted the need for SRC Operations Pty Ltd to adjust site operations at the PLRRC.

This Modification Proposal aims to improve the quality of recovered soils, sands and aggregates from processing of general solids waste (soils) and building and demolition waste to protect human health and the environment. This plant and investment will help Bingo improve the quality of recovered soils and aggregates, increase diversion rates and better deliver on the objectives of the NSW Government's *Waste and Sustainable Materials Strategy 2041. Stage 1 – 2021-2027*. The Modification Proposal also seeks to upgrade the landfill leachate treatment system to achieve improved water quality outcomes related to the landfill. Provision of a leachate treatment plant would improve the reliability and efficacy of the leachate management system, bringing the site in line with modern best practice and improving environmental outcomes.

The proposed elements of the integrated water treatment management system upgrades would include an additional new raw leachate dam, new contact water dam, Leachate Treatment Plant (LTP), Recycling Water Treatment Plant (RWTP), infrastructure to support the wash plant, and a future connection to sewer.

Given there are no additional waste tonnages or significant changes to the existing PLRRC or landfill site layout, and would have a minimal environmental impact, this Modification Report has been prepared to support a modification to the current Development Consent (MP09_0074) under Section 4.55(1A) of the *Environmental Planning and Assessment Act* 1979. The report has been prepared having regard to the *State Significant Development Guidelines – Preparing a Modification Report*, Appendix E to the *State Significant Development Guidelines* (December 2021).

The Modification Proposal is in line with the strategic goals of the Greater Sydney Region Plan, and would provide additional means for the recovery of soil, sand and aggregates for regional markets, diversion of waste from landfill and protection of water quality. would assist in reaching an 80% recovery rate by 2030 by continuing to operate the PLRRC whilst protecting water quality and by supplying additional recycled sands and aggregates (that would otherwise go to landfill) for use in the building industry.

The plant, equipment and investment proposed by SRC Operations Pty Ltd will improve the quality of recovered soils and aggregates, increase diversion rates and assist in delivering on the objectives of the NSW Government's *Waste and Sustainable Materials Strategy 2041.*

The assessment against relevant environmental aspects has identified that the infrastructure would likely have a neutral impact when compared to the existing approval. Specialist assessments have been prepared to that demonstrate this outcome in the several key areas including noise and vibration, air quality, and soil and water.

The Modification Proposal will produce high quality recovered products including course and fine sands and aggregates and support a diverse range of commercial, residential and large-scale infrastructure projects such as Western Sydney aerotropolis, Sydney Metro – Western Sydney Airport Stations all of which are located within close proximity to the site.

The wet technology to be comprised within the resource recovery plant has been developed tried and tested in Europe and represents state-of-the-art technology for maximising the recovery of soil, sand and aggregate from general solid waste comprising mainly soil from building sites.

The Modification Proposal will reduce the quantity of soils landfilled and maximise the quantity and quality of treated soils recycled for use in construction and infrastructure projects across Greater Sydney and in NSW, and will have negligible or positive impact on the local environment in terms of visual, traffic, soil and water, and noise and vibration.

The Modification Proposal to the development is minor and considered to be substantially the same as the original consent (MP09_0074), and therefore is recommended for approval.

Appendix A – Compliance Table

Legislation	Compliance Status	Modification Report Section addressed
Environment Protection and Biodiversity Conservation Act 1999	Compliant	Section 4.1
Environmental Planning and Assessment Act 1979	Compliant	Section 4.2.1
Environmental Planning and Assessment Regulation 2021	Compliant	Section 4.2.2
Protection of the Environment Operations Act 1997	Compliant	Section 4.2.3
Protection of the Environment Operations (Waste) Regulation 2014	Compliant	Section 4.2.4
Biodiversity Conservation Act 2016	Compliant	Section 4.2.5
State Environmental Planning Policy (Transport and Infrastructure) 2021	Compliant	Section 4.3.1
State Environmental Planning Policy (Biodiversity and Conservation) 2021	Compliant	Section 4.3.7
State Environmental Planning Policy (Precincts - Western Parkland City) 2021	Compliant	Section 4.3.2
State Environmental Planning Policy (Resilience and Hazards) 2021	Compliant	Section 4.3.3
State Environmental Planning Policy (Industry and Employment) 2021	Compliant	Section 4.3.4
State Environmental Planning Policy (Planning Systems) 2021	Compliant	Section 4.3.5
State Environmental Planning Policy (Resources and Energy) 2021	Compliant	Section 4.3.6
Penrith Local Environmental Plan 2010	Compliant	Section 4.5

Appendix B – Site Plans

Appendix C – Consultation Letters and Feedback

Appendix D – Air Quality Impact Assessment

Appendix E – Noise Impact Assessment

Appendix F – Soil and Water Impact Assessment (including Water Balance)

Appendix G – Capital Investment Value

Appendix H – Owner's Consent Letter