Waste Management Impact Assessment

Greater Parramatta and Olympic Peninsula Water Cycle Management

Sydney Water Corporation

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→ The Power of Commitment

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Executive summary

Sydney Water is proposing to build and operate a new water resource recovery facility (WRRF) at Camellia-Rosehill for advanced water treatment and water recycling. The new WRRF is needed to provide additional wastewater capacity to support growth across the northern suburbs of Sydney, and in the Greater Parramatta and Olympic Peninsula (GPOP) growth corridor. The WRRF and associated infrastructure together form the GPOP Water Cycle Management project (the project).

The additional growth would place pressure on the existing northern suburbs wastewater network, which includes the Northern Suburbs Ocean Outfall Sewer (NSOOS) and the North Head WRRF. These critical assets provide wastewater services to around 1.7 million people, and with current growth projections would reach capacity by 2031.

The GPOP WCM project has been designed to be efficient, sustainable, and cost effective for the community, as well as resilient and adaptable for future water uses.

The main elements of the project include:

– A new WRRF at Camellia-Rosehill to treat wastewater to produce advanced treated water
– Upgrades to the existing pumping station at Camellia
– A new wastewater transfer pipeline from Camellia pumping station to the WRRF
– A new and repurposed brine pipeline to transfer brine from the WRRF to the NSOOS
– A new river release pipeline to transfer advanced treated water from the WRRF to a release structure in Parramatta River at Meadowbank.

This waste management impact assessment report has been prepared by GHD Pty Ltd (GHD) as part of the project's Environmental Impact Statement (EIS). The report assesses the potential impacts from the excavation, handling, temporary storage on-site and transport of waste generated during the construction and operation of the project in accordance with the Secretary's Environmental Assessment Requirements (SEARs) for waste management. This report focuses on solid waste removed off-site for further treatment, recycling or disposal and does not address wastewater management which would be treated to an advanced quality and have potential other uses.

During construction of the project, the primary waste streams are expected to be generated from site preparation, construction of the WRRF, pipelines and associated infrastructure, and works at the pumping station, and use of the construction site offices. Waste (including excess spoil material) would be temporarily stored in the construction compounds for on-site reuse or collection for off-site treatment or disposal. Excess spoil material generated during construction would be reused on-site where possible.

Key waste streams expected to be generated during operation include brine, biosolids, dewatered screenings, dewatered grits, and general waste from operation and maintenance. Appropriately licensed waste recycling and disposal facilities have been identified to accept general waste, hazardous waste, special waste, recyclables and organics waste. Biosolids would be beneficially reused where possible as typically managed in line with Sydney Water's operations.

The proposed waste management approach for construction and operational waste includes reuse and recycling where feasible in accordance with the waste management hierarchy. The approach considers the Sydney Water goal of 85% recovery of waste materials from construction, office and operations through recycling or reuse (excluding biosolids).

On the basis of proposed in-built measures and implementation of the identified additional mitigation measures, the project is not anticipated to result in unacceptable impacts on receiving environments in relation to waste.

This report is subject to, and must be read in conjunction with, the limitations set out in Section 10 and the assumptions and qualifications contained throughout the Report.

Terms and abbreviations

Key terms	Definition/Description
Advanced treated water	Water that is treated to an advanced level, including microfiltration, ultrafiltration and reverse osmosis to filter out very fine particles. Also known as very high-quality treated water.
Anaerobic digestion	Anaerobic digestion is part of the wastewater treatment process that occurs where bacterial processes break down organic matter to produce methane gas, which can be used to generate electricity.
Biosolids	Organic solids produced during wastewater treatment is processed to convert it into biosolids. Biosolids are a safe fertiliser product and can be used in farming and gardening as an economic alternative to chemical fertilisers.
Brine	Concentrated solution of salt and other chemicals in water; a by-product of the reverse osmosis process.
Brine pipeline	A pipeline that is used to transport brine for disposal.
Camellia-Rosehill WRRF	Camellia-Rosehill Water Resource Recovery Facility.
Impact area	The area in which we are expecting the actual impacts to occur.
Impact assessment area	The maximum area that would be impacted by the project and within which we want flexibility in our planning approvals to have impacts.
Reverse osmosis	Reverse osmosis is a water purification process that uses membranes to remove particles such as nutrients, chemicals, bacteria and viruses.
River release	For this project, discharge of advanced treated water to Parramatta River.
Spoil	Waste material generated during excavation such as virgin excavated natural material comprising rock and soil, fill material, contaminated soil and other materials.
Waste	Any discarded, rejected, unwanted, surplus or abandoned substance, including substances intended for recycling, processing or treatment by a separate operation from that which produced the substance.
Wastewater	The raw material carried by pipes and treated in water resource recovery facilities and advanced water treatment plants, which together are called wastewater systems.

Abbreviations	Definition
AMP	Asbestos Management Plan
ASS	Acid sulfate soil
DP	Deposited Plan
DPHI	Department of Planning, Housing and Infrastructure
DSI	Detailed Site Investigation
EIS	Environmental Impact Statement
ENM	Excavated Natural Material
EPA	Environment Protection Authority
EPL	Environment Protection Licence
EP&A Act	*Environmental Planning and Assessment Act 1979*
GPOP WCM	Greater Parramatta and Olympic Peninsula Water Cycle Management Project
HDD	Horizontal directional drilling
LEP	Local Environmental Plan
LGA	Local Government Area
mbgl	Metres below ground level
ML	Megalitres

Abbreviations	Definition
ML/d	Megalitres per day
NSOOS	Northern Suburbs Ocean Outfall Sewer
NSW	New South Wales
PASS	Potential acid sulfate soil
POEO Act	*Protection of the Environment Operations Act 1997*
PSI	Preliminary Site Investigation
RO	Reverse Osmosis
SEARs	Secretary's Environmental Assessment Requirements
SOPA	Sydney Olympic Park Authority
SSI	State Significant Infrastructure
VENM	Virgin Excavated Natural Material
WHS	Work, health and safety
WRRF	Water Resource Recovery Facility

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1. Introduction

1.1 Overview

1.1.1 Project background

Positioned on the 6,000 hectare Greater Parramatta to Olympic Peninsula corridor, the Greater Parramatta and Olympic Peninsula Water Cycle Management project (GPOP) is a State Significant Infrastructure (SSI-74258485) project. Sydney Water is proposing to build and operate a new water resource recovery facility (WRRF) at Camellia-Rosehill with associated infrastructure to provide wastewater services to the Greater Parramatta and Olympic Peninsula (GPOP) growth area (the project).

The WRRF would be constructed on a 22-hectare site in Camellia-Rosehill. The WRRF site lies between the Parramatta River to the north, and Duck River to the south, in a precinct consisting mainly of commercial and industrial development. The site was recently acquired by Sydney Water, with a portion of land to the south of the proposed WRRF site retained by the former landowners. Key site constraints include contamination as a result of the former heavy industrial land use, presence of buried services and partial location within a flood zone.

The project also includes works to the existing pumping station at Camellia, construction of the WRRF's associated pipelines (the river release pipeline, transfer pipeline and brine pipeline) and associated infrastructure. The purpose of the river release pipeline is to discharge advanced treated water from the Camellia-Rosehill WRRF to Parramatta River. The transfer pipeline transfers wastewater from the existing pumping station at Camellia to the inlet works of the WRRF. The brine pipeline transfers brine from the WRRF to the pumping station at Camellia. From the pumping station, an existing wastewater pipeline will be relined and re-purposed to transfer the brine to the Northern Suburbs Ocean Outfall Sewer (NSOOS) and on to North Head WRRF for ocean disposal.

1.1.2 Key features of the project

The main elements of the project include:

– A new WRRF at Camellia-Rosehill to treat wastewater to produce advanced treated water
– Upgrades to the existing pumping station at Camellia
– A new wastewater transfer pipeline from Camellia pumping station to the WRRF
– A new and repurposed brine pipeline to transfer brine from the WRRF to the NSOOS
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1.2 Purpose of this report

GHD Pty Ltd (GHD) has been commissioned by Sydney Water to prepare a waste management impact assessment report.

This report will support the preparation of an Environmental Impact Statement (EIS) under the *Environmental Planning and Assessment Act 1979* (EP&A Act) for the project.

This report addresses the relevant SEARs and assesses the potential waste related impacts associated with the construction and operation of the project. This includes identifying and assessing the likely key waste streams (including liquid, non-liquid waste, hazardous and dangerous waste) generated from the project and developing measures to help ensure that all wastes generated during both construction and operation of the project are effectively stored, handled, treated, reused, recycled and/or disposed of lawfully and in a manner that protects environmental values.

1.3 Secretary's Environmental Assessment Requirements

The NSW Department of Planning, Housing and Infrastructure (DPHI) issued the Secretary's Environmental Assessment Requirements (SEARs) for the project on 24 September 2024. A description of the SEARs requirements and where they have been addressed in this waste assessment is provided in Table 1.1.

Table 1.1 DPHI SEARs

Requirement	Where addressed in this report
1. Predicted **waste generated** from the project during construction and operation, including: (a) classification of the waste in accordance with the current guidelines	Classification of predicted construction waste - Section 6.1.2 Classification of predicted operations waste - Section 6.2.2
(b) estimates / details of the quantity of each classification of waste to be generated during the construction of the project, including bulk earthworks and spoil balance	Quantities and details of construction waste - Section 6.1.2
(c) methods for handling of waste including measures to facilitate segregation and prevent cross contamination	Handling methods for construction waste - Section 6.1.4 Handling methods for operations waste - Section 6.2.4
(d) management of waste including estimated location and volume of stockpiles	Management of construction waste - Section 6.1.4 Management of operations waste - Section 6.2.4
(e) measures for waste minimisation and reuse	Waste planning and management approachment - Section 6.1.4 Mitigation measures for minimisation and reuse - Section 6.2.4 and 8
(f) lawful disposal or recycling locations for each type of waste	Waste recycling and disposal facilities for each waste type - Section 5.5
(g) contingencies for the above, including managing unexpected waste volumes.	Unexpected Finds Protocol - Section 6.1.4.10
2. Potential environmental impacts from the excavation, handling, storage on site and transport of waste particularly with relation to sediment/leachate control, noise and dust.	Impacts from the excavation, handling, storage on-site and transport of waste addressed generally in this report with potential impacts of construction waste in Section 1.1.1 and potential impacts of operational waste in Section 6.2.3 Impacts relating specifically to sediment/leachate control, noise and dust will be assessed in other specialist impact assessment reports.

2. Project description

Sydney Water is proposing to build and operate a new water resource recovery facility (WRRF) at Camellia-Rosehill. The new WRRF is needed to provide additional wastewater capacity to support growth across the northern suburbs of Sydney, and in the Greater Parramatta and Olympic Peninsula (GPOP) growth corridor. The WRRF and associated infrastructure together form the GPOP Water Cycle Management project (the project).

The additional growth would place pressure on the existing northern suburbs wastewater network, which includes the Northern Suburbs Ocean Outfall Sewer (NSOOS) and the North Head WRRF. These critical assets provide wastewater services to around 1.7 million people, and with current growth projections would reach capacity by 2031.

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The location of the main elements of the project is provided in Figure 2.1. Further details of each component of the project are provided in Table 2.1.

The project is State significant infrastructure and Sydney Water is preparing an Environmental Impact Statement (EIS) to support an application to the Minister for Planning and Public Spaces.

Table 2.1 Project description

Project component	Detailed description
WRRF	The WRRF would have capacity to treat 70 megalitres per day (ML/d). The WRRF would produce advance treated water to minimise impacts on receiving waterways. The reverse osmosis (RO) treatment process within the WRRF would generate brine as a by-product. The main components of the WRRF include: – Inlet works – Primary, secondary and tertiary wastewater treatment process units – Advanced treatment processes involving reverse osmosis – Disinfection systems – Biosolids handling facilities – Odour control facilities. The WRRF would require a range of process infrastructure such as tanks, bioreactors and digestors. The operation of the WRRF would also require ancillary facilities such as an administration building and associated car park, chemical storage and stormwater infrastructure.
Camellia pumping station upgrades	The existing Camellia pumping station would be upgraded to divert wastewater to the WRRF. Upgrades would include the installation of new pumps to deliver wastewater flows to the new WRRF while remaining pumps would pump excess existing flows and brine produced by the WRRF to the NSOOS via existing pressure mains. New connections would be installed to divert the wastewater into the transfer pipeline. The existing site sheds would be replaced with a new electrical switch room along the eastern boundary of the site.
Transfer pipeline	The transfer pipeline is about 2.2 km in length and would transfer wastewater from the Camellia pumping station to the WRRF.

Project component	Detailed description
Brine pipeline	The brine pipeline is about 5.2 kilometres in length and would transfer brine from the WRRF to the NSOOS for treatment and offshore discharge at North Head WRRF. A new pipeline would be constructed between the WRRF and Camellia pumping station, along the same alignment as the transfer pipeline. Between the Camellia pumping station and the NSOOS the brine pipeline would repurpose an existing pipeline.
River release pipeline and release structure	The river release pipeline is about 7.6 km in length commencing at the WRRF and within the suburbs of Silverwater, Newington, Sydney Olympic Park and Meadowbank. The river release pipeline would discharge advanced treated water into the Parramatta River at Meadowbank. Above ground infrastructure includes two concrete bridge-style aerial crossings over minor waterways in Meadowbank Park, and an approximately 8 metre high barometric loop located near the existing toilet block in Memorial Park. The river release structure involves eight smaller pipelines that extend out underneath the sandstone sea wall and along the riverbed of the Parramatta River. The pipelines would vary in length, with the longest extending about 130 m. Diffusers would release water to enable mixing.
Land ownership and location	The WRRF would be located on Sydney Water owned property at the intersection of Colquhoun and Devon Street, Rosehill (Lot 1, Deposited Plan 1308385). The WRRF site comprises an area of 21.41 ha (see Figure 2.1) and is located within the City of Parramatta Local Government Area (LGA). Upgrades to the existing sewage pumping station at Camellia are also located on Sydney Water property within the City of Parramatta LGA. Pipeline alignments are generally within the road corridor, Council or Crown land or Sydney Water easements, except for the transfer and brine pipelines beneath Rosehill Gardens Racecourse.
Construction activities	Key activities for construction of the WRRF will include: – Site establishment – Delivery of materials – Earthworks – Civil works – Structure construction – Installation of mechanical and electrical plant and equipment – Landscaping and rehabilitation – Commissioning. The new sections of pipelines from the WRRF to Camellia pumping station and the river release location, would be constructed using a combination of trenching and horizontal directional drilling techniques. Between Camellia pumping station and the NSOOS, the existing rising main would be relined and repurposed to form part of the brine pipeline. The upgrade of Camellia pumping station would include augmentation of underground infrastructure, installation of pumps, and upgrade of power supply.
Construction program	Construction of the project would commence in 2028 with a duration of around 36 months. Operation is planned to commence in 2031.The construction staging and indicative timing for the project is listed below: – WRRF construction: Q1 2028 – Q1 2031 – Camellia pumping station upgrade construction: Q2 2028 – Q3 2030 – Transfer pipeline construction: Q2 2028 – Q3 2030 – Brine pipeline construction: Q2 2028 – Q3 2030 – River release pipeline construction including works within Parramatta River: Q2 2028 – Q3 2030 – Commissioning: Q1 2031 – Q4 2031 – Start operation: Q4 2031

2.1 Impact areas and impact assessment areas

The term ‘impact assessment area’ has been used to represent the maximum area that would be impacted by the project to provide flexibility in the planning approval. The actual impacts will be in an ‘impact area’ within this impact assessment area. For the WRRF site, the impact assessment area and impact area will be the same. The pipelines will likely have a smaller impact area than the impact assessment area, and will be refined within the impact assessment area as the design progresses. Pipeline impact areas are expected to typically be between around 10-20 metres wide. The impact areas and impact assessment areas are shown in Figure 2.2.

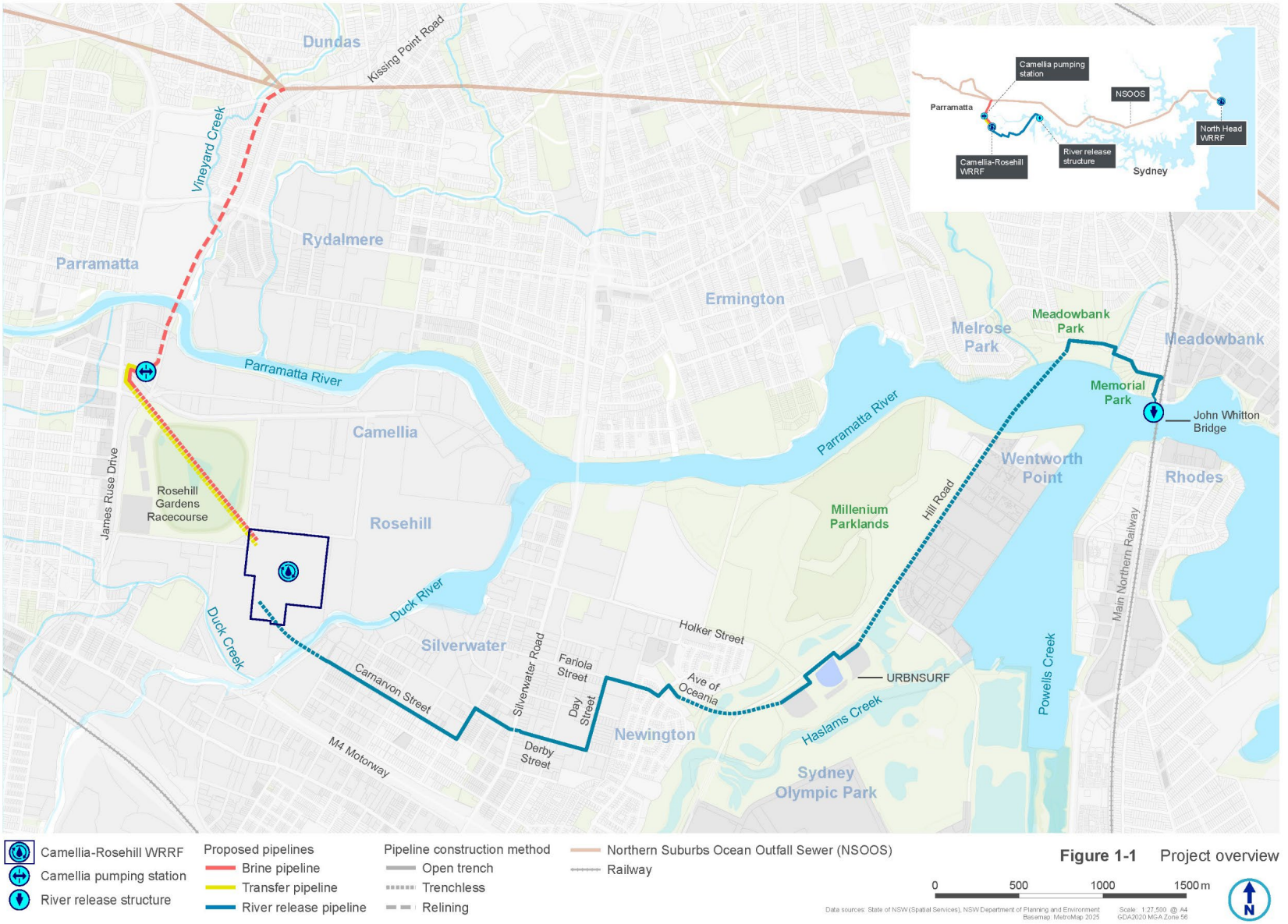

Figure 2.1 Project overview

Paper Size ISO A3

0 100 200 300 400 500

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56

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GHD

Sydney Water Corporation
GPOP WCM Project
Waste Management Impact Assessment

Construction compounds overview

Project No. **12655715**
Revision No. **1**
Date **13/10/2025**

FIGURE 6.2

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Print date: 13 Oct 2025 - 13:02

Data source: Sydney Water, World Imagery: Earthstar Geographics. Created by: elanuza

3. Legislative and policy framework

The NSW Environment Protection Authority (EPA) is the primary regulator of waste and pollution in NSW. The EPA regulates the transport and disposal of hazardous waste, and works with industry to find sustainable solutions to minimise the amount of waste going to landfill. In NSW, acts and regulations govern waste management. Anyone who handles, stores, transports, processes, recycles or disposes of waste must follow these rules to minimise harm to human health and the environment.

Table 3.1 summarises the plans, policies and guidelines for waste management that are relevant to the project.

Table 3.1 Legislation and policy relevant to technical study

Legislation/Policy	Brief description and intent	Relevance to the study
Environmental Planning and Assessment Act 1979 (EP&A Act) (DPE, 1979)	The EP&A Act and Environmental Planning and Assessment Regulation 2021 (EP&A Regulation) establish the planning and approvals process in NSW. It provides for the making of Environmental Planning Instruments (EPIs) including Local Environmental Plans (LEPs) and State Environmental Planning Policies (SEPPs), which set out requirements for particular localities and/or particular types of development. The applicable EPIs and the EP&A Regulations determine the relevant planning approval pathway and the associated environmental assessment requirements for proposed development activities. It includes provisions related to the management, storage, and disposal of waste to prevent environmental harm.	The project is being assessed as State Significant Infrastructure (SSI) for assessment under Division 5.2 of the EP&A Act.
Waste Avoidance and Resource Recovery Act 2001 (WARR Act) (NSW EPA, 2001)	The WARR Act is the overarching waste management legislation in NSW. The objectives of the WARR Act include encouraging the most efficient use of resources, reducing environmental harm and ensuring resource management decisions are made against a hierarchy that gives preference to waste avoidance and resource recovery. The main provisions of the WARR Act relate to the preparation of waste strategies and extended producer responsibility schemes. The WARR Act commits the NSW Government to refreshing and updating its waste strategy every five years – to review and continually improve the state's policies and targets for waste reduction and landfill diversion. The current statutory waste strategy is the NSW Waste and Sustainable Materials Strategy 2041 (DPIE, 2021). Extended producer responsibility schemes may also be made under the WARR Act. Schemes for waste packaging, mobile phones, agricultural chemicals and containers, polyvinyl chloride, oils and lubricants and tyres are identified schemes in place in NSW.	The approach to waste management in this impact assessment considers the waste hierarchy that gives preference to waste avoidance and resource recovery, as per the objectives of the WARR Act.
Protection of the Environment Operations Act 1997 (POEO Act) (NSW EPA, 1997a)	The POEO Act is the principal environmental protection legislation in NSW that addresses waste. It sets out the waste classifications, licensing requirements and other regulatory controls that would be applicable to waste generated by the project. It provides a range of controls about waste management requirements including the means of processing, handling, moving, storage and disposal of materials. The POEO Act defines and classifies offences relating to waste (Tier 1-3) and sets penalties, with prescribed penalty notice amounts provided in the POEO (General) Regulations. The POEO Act also regulates chemical pollution and waste management, and specifies licensing requirements for activities including hazardous waste generation, storage and transport.	The project is defined as a scheduled activity for sewage treatment in accordance with Clause 36 of schedule 1 of the POEO Act and therefore would require an environment protection licence (EPL) for operation of the treatment system. A licence variation application would be required to incorporate the project as part of the NSOOS System EPL (EPL No. 378). The waste management procedures outlined in the waste management impact assessment are informed by the POEO Act.

Legislation/Policy	Brief description and intent	Relevance to the study
Work Health and Safety (WHS) Act 2011	The WHS Act 2011 provides a framework to protect the health, safety and welfare of all workers (including employees, contractors, subcontractors, outworkers, apprentices and trainees, work experience students, volunteers, employers who perform work) at work. It also protects the health and safety of all other people including the general public who might be affected by the work. The WHS Act sets out the requirements for the following: – Incident notification – Consultation with workers – Issue resolution – Inspector powers and functions – Offences and penalties	Handling of asbestos and contaminated soils would be undertaken in accordance with the requirements outlined in the WHS Act 2011 and Work Health and Safety Regulations 2025.
Protection of the Environment Operations (Waste) Regulation 2014 (Waste Regulation) (NSW EPA, 2014a)	The Waste Regulation sets out obligations that apply to waste managers, consigners, transporters and receivers dealing with waste generated by the project. The main provisions of the Regulation relate to the payment of a waste levy by licensed waste receivers, the requirements to track the transportation and disposal of certain types of waste, and specific requirements regarding the transportation and management of asbestos waste. Schedule 1 of the Regulation lists the types of waste that must be tracked during transport and disposal. Obligations to track these wastes apply to consigners, transporters and receivers. The responsibilities of consigners generally relate to ensuring that transporters and receivers of their waste hold the relevant licences to deal with the waste. Part 7 of the Regulation contains provisions for the transportation and management of asbestos waste, including requirements for its containment during transport, reporting requirements for transporters and receivers of asbestos waste, the manner in which asbestos is disposed, and a prohibition on the reuse or recycling of asbestos waste.	The project involves the generation of wastes that must be tracked according to the Protection of the Environment Operations (Waste) Regulation.
The Work Health and Safety Regulation 2025	The WHS Regulation 2025 provides detailed requirements and duties for work health and safety related to the management of hazardous chemicals in the workplace. This includes requirements for labelling, safety data sheets (SDS), risk assessments, and control measures. It is developed to protect the health, safety, and welfare of all workers and the health and safety of other people who may be affected by the work.	The project involves ground disturbing activities, including the excavation of asbestos containing material, during the construction phase. It also involves the use of hazardous chemicals during operations and the generation of waste from these chemicals. This regulation is thus relevant to the construction phase of the project, in relation to the management of asbestos containing material and chemical waste during operation.

Legislation/Policy	Brief description and intent	Relevance to the study
NSW Waste and Sustainable Materials Strategy 2041 Stage 1: 2021-2027 (DPIE, 2021)	The NSW Waste and Sustainable Materials Strategy 2041 (DPIE, 2021) has been released for stage 1, covering the period 2021 to 2027. The strategy sets out the long-term vision for managing waste, planning for infrastructure, reducing carbon emissions, creating jobs, and refocusing the way NSW produces, consumes and recycles products and materials. The NSW Waste Strategy updates NSW's priorities for waste and resource recovery to reflect the NSW Circular Economy Policy Statement (described below), the Net Zero Plan Stage 1:2020–2030 and the National Waste Policy Action Plan. The strategy recognises that NSW is committed to making the transition to a circular economy over the next 20 years. Transitioning to a circular economy means that we use our resources efficiently and make them as productive as possible. The strategy identifies the following key challenges to the management of waste in NSW: – NSW is running out of space to deal with residual waste – Recycling is under pressure – Waste and materials usage significantly contribute to carbon emissions – Waste can damage our environment The strategy provides a 10-year target for 80 per cent average recovery rate from all waste streams by 2030 and a target to triple the plastics recycling rate by 2030.	The strategy informs the waste management procedures and mitigation measures outlined in this waste management impact assessment.
NSW Circular Economy Policy Statement: Too Good to Waste (NSW EPA, 2019)	The NSW Circular Economy Policy Statement provides a framework for implementing initiatives throughout the product life cycle, from design, manufacturing, and retail to end-of-life-disposal. These initiatives would promote long-lasting design, maintenance, repair, re-use, sharing, transforming products into services, remanufacturing, and recycling. The NSW Government released the NSW Circular Economy Policy Statement: Too Good to Waste (NSW EPA 2019) (the NSW Circular Economy Policy) to help guide decision making during the transition to a circular economy. A circular economy changes the typical cycle of production, use and disposal, to further integrate resource reduction, re-use and recycling. This aims to keep products in use for as long as possible, increasing the economic, social and environmental benefits for NSW. The NSW Circular Economy Policy forms the basis for the NSW Waste Strategy. The circular economy principles provided in the policy capture the intent of the National Waste Policy principles and go beyond waste management. The policy statement provides a framework for implementing initiatives throughout a product's life cycle, based on seven key principles: 1. Sustainable management of all resources 2. Valuing resource productivity 3. Design out waste and pollution 4. Maintain the value of products and materials 5. Innovate new solutions for resource efficiency 6. Create new circular economy jobs 7. Foster behaviour change through education and engagement	The policy informs the waste management procedures outlined in this waste management impact assessment. Majority of excavated material generated during construction of the project would be reused within the project impact area to avoid disposal to landfill.

Legislation/Policy	Brief description and intent	Relevance to the study
Waste Classification Guidelines: Part 1 Classifying (NSW EPA, 2014b) and Addendum (NSW EPA, 2016)	The Waste Classification Guidelines (NSW EPA, 2014b) expand on the classifications of waste in Schedule 1 of the POEO Act and Schedule 1 of the Waste Regulation. The classification of waste under the POEO Act and supporting guidelines is as follows: – Restricted solid waste: A substance meeting the specific contaminant concentrations and/or toxicity characteristics defined in the Waste Classification Guidelines (NSW EPA, 2014b). – Liquid waste: A substance that shows flowing characteristics at an angle of less than five degrees above horizontal, and becomes free flowing at or below 60 degrees Celsius or when it is transported. – Special waste: Clinical and related waste, asbestos waste and waste tyres. – Hazardous waste: • Substances that are Class 1 (explosives), Class 2 (gases), Class 5 (oxidising substances and organic peroxides) or Class 8 (corrosives) under the Transport of Dangerous Goods Code. • Substances under Division 4.1 (flammable solids), Division 4.2 (substances liable to spontaneous combustion), Division 4.3 (substances which emit flammable gas on contact with water) or Division 6.1 (toxic substances) of the Transport of Dangerous Goods Code. • Containers having previously contained Class 1, 3, 4, 5, 6.1 or 8 dangerous goods under the Transport of Dangerous Goods Code. • Other materials generated or collected under certain circumstances including coal tar or coal tar pitch waste, lead-acid or nickel-cadmium batteries, lead paint, or otherwise classified as hazardous waste by the NSW Environment Protection Authority and a mixture of any of the above. – General solid waste (non-putrescible): Numerous wastes other than those listed above. Examples include glass, plastic, concrete, metal, wood, asphalt and non-contaminated excavated material such as soil or gravel. – General solid waste (putrescible): Numerous wastes other than those listed above. Examples include manure and nightsoil, food waste and domestic waste with putrescible organics. – Trackable waste: Substances listed in Schedule 1 of the Protection of the Environment Operations (Waste) Regulation 2014. • Asbestos has separate tracking requirements under Part 7 of the Regulation.	The waste generated from this project must be classified according to these guidelines to ensure appropriate storage, collection and disposal.
Sydney Water Environmental Policy (Sydney Water, 2023)	Sydney Water's Environmental Policy (Sydney Water, 2023) states that it is committed to maximising resource value and supporting a circular economy by responsibly managing energy, water and materials, and minimising waste creation.	The objectives of the policy inform the waste management procedures and mitigation measures outlined in this waste management impact assessment.

Legislation/Policy	Brief description and intent	Relevance to the study
Sydney Water Sustainability Policy (Sydney Water, 2024a)	Sydney Water's Sustainability Policy (Sydney Water, 2024a) contains seven sustainability principles to allow for the consideration of sustainability in their work. The fourth principle is 'Strive for regenerative and circular outcomes', which involves supporting a transition to a circular economy within their operations and supply chain. The policy states that this would be achieved by: – Designing out waste and pollution – Keeping products and materials in use by valuing and designing for durability, reuse, remanufacturing, and recycling – Caring for Country and regenerating natural systems by preserving and enhancing renewable resources, biodiversity and ecosystem services	The objectives of the policy inform the waste management procedures outlined in this waste management impact assessment. Section 6.1.4.1 provides waste planning measures to reduce and reuse waste.
Strategic Investment Plan 2025-2035: Environmental Protection (Sydney Water, 2024b)	Sydney Water's Strategic Investment Plan 2025-2035: Environmental Protection (Sydney Water, 2024b) contains five objectives to achieve their strategy and vision to create a better life with world-class water services. One of these objectives is 'recover resources'. To achieve this, the plan notes the opportunity to 'apply circular economy principles to reduce waste to landfill costs and recover more materials,' and to 'design and deliver new assets to reduce waste'. The plan also notes Sydney Water's commitment to maximise recycling and reuse of water, energy and materials and minimise and manage waste, specifically, maintaining their current target of 85% of waste materials (generated from construction, office and operation) recycled and reused.	This plan informs the waste management procedures outlined and the waste management facilities chosen in this impact assessment.
Camellia-Rosehill Place Strategy (NSW Department of Planning and Environment, 2022)	The Camellia-Rosehill Place Strategy (NSW Department of Planning and Environment, 2022) provides a strategic 20-year vision to build on current economic and employment opportunities and apply a holistic approach to environmental management and sustainability, with the goal of becoming a net-zero precinct by 2040. One key aspect of this strategy is the development of a circular economy in the area. This component of the strategy would be achieved by supporting water, waste and energy recycling initiatives and adopting a circular economy approach to rethink waste as a resource to direct the precinct towards being zero-waste.	The waste management procedures were developed with consideration to the strategy goals.
Place-based Infrastructure Compact Pilot for Greater Parramatta and the Olympic Peninsula (Greater Sydney Commission, 2020)	The Place-based Infrastructure Compact Pilot for Greater Parramatta and the Olympic Peninsula report (Greater Sydney Commission, 2020) provides recommendations for the Camellia-Rosehill Precinct, including managing waste efficiently and setting a focus on supporting the development of a circular economy so that more waste is reused and recycled.	The objectives of the policy inform the waste management procedures outlined in this waste management impact assessment. See Section 6.1.4.1 for waste planning measures to reduce and reuse waste.

Legislation/Policy	Brief description and intent	Relevance to the study
NSW EPA Biosolids Regulatory Review (ongoing) (NSW EPA, 2023)	The NSW EPA is currently developing a Biosolids Regulatory Approach to update previous regulations that apply to biosolids reuse, due to the emergence of new contaminants of concern in the past 25 years. The EPA has been consulting with the community, local councils, Aboriginal Land Councils, EPA licenced sewage treatment plant operators, waste associations and contractors, composters, farmers and landowners, mining operators, research institutions and other government agencies and jurisdictions to inform this regulation.	Biosolids would be one of the waste types generated from operation of the WRRF and thus would be regulated by the Biosolids Regulatory Approach once it has been finalised. The in-progress Biosolids Regulatory Approach contains a biosolids classification system taking into account the following: – Contaminant grade: determined by the concentrations of a suite of contaminants in the biosolids – Stabilisation grade: determined by which treatments the product has had applied to reduce pathogens and vector attraction and analysis against microbial standards. The grades dictate the permissible end uses for the biosolid product. Beneficial reuse of biosolids are a key part of Sydney Water's circular economy goals. Sydney Water will comply with the environmental obligations set out by the NSW EPA. The potential impacts and outcomes of the NSW EPA's ongoing biosolids regulatory review on the project have been considered in this assessment.

4. Methodology

4.1 How waste types and quantities were determined

Waste quantities and types were determined based on the following assumptions:

– Construction:
  - The construction program would run for a duration of 36 months. Table 2.1 provides further information on the construction program.
  - Construction would generally be undertaken Monday to Saturday, with no work on Sundays and public holidays, except where needed, for example for oversized deliveries.
  - There may be up to 200 construction personnel on-site at the peak of construction of the Camellia-Rosehill WRRF, 25 construction personnel at the peak of construction of the river release pipeline, 30 construction personnel on-site at the peak of construction of the brine and transfer pipeline and 30 construction personnel on-site at the peak of the Camellia pumping station upgrade works over the duration of the construction program.
– Operational:
  - The Camellia-Rosehill WRRF would operate 24 hours a day, seven days a week.
  - There would be 10 operational personnel on-site during operation.

Construction and operational waste generation rates, including food waste and office waste generation rates, are based on preliminary design information and typical waste generation rates provided by Sydney Water which were scaled for the purpose of this assessment. The reference design drawings and design drawing of the original pipe arrangement were also used to inform the construction waste quantities from the Camellia pumping station upgrade works.

A description of the waste classifications is provided in Table 3.1.

A review of construction documentation and other specialist studies undertaken for the EIS was also undertaken to identify types and quantities of waste streams generated from particular construction activities:

– 80% Design Documentation – to determine the types and quantities of waste generated from the operations phase (Jacobs, 2025b)
– Cut and Fill Analysis – to determine the types and volumes of excavated soils (Jacobs, 2025e)
– Detailed Site Investigation (DSI) – to determine the types and volumes of contaminated soils and potential contaminants of concern (Jacobs, 2025a; Jacobs, 2025c; Jacobs, 2025f)
– Biodiversity Development Assessment Report – to determine the volumes of garden waste (Arcadis, 2025)
– Sydney Water Greater Parramatta Olympic Peninsula SP0067 Camellia Pumping Station Reference Design Drawings – to determine quantities of waste from concrete flooring removal and shed demolition (Jacobs, 2025d)
– Camellia LLPS No. 67 – Amplification – Second Stage Pipe Arrangement – to determine quantities of waste from pump and pipework demolition (Metropolitan Water Sewerage and Drainage Board, 1966)

4.2 Categories of waste classification

The likely waste classification for the expected waste streams were based on the following categories identified in the Waste Classification Guidelines (2016):

– Special waste
– Hazardous waste
– Restricted solid waste
– Liquid waste
– General solid waste (non-putrescible)

– General solid waste (putrescible)

4.3 Impact assessment method

A qualitative risk assessment was undertaken to indicate the potential environmental impacts associated with the generation and management (including storage, handling and transportation) of construction and operational wastes. The associated risk for each potential impact was assessed based on the consequences and likelihood of it occurring. Table 4.1 shows the risk categories used for this assessment.

Table 4.1 Impact assessment table

Consequence of impact	Likelihood of impact				
	Rare	Unlikely	Possible	Likely	Almost Certain
Severe	Low	Low to moderate	Moderate to high	Major	Major
Moderate	Negligible to low	Low	Moderate	Moderate to high	High
Mild	Negligible	Low	Low	Low to moderate	Moderate
Negligible	Negligible	Negligible	Negligible to Low	Low	Low

The risk of any of the potential impacts associated with waste generation and management on the environment has been determined by considering the likelihood and consequence of the impact.

The likelihood ratings are defined as follows:

– **Rare** – May occur in exceptional circumstances, such as less than 10% chance of occurring in the next 24 months if the risk is not mitigated.
– **Unlikely** – Has a 10-30% chance of occurring in the future if the risk is not mitigated.
– **Possible** – Has a 40-60% chance of occurring in the next 24 months if the risk is not mitigated.
– **Likely** – Has a 60-90% chance of occurring in the next 24 months if the risk is not mitigated.
– **Almost Certain** – Has a greater than 90% chance of occurring in the next 24 months if the risk is not mitigated.

The consequence ratings are defined as follows:

– **Severe** – Irreversible damage to human health or death and/or substantial pollution of sensitive water resources and/or major change to the number of one or more species or ecosystems and/or irreparable damage to buildings or structures.
– **Moderate** – Non-permanent effects to humans and/or substantial pollution of non-sensitive water resources or small-scale pollution and/or change to population densities of non-sensitive species and/or damage to sensitive buildings or structures.
– **Mild** – Slight short-term health effects to humans and/or slight pollution to non-sensitive water resources and/or some changes to population densities but with no negative effects on the function of the ecosystem and/or easily repairable effects of damage to buildings or structures.
– **Negligible** – No measurable health effects to humans and/or insubstantial pollution to non-sensitive water resources and/or no major changes to population densities in the environment or in any ecosystem and/or very slight non-structural damage or cosmetic harm to buildings or structures.

Risk ratings are defined as follows:

– **Negligible** – The presence of the identified impact does not give rise to the potential to cause major harm.
– **Low** – It is possible that harm could arise from an identified impact, though this is likely to be mild.
– **Moderate** – It is possible that harm could arise, but it is unlikely that such harm would be major.
– **High** – Major harm is likely to be experienced from an identified impact without mitigation measures in place.
– **Major** – There is a high probability that severe harm could arise from an identified impact without appropriate mitigation measures.

4.4 Cumulative impact approach

Cumulative impacts associated with waste management were assessed in accordance with the *Cumulative Impact Assessment Guidelines for State Significant Projects* (DPIE, 2022). The key potential cumulative impact associated with waste management is related to demand on local waste management facilities and their capacity to receive waste generated by the project during construction. During the operations phase, the quantities of waste generated would be lower than during the construction phase, resulting in a lower cumulative impact. Thus, only cumulative waste management impacts during the construction phase of the project were considered. The following criteria was used to determine which projects to include in the cumulative impact assessment:

– The cumulative search area was delineated based on where impacts are expected: within the Camellia Precinct, Hill Road, Meadowbank Park, and Silverwater and pipeline alignments to capture any impacts on the surrounding road network.
– Modifications or new projects that received their most recent approval within the last 5 years were considered.
– Projects that generate significant quantities of waste where the construction of the project overlaps with GPOP construction were considered. Where timeframes are unknown, projects were considered relevant.

5. Existing environment

This section outlines the existing environment of the project site and its surrounding areas, with a focus on aspects of the environment that could impact the types and quantities of waste generated by the project, as well as nearby waste management infrastructure facilities that handle and dispose of these waste materials.

5.1 Land use

5.1.1 Camellia-Rosehill WRRF

The WRRF site was a commercial/industrial subdivision, with mainly commercial/industrial surrounding land uses. These include a beverage distribution centre (Foster DC), electrical sub-station and Rosehill Gardens Racecourse to the north of the site, Downer asphalt recovery facility to the east, vacant land subject to civil works and Duck River to the south and Rosehill Gardens Racecourse and commercial/warehouse facilities to the west. The general precinct area has a history of mixed industrial development dating back to the 1880s. Developments included oil refining, a tannery, a meatworks, a lumber yard (which potentially included timber treatment), and facilities manufacturing asbestos products (including boards and pipes), plasterboard, bricks, roof tiles, chrome chemicals, chlorinated hydrocarbons, bitumen, rubber tyres, paints, arsenic-based herbicides, food products, paints, plastic pipes and pharmaceuticals. Other industries in the precinct area have included solid and liquid waste storage, recycling and treatment, and concrete recycling operations. Many of these industrial facilities have been or are subject to an EPL.

Between 1926 and 2012, the land was part of the Clyde Refinery, the operations of which primarily involved the receipt and refining of crude oil and finishing product piped from the Gore Bay Terminal. Since the cessation of refining operations, the former Clyde Refinery has been partially used as a terminal, which primarily involves the receipt, storage and distribution of finished petroleum products. Following the conversion of the site from a refinery to a terminal as part of the Clyde Terminal Conversion Project, the western area was no longer required for operational purposes. The site was declared significantly contaminated land under Section 11 of the *Contaminated Land Management Act 1997* on 8 June 2016 due to the presence of contaminated soil and groundwater. The groundwater was found to be contaminated with the following substances by the NSW EPA:

– Light Non-aqueous Phase Liquid
– Total petroleum hydrocarbons
– Benzene, Toluene, Ethylbenzene and Xylenes
– Polycyclic aromatic hydrocarbons
– Lead and chromium including hexavalent chromium
– Perfluorooctane sulfonate

Remediation of the WRRF site and surrounding areas was undertaken in the following years as part of the Clyde Western Area Remediation Project to enable future commercial and/or industrial land uses. In July 2022, the declaration of significantly contaminated land was removed by the EPA. Residual contamination was no longer significant enough to warrant regulation under the *Contaminated Land Management Act 1997* (Jacobs, 2025a).

The remediated site is currently vacant and is being managed under three long-term environmental management plans to manage residual contamination (Sydney Water, 2024c). Imported natural material was placed as part of the site management works and acts as a physical separation barrier to the underlying residual contamination.

5.1.2 Transfer pipeline and brine pipeline

The transfer pipeline would start at the Camellia pumping station site, travel downstream in a south easterly direction and discharge into the new inlet works at the Camellia-Rosehill WRRF site. The entirety of this pipeline would travel through Rosehill. The brine pipeline would start at the northwestern corner of the WRRF site and travel downstream in a north westerly direction to the Camellia pumping station site where it would connect to the existing DN750 header running to the NSOOS. This pipeline would start at Rosehill, travel into Parramatta and end

at Dundas. The pipeline would run underneath private property, public roads and proposed rail lines and cross Parramatta River.

5.1.3 River release pipeline

The river release pipeline would travel east from the Camellia-Rosehill WRRF to the outfall location at John Whitton Bridge at Meadowbank. It would start at Rosehill, travel through Silverwater, cross through Newington, continue along Sydney Olympic Park beside Wentworth Point, before crossing the river to Meadowbank and discharging into the Parramatta River. The pipeline would run underneath private property, public roads and rail lines, wetlands, parks and cross Duck River and Parramatta River.

5.2 Contamination

5.2.1 WRRF

5.2.1.1 Contaminated soils

A DSI (Jacobs, 2025a) was undertaken by Jacobs to characterise the existing soils at the WRRF site. Preliminary waste classification and leachability testing results classified most of the soil samples as general solid waste or special waste asbestos. However, soil samples from locations along the northern boundary, central-southern portion and southern boundary of the WRRF site showed concentrations of hydrocarbons, benzene and select metals (chromium, lead and mercury) which classified these materials as restricted and/or hazardous wastes.

Sampling of the on-site stockpile was also undertaken and the DSI determined that the reuse of the material on-site as general fill is considered acceptable provided it follows the relevant management plans. This is because the historical use of the site means it is unlikely to represent a terrestrial ecosystem of significant value. (Jacobs, 2025a)

5.2.1.2 Acid sulfate soils

ASS is expected in the low-lying Holocene wetland areas that once existed towards the east of the WRRF site. Based on the chromium reducible sulfur results, soil materials beneath the site between depths of 1.5 metres below ground level (mbgl) and 12.95 mbgl are considered to be ASS. These samples were collected in 2024 prior to raising the site levels by at least 1.7 m.

5.2.1.3 Asbestos contaminated soils

Potential asbestos containing materials (PACM) were observed as randomly scattered fragments of non-friable fibre cement sheeting across the surface of the site, with most observed in the southwestern portion. In surface fill materials (0.0-0.1 mbgl) PACM were identified as scattered bonded and fibrous material inclusions in fill and asbestos was identified in two sampling locations, one in the southwestern area of the site and one slightly east of the centre of the site. Bonded asbestos containing materials and fibrous asbestos/asbestos fines were identified at three locations within subsurface fill material at the site (0.1-1.0 mbgl from 2024 ground level prior to raising the site levels). One sample was located within the northeast portion, one in the eastern portion and one within the southeastern portion. No asbestos was identified in materials excavated from depths beyond 1.0 mbgl. (Jacobs, 2025a)

5.2.2 Brine and transfer pipeline and Camellia pumping station

5.2.2.1 Contaminated soils

Preliminary waste classification and leachability testing results classified the soils along most of the brine and transfer pipeline alignment as special waste (asbestos). Although heavy metals and polycyclic aromatic hydrocarbons were reported to exceed the respective human health and ecological health criteria within fill materials at two locations near the Rosehill Gardens Racecourse overflow carpark, the leachability testing results indicated that soil from these locations would be classified as general solid waste. Further detail on extent of contamination impacted by the project is provided in the soil and contaminated land impact assessment.

5.2.2.2 Acid sulfate soils

Potential acid sulfate soils (PASS) could be located in fill and natural soils at locations within and/or between the Camellia-Rosehill WRRF, Rosehill Gardens Racecourse overflow carpark and the Camellia pumping station. The entire brine and transfer pipeline alignment also passes through Class 4 ASS risk areas, so ASS may be present more than 2 mbgl. Where PASS and ASS is identified, the natural material would be classified as general solid waste (non-putrescible).

5.2.2.3 Asbestos contaminated soils

Asbestos containing material in the form of fibrous asbestos/asbestos fines was identified at one location near the Rosehill Gardens Racecourse overflow carpark throughout the fill profile between 0.2-2.5 mbgl. Open trench excavation is planned in this area so asbestos containing materials will be disturbed. The pumping station is currently being managed by Sydney Water under a contamination plan for asbestos. Considering historical activities in the general area, the limitations of the asbestos sampling undertaken and the inherent nature of asbestos contamination being scattered through the fill, asbestos may be present in other fill materials along the alignment that were not sampled during the investigation and which may be further disturbed by the proposed construction activities. (Jacobs, 2025f). Further detail on presence and extent of asbestos soils impacted by the project is provided in the soil and contaminated land impact assessment.

5.2.2.4 Resource recovery

The natural material identified beneath the fill profile in the DSI may be certified as Virgin Excavated Natural Material (VENM) or Excavated Natural Material (ENM) where there is no PASS or ASS or pre-classified as general solid waste (non-putrescible). These materials would be encountered during open trenching and could be accepted at a resource recovery facility. This classification could change if the material has been impacted by operations undertaken on adjacent sites, the overlying fill materials and if the material contains sulfidic soils. (Jacobs, 2025f).

The HDD alignment is generally at depths below contaminated fill layers identified above. As such, HDD spoil may be treated for beneficial reuse off site under the treated drill mud order 2014. Sampling and testing would be required as outlined in the resource recovery order and exemption.

5.2.3 River release pipeline

5.2.3.1 Contaminated fill

Preliminary waste classification and leachability testing results classified the fill along most of the river release pipeline alignment as general solid waste or special waste (asbestos). However, there were a few sampling sites where the fill was classified as restricted solid waste or hazardous waste due to concentrations of heavy metals, total recoverable hydrocarbons and polycyclic aromatic hydrocarbons that exceeded the adopted human health or ecological criteria. The locations with these classifications are as follows:

– Restricted solid waste: five sample locations within Newington, Sydney Olympic Park, Wentworth Point and Meadowbank and one at the WRRF site.
– Hazardous waste: One location in Silverwater and one at the WRRF site.

It is noted that these waste classifications could change subject to further testing. (Jacobs, 2025c)

5.2.3.2 Acid sulfate soils

PASS is likely to be encountered in locations within Camellia, Sydney Olympic Park and Meadowbank at horizontal direction drilling (HDD) drill/retrieval locations and HDD boring in soil/weathered materials, as well as the open trenching location at Meadowbank only. Additional ASS filed screening and sampling should be undertaken targeting locations in Silverwater, Sydney Olympic Park and Meadowbank. This testing should be undertaken during detailed design of the river release pipeline.

5.2.3.3 Asbestos contaminated soils

Asbestos containing material in the form of fibrous asbestos/asbestos fines were identified at two sampling locations within Newington. It was not reported in any other fill sample laboratory tested for asbestos identification. At the locations where asbestos was identified, the proposed HDD activities are unlikely to disturb the asbestos containing material at this location as they are at approximately 25 mbgl. However, works at the HDD drill retrieval location would include excavation through the soil and may disturb the fill material in this area. Considering historical activities in the general area, the limitations of the asbestos sampling undertaken and the inherent nature of asbestos contamination, asbestos may be present in other fill materials that were not sampled during the investigation (Jacobs, 2025c).

The proposed HDD receival location for the river release pipeline at the WRRF site is likely to contain asbestos following earlier works on site as part of the Clyde Western Area Remediation project (GHD, 2024).

5.2.3.4 Resource recovery

The natural material identified beneath the fill profile during the investigation may be classified as VENM or ENM and pre-classified as general solid waste (non-putrescible) and suitable for acceptance at a resource recovery facility, except for the material in the vicinity of the former Silverwater landfill. This classification could change if the material has been impacted by operations undertaken on adjacent sites, the overlying fill materials and if the material contains sulfidic soils. (Jacobs, 2025c)

5.3 Access

The project is well serviced by main and ancillary roads which facilitate the movement of waste collection vehicles. Key transport routes are identified in the Traffic and Transport Impact Assessment which would be utilised for transport of waste to waste management facilities.

5.4 Other waste generators within the cumulative impact area

The cumulative search area includes the City of Parramatta, Canada Bay, Cumberland and City of Ryde LGAs who all provide kerbside waste collection services to their residents. There are also other recently approved projects within the cumulative impact area that are expected to generate waste during construction and/or operation of the WRRF and pipelines – some of these projects have been listed below. Most of these projects do not have confirmed waste quantities and those that do mainly generate spoil material. Further information on the cumulative impacts of GPOP and other projects is provided in Section 7.

– Rosehill Resource Recovery Facility
– SAMI – Camellia – Bitumen Plant Redevelopment
– Camellia-Rosehill Place Strategy
– SOPA Master Plan
– Parramatta Light Rail Stage 2
– Sydney Metro West – Rail infrastructure, stations, precincts and operations
– Duck River Nature Trail
– Downer Rosehill Sustainable Road Resource Centre

5.5 Waste management facilities

To ensure the wastes identified in Section 6 undergo lawful recycling or disposal, the locations of waste management facilities around the project area were investigated. The recycling and disposal facilities for each waste type would be determined based on availability/capacity, waste licensed to be accepted and confirmed waste classifications. The facilities would be documented in the Waste and Resource Recovery Plan to be prepared for the project, prior to construction commencing.

Facilities would be appropriately licensed to accept the classified waste type. A list of potential nearby waste recycling and disposal facilities is provided in Table 5.1. Local facilities were prioritised where possible to minimise haulage distance. This would be further confirmed based on the waste quantities and availability prior to the construction commencement.

Table 5.1 Waste facilities near the site

Facility Name	Address	Distance from WRRF (km via road)	Facility type	Description
Earthpower Biomass Facility[1]	35 Grand Avenue, Camellia	1.7 km	Anaerobic Digestion Facility	Accepts: – Food waste (no more than 75,000 tonnes/yr) – General solid waste (non-putrescible): paper, cardboard or plastics, metal or glass, wood, cloth or fabric (no more than 15,000 tonnes/yr).
Cleanaway Auburn Resource Recovery Centre	Hill Road, Homebush Bay	6.8 km	Resource Recovery	Accepts: – Asbestos waste (bonded only, max. 10m^3 on premises at any time) – Waste tyres (max. 50 tonnes at any time)
Cleanaway Homebush Bay Liquid Treatment Plant	Corner of Hill Road and Pondage Link, Homebush Bay	7.4 km	Liquid Treatment Plant	Accepts: – Waste mineral oils unfit for their original intended use – Waste oil/hydrocarbons mixtures/emulsions in water – Organic solvents, excluding halogenated solvents – Halogenated solvents – Waste from the production, formulation and use of organic solvents – Acidic solutions or acids in solid form – Basic solutions or bases in solid form
Boral Recycling	39a Widemere Road, Wetherill Park	17.3 km	Resource Recovery	Accepts: – Building and demolition waste – Concrete, bricks and roof tiles – Excavated natural material – Asphalt waste (including asphalt resulting from road construction and waterproofing works) – VENM – Plasterboard and ceramics – Cured concrete waste from a batch plant – Soils (must meet the following thresholds: Arsenic 40 mg/kg; Cadmium 2 mg/kg; Copper 200 mg/kg; Mercury 1.5 mg/kg; Zinc 600 mg/kg; Petroleum Hydrocarbons C6-C9 150 mg/kg; Petroleum Hydrocarbons C10-C36 1600 mg/kg; Polycyclic aromatic hydrocarbons 80 mg/kg; Polychlorinated biphenyls (individual) 1 mg/kg; no ASS or PASS)

[1] Applicable if food waste is to be segregated.

Facility Name	Address	Distance from WRRF (km via road)	Facility type	Description
ResourceCo Resource Recovery Facility	35-37 Frank Street, Wetherill Park	17.6 km	Resource Recovery	Accepts: – Synthetic fibre waste (from materials such as fibreglass, polyesters and other plastics), but excluding asbestos waste – Wood waste – Glass, plastic, rubber, plasterboard, ceramics, bricks, concrete, metal or timber – Paper or cardboard – Building and demolition waste
Sims Metal – Milperra	43 Ashford Avenue, Milperra	18.2 km	Resource Recovery	Accepts scrap metal
BINGO Eastern Creek Ecology Park	1 Kangaroo Avenue, Eastern Creek	23.6 km	Resource Recovery and Landfill	Accepts for landfilling: – Tyres (has a diameter of 1.2 m or more; and/or the tyre has been shredded or had its walls removed; and/or the tyre was delivered to the premises as part of a domestic load.) – Asbestos waste – General solid waste (non-putrescible) Accepts for resource recovery and waste storage: – VENM – Asphalt waste – Wood waste – Garden waste – Building and demolition waste – Waste tyres – Soils that meet the CT1 thresholds for General Solid Waste – General solid waste (non-putrescible)
Tyrecycle	1-21 Grady Crescent, Erskine Park	27.8 km	Resource Recovery	Accepts: – Waste tyres (max. 29,000 tonnes on premises in 12 months) – Lead acid batteries (max. 60 tonnes of this and waste oils on premises at any time) – Waste oil/hydrocarbons mixtures/emulsions in water (max. 60 tonnes of this and lead acid batteries on premises at any time)
Sydney Recycling Park	16-23 Clifton Avenue, Kemps Creek	30.3 km	Resource Recovery	Accepts general solid waste (non-putrescible)
Hi Q Kemps Creek Central	1503-1519 Elizabeth Drive, Kemps Creek	30.7 km	Resource Recovery	Accepts: – Tunnel spoil – ENM – VENM (max. 8,500 cubic metres on the premises at any one time) – Building and demolition waste (max. 30,000 cubic metres on the premises at any one time)

Facility Name	Address	Distance from WRRF (km via road)	Facility type	Description
Cleanaway Lucas Heights Resource Recovery Park	New Illawarra Road, Lucas Heights	30.8 km	Landfill	Accepts: – Asbestos waste – Tyres (max. 50 tonnes on the premises at any one time) – General solid waste (non-putrescible) – General solid waste (putrescible)
EcoCycle	22-24 Christie Street, St Marys	31.5 km	Resource Recovery	Accepts Mercury; mercury compounds – lighting waste (tubes, globes), carbon filters and other mercury containing waste
Cleanaway St Marys	40 Christie Street, St Marys	31.6 km	Resource Recovery and Landfill	Accepts: – Waste mineral oils unfit for their original intended use – Containers and drums containing controlled waste residues – Organic solvents, excluding halogenated solvents – Electronic waste – Acidic solutions or acids in solid form – Basic solutions or bases in solid form – Residues from industrial waste treatment/disposal operations – Asbestos – Soils contaminated with a substance or waste referred to in Parts 1 or 2 of Schedule 1 of the Protection of the Environment Operations (Waste) Regulation 2014 (this includes soil contaminated by polychlorinated dibenzo-p-dioxin (any congener)) – Waste oil/hydrocarbons mixtures/emulsions in water – Non-toxic salts
Cleanaway Kemps Creek Resource Recovery Park	1725 Elizabeth Drive, Kemps Creek	32.4 km	Resource Recovery and Landfill	Accepts for landfilling: – General solid waste (non-putrescible) – General solid waste (non-putrescible) subject to general or specific immobilisation approvals – Asbestos waste – Waste tyres – Restricted solid waste – Restricted solid waste subject to general or specific immobilisation approvals Accepts for resource recovery: – General solid waste (putrescible) (max. 120,000 tonnes per year putrescible and non-putrescible) – General solid waste (non-putrescible) (max. 120,000 tonnes per year putrescible and non-putrescible) – Biosolids categorised as unrestricted use, or as restricted use 1, 2 or 3, in accordance with the criteria set out in the guidelines (max. 14,400 tonnes per year)

6. Waste generation and management

The waste streams, classifications and quantities estimated to be generated during the construction and operation of the Camellia-Rosehill WRRF, river release, brine and transfer pipelines were developed in accordance with the methodology outlined in Section 4.

Management of waste streams generated by the project has been accounted for in the design of the WRRF and associated pipelines. All other construction and operational waste is typical of these activities and can be managed using standard waste strategies. Construction and operational waste would be reused and recycled where feasible in accordance with the waste management hierarchy in line with Sydney Water's goal of 85% recovery of waste materials from construction, office and operations (excluding biosolids). Waste that cannot be reused or recycled would be disposed of at appropriately licenced facilities.

6.1 Construction waste

6.1.1 Waste generating activities

Key waste generating activities during construction of the project are:

Camellia-Rosehill WRRF:

– Site preparation including establishment of construction compounds including roads and fencing
– Earthworks including excavation for building footings, electrical pits, water retaining structures, foul water pumping stations, retaining walls, pipe trenches, and other structures (this will excavate through the imported natural material on-site)
– Construction of the project including building works, paved areas, driveways, office, stormwater infrastructure and utility connections
– Operation of construction compounds including workshop and offices
– Installation and commissioning of plant and equipment

River release, brine and transfer pipelines:

– Site preparation including vegetation clearance, decommissioning and relocation of services, establishment of construction compounds
– Earthworks including horizontal directional drilling pits, micro-tunnelling launch and receival shafts, open trenches
– Construction of the project including building works, installation of equipment, storage tanks, paved areas, driveways, office, and utilities
– Operation of construction compounds including workshop and offices
– Commissioning of pipeline

Camellia pumping station:

– Upgrade to existing infrastructure including decommissioning of plant and equipment
– Earthworks including open trenching for connection of transfer main and brine pipeline to existing wet well
– Commissioning of pumping station

Minor quantities of other waste streams such as other construction materials (for example asphalt, aggregate, timber formwork), offcuts and cables may also be generated.

6.1.2 Waste classifications and quantities

Key waste streams anticipated to be generated during construction of the project are identified in Table 6.1. The methodology outlined in Section 4.1 informed the types and quantities of waste generated during construction. A number of the identified waste streams are intended to be reused or recycled, as outlined in section 6.1.4.

Note that all spoil material generated during construction of the WRRF site would be reused on-site, therefore has not been identified as a waste stream for the purpose of this assessment. The waste streams identified below include excess spoil material and waste material that is proposed to be transferred off-site for disposal, treatment, recycling or beneficial reuse.

Table 6.1 Key waste streams and classifications – construction

Activity	Waste streams that may be produced	Likely classification of waste streams	Estimated quantity over construction period
Camellia-Rosehill Water Resource Recovery Facility			
Operation of construction site amenities	Site office waste including paper and cardboard*	General solid waste (non-putrescible)	27 t
	Food waste from site offices and crib rooms*	General solid waste (putrescible)	53 t
	Wastewater (sewage from ablution facilities)	Liquid waste	Up to 30 kL/day at peak construction
Construction of the project including building works, installation of equipment, paved areas, driveways, office and utilities	Wastewater (greywater from construction activities such as equipment washdown including concrete washout, contaminated groundwater, surface water collected in retention/detention basins and erosion and sediment control systems)	Liquid waste	25,200 m^3
	Wood waste*	General solid waste (non-putrescible)	109 t
	Electrical infrastructure waste*	General solid waste (non-putrescible)	1,008 kg
	Piping materials*	General solid waste (non-putrescible)	672 t
	Metal wastes including steel and aluminium*	General solid waste (non-putrescible)	2,590 t
	E-waste*	General solid waste (non-putrescible)	Minimal
	Other construction waste including concrete waste from pipe off cuts or pouring remnants and waste packaging*	General solid waste (non-putrescible)	9,142 m^3
	Synthetic fibres and membranes*	General solid waste (non-putrescible)	7 t
	Dewatered grit, sediment, litter and gross pollutants	General solid waste (non-putrescible)	252 m^3
Plant and equipment waste	Tyres*	Special waste	9 t
	Waste oils*	Liquid waste	1,470 L
	Unwashed containers that previously held Class 1, 3, 4, 5 or 8	Hazardous waste	504 m^3
	Used batteries	Hazardous waste	91 kg
	Construction plant waste*	General solid waste (non-putrescible)	126 m^3

Activity	Waste streams that may be produced	Likely classification of waste streams	Estimated quantity over construction period
Commissioning of the WRRF	Partially treated water	Liquid waste	5,425 ML
	Screenings (combined coarse and fine)	General solid waste (putrescible)	49,445 m^3
	Grit	General solid waste (putrescible)	10,695 m^3
	Dewatered cake	General solid waste (putrescible)	6,000 t
River release and brine and transfer pipelines			
Operation of construction site amenities	Site office waste including paper and cardboard*	General solid waste (non-putrescible)	8 t
	Food waste from site offices and crib rooms*	General solid waste (putrescible)	17 t
	Wastewater (sewage from ablution facilities)	Liquid waste	Up to 8 kL/day at peak construction
Site preparation including vegetation clearing, earthworks, and establishment of compounds	Untreated drilling muds	Liquid waste	759 m^3
	Spoil (contaminated soil/fill, soils containing asbestos)	Special waste (for soils containing asbestos), restricted solid waste, hazardous waste	Minimal
	Acid sulfate soil	General solid waste (non-putrescible)	Unknown (subject to testing in accordance with Section 6.1.4.6)
	Garden waste*	General solid waste (non-putrescible)	4.97 ha
	Treated drilling muds (dewatered to create a solid – drilling fluid has been removed)*	General solid waste (non-putrescible)	1359 m^3
Construction of the project including building works, HDD, trenching, installation of equipment, paved areas, driveways, office and utilities	Wastewater (greywater from construction activities such as equipment washdown including concrete washout, contaminated groundwater, surface water collected in retention/detention basins and erosion and sediment control systems)	Liquid waste	14,118 m^3
	Spoil (excess from trenching or HDD)*	General solid waste (non-putrescible)	26,500 m^3
	Partially treated water	Liquid waste	7 ML
	Wood waste*	General solid waste (non-putrescible)	36 t
	Piping materials*	General solid waste (non-putrescible)	750 t
	Other construction waste including waste packaging*	General solid waste (non-putrescible)	2,259 m^3
	Synthetic fibres*	General solid waste (non-putrescible)	4 t
	Dewatered grit, sediment, litter and gross pollutants	General solid waste (non-putrescible)	141 m^3

Activity	Waste streams that may be produced	Likely classification of waste streams	Estimated quantity over construction period
Plant and equipment waste	Tyres*	Special waste	49 t
	Waste oils*	Liquid waste	8,550 L
	Unwashed containers that previously held Class 1, 3, 4, 5 or 8	Hazardous waste	282 m^3
	Used batteries*	Hazardous waste	335 kg
	Construction plant waste*	General solid waste (non-putrescible)	71 m^3
Pipeline commissioning wastes	Hydrostatic test water*	Liquid waste	6,454 m^3
	River release pipeline disinfection flushing water	Liquid waste	3 ML
Camellia pumping station upgrade			
Operation of construction site amenities	Site office waste including paper and cardboard*	General solid waste (non-putrescible)	5 t
	Food waste from site offices and crib rooms*	General solid waste (putrescible)	9 t
	Wastewater (sewage from ablution facilities)	Liquid waste	Up to 5 kL/day at peak construction
Site preparation including vegetation clearing, earthworks, establishment of compounds, pipeline connection works, construction of footings for transformer building and clearance works	Asbestos waste (at surface, in shed)	Special waste	Unknown (subject to testing in accordance with Section 5.2.2.3)
	Spoil (contaminated soil/fill, soils containing asbestos)[2]	Special waste (for soils containing asbestos)	Minimal (subject to further investigation per Section 6.1.4.7)
	ASS	General solid waste (non-putrescible)	Unknown (subject to testing in accordance with Section 6.1.4.6)
	Garden waste*	General solid waste (non-putrescible)	0.08 ha
Construction of the project including building works, installation of equipment, paved areas, driveways, office and utilities	Waste pumps and pipework (cast iron)*	General solid waste (non-putrescible)	27 t
	Concrete waste*	General solid waste (non-putrescible)	77 m^3
	Shed demolition waste*	General solid waste (non-putrescible)	70 m^3
	Piping offcuts*	General solid waste (non-putrescible)	Minimal
	Wastewater (greywater from construction activities such as equipment washdown including concrete washout, contaminated groundwater, surface water collected in retention/detention basins and erosion and sediment control systems)	Liquid waste	Minimal

* Waste streams intended for reuse or recycling

[2] Contaminated spoil will be stored on-site and reused as much as possible (further details provided in Section 6.1.4.7).

6.1.3 Potential impacts

The potential impacts of waste generated from the project during construction and commissioning, if not managed appropriately, are summarised in Table 6.2 and an associated risk rating provided, based on the impact assessment method outlined in Section 4.3. The impacts associated with contamination, noise, odours and traffic have been assessed in detail within other technical studies in the EIS.

Table 6.2 Potential impacts associated with waste generation and management – construction

Aspect of waste management	Potential impacts	Unmitigated risk
Project-wide potential impacts		
Generation of waste, including excavation and handling	– Dust from excavation, handling and movement of waste. – Erosion and sedimentation due to runoff from exposed surfaces. – Generation of turbid plumes and mobilisation of contaminants or release of turbid or contaminated waters. – Sediment laden/contaminated runoff, uncontrolled release of commissioning wastes and leachate generation, resulting in uncontrolled release to waterways impacting water quality and aquatic ecosystems. – Human health risks due to handling of contaminated soil/fill and hazardous materials – Air quality impacts from excavation and movement of spoil containing asbestos.	**Moderate to high** (Likely, moderate)
Waste transportation	– Dust from loading waste onto vehicles and movement of waste on haul roads. – Traffic generated by haulage of waste to reuse/disposal facilities. – Odours from loading waste onto vehicles and movement of waste collection vehicles to disposal or recycling facilities. – Mud tracking on road from waste collection vehicles. – Unlawful transport and disposal. – Incorrect classification of waste materials.	**Moderate** (Possible, Moderate)
Non-classified or incorrectly classified waste transport and disposal	– Regulatory non-compliance. – Contamination of receiving facility. – Contamination of soils, groundwater and/or surface water. – Unlicensed waste contractors transporting waste.	**Moderate** (Possible, Moderate)
Unlicensed waste contractors transporting waste	– Regulatory non-compliance. – Potential illegal dumping of waste. – Potential for disposal at unlawful unlicensed receival sites.	**Low to moderate** (Likely, mild)
Storage and segregation of waste (including stockpiles)	– Odours and dust from stockpiling/storage of wastes. – Human health risks due to storage of contaminated soil/fill and hazardous materials, such as asbestos, contaminated fill and ASSs – Sediment laden/contaminated runoff and leachate generation, which if located close to receiving waterbodies could impact water quality and aquatic ecosystems. – Waste build-up from irregular or disrupted collections. – Cross contamination of soils due to improper segregation and storage. – Attracting pests and disease vectors.	**Moderate to high** (Likely, moderate)

Aspect of waste management	Potential impacts	Unmitigated risk
Water Resource Recovery Facility		
Site specific consideration of generation of waste, including excavation and handling	– Mobilisation of acid sulfate soils (soil between depths of 1.5 mbgl and 12.95 mbgl). – Sediment laden/contaminated runoff, uncontrolled release of commissioning wastes and leachate generation, resulting in uncontrolled release to Duck River impacting water quality and aquatic ecosystems. – Human health risks due to handling of contaminated soil/fill below the imported natural material layer located at the WRRF site.	**Moderate to high** (Likely, moderate)
River release pipeline		
Site specific consideration of generation of waste, including excavation and handling	– Mobilisation of acid sulfate soils, likely present in locations within Camellia, Sydney Olympic Park and Meadowbank. – Mobilisation of contaminated sediments at the river release structure location in the Parramatta River at Meadowbank. – Sediment laden/contaminated runoff, uncontrolled release of commissioning wastes and leachate generation, resulting in uncontrolled release to Duck River or Parramatta River impacting water quality and aquatic ecosystems. – Encountering unexpected finds at 54-58 Derby Street and 103-105 Silverwater Road where further investigation is required.	**Moderate to high** (Likely, moderate)
Brine and transfer pipelines		
Site specific consideration of generation of waste, including excavation and handling	– Sediment laden/contaminated runoff, uncontrolled release of commissioning wastes and leachate generation, resulting in uncontrolled release to Parramatta River impacting water quality and aquatic ecosystems.	**Moderate to high** (Likely, moderate)
Camellia pumping station upgrade		
Site specific consideration of generation of waste, including excavation and handling	– Encountering shallow ASS in fill – Sediment laden/contaminated runoff, uncontrolled release of commissioning wastes and leachate generation, resulting in uncontrolled release to Parramatta River impacting water quality and aquatic ecosystems.	**Moderate to high** (Likely, moderate)

6.1.4 Waste management approach

6.1.4.1 Waste planning

Waste generated on-site during construction would be managed and minimised by appropriate waste planning. Waste planning activities would include:

– Avoidance of unnecessary resource consumption through design, efficient construction methodologies and management.
– Resource recovery, including reuse, reprocessing, recycling and energy recovery within the project.
– Resource recovery, including reuse, reprocessing, recycling and energy recovery outside the project.
– Siting optimisation of construction compounds and pipe alignments to minimise vegetation clearance and interaction with buried services
– Options for wastewater reuse would be investigated and pursued where feasible and reasonable and subject to meeting water reuse quality requirements.
– Avoidance and reduction of spoil disposal to landfill, as most of the spoil generated at the WRRF site would be imported engineered fill (used previously for partially raising the site) that can be reused on-site or likely recycled, rather than being disposed to landfill.

– Where resource recovery is not feasible or reasonable, disposal at an appropriately licenced facility as the last resort.
– Allocation of contingency stockpiling area in the event that excess stockpile material is generated.

6.1.4.2 Waste hierarchy

All waste generated during construction would be managed using circular economy principles and the waste hierarchy approach of avoidance and reuse before consideration is given to disposal (Figure 6.1). The waste hierarchy prioritises waste avoidance and minimisation and recycling above disposal. Waste minimisation and resource recovery strategies would be investigated and prioritised as part of the overall construction phase of the project.

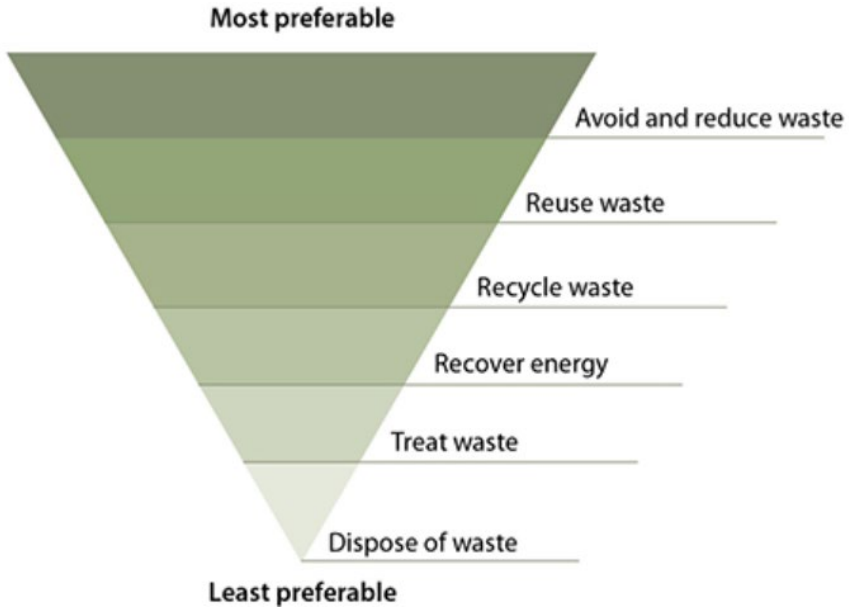

Figure 6.1 Waste management hierarchy (NSW EPA, 2022)

All wastes would also be managed in accordance with the waste provisions contained within the POEO Act and other relevant legislative and policy requirements, as defined by the instruments, policies and guidelines listed in Chapter 1.

Should waste be found to be unsuitable for reuse or recycling, disposal methods would be selected based on the classification of the waste material in accordance with the Waste Classification Guidelines (NSW EPA, 2014b). The Waste Classification Guidelines provide direction on the classification of waste, specifying requirements for management, transportation and disposal of each waste category.

6.1.4.3 Excess spoil and waste storage

Waste would be stored within the construction footprint or designated construction compounds as previously shown in Figure 2.2. Larger quantities of waste, including excess spoil from HDD would be stockpiled temporarily prior to reuse or transfer off site. Stockpile dimensions would generally align with the relevant NSW EPA guidance on stockpiles. Construction waste including wood waste, scrap metals and concrete waste would be segregated and stored in skip bins/hooklift bins on-site.

Excess spoil material would be reused within the WRRF site to raise the south-eastern area by at least 1.7 m to the existing raised surface level. The southern area of the WRRF site has the capacity to accommodate approximately 64,000 m^3 of excess spoil. Contaminated spoil and spoil from the construction of the WRRF, as well as spoil from open trenching along the river release pipeline (Jacobs, 2025e) would be placed in this area.

During construction, the contractor would ensure that the waste storage areas are:

– Easy to use: by ensuring that containers are easily accessible by workers.

– Safe: by ensuring that the containers and storage can be managed safely, including limiting public access to the area.
– Aesthetic: by ensuring that the site appears orderly, for example screening for dust and litter containment and daily collection of windblown material.
– Odourless: by ensuring odours are controlled.
– Regularly maintained and cleaned.

Waste generated by construction staff and subcontractors would be stored in receptacles in the site office and crib room before transferred to the waste storage areas for collection.

6.1.4.4 Waste collection and transport

Construction waste, as outlined in Table 6.1, would be managed by the construction contractor which would engage appropriately licensed private waste collection contractors to collect and transport the waste off-site for disposal or recycling following source segregation on-site. Where waste material is designated for beneficial reuse on-site such as landscaping, the construction contractor would ensure that it is appropriately stored to prevent contamination.

All transport vehicles would be covered, and tailgates secured prior to trucks leaving the work site. All vehicles would be appropriate for transport of the waste as classified.

Transporters would hold an environment protection licence (EPL) if transporting higher risk wastes ('trackable' waste).

According to the NSW EPA (2024) Asbestos and Waste Tyres Guidelines, transporters of Asbestos Waste must be registered on the Integrated Waste Tracking Solution and provide the following information to the EPA before the transportation of any load of Asbestos Waste:

– The transporter's name, ABN (if any), address, and postal address (if different from the transporter's address)
– The transporter's primary telephone number (preferably mobile telephone number) and email address.

Transporters of Asbestos Waste must give the following information to the EPA before the transportation of any load of Asbestos Waste:

– The driver licence number and jurisdiction of issue
– Mobile telephone number of the transporter's driver
– The vehicle registration number of the vehicle used for the transport
– The date of pick up and drop off
– The type and quantity of Asbestos Waste in each load.

Documents and records of the transport and fate of all materials removed from the site would be kept as proof of correct disposal and for environmental auditing purposes (refer to Section 6.4).

6.1.4.5 Litter management

Daily site inspection to identify and collect litter and investigate the cause to reduce the potential for the issue to occur in the future. Litter prevention strategies would include:

– Ensuring sufficient number of bins and waste receptacles are available to avoid littering outside bins
– Covering all bins to ensure that wastes cannot be blown out during windy conditions. This would also apply to relevant stocks of materials to be used during construction.
– Nominating personnel on litter management including regular inspections of sites and surrounds and litter collection

6.1.4.6 Acid sulfate soils

Excavation of materials below 1.5 mbgl at the WRRF site may be classified as ASS and managed and treated in accordance with a Soil and Water Management Plan (Jacobs, 2025a). Where ASS is not be managed on-site, it would be treated, classified and managed in accordance with the requirements of the Waste Classification

Guidelines Part 4: Acid sulfate soils(NSW EPA, 2014c). PASS is likely to be encountered during HDD drill/retrieval and HDD boring in soil/weathered materials locations at various locations along the river release pipeline alignment (see Section 5.2.3.2 for further details). The Soil and Water Management Plan would identify locations and methods for testing and treating and/or disposing ASS along the river release pipeline.

6.1.4.7 Contaminated materials

Approximately 15,000 m^3 of contaminated soil material would be generated during construction of the WRRF. Contaminated soil from within the WRRF site would be reused on-site as fill material subject to suitability. All contaminated material that is located within the WRRF site would be handled in accordance with a Waste and Resource Recovery Plan. A detailed assessment of potential impacts associated with contamination and the handling of contaminated materials is provided in the soil and contaminated land impact assessment.

Management and handling of other contaminated materials (including those classified as restricted solid waste and hazardous waste) would be undertaken in accordance with a Soil and Water Management Plan. Where earthworks and excavation are required at the construction compound sites, the contamination status of the soils would be assessed and management undertaken in accordance with the procedures detailed in the Construction Environmental Management Plan. Drilling muds would be managed in accordance with a Drilling Fluid Management Protocol. Contaminated materials from the pipeline construction works would be reused as fill material in the south-eastern portion of the WRRF if possible, or disposed of at an appropriately licenced facility.

Asbestos contaminated soil is expected to be encountered during HDD of the river release pipeline, open trenching at one location along the brine and transfer pipeline and at the WRRF. Any works with asbestos contaminated material in soil will be managed by an appropriately licenced asbestos removalist. An Asbestos Management Plan (AMP) would be prepared that addresses handling and management of asbestos contaminated soil.

6.1.4.8 Dust management

Dust from waste storage and transport and collection would be controlled within the site by applying management measures where necessary, such as using dust suppression sprays to minimise the impacts on the environment. A detailed assessment of dust-related impacts has been provided in the air quality impact assessment.

6.1.4.9 Waste tracking

Consistent with the Protection of the Environment Operations (Waste) Regulation 2014 (NSW EPA), the following wastes potentially encountered/generated are required to be tracked within NSW:

– Liquid Waste (Category 1 trackable waste)
– 100 kg or more of asbestos waste, or 10 m^2 or more of asbestos sheeting in any single load
– Tyres with a total weight of 200 kg or more, or 20 or more tyres in any single load
– Waste oil/water, hydrocarbon/water mixtures emulsions
– Wastes listed in Table 1 of the NSW EPA ‘Waste that must be tracked’ Guideline (NSW EPA, 2018)
– Wastes listed in Table 2 of the NSW EPA ‘Waste that must be tracked’ Guideline (NSW EPA, 2018)
– Hazardous Wastes as defined by Table 3 in the NSW EPA ‘Waste that must be tracked’ Guideline (NSW EPA, 2018)

Details of waste types, volumes and destinations would be recorded in the waste management register (refer Section 6.4) for all waste movements off-site. The NSW EPA Waste Locate system would be used for all generated asbestos waste and waste tyres. The online waste tracking system developed by the NSW EPA would be used to track all other trackable waste, if required.

The wastes that would require tracking for the GPOP WCM project are as follows:

– Wastewater
– Waste oils
– Untreated drilling muds
– Partially treated water

– Hydrostatic test water
– River release pipeline disinfection flushing water
– Asbestos waste
– Tyres
– Contaminated spoil
– Unwashed containers that previously held Class 1, 3, 4, 5 or 8
– Used batteries

6.1.4.10 Summary

The proposed approach to managing construction waste, including measures to facilitate segregation and prevent cross contamination, is provided in Table 6.3. Additional mitigation measures, proposed as an outcome of the assessment, are provided in Table 8.1. The impacts associated with contamination have been assessed in detail in the soil and contaminated land impact assessment.

Waste management and handling would be further detailed based on the information provided by the construction contractor prior to the commencement of construction.

Table 6.3 Management of construction waste

Waste type	Approach	Description	Potential destination
Spoil (excess from trenching or HDD, pipeline connection works and footings for transformer building)	Reuse	The project would reuse all suitable spoil from the WRRF as on-site for construction fill. Excess spoil from the WRRF and pipeline trenching would be placed as fill in the south eastern portion of the WRRF. Imported natural material from the WRRF site that primarily comprise tunnel spoil would be reused as construction fill for construction of retaining walls and trench backfill.	Reused on-site
	Recycle	All HDD spoil would be removed off-site. Eligible HDD and trenching spoil material would be sampled and tested in accordance with relevant resource recovery orders and exemptions to allow for recycling and beneficial reuse off site. Relevant resource recovery orders and exemptions may include: – Excavated natural material – Excavated public road material – Reclaimed asphalt pavement	Beneficial reuse off site such as road construction and maintenance, or as engineering fill.
Spoil (contaminated soil/fill)[3]	Reuse	Contaminated soil/fill excavated during construction of the Project would be reused on-site as general fill. The DSI (Jacobs, 2025a) noted that the reuse of the material on-site as general fill is considered acceptable provided it follows the relevant management plans. Excess contaminated soil/fill excavated during construction of the pipelines that cannot be reused on-site, would be transferred off-site for disposal.	Reused on-site
	Disposal		Facility licenced to accept this waste

[3] Potential impacts associated with contamination and the handling of contaminated materials have been assessed in the soil and contaminated land impact assessment.

Waste type	Approach	Description	Potential destination
Dewatered grit, sediment, litter and gross pollutants	Disposal	Grit, sediment, litter and gross pollutants would be collected from stormwater controls and temporarily stored in skip bins prior to disposal off-site.	Facility licenced to accept this waste
Garden waste	Reuse and/or recycling	Clearing would be minimised by placing temporary infrastructure in areas that have been previously cleared, degraded or have naturally lower above ground biomass. Areas to be cleared would be marked to reduce incidental clearing. If unable to be reused on-site, the material would be removed for off-site reuse in accordance with The Mulch Order 2016 or sent for recycling at a suitably licensed facility. Priority weeds would be disposed of in accordance with relevant guidelines / requirements.	Recycling facility licenced to accept this waste
General building and construction waste (concrete, asphalt, timber, scrap metals, cable, synthetic fibres and membranes and packaging materials) and redundant utilities waste (wiring and piping)	Recycling and disposal	General building and construction waste would be classified in accordance with the Waste Classification Guidelines (NSW EPA, 2014b) and directed to a waste management facility that is lawfully permitted to accept that type of waste. General building and construction waste would be managed in accordance with the waste hierarchy. Where space constraints permit, waste would be segregated and stockpiled on-site, with materials such as concrete, metals and asphalt separated and sent to a construction and demolition waste recycling facility. Other recyclable materials would be sent for recycling as a mixed waste stream. Opportunities for take back agreements in procurement would be identified for example for packaging and pallets.	Facility licenced to accept this waste
Food waste	Recycling and/or disposal	Putrescible waste would be stored in designated bins and collected by an authorised contractor for disposal to a suitably licensed facility.	Facility licenced to accept this waste
General waste (such as paper and cardboard, containers (plastic, glass, metals), pellets, plastic film wrap, cable reels, and metal straps/bands, polystyrene and other packaging waste)	Recycling and/or disposal	Labelled and colour coded receptacles would be provided at the construction site offices for general waste from construction personnel to ensure source separation of recyclable materials and residual landfill waste. These wastes would be collected on a regular basis by authorised and appropriately licensed waste collection contractors for off-site recycling or disposal.	Facility licenced to accept this waste
Electrical and electronic waste	Recycling	Electrical and electronic waste would be segregated and sent for recycling to a suitably licensed facility.	Recycling facility licenced to accept this waste

Waste type	Approach	Description	Potential destination
Waste from vehicle/plant equipment maintenance (such as adhesives, lubricants, waste fuels and oils, chemicals, engine coolant, batteries, tyres, unwashed containers)	Recycling and/or disposal	Waste from construction vehicle and plant maintenance activities would be collected and stored in designated waste storage areas for collection by an authorised contractor for disposal off-site. Any potentially hazardous waste would be stored separately in clearly labelled receptacles and disposed of in accordance with its waste classification. Waste oil and oil filters would be stored in separate recycling bins and collected by an authorised contractor, and recycled off-site, where feasible. Tyres would be collected by an authorised contractor for recycling at a facility licensed to receive tyres (including tyre pieces).	Facility licenced to accept this waste
Drilling muds[4]	Disposal	Drilling muds would be: – Temporarily stored in intermediate bulk containers within the works area – Treated and reused on-site in accordance with the Drilling Fluid Management Protocol – Disposed off-site in accordance with the treated drilling mud resource recovery order and exemption	Facility licenced to accept this waste
Concrete washout	Recycling	Concrete washout would be sent to washout bays, where the water typically evaporates and solid waste concrete is collected, stored in skip bins and sent for concrete recycling.	Facility licenced to accept this waste
Groundwater	Disposal	Depending on levels of contamination, groundwater would be used for dust suppression, disposed to the Sydney Water network (via a Trade Waste approval) or collected and disposed as a liquid waste to a suitable facility.	Facility licenced to accept this waste
Liquid waste (from chemicals)	Disposal	Liquid waste from chemicals would be stored in bunded areas and pumped off-site to liquid waste facilities when sumps near capacity.	Facility licenced to accept this waste
Wastewater (grey water and sewage)	Disposal	Wastewater generated by construction staff would be connected to the existing sewer and subject to Trade Waste Agreement.	Connected to existing sewer
Partially treated water	Disposal	Partially treated water would be sent to the Camellia pumping station via the brine pipeline and then pumped to the NSOOS.	NSOOS
Asbestos / other contaminated materials	Reuse	Contaminated materials would be managed in accordance with the Soil and	Reuse as fill in the south eastern area of the WRRF site

[4] More information on drilling muds is detailed in the soil and contamination land impact assessment

Waste type	Approach	Description	Potential destination
	Disposal	Water Management Plan and the Unexpected Finds Protocol. Asbestos waste generated would be managed in accordance with the AMP, which would be referenced in the Soil and Water Management Plan. Excess asbestos waste that cannot be reused on site, would be transferred off-site for disposal. ASS would be managed and treated in accordance with a Soil and Water Management Plan. ASS may be treated on-site and reused as fill material in the southern eastern area of the WRRF.	Facility licenced to accept this waste
Hydrostatic test water	Reuse	Water would be required for hydrostatic testing of the pipelines and at the WRRF. Where possible, this water would be reused. Where reuse is not possible, it would be disposed to appropriate locations based on disposal protocols that would be established as part of the Waste and Resource Recovery Plan.	Reused on site
	Disposal		Facility licenced to accept this waste
Unexpected finds	Disposal	Actual or suspected contaminated soil/fill that cannot be reused or retained on-site would be classified in accordance with the Waste Classification Guidelines (NSW EPA, 2014b). Once classified, the soil would be managed, transported and disposed of in accordance with the requirements for the relevant classification. This includes transport by an authorised contractor and disposal at an appropriately licensed facility that is lawfully able to receive the classification of waste. A Soil and Water Management Plan would be developed to manage any contamination encountered during the construction of the project and to ensure the completed works are suitable for the intended land use. An Unexpected Finds Protocol would be developed.	Facility licenced to accept this waste

The mitigated risks associated with implementation of the above waste management approach is summarised in Table 6.4.

Table 6.4 Mitigated risks - construction

Aspect of waste management	Management approach	Mitigated risk
Project-wide potential impacts		
Waste transportation	Waste would be handled by appropriately licenced waste contractors in accordance with the requirements of the Waste Regulation. Waste tracking records will be maintained to control movement of waste.	**Low** (Unlikely, moderate)
Non-classified or incorrectly classified waste transport and disposal	All waste would be classified in accordance with the Waste Classification Guidelines (NSW EPA, 2014b)	**Low** (Unlikely, moderate)
Unlicensed waste contractors transporting waste	Appropriate waste management facilities will be identified in a Waste and Resource Recovery Plan.	**Low** (Unlikely, mild)
Storage and segregation of waste (including stockpiles)	Waste materials would be stored in designated areas within the construction compounds designated stockpiling areas and appropriately managed in accordance with a Waste and Resource Recovery Plan.	**Low** (Unlikely, moderate)
Camellia-Rosehill Water Resource Recovery Facility		
Generation of waste, including excavation and handling	Waste generated during construction would be managed in accordance with a Waste and Resource Recovery Plan.	**Low** (Unlikely, moderate)
River release pipeline		
Generation of waste, including excavation and handling	Waste generated during construction would be managed in accordance with a Waste and Resource Recovery Plan.	**Low** (Unlikely, moderate)
Brine and transfer pipelines		
Generation of waste, including excavation and handling	Waste generated during construction would be managed in accordance with a Waste and Resource Recovery Plan.	**Low** (Unlikely, moderate)
Camellia pumping station upgrade		
Generation of waste, including excavation and handling	Waste generated during construction would be managed in accordance with a Waste and Resource Recovery Plan.	**Low** (Unlikely, moderate)

6.2 Operations

6.2.1 Waste generating activities

During the operation of the project, the primary waste streams would be associated with:

– Dewatered screenings and dewatered grits from the inlet works
– Biosolids from the primary sedimentation and bioreactor and membrane bioreactor process steps
– Brine from the advanced water treatment plant (reverse osmosis membrane)
– General waste generated by operational staff
– Other wastes generated during plant repair and maintenance

The estimated quantities of these waste streams are shown in Table 6.5.

6.2.2 Waste classification and quantities

Table 6.5 lists the key waste streams that may be produced from operational activities, and their likely classifications. A number of the identified waste streams are intended to be reused or recycled, as outlined in Section 6.2.4.

Table 6.5 Key waste streams quantities and classification – operations

Activity	Waste streams that may be produced	Likely classification of waste streams	Estimated quantity per year
Process	Brine	Liquid waste	5,183 ML
	Biosolids*	General solid waste (non-putrescible)	4,680 t
	Dewatered screenings	General solid waste (putrescible)	294 t
	Dewatered grits	General solid waste (putrescible)	154 t
	Biogas*	Hazardous waste	1,679,000 m^3
General operation and maintenance (including offices and amenities)	Tyres*	Special waste	42 kg
	Waste oils*	Liquid waste	7 L
	Electrical transformer oils	Liquid waste	140 L
	Workshop liquid wastes	Liquid waste	616 L
	Wastewater	Liquid waste	>280 m^3
	Unwashed containers that previously held Class 1, 3, 4, 5 or 8	Hazardous waste	7 m^3
	Water treatment chemicals	Hazardous waste – unused or spilt chemicals: sodium bisulphate, sodium hypochlorite, ferric chloride, sodium hydroxide, methanol, sulphuric acid, anti-scaleant (phosphonic acid) General solid waste (non-putrescible) – unused or spilt chemicals: sodium hydroxide, alum, ammonia sulphate	12,264 L 4,914 L
	Office waste*	General solid waste (non-putrescible)	1 t
	Maintenance waste*	General solid waste (non-putrescible)	42 m^3
	Wood waste*	General solid waste (non-putrescible)	168 kg
	E-waste*	General solid waste (non-putrescible)	28 kg
	Odour control chemicals	General solid waste (non-putrescible)	42 kg
	Scrap metals*	General solid waste (non-putrescible)	3 t
	Spent filters	General solid waste (non-putrescible)	14 m^3
	Food waste*	General solid waste (putrescible)	2 t

* Waste streams intended for reuse or recycling

6.2.3 Potential impacts

The potential impacts associated with aspects of waste generation and management during operation are summarised in Table 6.6 and an associated risk rating provided, based on the impact assessment method outlined in Section 4.3. All impacts can be appropriately managed through the design of the scheme and implementation of appropriate waste management practices during operations. The impacts associated with odours, additional traffic associated with waste transportation and contamination have been assessed in detail within the air quality, traffic and transport and soil and contaminated land assessments for the EIS.

Table 6.6 Potential impacts associated with waste generation and management – operation

Aspect of waste management	Potential impacts	Unmitigated risk
Storage and segregation of waste	– Odours from storage of wastes. – Waste build up from irregular or disrupted collections. – Cross contamination of waste due to improper segregation and storage. – Attracting pests and disease vectors.	**Moderate** (Possible, Moderate)
Waste transportation	– Traffic generated by haulage of waste to reuse/disposal facilities. – Odours from loading waste onto vehicles and movement of waste collection vehicles to disposal or recycling facilities. – Unlawful transport and disposal. – Incorrect classification of waste materials.	**Moderate** (Possible, Moderate)
Non-classified or incorrectly classified waste transport and disposal	– Regulatory non-compliance. – Contamination of receiving facility. – Contamination of soils, groundwater and/or surface water. – Unlicensed waste contractors transporting waste.	**Moderate** (Possible, Moderate)
Unlicensed waste contractors transporting waste	– Regulatory non-compliance. – Potential illegal dumping of waste. – Potential for disposal at unlawful unlicensed receival sites.	**Moderate** (Possible, Moderate)

6.2.4 Waste management approach

6.2.4.1 Waste storage

Proposed waste storage locations within the WRRF site are shown in Figure 6.2. Waste from the WRRF process would be stored near the areas where it is produced and food waste and office waste generated by operational staff would be stored outside of the administration building accessible to waste collection vehicles.

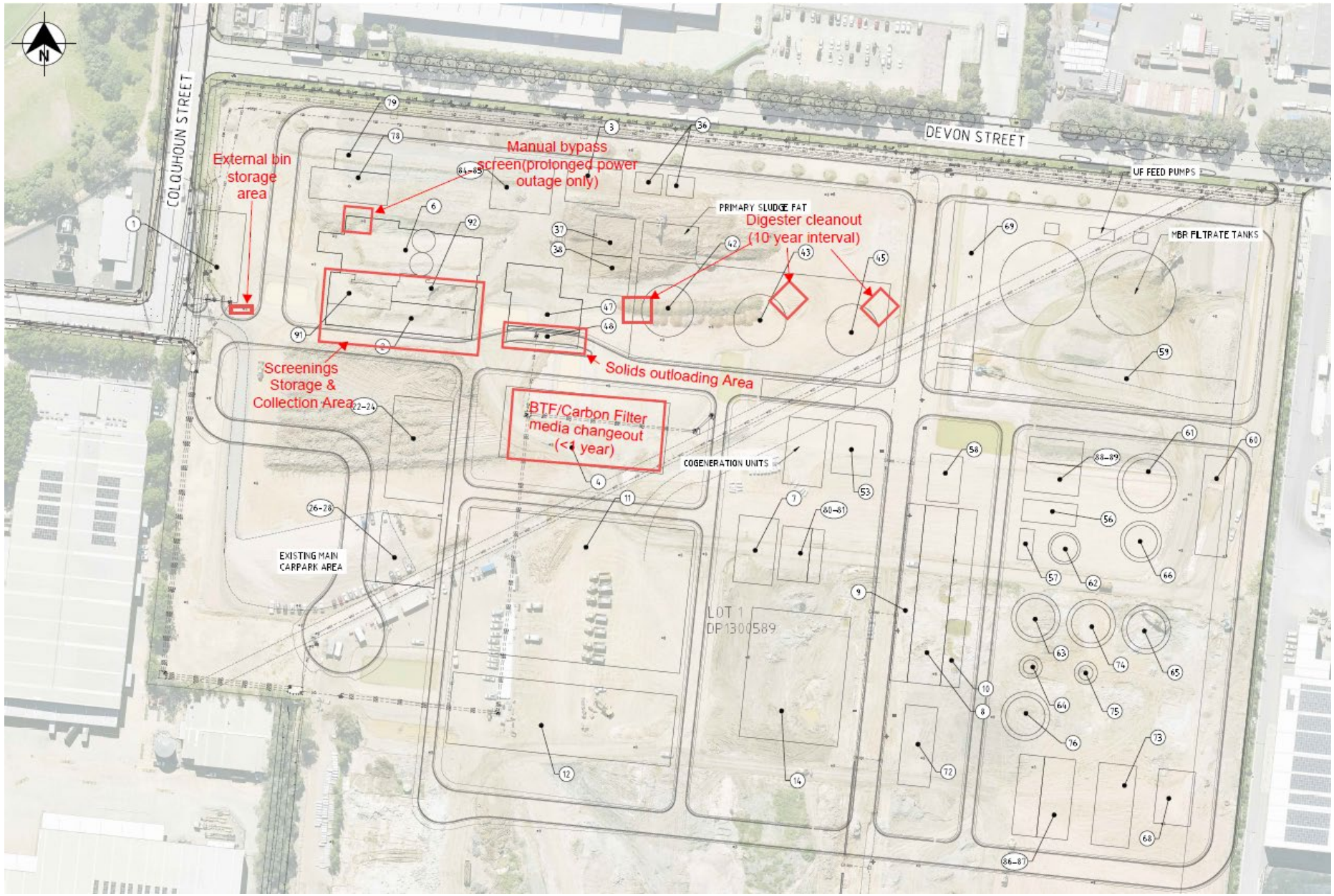

Figure 6.2 ***Indicative operational waste storage areas***

6.2.4.2 Beneficial reuse of biosolids and biogas

The WRRF would produce about 18 tonnes of dewatered biosolids per day. Digested solids from the anaerobic digesters would be dewatered before being taken off-site for beneficial reuse. The ultimate destination and use of biosolids generated at the WRRF is not part of the scope of the EIS, however, biosolids are generally used for land application in agriculture, forestry or further processed into compost. The reuse of biosolids is managed in line with the Sydney Water Bioresources Master Plan (Sydney Water, 2018) and the NSW EPA's Environmental Guidelines – Use and Disposal of Biosolids Products (1997b) across its whole wastewater network, noting that the NSW EPA is currently reviewing the biosolids guidelines.

Beneficial reuse of biosolids is a key part of Sydney Water's circular economy goals and Sydney Water will comply with the environmental obligations set by NSW EPA. NSW Health and NSW EPA have confirmed biosolids are safe if they are made and used following the NSW EPA's biosolids guidelines.

Biogas produced in the anaerobic digesters would be delivered to co-generation engines to generate electricity and provide digester heating.

6.2.4.3 Summary

The proposed approach to managing operational waste, including measures to facilitate segregation and prevent cross contamination, is provided in Table 6.6 . Additional mitigation measures, proposed as an outcome of the assessment, are provided in Table 8.1.

Table 6.6 Management of operations waste

Waste type	Approach	Description	Potential destination
Brine	Disposal	Brine would pass through a bisulphite dose point for destruction of monochloramine, prior to discharge to the single brine tank. The brine tank would provide minimal storage capacity of 2 hours at average stage 2 brine flows (Jacobs, 2025b). Following this, brine would be transferred off-site via NSOOS and North Head WRRF for off-shore disposal.	NSOOS and North Head WRRF
Biosolids	Reuse	Biosolids from the primary sedimentation process would be pumped to the primary sludge thickening facility via the primary sludge pumps. The waste activated sludge pumps would control the age of the biosolids from the bioreactor and membrane bioreactor process and transfer the excess solids and accumulated scum to the solids area for processing. Biosolids/sludge would undergo sludge thickening and anaerobic digestion. A dewatering system would produce dewatered biosolid cake and centrate. The biosolid cake would be transferred via conveyor to a biosolids storage silo prior to transfer to the truck outloading facility, where they would be transferred directly from the silo to trucks parked on the weighbridge underneath before being taken off-site for beneficial reuse. The centrate would be returned to the solids drain pumping station (Jacobs, 2025b).	Off-site for beneficial reuse subject to approvals (see Section 6.2.4.2)

Waste type	Approach	Description	Potential destination
Dewatered screenings and dewatered grits	Disposal	Dewatered screenings and dewatered grit would be collected in 10 m^3 self-levelling bins. Up to three coarse and three fine screen dewatering bins would be provided (one for each wash press) with two additional bins for emergency storage. Up to two dewatered grit bins would be provided which would allow 7 days storage for contingency capacity during non-working days. (Jacobs, 2025b)	Facility licenced to accept this waste
Wastewater (blackwater and greywater)	Disposal	Wastewater would be directed to the head of works for treatment and disposal.	Head of works
Food and other organic waste	Disposal	Food and other organic waste would be stored in designated mobile garbage bins and collected by an authorised contractor for disposal to a suitably licensed facility.	Facility licenced to accept this waste
General waste (such as paper and cardboard, plastic, glass, metals, wood, other maintenance and office waste, spent filters)	Recycling and/or disposal	General waste would be managed in accordance with the waste hierarchy. Labelled and colour coded receptacles would be provided at the administration/control building and workshop/warehouse for general waste from operational personnel to ensure source separation of recyclable materials and residual landfill waste. These wastes would be collected on a regular basis by authorised and appropriately licensed waste collection contractors for off-site recycling or disposal.	Facility licenced to accept this waste
Electrical and electronic waste	Recycling	Electrical and electronic waste would be segregated and sent for recycling to a suitably licensed facility.	Facility licenced to accept this waste
Lubricants, oils, chemicals, unwashed containers that previously contained fuels, paint or chemicals	Recycling and/or disposal	Waste from any workshop or maintenance activities would be collected and stored in designated waste storage areas for collection by an authorised contractor for disposal off-site. Any potentially hazardous waste or chemicals would be stored separately in clearly labelled receptacles and disposed of in accordance with its waste classification. Waste oil and oil filters would be stored in separate recycling bins and collected by an authorised contractor, and recycled off-site, where feasible. Unwashed containers that previously contained fuels, paint or chemicals, including chemical drums and intermediate bulk containers could be involved in take back arrangements, as the companies that provide these products typically pick up the old containers when new products are delivered.	Companies providing these products as per takeback arrangements Facility licenced to accept this waste
Tyres	Recycling	Tyres would be collected by an authorised contractor for recycling at a facility licensed to receive tyres (including tyre pieces).	Facility licenced to accept this waste

The mitigated risks associated with implementation of the above waste management approach is summarised in Table 6.7 below.

Table 6.7 Mitigated risks - operation

Aspect of waste management	Management approach	Mitigated risk
Storage and segregation of waste	Waste would be stored in suitably sized designated storage areas with frequent collection as required. Contingency waste management facilities would be identified.	**Low** (Unlikely, moderate)
Waste transportation	Waste would be handled by appropriately licenced waste contractors in accordance with the requirements of the Waste Regulations. A waste management register would be maintained.	**Low** (Unlikely, moderate)
Non-classified or incorrectly classified waste transport and disposal	All waste would be classified in accordance with the Waste Classification Guidelines (NSW EPA, 2014b)	**Low** (Unlikely, moderate)
Unlicensed waste contractors transporting waste	Appropriate waste management facilities would be identified in the Waste and Resource Recovery Plan.	**Low** (Unlikely, moderate)

6.3 Decommissioning waste

As is standard Sydney Water practice for these types of assets, it is highly unlikely that the WRRF and pipelines will be decommissioned. It is more probable that the WRRF and pipeline will be repaired and upgraded throughout its design life to maintain its operation.

6.4 Records and reporting

A waste management register would be maintained which identifies all waste generated on-site and subsequent management. The register would document the following:

– The type and quantity of waste (including its classification)
– Whether the waste is to be reused, recycled (on or off-site) or sent for disposal
– Tracking information (where applicable)
– Upon removal from site: date of removal, transport contractor information and final destination

All relevant documentation such as dockets, receipts and waste classification records would be retained with the waste management register.

7. Cumulative impacts

The cumulative impacts associated with the GPOP WCM project and other projects in the surrounding area with respect to waste management are listed in Table 7.1. The key potential cumulative impact associated with waste management is related to demand on local waste management facilities and their capacity to receive waste generated by the project during construction. Consultation with waste contractors will be undertaken prior to construction during detailed design and delivery to confirm facility capacities.

Table 7.1 Cumulative impacts

Project ID	Project Name (Development Type)	Project Status	Distance from WRRF	Construction timeframe	Comments
SSD-77870968	Rosehill Resource Recovery Facility (Waste collection, treatment and disposal)	Prepare SEARs	0.85 km	Commencement date TBC. Construction expected to take 8 months	The construction timeline for this project is unknown and limited information has been provided regarding waste management. However, it is anticipated that waste facilities will be selected based on available capacity during the construction process of the GPOP WCM project. If this project is expected to generate large amounts of specific waste types that would need to be sent to the same facility as waste from the GPOP WCM project, it is expected that the waste operators will be consulted. This project is a resource recovery facility proposing to receive construction and demolition waste, primarily soils, concrete/brick and recycled asphalt pavement materials. If the facility is operational during the construction timeline of the GPOP WCM project, it is a potential destination for construction and demolition waste generated from the project. Note that restricted solid waste and hazardous waste is not accepted at this facility.
SSD-71558962	Mixed Use Development with In-fill Affordable Housing - Melrose Park South – East (Residential)	Prepare EIS	1 km	TBC, not provided in scoping report	The construction timeline for this project is unknown and limited information has been provided regarding waste management. However, it is anticipated that waste facilities will be selected based on available capacity during the construction process of the GPOP WCM project. If this project is expected to generate large amounts of specific waste types that would need to be sent to the same facility as waste from the GPOP WCM project, it is expected that the waste operators will be consulted.
SSD-50894964	River Road West Build-to-Rent (Build to Rent)	Prepare EIS	0.4 km	TBC, only industry specific SEARs available	The construction timeline for this project is unknown and limited information has been provided regarding waste management. However, it is anticipated that waste facilities will be selected based on available capacity during the construction process of the GPOP WCM project. If this project is expected to generate large amounts of specific waste types that would need to be sent to the same facility as waste from the GPOP WCM project, it is expected that the waste operators will be consulted.
SSD-65654458	SAMI - Camellia - Bitumen Plant Redevelopment (Chemical Manufacturing)	Prepare EIS	0.8 km	TBC, construction timing not provided	The construction timeline for this project is unknown and limited information has been provided regarding waste management. However, it is anticipated that waste facilities will be selected based on available capacity during the construction process of the GPOP WCM project. If this project is expected to generate large amounts of specific waste types that would need to be sent to the same facility as waste from the GPOP WCM project, it is expected that the waste operators will be consulted.

Project ID	Project Name (Development Type)	Project Status	Distance from WRRF	Construction timeframe	Comments
SSD-10459-Mod-4	Mod 4 - DSRRC throughput increase (Waste collection, treatment and disposal)	Prepare mod report	Directly adjacent to WRRF (east)	TBC, only scoping report available	Based on proposed activities, the facility is expected to become operational soon after approval of the modification. As a result, it is anticipated that impacts associated to local waste facility capacity would be minimal. This development is a reclaimed asphalt pavement facility, so if it becomes operational while the GPOP WCM project is in its construction phase, particularly during pipeline construction, it may be used to send any generated asphalt waste.
SSD-67508739	Residential development with affordable housing – Llewellyn Street, Rhodes (Residential)	Prepare EIS	0.7 km	Not provided, TBC in EIS	The construction timeline for this project is unknown and limited information has been provided regarding waste management. However, it is anticipated that waste facilities will be selected based on available capacity during the construction process of the GPOP WCM project. If this project is expected to generate large amounts of specific waste types that would need to be sent to the same facility as waste from the GPOP WCM project, it is expected that the waste operators will be consulted.
SSD-67636458	Mixed-use development with affordable housing – 23-29 Marquet Street, Rhodes (Residential & Commercial (Mixed Use))	Prepare EIS	0.9 km	Not provided, TBC in EIS	The construction timeline for this project is unknown and limited information has been provided regarding waste management. However, it is anticipated that waste facilities will be selected based on available capacity during the construction process of the GPOP WCM project. If this project is expected to generate large amounts of specific waste types that would need to be sent to the same facility as waste from the GPOP WCM project, it is expected that the waste operators will be consulted.
N/A	Camellia-Rosehill Place Strategy	Finalised	Overlaps with the project	20 years	The construction timeline for this project overlaps with the construction of the WRRF and pipelines. However, it is anticipated that waste facilities will be selected based on available capacity during the construction process of the GPOP WCM project. If this project is expected to generate large amounts of specific waste types that would need to be sent to the same facility as waste from the GPOP WCM project, it is expected that the waste operators will be consulted.
N/A	SOPA Master Plan	Draft	Overlaps with the project	25 years	The construction timeline for this project overlaps with the construction of the WRRF and pipelines. However, it is anticipated that waste facilities will be selected based on available capacity during the construction process of the GPOP WCM project. If this project is expected to generate large amounts of specific waste types that would need to be sent to the same facility as waste from the GPOP WCM project, it is expected that the waste operators will be consulted.

Project ID	Project Name (Development Type)	Project Status	Distance from WRRF	Construction timeframe	Comments
SSI-10035	Parramatta Light Rail Stage 2 (Rail transport facilities)	Determination - 22/02/2024	Overlaps with the project	5 to 6 years commencing in 2025	The construction timeline and some of the identified waste facilities for this project overlap with the construction timeline and identified waste facilities for the WRRF and pipelines. This may impact the receival capacity of local waste facilities identified by both projects. At this stage, waste quantities have only been provided for the spoil generated from this project. However, both this project and the GPOP WCM project have identified potential alternative waste facilities to minimise the impact to waste facility availability.
SSI-22765520	Sydney Metro West - Rail infrastructure, stations, precincts and operations (Rail transport facilities)	Determination - 25/01/2023	<1km	Total construction period of Sydney Metro West (including Stage 1 and 2) is 8 years. Construction for this project was expected to commence in 2024	The construction timeline and some of the identified waste facilities for this project overlap those proposed for the project. It was also identified that a total of 225,000 m^3 of waste would be generated during the construction of this project, with 207,000 m^3 expected to be spoil. This may impact the waste facilities identified by both projects and cause capacity issues. However, both this project and the GPOP WCM project have provided alternative waste facilities to minimise the impact to waste facility availability.
N/A	Duck River Nature Trail (Recreational)	Stage 1 determined	Overlaps with the project	To be completed in 3 stages: Stage 1: Construction to begin in March 2025. Operational in September 2025 Stage 2: Construction to begin in late 2025. Operational in mid 2026 Stage 3: Construction to begin in 2026. Operational in 2028	The construction timeline for this project overlaps with the construction of the WRRF and pipelines. However, it is anticipated that waste facilities will be selected based on available capacity during the construction process of the GPOP WCM project. If this project is expected to generate large amounts of specific waste types that would need to be sent to the same facility as waste from the GPOP WCM project, it is expected that the waste operators will be consulted.
TBC	Central Sydney Industrial Estate SSD 10459 Mod 5 (Waste collection, treatment and disposal)	To be submitted	Directly adjacent to WRRF (east)	Timing not provided	The construction timeline for this project is unknown and limited information has been provided regarding waste management. However, it is anticipated that waste facilities will be selected based on available capacity during the construction process of the GPOP WCM project. If this project is expected to generate large amounts of specific waste types that would need to be sent to the same facility as waste from the GPOP WCM project, it is expected that the waste operators will be consulted.

8. Mitigation measures

The potential impacts associated with waste management during construction and operation are identified in sections 1.1.1 and 6.2.3. Mitigation measures proposed to avoid or minimise potential impacts with regards to waste during construction and operation of the project are listed in Table 8.1.

Table 8.1 Mitigation measures

Potential impact	Mitigation measures	Timing
Co-mingling and contamination of waste and resource types, unnecessary disposal, offsite impacts from poor waste management	Develop and implement a Waste and Resource Recovery Plan as part of the project's Construction Environmental Management Plan to appropriately manage and classify any materials including soils, construction and demolition wastes and associated stockpiles. The plan would include: – opportunities to avoid and minimise the generation of spoil in line with the waste hierarchy – expected waste types and their location, including stockpile locations and reuse locations – classification of all waste generated by the project in line with the POEO Act and associated regulations – delineation of waste or resource types including identification of likely vertical and lateral extents (where applicable) – visual monitoring of materials during excavation and measures to be undertaken – material tracking register for on-site and off-site movements – ex-situ waste and resource recovery classification program, including proposed hold points – site specific measures for waste segregation, storage, handling, collection and transport according to their waste classification – roles and responsibilities in relation to the management and monitoring of stockpiles and materials – legislative compliance requirements – instructions on clear signage to be provided at construction compounds to encourage correct recycling and segregation to reduce cross contamination.	During detailed design and construction
Human health risks from storage and handling of asbestos contaminated soils	Prepare an AMP which would detail asbestos locations on-site, management decisions including transport management, air monitoring requirements (if applicable) during construction, incident and emergency procedures.	During construction
Inadequate waste storage space resulting in safety and environmental impacts	Consider measures to minimise excess waste generation during detailed design. Optimise design to minimise excess spoil volumes and maximise the reuse of material on-site in line with the waste hierarchy outlined in the WARR Act.	During detailed design
Waste-related odour, runoff and contamination during operation	Ensure dewatered biosolids, screening and grit is stored properly in covered areas. Ensure process units are appropriately connected to the odour control unit.	During operation

9. Recommendations and conclusions

This report provides an assessment of waste management for the project. Relevant local and state-level legislation and policies have been reviewed and applied to the development of this report.

Relevant waste management options and mitigation measures have been identified to mitigate the potential impacts from waste generation and collection. These include:

– Minimising excess waste and optimising material reuse on-site through detailed design.
– Classifying and managing waste according to relevant regulations and guidelines.
– Preparing a Waste and Resource Recovery Plan before construction, adopting circular economy principles and the waste hierarchy.

Waste management activities for the project would not have a significant impact on the environment or human health with the implementation of the identified waste management options and mitigation measures.

10. Limitations

This report: has been prepared by GHD for Sydney Water Corporation and may only be used and relied on by Sydney Water Corporation for the purpose agreed between GHD and Sydney Water Corporation as set out in Section 1.2 of this report.

GHD otherwise disclaims responsibility to any person other than Sydney Water Corporation arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

11. References

Arcadis. (2025). *Water Cycle Management for Greater Parramatta and Olympic Peninsula - Biodiversity Development Assessment Report.*

Aurecon & ARUP. (2021). *Upper South Creek Advanced Water Recycling Centre Waste Management Impact Assessment Report.*

DPE. (1979). Environmental Planning and Assessment Act 1979 No 203. NSW.

DPIE. (2021). *NSW Waste and Sustainable Materials Strategy 2041 Stage 1: 2021-2027.* DPIE.

DPIE. (2022). *Cumulative Impact Assessment Guidelines for State Significant Projects .*

GHD. (2024). *Clyde Western Area Remediation Project, Stage 2 Audit Area 4 - Site Audit Report No. 081-2127799.*

Greater Sydney Commission. (2020). *Recommendations report - Place-based Infrastructure Compact Pilot for Greater Parramatta and the Olympic Peninsula.*

Jacobs. (2025a). *Detailed Site Investigation - Camellia WRRF.*

Jacobs. (2025b). *Camellia WRRF Reference Design Report - 80% Design.*

Jacobs. (2025c). *Detailed Site Investigation - River Release Pipeline Alignment.*

Jacobs. (2025d). *Greater Parramatta Olympic Peninsula SP0067 Camellia Pumping Station Reference Design Drawings.*

Jacobs. (2025e). *GPOP WRRF Reference Design - Earthworks Calculations Rev. 4.*

Jacobs. (2025f). *Detailed Site Investigation - Brine and Influent Pipeline Alignment.*

Metropolitan Water Sewerage and Drainage Board. (1966). *Camellia LLPS No. 67 - Amplification - Second Stage Pipe Arrangement.*

NSW Department of Planning and Environment. (2022). *Camellia-Rosehill Place Strategy.*

NSW EPA. (1997a). The Protection of Environmental Operations Act 1997.

NSW EPA. (1997b). *Environmental Guidelines: Use and Disposal of Biosolids Products.*

NSW EPA. (2001). NSW Waste Avoidance Recovery Act 2001.

NSW EPA. (2014a). Protection of the Environment Operations (Waste) Regulation 2014.

NSW EPA. (2014b). *Waste Classification Guidelines.* Sydney: NSW EPA.

NSW EPA. (2014c). *Waste classification guidelines Part 4: Acid sulfate soils.* Sydney South: NSW EPA.

NSW EPA. (2016). *Addendum to the Waste Classification Guidelines Part 1: Classifying Waste.*

NSW EPA. (2018). *Waste that needs to be tracked*. Retrieved from https://www.epa.nsw.gov.au/Your-environment/Waste/tracking-transporting-hazardous-waste/waste-must-tracked

NSW EPA. (2019). *NSW Circular Economy Policy Statement: Too Good to Waste* . NSW EPA.

NSW EPA. (2022). *The waste hierarchy, https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/warr-strategy/the-waste-hierarchy, accessed on 9 May 2023.* NSW EPA.

NSW EPA. (2023). *NSW Biosolids Regulatory Review.*

NSW EPA. (2024). *Asbestos and Waste Tyres Guidelines.*

SafeWork NSW. (2023). *Managing Risks of Hazardous Chemicals in the Workplace.* SafeWork NSW.

Sydney Water. (2018). *Sydney Water Bioresources Master Plan.*

Sydney Water. (2023). *Environmental Policy.*

Sydney Water. (2024a). *Sustainability Policy.*

Sydney Water. (2024b). *Strategic Investment Plan 2025-2035: Environmental Protection.*

Sydney Water. (2024c). *Review of Environmental Factors - Site Environmental Management Works, Camellia.*

Sydney Water. (2025a). *Site Information - River Release Pipeline.*

Sydney Water. (2025b). *Site Information - Influent and Brine Pipeline.*

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