Upper South Creek

Advanced Water Recycling Centre and Pipelines

Sustainability Management Plan

Document Number: USCP-JHG-MPL-PMT-0009
Revision: Rev B

Revisions and Distribution

Distribution

There are no restrictions on the distribution or circulation of this Construction Environmental Plan within John Holland.

	Uncontrolled Copy
Authorised By: Date:22/01/2024	Richard Ioffrida (Project Director)

Revisions

Draft issues of this document shall be identified as Revision 01, 02, 03 etc. Upon initial issue (generally Contract Award) this shall be changed to a sequential number commencing at Revision A. Revision numbers shall commence at Rev. A, B etc.

Date	Rev	Remarks	Prepared By	Reviewed By	Approved By	Signature
01/12/22	0	Initial Draft	D.Graham	Mark Trethewy	N/A	N/A
04/04/23	01	Final draft inclusive of final objectives and targets and IS credit pathway	D.Graham/Gareth O'Brien	Mark Trethewy/ Renuka Tandon/ Michael Robertson/Joseph Hancock/Triska McKervey/Jason Julius/Darragh O'Brien	N/A	N/A
21/04/23	02	Final version incorporating leadership team comments	D.Graham/Gareth O'Brien	Mark Trethewy Sydney Water	Rob Cranston (Project Director)	
19/06/23	03	Updated following Sydney Water Review	B.Dechnik	Mark Trethewy Sydney Water	Richard Ioffrida (Project Director)	
28/07/23	04	Updated following Sydney Water review	B.Dechnik	Mark Trethewy	Richard Ioffrida (Project Director)	
07/08/23	A	Issued for Construction	B.Dechnik	Mark Trethewy	Richard Ioffrida (Project Director)	
14/12/2023	B	Updated to address feedback from	D.Graham /Michelle Huang	Mark Trethewy	Richard Ioffrida (Project Director)	

		external stakeholders				

Table of Contents

Definitions and Abbreviations

Definitions and abbreviations to be applied to the Sustainability Management Plan are listed below.

Terms/Abbreviations	Definitions
AWRC	Advanced Water Recycling Centre
BAU	Business as Usual
CCRA	Climate Change Risk Assessment
Client (Principal)	The party to whom John Holland is contracted for a Project. For this project the Client is Sydney Water.
CPTED	Crime Prevention Through Environmental Design
CoA	Conditions of Approval (associated with Environmental Impact Statement – State Significant Infrastructure 8609189)
CSF	Credit Summary Forms
CSSI	Critical State Significant Infrastructure - 8609189
DMP	Design Management Plan
DPE	Department of Planning & Environment
EPD	Environmental Product Declaration
EIS	Environmental Impact Statement – Critical State Significant Infrastructure 8609189
GHG	Greenhouse Gas
GREP	Government Resource Efficiency Policy
IS	Infrastructure Sustainability
ISAP	Infrastructure Sustainability Accredited Professional
ISC	Infrastructure Sustainability Council
ISP	Independent Sustainability Professional
JH	John Holland Pty Ltd (JH) as the organisation responsible for the total performance of the works under the Contract.
JHT	Joint venture consisting of Trility Pty Ltd. & John Holland (Property Investment A) Pty Ltd.)
MCA	Multi-criteria analysis
PPW	Project Pack Web
UN SDGs	United Nations Sustainable Development Goals

Terms/Abbreviations	Definitions
LT	Leadership Team
SuMP	Sustainability Management Plan (this Plan)
SQP	Suitably Qualified Professional
SWC	Sydney Water Corporation
USC	Upper South Creek

1 Introduction

1.1 Project Background

The Upper South Creek Advanced Water Recycling Centre and associated Pipelines (treated water & brine) project (the Project) will support the population growth and economic development of the Western Sydney Aerotropolis Growth Area (WSAGA or Aerotropolis), South West Growth Area (SWGA) and the new Western Sydney International Airport. The project will provide wastewater services to Western Sydney to produce high-quality treated water for non-drinking reuse and for release to local waterways.

On 28 November 2022, the Department of Planning and Environment (DPE) approved the construction and operation of the Project (SSI 8609189) (herein referred to as the Project). On 26 May 2023, the Department of Planning and Environment (DPE) have issued a modification to the Infrastructure Approval SSI 8609189 (herein referred to Mod 1). The purpose of Mod 1 is to descope the Environmental Flows Pipeline from the project.

The project comprises the following components:

- A new Advanced Water Recycling Centre (AWRC) to collect wastewater from businesses and homes and treat it, producing high-quality treated water, renewable energy and biosolids for beneficial reuse.
- A new green space area around the AWRC, adjacent to South Creek and Kemps Creek, to support the ongoing development of a green spine through Western Sydney
- New infrastructure from the AWRC to South Creek, to release excess treated water during significant wet weather events, estimated to occur about 3 – 14 days each year.
- A new treated water pipeline from the AWRC to the Nepean River at Wallacia Weir, to release high-quality treated water to the river during normal weather conditions.
- A new brine pipeline from the AWRC connecting into Sydney Water's existing wastewater system to transport brine to the Malabar Wastewater Treatment Plant
- A range of ancillary infrastructure.

An overview of the project site and associated pipelines is presented in Figure 1-1.

The USC project will be built in stages, consisting of:

Stage 1

- building and operating the AWRC to treat a daily wastewater flow, known as the average dry weather flow (ADWF), of up to 35 megalitres per day (ML/day)

- building the treated water and brine pipelines to cater for up to 70 ML/day flow coming through the AWRC (but only operating them to transport and release volumes produced by Stage 1).

Future Stages (outside of scope of the Project)

This Sustainability Management Plan (SuMP) applies only to Stage 1 of the USC Project. Specifically, this includes the design and construction of the AWRC and pipelines for treating a daily wastewater flow of up to 35ML/day. Greater flow capacities (including up to 50ML/day and 100ML/day), as detailed in the EIS, are not covered in this SuMP as they are outside of the scope of the Project.

John Holland has been engaged as the principal contractor by Sydney Water to design and construct Stage 1. John Holland has engaged a design joint venture comprising of GHD and Jacobs to deliver the Project design and provide overall engineering and design services. Sydney Water has additionally selected a joint venture consisting of Trility Pty Ltd. & John Holland (Property Investment A Pty Ltd.) (JHT) that will provide operations and maintenance input during design and construction and will be responsible for operating the AWRC during its first five years.

It is expected that the AWRC will ultimately require expansion to treat wastewater flows up to 70 ML/day. Sydney Water will remain flexible on the size and timing of these future upgrades to accommodate changes in population projections over time. Future stages will be subject to further environmental assessment and sustainability considerations to help facilitate the integration into the existing or subsequent scope for John Holland. Further detail on project staging is provided in the Upper South Creek AWRC EIS.

1.2 Project Description

1.2.1 AWRC Site

The AWRC site is approximately 78 ha and is shown in Figure 1-2. The AWRC site is split into two areas the operational site and the green space. The operational site is approximately 40 ha and will contain the wastewater and advanced treatment infrastructure and a range of ancillary infrastructure including inlet works, tanks and process chambers, advanced treatment buildings, interconnecting pipelines, digesters, pumping stations, odour treatment units, and biosolids treatment units.

The operational area also includes a range of supporting infrastructure such as roads, carparking, an administration building, security fencing and visual screening. Other features ancillary to the main treatment process includes chemical handling facilities and photovoltaic cells for solar energy production.

The green space of the site is about 38 ha and is within the 1% Annual Exceedance Probability (AEP) flood level. As part of the project, it will be landscaped to develop a green space that enhances biodiversity, uses best practice water sensitive urban design, and provides visual screening of the AWRC.

Stage 1 includes delivering a component of the landscaping proposed in the green space, however, the remainder of it will be completed as part of future stages of the USC project and is not included in the scope of this SuMP. The Project scope includes:

- Streetscapes to the site entry and internal plant roads, including features such as street trees, lighting, seating and other street furniture around the Administration building.
- Any planted elements for visual screening to protect local amenity, including the emergency/ fire access track.
- Riparian planting along South Creek that may include wetlands, native grassland, trees and shrubs and walking access to riparian areas.
- Water Sensitive Urban Design (supporting site drainage)
- High level concept design for the green space future stages that incorporates cultural heritage values in consultation with traditional owners / custodians of the land

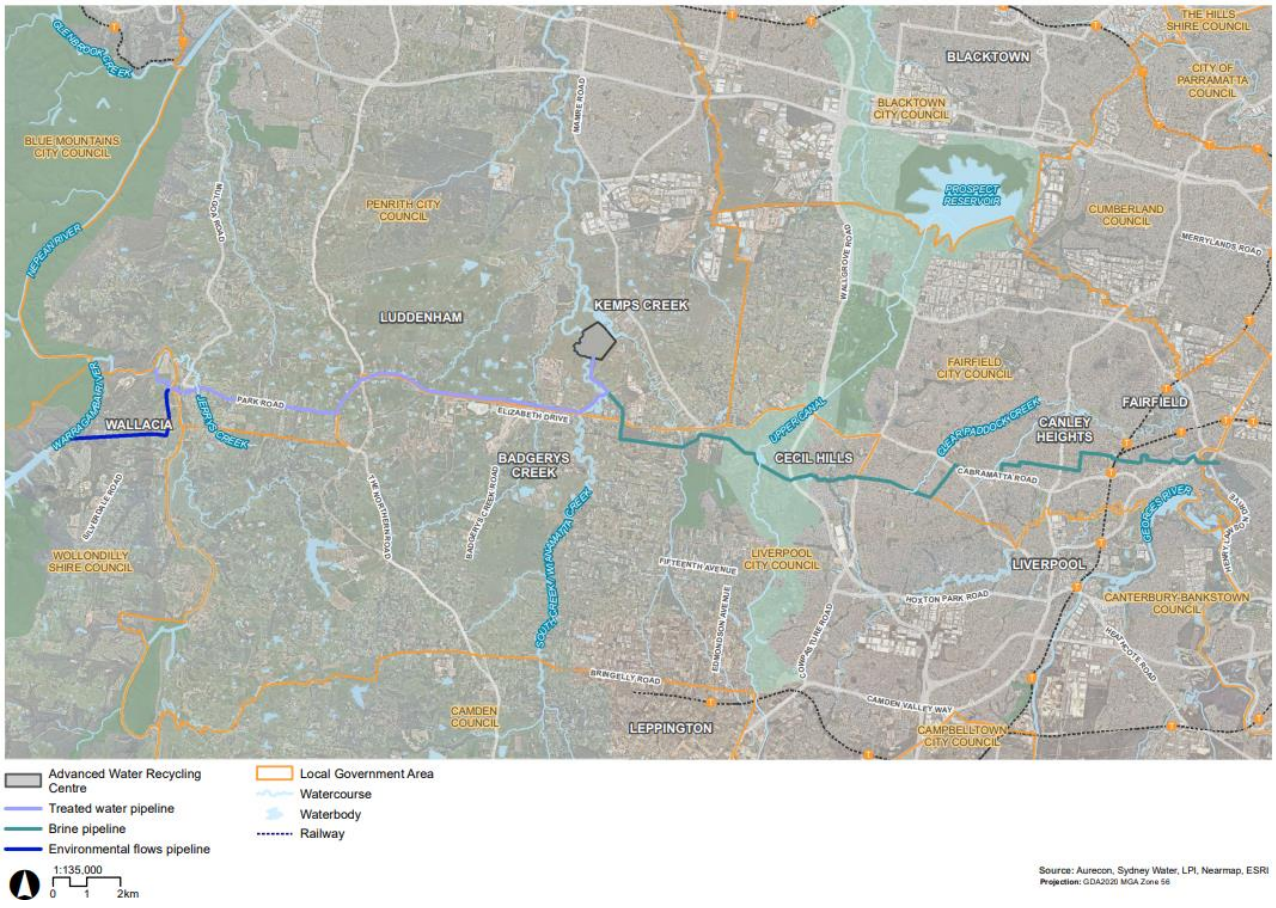


Figure 1-1 Indicative overview of the project site and associated pipelines (Environmental flows pipeline not applicable to Stage 1) **(Source: USC AWRC EIS, Aurecon, September 2021)**

The overall duration of design for the AWRC and pipelines is expected to take 14 months and be completed by December 2024. Construction at the AWRC site is expected to be about 36 months, starting in July-September 2023. The relationship between the main project lifecycle and sustainability is presented in Section 1.5 of this plan. Figure 1-1 below provides an indicative overview of the project site and associated pipelines. Figure 1-2 provides an indicative AWRC site arrangement.

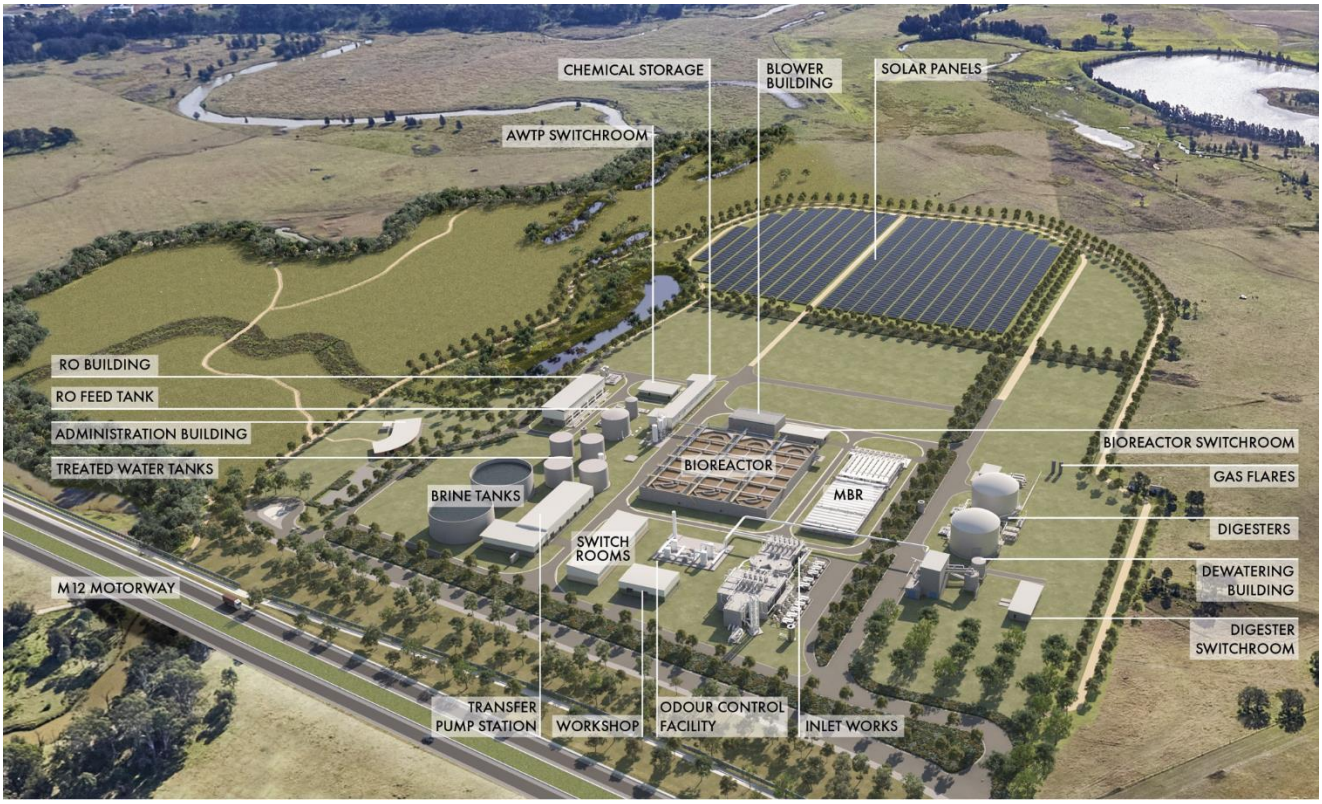


Figure 1-2 Indicative AWRC site arrangement (indicative and pending detailed design)

1.2.2 Pipelines

The project includes pipelines to take treated water and the brine waste stream away from the AWRC and release and dispose of them responsibly.

Pipelines required include the treated water pipeline to Nepean River at Wallacia Weir and the brine pipeline from the AWRC to the existing Sydney Water wastewater network at Lansdowne. All pipelines will be built to their full capacity (that is, for a 70 ML/day AWRC capacity) in Stage 1.

Treated Water Pipelines

The treated water pipeline is planned to be about 16.7 km long and up to 1.2 m in diameter. The treated water pipeline will transfer treated water from the transfer pumping station at the AWRC, to the release point at

Nepean River, upstream of Wallacia Weir from where it will then serve as an environmental flow. Figure 1-1 shows the treated water pipeline location.

Brine Pipelines

The brine pipeline will be about 24 km in length and about 0.6 m in diameter. The advanced treatment process at the AWRC will produce a brine waste product, which will be transferred from the AWRC to the existing Malabar wastewater system at Lansdowne. Figure 1-1 shows the location and extent of the brine pipeline.

Construction of pipelines is likely to occur over the entire construction phase, starting mid-2023. Construction of the pipelines will likely occur in several locations at one time, rather than moving progressively from one end to the other, and each location is likely to be in a different phase at different times.

1.3 Project Milestones

In accordance with CoA E89 and the Sydney Water Project deed, the Project shall undertake a sustainability rating under the Infrastructure Sustainability Council (ISC) infrastructure v2.1 rating tool. The Project shall achieve a minimum Infrastructure Sustainability (IS) “Gold” ‘Design’ and ‘As built’ rating. The graphic below presents an indicative timeline for the key project milestones needed to achieve the overall verification of the IS rating. Section 2.4 below explores the main components of the IS rating process. Sections 3 and 4 of this plan explores the general approach and sustainability management measures to be undertaken by the Project. Sections 5 to 8 of this plan illustrates the specific targeted pathway and credits to be addressed to ensure the required “Gold” Design and As-Built rating is achieved.

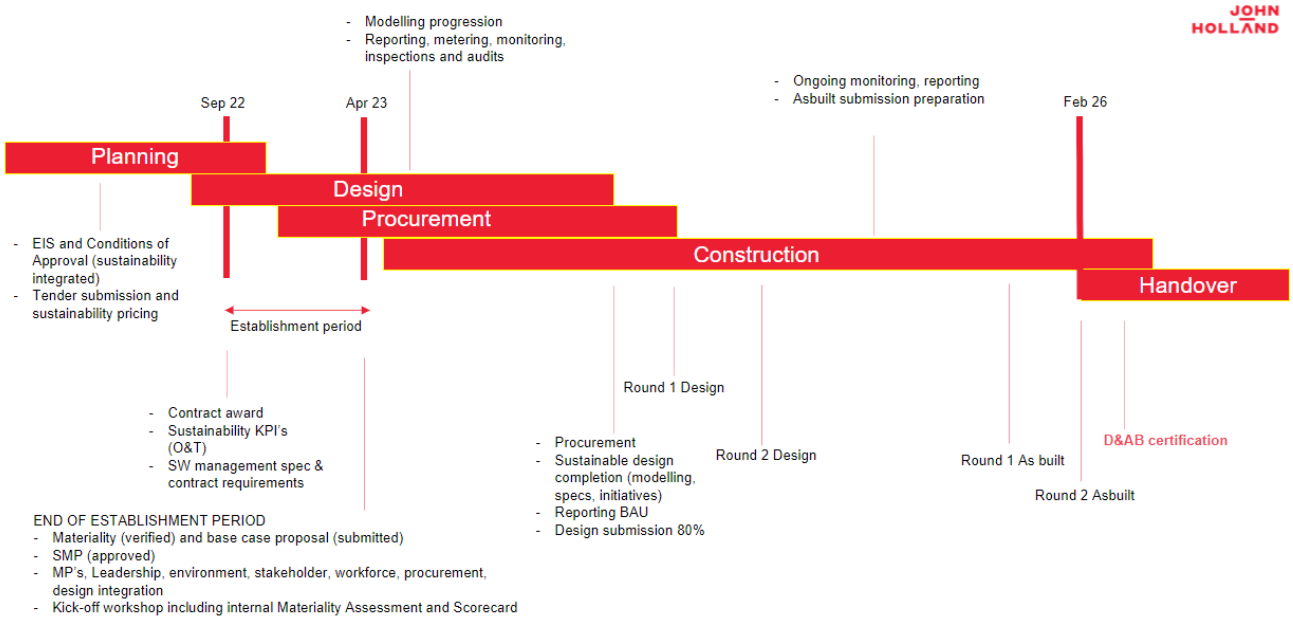


Figure 1-3 Project Key Sustainability Milestones

1.4 Purpose of the Plan

Sustainability in the context of sustainable development is a priority to the Project, we consider our people, the community, our clients, our supply chain, and the environment when making decisions for the Project. This Sustainability Management Plan (SuMP) specifies the requirements of the John Holland Sustainability Management System (SMS) (which is aligned with ISO 26000) that the Project will use to enhance its sustainability performance. This SuMP provides the detail on how sustainability is embedded on the Project, with integration across multiple disciplines and functions including Workforce, Commercial, Design, Procurement including Social inclusion, Construction, Health, Safety and Wellbeing, Environment and Sustainability, and Community and Stakeholder management.

This SuMP explains how the project will deliver on the sustainability objectives and commitments for the Project. Consistent with Sydney Water and John Hollands Sustainability Policies, the intended outcomes of this SuMP include:

- Identify processes for the management of sustainability risks and opportunities
- Determining the Project sustainability deliverables (including objectives and targets)
- Measuring and reporting on sustainability performance
- Determining the Project roles and responsibilities
- Compliance with all Sydney Water and Department of Planning and Environment (DPE) SSI 8609189 Conditions of Approval, specifically:
    - CoA SU01: Develop a Sustainability Management Plan
    - CoA E89: A Sustainability Strategy must be prepared and implemented to achieve a minimum “Gold” ‘Design’ and ‘As built’ rating under the Infrastructure Sustainability Council infrastructure v2.1 rating tool, or at least “Excellent” under v1.2.

In accordance with CoA E89 and the Sydney Water Project deed, the Project shall undertake a sustainability rating under the Infrastructure Sustainability Council (ISC) infrastructure v2.1 rating tool. The Project shall achieve a minimum Infrastructure Sustainability (IS) “Gold” ‘Design’ and ‘As built’ rating.

1.4.1 SuMP Compliance

This SuMP is intended to satisfy both CoA E89 and CoA SU01. This SuMP shall be implemented throughout design and updated for construction and subsequently operation. It shall be reviewed and endorsed by the Project Leadership Team (LT) and as per CoA E91 submitted to the Planning Secretary for information. The SuMP to satisfy CoA B12 will be placed on the Project website to provide increased transparency as a document required as part of the approval in a manner in which is easily accessible.

In addition to the above CoA's relating to this SuMP, additional attention has been given to the compliance requirements of ISC – Leadership credits. Notably credit Lea-1. Table 4 and Table 5 below detail how the above compliance obligations are addressed in this SuMP.

Table 1: Compliance with ISC Lea-1 (specific to the production of a SuMP)

Credit / code	Benchmark	Must Statement	Reference in this document
Lea-1	DL1.2 A sustainability management plan has been developed for design and construction.	A sustainability management plan must be developed for the design and construction phases and include the following:	
		• Project description, including the project program and IS Rating boundary.	Description detailed in section 1.2, program in section 1.3.
		• The project's most important sustainability topics (at least those IS credit categories identified as very high and high in the verified materiality assessment)	Section 2 and credit mapping in Section 4.1
		• Sustainability goals or objectives and targets (as per DL1.1) and actions plans relevant to the project	Section 3 of this plan. Actions plans – covered in Sections 4 - 8
		• Roles and responsibilities for overall sustainability management and all sustainability targets.	Roles and responsibilities presented in Section 4.2 and responsibility of all targets is covered in Section 4.1.1.
		• Reporting and review requirements across the project life cycle.	Reporting detailed in Section 4.3 at a frequency greater to or equal to DL1.2A

		The management plan may take the form of the IS Management Plan undertaken at the commencement of a rating. Performance against sustainability objectives and targets must be reported to the senior management team on a quarterly basis for the duration of the design phase.	Requirements of the SMP covered by this plan. Reporting detailed in Section 4.3 at a frequency greater to or equal to DL1.2A
Lea-1	ABL1.2 A sustainability management plan has been updated for construction.	The sustainability management plan developed in Design must be reviewed and updated for the construction phase and include the following: • Project description, including the project program and IS Rating boundary. • The project's most important sustainability topics. • Sustainability objectives and targets and actions plans relevant to the project. • Roles and responsibilities for overall sustainability management and all sustainability targets. • Reporting and review requirements for the construction phase.	Description detailed in section 1.2, program in section 1.3. Section 2 and credit mapping in Section 4.1 Section 3 of this plan. Actions plans – covered in Sections 4 - 8 Roles and responsibilities presented in Section 4.2 and responsibility of all targets is covered in Section 4.1.1. Reporting detailed in Section 4.3 at a frequency greater to or equal to DL1.2A

		Performance against sustainability objectives and targets must be reported to the senior management team on a quarterly basis for the duration of the construction phase.	John Holland Senior Leadership Team meetings held fortnightly, Sustainability Manager delivers presentations on performance of sustainability objectives & targets quarterly within fortnightly meetings.

Table 2: Department of Planning and Environment (DPE) SSI 8609189 Conditions of Approval & USC AWRC Submissions Report, Appendix B Updated Management Measures (March 2022)

CoA/ UMM's	Requirement	Reference in this document
B12	A website or webpage providing information in relation to Stage 1 of the CSSI must be established before commencement of Work and be maintained for the duration of construction, and for a minimum of 24 months following the completion of construction of Stage 1 of the CSSI. The following up-to-date information (excluding confidential, private, commercial information or any other information that the Planning Secretary has approved to be excluded) must be published before the relevant Work commences and maintained on the website or dedicated pages including: (a) information on the current implementation status of Stage 1 of the CSSI; (b) a copy of the documents listed in Condition A1, and any documentation relating to any modifications made to the CSSI or the terms of this approval; (c) a copy of this approval in its original form, a current consolidated copy of this approval (that is, including any approved modifications to its terms), and copies of any approval granted by the Minister to a modification of the terms of this approval; (d) a copy of each statutory approval, licence or permit required and obtained in relation to Stage 1 of the CSSI; (e) a copy of the current version of each document required under the terms of this approval; and (f) a copy of the audit reports required under this approval.	Section 4.1.1

	Where the information / document relates to a particular Work or is required to be implemented, it must be published before the commencement of the relevant Work to which it relates or before its implementation. All information required in this condition must be provided on the Proponent's website, ordered in a logical sequence and which is easy to navigate.	
SU01	Develop a Sustainability Management Plan that outlines how the project will embed and continually improve sustainability throughout the project. The sustainability management plan will outline: • The IS rating process, including timeframes for achieving a project IS rating. • Roles and responsibilities relating to sustainability. • How sustainability objectives will be embedded into the construction and operation of the project. • How, and if, the future aspirations of Sydney Water can be accommodated and implemented in the project.	This document Section 4.2 (process), Section 1.3 (timeframes) Section 4.2 – Table 16 Section 2 Section 1.1
E89	A **Sustainability Strategy** must be prepared and implemented to achieve a minimum "Gold" 'Design' and 'As built' rating under the Infrastructure Sustainability Council infrastructure v2.1 rating tool, or at least "Excellent" under v1.2.	This plan throughout, specifically credit mapping pathway detailed within Section 4.1
E91	The Sustainability Strategy must be implemented throughout design, construction and operation, and be submitted to the Planning Secretary for information.	Insert date of submission / confirmation evidence once complete

1.5 Structure of the Plan

The SuMP is one of the governing plans in the Project Management System (see Section 4). The SuMP is a governing plan because sustainability principles extend across the whole Project, starting with optioneering and the tender concept design in the tender period through to detailed design, construction, commissioning and operations. These principles are also embedded across all management disciplines, ensuring that the decision-making process considers whole-of-life, environmental, social, and economic costs, and benefits over the life of the Project.

The SuMP and other Project Management Plans provide a complete and coherent system of requirements and processes to ensure that the project requirements are met. Beneath the project management plans, there is a suite of more detailed and specific documents such as system procedures, system instructions, technical procedures, inspection and test plans, work method statements and standard forms and checklists.

In addition to the Project Management Plan, other Project Plans that interface with the SuMP are mapped within Section 4.1 of this document.

2 Sustainability Framework and Approach

The Project's approach to sustainability is informed through a combination of John Holland Group's (JHG) and Sydney Water Corporation's commitments detailed within their Sustainability Policies (Section 2.3) and supported by the JHG Sustainability Framework (Section 2.1 below), and Innovation and Continuous Improvement Framework (Section 2.1). These are implemented as part of the Project Sustainability Management System (SMS) and Sustainable Management Strategy below (Section 2.2).

2.1 Sustainability Framework

Our Sustainability Framework (Figure 2-1) governs the way we work through 4 key pillars (Leadership and Strategy, Our Community and Partners, Built and Natural Environment; and Our People) and 12 Sustainability Elements. These 12 Sustainability Elements focus on the key interactions with our supply chain, customers, communities and the environment, throughout the project lifecycle.

The Framework is designed to leverage our people and diverse expertise by encouraging a thoughtful, collaborative, interconnected approach to decision making. Each component of our framework is interconnected, each of the 4 pillars and their 12 elements define our inclusive and thoughtful approach to decision-making that we see as a 'whole of business' challenge – that is one we are all working towards together. More detail on JH's Sustainability Framework can be found on the JH SharePoint Sustainability Hub and publicly available on the John Holland website: https://johnholland.com.au/how-we-care/sustainability

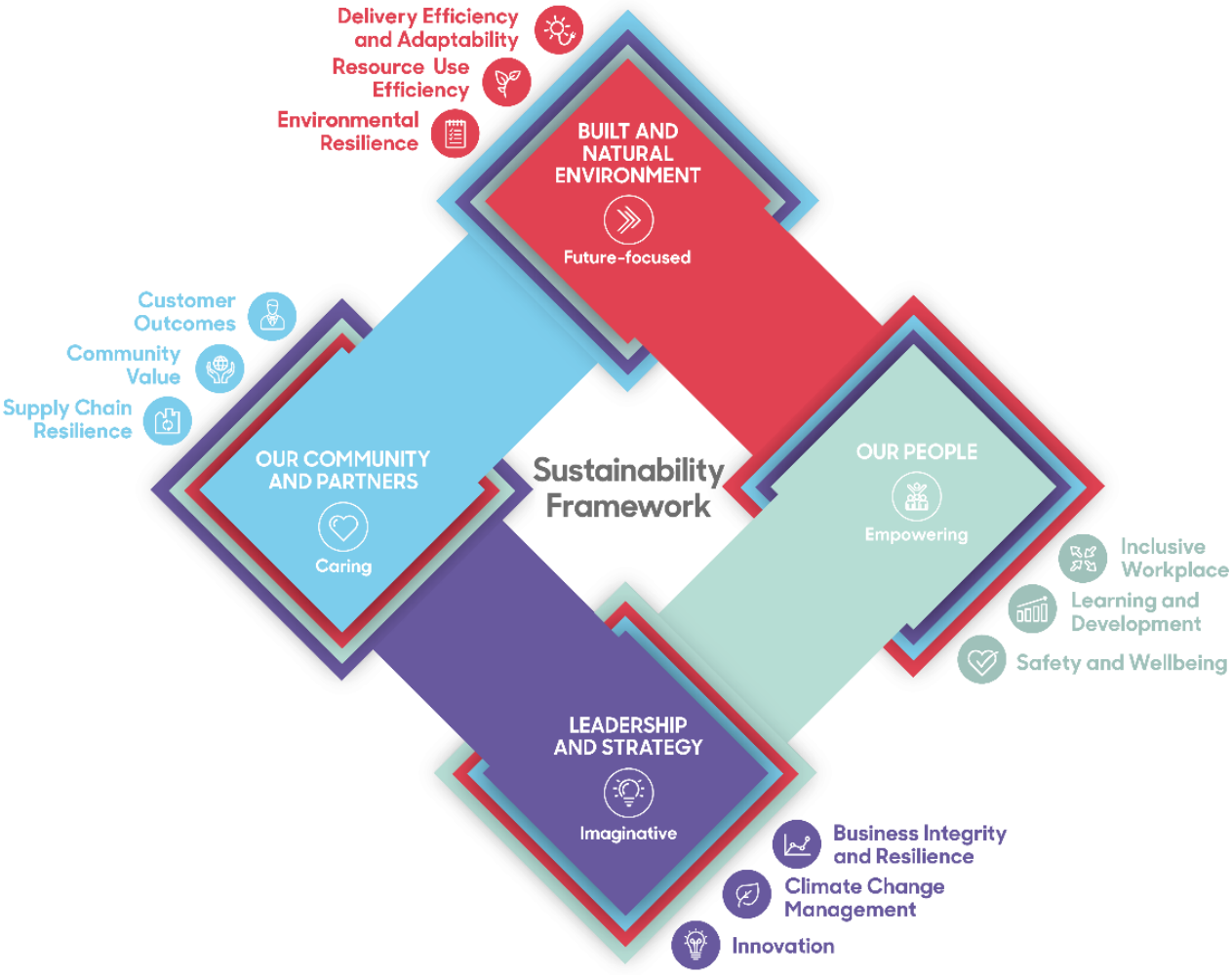


Figure 2-1: John Holland's Sustainability Framework

2.2 Project Sustainability Management Strategy

The Sustainability Management Strategy sets out how sustainability will be developed across the project and how the team will strive to exceed its sustainability requirements. The Project Sustainability Management Strategy was developed using information, guidance and structure from Sydney Water, the United Nations, the Infrastructure Sustainability Council and John Holland (Figure 2-2).

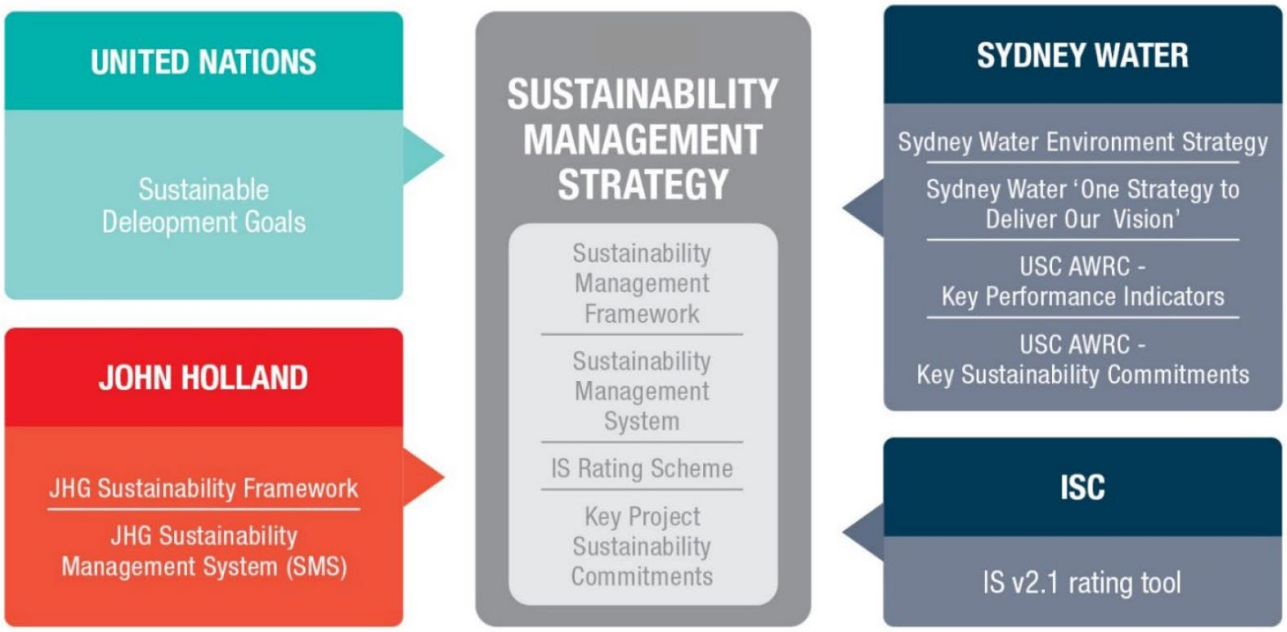


Figure 2-2 Sustainability Management Strategy Development

The Project's Sustainability Management Strategy will apply the approach set out by the JHG Sustainability Management Framework (SMF), using the tools and structure in the SMF to embed and exceed the projects sustainability requirements. The strategy also enables the project to work towards the UN Sustainable Development Goals. This strategy aligns with Sydney Water's Environment and Sustainability Policy in particular, each component of the strategy is interconnected with each of the four pillars, John Holland's 12 elements and Sydney Waters strategic outcomes define an inclusive and considered approach.

Figure 2-3 demonstrates the synergy between the JHG Sustainability Framework elements and the broader Sydney Water 2030 Strategy and Vision of 'Creating a better life with world-class water services. The Project strives to work with Sydney Water to build resilience in the Sydney network, for Sydney Water and its customers, and for JH's people and supply chain.

Figure 2-2. Alignment of JHG's Sustainability Framework with Sydney Waters 2030 Strategy and Vision

2.3 Alignment with Organisational Polices and Strategies

2.3.1 John Holland and Sydney Waters Sustainability Policy Commitments

John Holland's and Sydney Water's Sustainability Policies spell out how they are commitment to sustainability through "integrating economic growth, environmental resilience, and social progress as priorities into decision-making at every level, with the ambition to create long-term value. The below provides the commitments from both Policies. Refer to Appendix A-1-1 – JHG Sustainability Policy.

Create a sense of place for communities, by making a positive and meaningful difference to the community by genuinely engaging with the community and stakeholders
Work closely with our customers to achieve optimal and resilient outcomes for users and society
Decision-making to integrate economic, social, environmental and governance aspects, and seek to achieve positive outcomes in each
Minimise whole of life asset impact by future proofing our assets and responding to climate change

Address environment considerations in a manner that is sensitive to the needs of our stakeholders and the environmental outcomes wherever practical
Be recognised as an industry leader in making our workplaces safer through innovation, collaboration and effective planning and management of risks
Enhance workforce health and wellbeing and inclusion and diversity, through employee empowerment to deliver sustainable outcomes
Source sustainably and ethically, including prioritising local industry participation, social procurement initiatives and a commitment to avoiding modern slavery
Encourage innovation amongst our delivery teams and supply chain to achieve sustainable outcomes
Manage all activities ethically, managing and reporting the sustainability performance of the project
Govern for sustainability by implementing project systems and processes to ensure the effective and efficient delivery and operation of the project
Support the UN Sustainable Development Goals

2.3.2 Sydney Water Environmental Policy commitments

having no net impact from our discharges to the air, water or land
maximising resource value and supporting a circular economy by responsibly managing energy, water and materials, and minimising waste creation
achieving net carbon zero in our operations by 2030 and supply chain by 2040
managing the entire integrated water cycle
protecting, restoring, and enhancing our natural and heritage assets
social responsibility by having at the forefront the wellbeing of the community to improve our overall environmental performance.

Refer Appendix A-1-1 – Sustainability policies.

2.4 UN Sustainability Goals

The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and planet, now and into the future. At its core are 17 Sustainable Development Goals (SDGs) visualised in Figure 2-3 below.

Figure 2-3. United Nations Sustainable Development Goals

2.5 Infrastructure Sustainability Council

The Infrastructure Sustainability (IS) Rating Scheme has been developed by the Infrastructure Sustainability Council (ISC). The IS Rating Scheme evaluates sustainability initiatives and potential environmental, social, and economic impacts of infrastructure projects and assets. It is intended for use by stakeholders, including proponents, designers, construction, and operation-project team members, as a guide for sustainable design, procurement, construction and operation for infrastructure projects and assets.

2.5.1 The IS Rating Scheme

The Infrastructure Sustainability (IS) Rating Scheme has been designed to help infrastructure deliver the best possible environmental, social, and economic outcomes. There is an IS Rating tool to independently, assess and reward sustainability at each stage of the infrastructure lifecycle, from early planning through to design and construction, and into the operational state.

In accordance with the above sections of this plan, the Project shall achieve an IS v2.1 Design and As built rating. In accordance with CoA E89 and the IS rating award levels the project shall achieve a minimum of 60 verified points out of 100 points, with 10 bonus points available for innovation, resulting in a minimum of a “Gold” rating.

The scope and boundary of the IS rating are equal to the Stage 1 AWRC Layout as detailed in Figure 1-2 of this plan and the extent of the pipeline boundary as depicted in Figure 1-1 of this plan, both boundaries are further detailed with the USC AWRC EIS, Aurecon, September 2021. The AWRC and pipeline scope shall be combined into one IS rating submission. Excluded from the scope is the site entry road from Clifton Avenue to the operational site entrance that is pre-existing at the time of John Holland’s major works commencing. Further detail of the IS rating processes and pathways is explored within this SuMP throughout.

2.5.2 Themes, categories, credits, levels, criteria and must statements.

The IS Rating Scheme covers four themes: Governance, Economic, Environmental and Social. Each theme has one or more categories and each category has one or more credits. Each credit (other than Innovation) has up to three levels of achievement and addresses a specific aspect of sustainability performance.

The project’s focus will be achieving measurable outcomes that are aligned to Sydney Water’s Environment Strategy (2018-2030) via the IS rating scheme, as outlined in Figure 2-4 below.

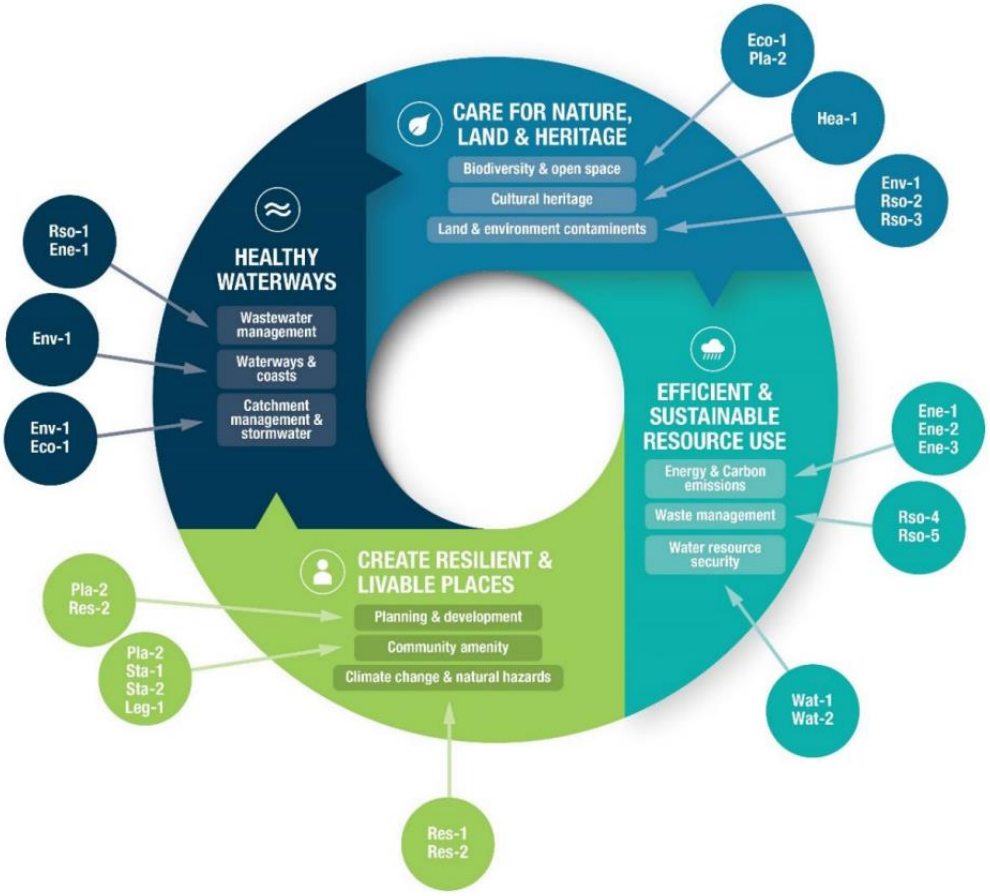


Figure 2-4 Using the IS Rating Tool to Achieve Outcomes Aligned to Sydney Waters Environment Strategy

2.5.3 Scoring and materiality

To achieve a rating and to measure performance the IS Rating Scheme has a point scoring system that is adjusted to fit the profile of each asset. The highest number of points a project can achieve is 110 points. Default points are allocated to every credit with the sum total equalling 110 points.

The materiality assessment is a compulsory first step in the IS rating process and identifies the most important (material) sustainability issues for infrastructure projects and assets, and results in an adjustment to the default credit scores within the IS Rating Tool to focus the tool on delivering outcomes in the context of the project or asset.

The overall score is the sum of the points verified as achieved in all credits. The rating award level is assigned based on the overall score. The materiality assessment is also an opportunity for projects to identify credits that will not form a part of their rating. There are three main steps in the materiality assessment process:

- Preparation.
- Assessment

• Verification.

Once the Materiality Assessment is completed, the IS Scorecard calculates a Materiality Score from 0 to 4 as follows:

0 Not material (scoped out)

1 Low materiality (half as important as moderate)

2 Moderate materiality

3 High materiality (50% more important than moderate)

4 Very high materiality (twice as important as moderate).

The Materiality Assessment must be verified before the end of the establishment period of the Project. The establishment period is a grace period provided by ISC to facilitate project sustainability mobilisation. The establishment period for the Project concludes on 26 April 2023. The Project establishment phase has been extended from the 15th of March 2023 to April 26 by means of an endorsed ISC technical clarification (TC), the TC was endorsed on the 27th of February 2023. Key dates regarding the Materiality assessment and IS rating process for the project are summarised in the table below.

Table 3: ISC Project Milestones

ISC Component	Key Dates
Establishment Period	15/09/22 - 26/04/23
Formal Kick-Off Workshop	31/01/23
Materiality Assessment	Submitted - 15/02/23
	Verified - 19/04/23
Verifier appointment completed by ISC	February 2023
Base Case	Submitted – 26/04/23
	Verified - TBC
Design Phase (Indicative)	15/09/22 – 30/11/2024
Submission of Design Round 1	October 2024

ISC Component	Key Dates
Submission of Design Round 2	November 2024
Construction Phase	23/08/2023 – 13/02/2026 CEMP Approval from Department of Climate Change, Energy, the Environment and Water – Final Cutover
Submission of As Built Round 1	November – December 2025
Submission of As Built Round 2	February 2026

2.5.4 Scaled credits.

Certain credits in the IS Rating Tool are ‘scaled credits’ e.g. Ene-1, Rso-7. This means that fractions of points are achievable on a sliding scale depending on the project results e.g. level of carbon reductions. This approach encourages the pursuit of every incremental improvement possible.

2.5.5 Evidence

Evidence is required for each credit criterion, to demonstrate that the credit performance benchmarks (levels) are being met. Guidance on evidence can be found within each credit.

2.5.6 IS Rating Process

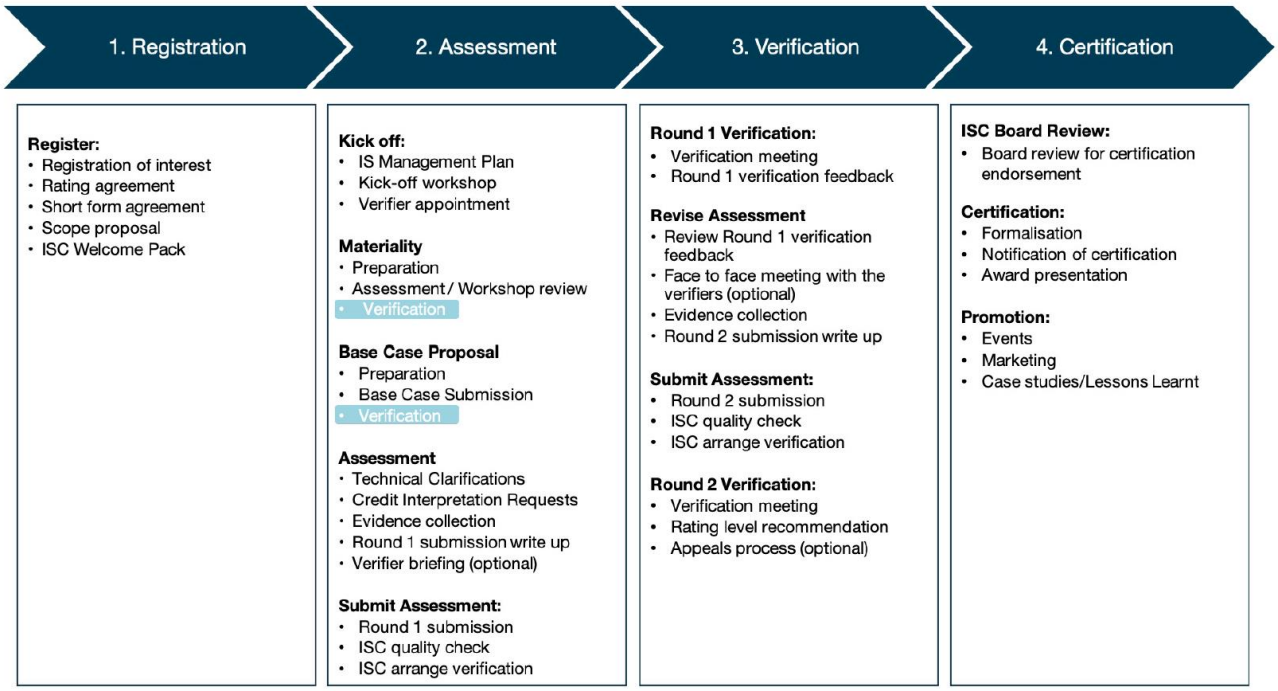


Figure 2-5 IS Rating Process

2.5.7 Registration

Registration is the first stage in the rating process. This stage establishes a formal agreement between the Infrastructure Sustainability Council and the Registrant. Key activities that make up the Registration stage include:

• Registration of Interest (RoI)

• Completion of the IS Rating Agreement

• Completion of the Project Detail Form.

The registration of the IS rating covering both the AWRC and pipelines was completed in January 2023.

2.5.8 Assessment

The Assessment stage requires the project or asset management team to measure and evaluate their sustainability performance and determine their rating achievement using the IS Rating tool and associated guidelines. Assessment will continue as the project or asset proceeds through the relevant infrastructure life cycle phases (design and construction in this case). The key dates and activities within the assessment stage are summaries in Table 3.

2.5.9 Base Case and Actual Case

In the Energy and Carbon, Water and Resource Efficiency and Management categories, several credits adopt an approach of modelling and measuring the performance of the project or asset (in terms of resource consumption or greenhouse gas emissions) and comparing it to a business as usual (BAU) footprint.

The Base Case approach refers to the development of a business-as-usual footprint for energy and carbon, resource inputs, and water use. Footprint means the quantified impact of a certain issue across the infrastructure life cycle. The Project is rewarded based on the percentage reduction that is achieved between the Base Case and their actual design.

2.5.9.1 Base Case

The Base Case is a suitable early design accepted by key stakeholders as a representative of the original concept for the AWRC and Pipelines accompanied by a set of BAU assumptions regarding technologies, materials sourcing and composition. Very early designs may be too high level to allow footprints to be estimated, while later designs may already incorporate beyond-BAU sustainability initiatives whereby such inclusion should be recognised in any measurement of project performance. In the case that a later design is chosen that incorporates beyond-BAU initiatives, a process of 'extracting' these initiatives from the selected design can be applied to establish a Base Case.

2.5.9.2 Actual case

For the Design component of the rating, the actual case is the design that is issued for construction at the end of the design phase. For the As Built component of the rating, the actual case is the as built design at the end of construction.

2.5.10 Technical Clarifications and Credit Interpretation Requests

During the course of the assessment phase projects may find challenges or situations where the manual needs to be interpreted or clarified for their specific context. In these cases, projects can resolve their technical queries by submitting a Technical Clarification (TC) or Credit Interpretation Request (CIR) to ISC.

2.5.11 Assessment submission

Once the project/asset has reached the end of the assessment stage (for the Design component of the rating this would be at the end of the design, for the As Built component of the rating this would be close to the end of construction), the finalised assessment needs to be submitted to ISC for verification. The submission needs to include:

- a completed IS Scorecard including the level targeted for each credit
- a completed set of Credit Summary Forms (CSF)

- all necessary evidence.

2.5.12 Verification & Certification

The verification of the project or asset assessment will be completed over two rounds for each Design and As-Built stages of the rating. Once the rating receives its As-Built rating it shall be certified at a particular rating level e.g. “Gold”.

2.5.13 Sustainability Rating Tool Pathway

As discussed throughout this SuMP, The Project is contractually required from Sydney Water to achieve a minimum of 60 Points for a “Gold” rating (with stretch targets for higher) under a Design and As Built IS Rating Tool v2.1.

The below Table 2 provides an overview of the mapping of credits, their materiality and available points the project can achieve if successfully implemented.

The Project will utilise the Sustainability Compliance and Assurance Tool as discussed throughout this plan to manage the delivery of the IS Rating and other sustainability targets, and will outline the tasks required to achieve each benchmark/target, assign responsibilities, provide a status of completion and assign expected difficulties/probabilities of success.

2.5.14 IS rating pathway

Table 2: IS Credits and Target levels.

IS v2.1 Design & As Built Scorecard Country: Australia Design Rating stage: Design

Credit	Credit name	Materiality	Score possible	No. of levels	Target level	Target score	R1 assessed level	R1 assessed score	R1 verified level	R1 verified score	R2 assessed level	R2 assessed score	R2 verified level	Final score
Pla-2	Urban and Landscape Design	3	3.95	3	2	2.63	0	0.00	0	0.00	0	0.00	0	0.00
Lea-1	Integrating Sustainability	2	3.01	3	2	2.01	0	0.00	0	0.00	0	0.00	0	0.00
Lea-2	Risks & Opportunities	2	1.88	3	2	1.25	0	0.00	0	0.00	0	0.00	0	0.00
Lea-3	Knowledge Sharing	2	1.88	3	2	1.25	0	0.00	0	0.00	0	0.00	0	0.00
Spr-1	Sustainable Procurement Strategy	2	2.26	3	1	0.75	0	0.00	0	0.00	0	0.00	0	0.00
Spr-2	Supplier Assessment and Selection	2	1.88	3	1	0.63	0	0.00	0	0.00	0	0.00	0	0.00
Spr-3	Contract and Supplier Management	2	1.88	3	3	1.88	0	0.00	0	0.00	0	0.00	0	0.00
Res-1	Climate and Natural Hazards Risks	4	3.76	3	2	2.51	0	0.00	0	0.00	0	0.00	0	0.00
Res-2	Resilience Planning	4	6.02	3	2	4.01	0	0.00	0	0.00	0	0.00	0	0.00
Inn-1	Innovation	2	10.00	10	5	5.00	0	0.00	0	0.00	0	0.00	0	0.00
Ecn-1	Options Assessment and Significant Decisio	2	3.76	3	2	2.51	0	0.00	0	0.00	0	0.00	0	0.00
Ene-1	Energy Efficiency and Carbon Reductions	4	5.64	3	3.00	5.64	0	0.00	0	0.00	0	0.00	0	0.00
Ene-2	Renewable Energy	4	3.76	3	1.50	1.88	0	0.00	0	0.00	0	0.00	0	0.00
Ene-3	Offsetting	2	0.94	3	0.00	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Env-1	Receiving Water Quality	4	2.60	3	2	1.73	0	0.00	0	0.00	0	0.00	0	0.00
Env-2	Noise	4	2.59	3	3	2.59	0	0.00	0	0.00	0	0.00	0	0.00
Env-3	Vibration	3	1.94	3	3	1.94	0	0.00	0	0.00	0	0.00	0	0.00
Env-4	Air Quality	4	2.59	3	3	2.59	0	0.00	0	0.00	0	0.00	0	0.00
Env-5	Light Pollution	1	0.41	3	2	0.28	0	0.00	0	0.00	0	0.00	0	0.00
Rso-1	Resource Strategy Development	3	2.26	3	2	1.50	0	0.00	0	0.00	0	0.00	0	0.00
Rso-2	Management of Contaminated Material	1	0.38	2	2	0.38	0	0.00	0	0.00	0	0.00	0	0.00
Rso-3	Management of Acid Sulfate Soil	1	0.38	3	2	0.25	0	0.00	0	0.00	0	0.00	0	0.00
Rso-4	Resource Recovery and Management	3	2.26	3	2	1.50	0	0.00	0	0.00	0	0.00	0	0.00
Rso-5	Adaptability and End of Life	3	2.26	3	2.00	1.50	0	0.00	0	0.00	0	0.00	0	0.00
Rso-6	Material Life Cycle Impact Measurement & Ma	2	3.38	3	2.00	2.26	0	0.00	0	0.00	0	0.00	0	0.00
Rso-7	Sustainability Labelled Products and Supply	2	1.13	3	1.00	0.38	0	0.00	0	0.00	0	0.00	0	0.00
Wat-1	Avoiding Water Use	4	4.51	3	2.50	3.76	0	0.00	0	0.00	0	0.00	0	0.00
Wat-2	Appropriate Use of Water Sources	4	4.51	3	2	3.01	0	0.00	0	0.00	0	0.00	0	0.00
Eco-1	Ecological Protection and Enhancement	2	5.26	3	2	3.51	0	0.00	0	0.00	0	0.00	0	0.00
Sta-1	Stakeholder Engagement Strategy	4	5.26	3	1	1.75	0	0.00	0	0.00	0	0.00	0	0.00
Sta-2	Stakeholder Engagement and Impacts	4	5.26	3	1	1.75	0	0.00	0	0.00	0	0.00	0	0.00
Leg-1	Leaving a Lasting Legacy	2	1.69	3	1	0.56	0	0.00	0	0.00	0	0.00	0	0.00
Her-1	Heritage Protection and Enhancement	4	3.76	3	1	1.25	0	0.00	0	0.00	0	0.00	0	0.00
Wfs-1	Jobs, Skills and Workforce Planning	2	2.26	2	2	2.26	0	0.00	0	0.00	0	0.00	0	0.00
Wfs-2	Workplace Culture and Wellbeing	2	1.69	3	2	1.13	0	0.00	0	0.00	0	0.00	0	0.00
Wfs-3	Diversity and Inclusion	2	1.69	3	2	1.13	0	0.00	0	0.00	0	0.00	0	0.00
Wfs-4	Sustainable Site Facilities	2	1.32	3	0.99	0.43	0	0.00	0	0.00	0	0.00	0	0.00
Total			Σ 110 pts			Σ 69.4 pts		Σ 0 pts		Σ 0 pts		Σ 0 pts		Σ 0 pts
						Gold		N/A		N/A		N/A		N/A

Figure 2-6: IS Credit points mapping, illustrating the variety of UN SDG's the credits are aligned with.

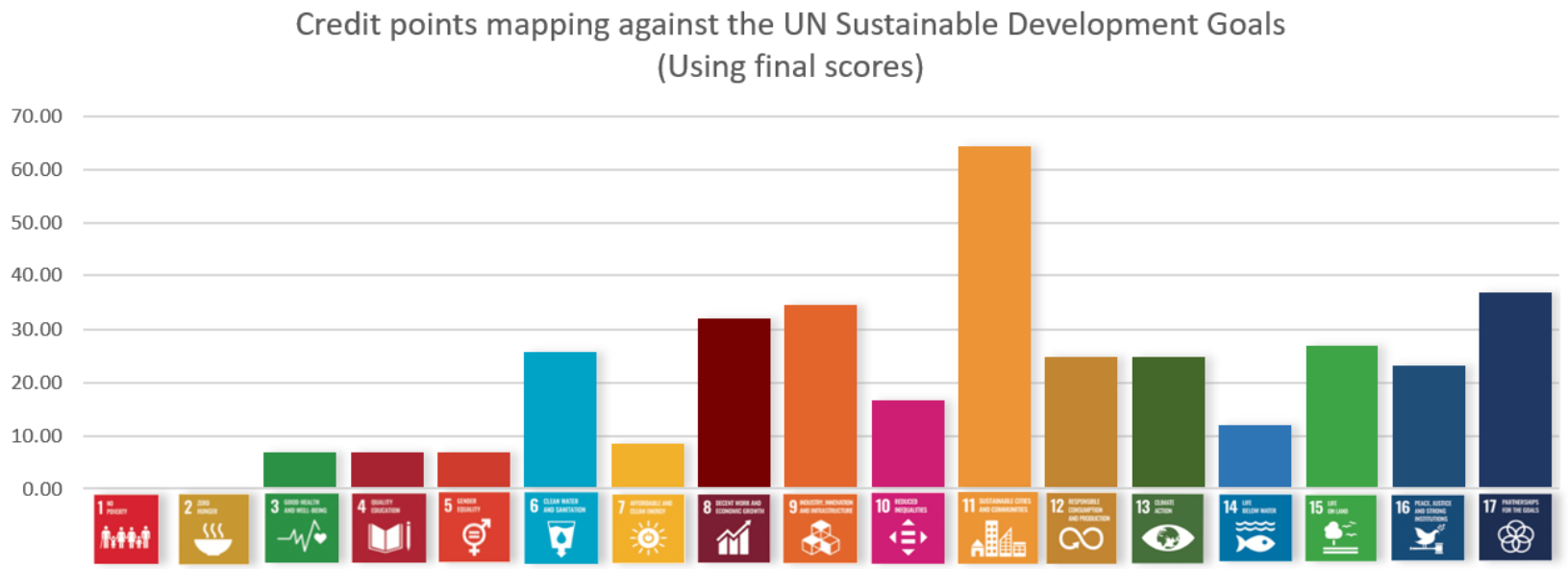
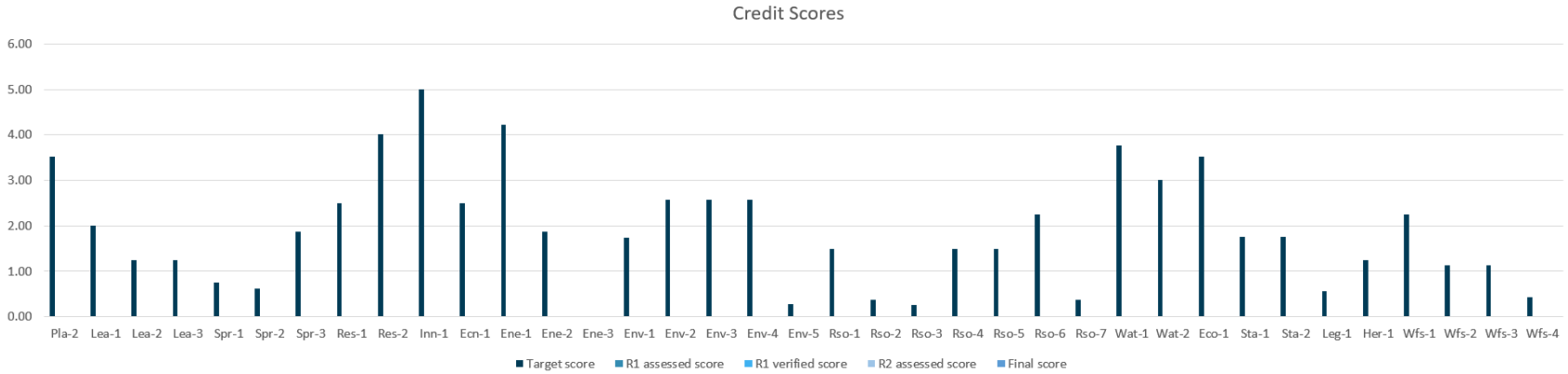


Figure 2-7: IS Credits and score graphical representation, illustrating the spread of targeted point based on credit type.



2.6 Sustainability Requirements

In addition to the above core IS v2.1 sustainability requirements for the Project, Table 3 outlines the Department of Planning & Environment (DPE) minimum sustainability requirements and where these requirements have been addressed within standalone documentation or within this SuMP. Note, compliance to CoA E89 (this SuMP) and the strategy for the achievement of a minimum "Gold" 'Design' and 'As built' rating under the Infrastructure Sustainability Council infrastructure v2.1 rating tool is provided in-depth throughout this entire document.

Table 3: Planning Approval requirements for sustainability management extracted from the CoA of SSI-8609189 and Updated Management Measures (UMMs)

ID	Requirement	Reference document
SU02	Investigate opportunities to: · procure recycled or reused materials where the options exist and comparable performance can be achieved · reduce material quantities, where possible, while maintaining the design performance · implement passive design measures at the AWRC such as optimum solar orientation, shading and natural ventilation to reduce demand for heating and cooling of occupied site buildings · implement alternative technologies to reduce nitrous oxide emissions from the operation of the AWRC.	Resource Efficiency Strategy ; and Resource Efficiency Plan , Renewables energy report and modelling
SU03	Implement the initiatives identified in the Sustainability Initiatives Register in Table 12-3.	Initiatives included in Section 1.8.3 (evidence to be provided during Construction)
SU04	Supplement 50% of Stage 1 project electricity use with renewable energy generation. If this cannot be achieved through renewable energy generation, investigate other options such as purchasing large scale generation certificates (LGCs) or entering into a power purchasing agreement where electricity is sourced from off-site renewable energy.	Renewables energy report (Ene-1 & Ene-2) & Adaptability Strategy
E90	Evidence that the minimum rating in Condition E89 has been achieved must be provided to the Planning Secretary for information within one month of receiving the ratings.	ISC rating certificate TBC at project completion

E92	A **Water Reuse Strategy** must be prepared, which sets out options for the reuse of collected stormwater and groundwater during construction and operation. The **Water Reuse Strategy** must include, but not be limited to: (a) evaluation of reuse options; (b) details of the preferred reuse option(s), including indicative volumes of water to be reused, proposed reuse locations and/or activities, proposed treatment (if required), and any additional licences or approvals that may be required; (c) measures to avoid misuse of stormwater and groundwater as potable water; (d) consideration of the public health risks from reuse of stormwater or groundwater; and (e) a time frame for the implementation of the preferred reuse option(s). The **Water Reuse Strategy** must be prepared based on best practice and advice sought from relevant agencies, as required. The Strategy must be applied during construction and operation. Justification must be provided to the Planning Secretary if it is concluded that no reuse options prevail before the commencement of construction. A copy of the Water Reuse Strategy must be made publicly available prior to the commencement of construction. If reuse is only proposed during operation, then the Strategy must be made publicly available prior to the commencement of operation. **Note:** Nothing in this condition prevents the Proponent from preparing separate Water Reuse Strategies for the construction and operational phases of the CSSI.	Construction Water Reuse Strategy (USCP-JHG-PLN-ENV-0001) Operational Water Reuse Strategy (TBC)

2.6.1 EIS / Planning Approval Key Sustainability Commitments (Table 12-3 as per EIS related to the project Scope)

ISC – obtain an ISC rating of at least ‘Gold’ (under v2.1) and preferably ‘Platinum’ (under v2.1) for design and as built stages (with a minimum score of 60 points).
Electricity use – supplement 50% of Stage 1 project electricity use by: • self-generating renewable energy from installation of solar PV panels and • purchasing grid renewable energy.

Beneficial reuse of biosolids – reuse all biosolids to maximise reuse and recovery of resources.
Recycled water – Provide a source of water that can be used for green space and tree canopy irrigation to support urban cooling and greening objectives in Western Sydney.
Urban design/landscaping – develop and implement a landscape-led Urban Design and Landscaping Plan for the AWRC site.
Water Sensitive Urban Design – design stormwater management at the AWRC site with the aim of meeting waterway objectives for South Creek.
USC AWRC Environmental Impact Statement outcomes – manage environmental impacts arising from construction and operation of the AWRC and pipelines.
Flood Management – do not contribute to existing flood management issues in the Hawkesbury Nepean or South Creek catchments.
Infrastructure resilience and opportunities for improved drought resilience in Western Sydney - manage the impacts of a changing climate by including adaptation measures to support resilience of the AWRC and pipeline infrastructure.

3 Project Sustainability Objectives and Targets

3.1 Project Specific Sustainability Objectives

All commitments from the abovementioned documents have been mapped to create Project-specific themes, objectives and “SMART” targets relevant to the most material sustainability aspects. Refer to Table 6 below for the themes and objectives, Table 7 for the “SMART” targets and Table 8 for the allocation of responsibility, monitoring and reporting.

Table-6: Project-specific themes and objectives

Theme	ID#	Objective
Environmental Health	1	Have no net impact on environmental health through discharges to water, air and land
Natural and Heritage Assets	2	Protect, restore and enhance natural and heritage assets
Energy and Carbon	3	Responsibly manage energy by applying best practice design and energy efficiency approaches

	4	Minimise residual GHG emissions by pursuing renewable energy and low-carbon solutions
Circular Economy	5	Pursue circular economy approaches to material sources (including reuse) and effective waste management
Water Use Management	6	Supply recycled water for non-drinking purposes for use in homes and businesses, for agriculture purposes or irrigation of public spaces
	7	Minimise water use and choose appropriate water sources
Resilience	8	Adopt a resilience approach when considering climate change risks, climate change impacts and implement adaptation solutions
Society and Community	9	Be a leader in social responsibility by having the well-being of the community and stakeholders at the forefront of delivery
	10	Create green and vibrant spaces through landscape-led urban design and landscaping
Governance	11	Value-for-money decision-making which integrates economic, social, environmental aspects

3.2 Sustainability targets and UN SDGs

The Project has adopted the following ‘SMART targets”. “SMART” meaning:

- Specific
- Measurable
- Achievable
- Relevant
- Time-bound

Targets have been identified and agreed upon between the Project’s multidisciplinary, Leadership Team to meet the Project sustainability commitments, objectives, and contractual requirements. These are outlined in detail and mapped against the UN SDG’s below in Table 7.

Table-7: Project Specific Sustainability Targets

Phase	Primary Theme	ID#	"SMART" Target	UN SDG
Project-wide	All	T-1	Achieve an ISC rating of 'Gold' under TM v2.1	All
	All	T-2	Achieve 5 innovation points under ISC	9. Industry, innovation and infrastructure
Design phase	Energy and Carbon	T-3	30% reduction in energy use/demand from Base Case scenario	7. Affordable and clean energy 11. Sustainable cities and communities
		T-4	50% increase in operational electricity sourced from renewables from Base Case scenario	7. Affordable and clean energy 11. Sustainable cities and communities
	Water Use Management	T-5	25% reduction in water demand from Base Case scenario	6. Clean water and sanitation 11. Sustainable cities and communities 12. Responsible consumption and production
		T-6	25% reduction in total potable water from Base Case scenario	6. Clean water and sanitation 11. Sustainable cities and communities 12. Responsible consumption and production
	Circular Economy	T-7	45% reduction in material life cycle impacts from a Base Case scenario	9. Industry, innovation and infrastructure 11. Sustainable cities and communities

Phase	Primary Theme	ID#	"SMART" Target	UN SDG
				12. Responsible consumption and production
		T-8	30% of products / materials (by cost) will have an ISC-approved sustainability label	9. Industry, innovation and infrastructure 11. Sustainable cities and communities 12. Responsible consumption and production
		T-9	100% re-use of biosolids	9. Industry, innovation and infrastructure 12. Responsible consumption and production
		T-10	50% of materials (by cost) can be easily adapted, re-used or recycled at end-of-life	9. Industry, innovation and infrastructure 11. Sustainable cities and communities 12. Responsible consumption and production
		T-11	≥ 250 tonnes of pipe bedding sand made from a blend of natural sand and crushed glass collected from curb side waste collection schemes will be used in the Project permanent works.	9. Industry, innovation and infrastructure 11. Sustainable cities and communities 12. Responsible consumption and production

Phase	Primary Theme	ID#	"SMART" Target	UN SDG
		T-12	≥ 2000 white feather honeymyrtle seeds will be collected from site, germinated and returned to Project site as tube stock for use in permanent landscaping works to use in the regeneration of the Project riparian corridor.	9. Industry, innovation and infrastructure 11. Sustainable cities and communities 12. Responsible consumption and production 15. Life on land
		T-13	The Project will target 5% recycled material and/or recycled asphalt pavement use in the asphalt production for permanent works at the plant site.	9. Industry, innovation and infrastructure 11. Sustainable cities and communities 12. Responsible consumption and production
	Society and Community	T-14	No greater than 1 horizontal lux level (over the project boundary).	11. Sustainable cities and communities
		T-15	No greater than 1% upward light ratio.	11. Sustainable cities and communities
		T-16	Achieve Level 2 for Urban Design and Landscaping (Pla-2 under ISC v2.1).	11. Sustainable cities and communities
	Natural and Heritage	T-17	Identify, maintain, and enhance Aboriginal and non-Aboriginal heritage assets and values within the Project's urban and landscape design by integrating requirements into design documentation by 2026.	11. Sustainable cities and communities

Phase	Primary Theme	ID#	"SMART" Target	UN SDG
	Assets/Society and Community	T-18	Develop & implement the USC Project Rehabilitation Management Plan.	14. Life below water 15. Life on land
		T-19	Develop and implement 100% of the urban design landscape themes/recommendations within the Stage 1a Operational Space Urban Design Landscape Plan.	11. Sustainable cities and communities
		T-20	The Project will regenerate and landscape the riparian area adjacent Wianamatta-South Creek, including the reconnection of an on-site billabong to support Western Sydney's green spine development before the operational commencement of the plant.	11. Sustainable cities and communities 14. Life below water 15. Life on land 13. Climate action
	Resilience	T-21	Reduce 100% of extreme and high-priority direct climate and natural hazard risks to an acceptable risk level	13. Climate action
	Environmental Health – Water	T-22	The Project will achieve load and concentration limits within Yarramundi 2 subzone and maintain or improve instream water quality and macroinvertebrate diversity attributable to the project's operational waterway releases. These will be achieved by meeting the project-specific water quality objectives (see table 8-8 of USC EIS, September 2021)	14. Life below water

Phase	Primary Theme	ID#	"SMART" Target	UN SDG
	Environmental Health – Noise	T-223	Operational noise is within the Project Specific Noise Trigger Levels of 41 dBL at night and 45 dBL day/evening at existing/future residential receivers.	11. Sustainable cities and communities
	Environmental Health – Air quality	T-234	Air quality does not exceed 4 odor units (OU) beyond the boundary of the plant (operational site).	11. Sustainable cities and communities
Construction phase	Energy and Carbon	T-25	30% reduction in energy use/demand (Scope 1 and 2) from Base Case scenario	7. Affordable and clean energy 11. Sustainable cities and communities
		T-26	30% increase in electricity sourced from renewables	7. Affordable and clean energy 11. Sustainable cities and communities
	Water Use Management	T-27	25% reduction in water demand from Base Case scenario	6. Clean water and sanitation 11. Sustainable cities and communities
		T-28	20% reduction in potable water use from Base Case scenario	6. Clean water and sanitation 11. Sustainable cities and communities 12. Responsible consumption and production
	Circular Economy	T-29	95% diversion of clean/inert excavation spoil from entering landfill	9. Industry, innovation and infrastructure 11. Sustainable cities and communities

Phase	Primary Theme	ID#	"SMART" Target	UN SDG
				12. Responsible consumption and production
		T-30	70% diversion of office waste from entering landfill	9. Industry, innovation and infrastructure 11. Sustainable cities and communities 12. Responsible consumption and production
		T-31	80% diversion of other inert resource outputs from entering landfill	9. Industry, innovation and infrastructure 11. Sustainable cities and communities 12. Responsible consumption and production
		T-32	The Project will utilise ≥ 300 tonnes of salvaged and collected woody debris (logs and root balls) in the Project's riparian corridor rehabilitation and revegetation works.	11. Sustainable cities and communities 12. Responsible consumption and production
		T-33	≥ 20 tonnes of sustainable asphalt made from recycled coffee cups and using a bio-bitumen (polymer-modified binder containing biogenic materials) binder will be trialled on-site as part of temporary works during construction to	9. Industry, innovation and infrastructure 11. Sustainable cities and communities 12. Responsible consumption and production

Phase	Primary Theme	ID#	"SMART" Target	UN SDG
			evidence the use/ viability and incorporation of problem waste streams in construction materials.	
	Natural and Heritage Assets	T-34	Number of significant heritage-related incidents per million hours worked is 0	11. Sustainable cities and communities
	Environmental Health – Water	T-35	Number of significant water and discharge related incidents per million hours worked is 0	14. Life below water 15. Life on land
	Environmental Health – Noise	T-36	Number of significant of noise-related incidents per million hours worked is 0	11. Sustainable cities and communities
	Environmental Health – Vibration	T-37	Number of significant vibration-related incidents per million hours worked is 0	11. Sustainable cities and communities
	Environmental Health – Biodiversity	T-38	Number of significant fauna / flora incidents per million hours worked is 0	15. Life on land
	Society and Community	T-39	Community and Stakeholder Engagement Plan (CSEP) inspections are conducted monthly	11. Sustainable cities and communities
		T-40	Avoidable complaints of less than 12 per calendar year for AWRC and less than 24 per calendar year for Pipelines	11. Sustainable cities and communities

***Note**

For more detailed information on the criteria and definition of "significant" environmental incidents related to targets T-34 to T-38, please refer to Appendix A7: Incident Management in the Project Construction Environmental Management Plan (Document Number: USCP-JHG-MPL-ENV-0008). This plan and procedure can be accessed by the public on the Project website at https://www.sydneywatertalk.com.au/uppersouthcreek.

3.3 Sustainability targets, responsibilities, and reporting

3.3.1 Project wide targets

The Sustainability Compliance and Assurance Tool, as detailed in Section 4.3.2.1 presents a bespoke online tool created for the Project (See Figure 6-1 of this plan for a snapshot of the tool's landing page). The tool shall be used to house all sustainability performance data. The tool has been developed to address the reporting requirements of Sydney Water's Management Specification, including, the performance of the Project against the commitments, objectives and targets. Section 4.3 provides further details on the wider data capture and reporting functions of the dashboard.

Table-8: Project Specific Sustainability Targets, Responsibility, Monitoring and Reporting

ID#	"SMART" Target	Responsibility	Monitoring	Reporting
T-1	Achieve an ISC rating of 'Gold' under TM v2.1	Project Director	ISC Compliance Tool	*Progress* Quarterly at JH Leadership Team meetings & annual reports during design phase *Final compliance* ISC As Built v2.1 verified scorecard and rating certificate
T-2	Achieve 5 innovation points under ISC	Project Director, Sustainability Manager	ISC Compliance Tool, Initiatives and Innovation Register by number and points of innovations targeted	*Progress* Quarterly at JH Leadership Team meetings & annual reports during design and construction phase *Final compliance* ISC verified innovations (Design submission verification and As Built submission verification)

Design phase targets

ID	"SMART" target	Responsibility	Measurement / Monitoring	Reporting
T-3	30% reduction in energy use/demand from Base Case scenario	Engineering Manager	Progress on initiatives to reduce energy consumption	*Progress* Quarterly at JH leadership team meetings & annual reports during design phase *Final compliance* As-built energy model and energy/design reports
T-4	50% increase in operational electricity sourced from renewables from Base Case scenario	Engineering Manager	Progress on implementation of solar PV array	*Progress updates* Quarterly at JH leadership team meetings & annual reports during design phase *Final compliance* As-built energy model and energy/design reports
T-5	25% reduction in water demand from Base Case scenario	Engineering Manager	Progress on initiatives to reduce water consumption	*Progress* Quarterly at JH leadership team meetings & annual reports during design phase *Final compliance* As-built water models and design reports
T-6	25% reduction in total potable water from Base Case scenario	Engineering Manager	Progress on initiatives to use alternative sources of water	*Progress* Quarterly at JH leadership team meetings & annual reports during design phase *Final compliance* As-built water models and design reports

T-7	45% reduction in material life cycle impacts from a Base Case scenario	Engineering Manager	Progress on initiatives to reduce material volumes, select less-impactful materials, etc.	*Progress* Quarterly at JH leadership team meetings & annual reports during design and construction phase *Final compliance* As-built LCA and design reports
T-8	30% of products / materials (by cost) will have an ISC-approved sustainability label	Commercial Director & Construction Director	Progress on selection of targeted materials/products	*Progress* Quarterly at JH leadership team meetings & annual reports during design and construction *Final compliance* As-built products / materials register, verification by ISC design and as-built ISC submission
T-9	100% re-use of biosolids	Engineering Manager & Commissioning Manager	Confirmation of end-use of biosolids	*Progress* Quarterly at JH leadership team meetings & annual reports during design *Final compliance* Design report, energy model/report
T-10	50% of materials (by cost) can be easily adapted, re-used or recycled at end-of-life	Engineering Manager	Progress on assessment and initiatives into end-of-life re-use	*Progress* Quarterly at JH leadership team meetings & annual reports during design *Final compliance* Design Report, adaptability Strategy,

				equipment/materials register and inclusion in O&M manuals and relevant operator documentation
T-11	≥ 250 tonnes of pipe bedding sand made from a blend of natural sand and crushed glass collected from curb side waste collection schemes will be used in the Project permanent works.	Construction Director/Manager, Engineering Manager & Sustainability Manager	Progress on initiatives to reduce material volumes, select less-impactful materials, etc.	*Progress* Quarterly at JH leadership team meetings & annual reports during design and construction phase *Final compliance* As-built LCA and design reports, deviation forms, supplier dockets/import register.
T-12	≥ 2000 white feather honeymyrtle seeds will be collected from site, germinated, and returned to Project site as tube stock for use in permanent landscaping works to use in the regeneration of the Project riparian corridor.	Environment Planning & Approvals Director & Project Urban Design Landscape Architect (Tract)	Progress on seeds collected, germination rate, install rate and survival rate recorded.	*Progress* Quarterly at JH leadership team meetings & annual reports during design and construction phase *Final Compliance* Vegetation Management Plan, planting schedule, as built drawings, install/ supplier records.
T-13	The Project will target 5% recycled material and/or recycled asphalt pavement use in the asphalt production for permanent works at the plant site.	Construction Director/Manager, Engineering Manager & Sustainability Manager	Progress on initiatives to reduce material volumes, select less-impactful materials, etc.	*Progress* Quarterly at JH leadership team meetings & annual reports during design and construction phase *Final compliance* As-built LCA and design reports, deviation forms,

				supplier dockets/import register.
T-14	No greater than 1 horizontal lux level (over the project boundary)	Engineering Manager & Commissioning Manager	Progress on implementation of initiatives	*Progress* Quarterly at JH leadership team meetings & annual reports during design *Final compliance* As-built design reports / lux model
T-15	No greater than 1% upward light ratio	Engineering Manager & Commissioning Manager	Progress on implementation of initiatives	*Progress* Quarterly at JH leadership team meetings during design *Final compliance* As-built design reports / lux model
T-16	Achieve Level 2 for Urban Design and Landscaping (Pla-2 under ISC v2.1)	Engineering Manager, Construction Director/Manager & Project Urban Design Landscape Architect (Tract)	Progress on implementation of ISC requirements	*Progress* Quarterly at JH leadership team meetings and annual reports during design *Final compliance* Design reports / Urban Design and Landscape Report, ISC verified as built scorecard
T-17	Identify, maintain, and enhance Aboriginal and non-Aboriginal heritage assets and values within the Project's urban and landscape design by integrating requirements	Engineering Manager, Project Urban Design Landscape Architect (Tract), Sydney Water heritage consultant, Sustainability Manager,	Progress on incorporation of initiatives to maintain and enhance heritage assets and values into the permanent design.	*Progress* Quarterly at JH leadership team meetings and annual reports during design *Final compliance* Urban & Landscape Design Plan, Vegetation

	into design documentation by 2026.	Community and Stakeholder Engagement Director & Environment Planning & Approvals Director		Management Plan, Landscape Management Plan, Aboriginal Participation Plan ,as built drawings and operator maintenance manuals.
T-18	Develop & implement the USC Project Rehabilitation Management Plan	Engineering Manager & Environment Planning & Approvals Director	Progress on implementation of initiatives and development of plan	*Progress* Quarterly at JH leadership team meetings and annual reports during design *Final compliance* Pipelines – Rehabilitation Management Plan, USC Project Vegetation Management Plan & Landscape Management Plan, as-built drawings, completions report.
T-19	Develop and implement 100% of the urban design landscape themes/recommendations within the Stage 1a Operational Space Urban Design Landscape Plan	Engineering Manager, Construction Director/Manager & Project Urban Design Landscape Architect (Tract)	Progress on implementation of initiatives and development of plan	*Progress* Quarterly at JH leadership team meetings and annual reports during design and construction *Final compliance* Urban & Landscape Design Plan, Urban & Landscape Design Statement, independent evaluations by SQP at practical completion.
T-20	The Project will regenerate and landscape the riparian area adjacent Wianamatta-South Creek, including the reconnection of an on-site billabong to support	Engineering Manager, Construction Director/Manager & Project Urban	Progress on the development of key landscaping features into the urban and landscape design and the implementation of the	*Progress* Quarterly at JH leadership team meetings and annual

	Western Sydney's green spine development before the operational commencement of the plant.	Design Landscape Architect (Tract)	required landscaping as per design.	reports during design and construction *Final compliance* Vegetation Management Plan, as built drawings, Urban & Landscape Design Statement, independent evaluations by SQP at practical completion
T-21	Reduce 100% of extreme and high-priority direct climate and natural hazard risks to an acceptable risk level	Engineering Manager & Construction Director / Manager	Progress on identification of risks and identification/implementation of adaptation measures	*Progress* Quarterly at JH leadership team meetings during design *Final compliance* Design drawings/reports, Climate & natural hazard adaptation plan and Resilience Plan
T-22	The Project will achieve load and concentration limits within Yarramundi 2 subzone and maintain or improve instream water quality and macroinvertebrate diversity attributable to the project's operational waterway releases. These will be achieved by meeting the project-specific water quality objectives (see table 8-8 of USC EIS, September 2021).	Engineering Manager & Commissioning Manager	Modelling of water discharge and receiving water demonstrates no adverse impact on receiving water environmental value in alignment with table 8-8	*Progress* Quarterly at JH leadership team meetings and annual reports during design *Final compliance* Water quality modelling and design report, operator documentation, operational environmental protection licence and as-built drawings
T-23	Operational noise is within the Project Specific Noise Trigger Levels of 41 dBL at night and 45 dBL	Engineering Manager & Commissioning Manager	Modelling of noise predictions, progress on initiatives for reduction, and monitoring	*Progress*

	day/evening at existing/future residential receivers.			Quarterly at JH leadership team meetings and annual reports during design *Final compliance* ONVMP, compliance operational noise monitoring results and monitoring plan.
T-24	Air quality does not exceed 4 odor units (OU) beyond the boundary of the plant (operational site).	Engineering Manager & Commissioning Manager	Modelling of noise predictions, progress on initiatives for reduction, and monitoring	*Progress* Quarterly at JH leadership team meetings and annual reports during design *Final compliance* OAQMP / odour MP, compliance odour monitoring results and monitoring plan.

Construction-phase targets

ID	"SMART" target	Responsibility	Monitoring and measurement	Reporting
T-25	30% reduction in energy use/demand (Scope 1 and 2) from Base Case scenario	Construction Director	All electricity (kWh) and fuel (L) used during construction	*Progress* Quarterly at JH leadership team meetings and annual reports during construction *Final compliance* As-built energy model
T-26	30% increase in electricity sourced from renewables	Construction Director	Electricity by source and type	*Progress* Quarterly at JH leadership team meetings and annual reports during construction

				Final compliance As-built energy model
T-27	25% reduction in water demand from Base Case scenario	Construction Director	All water consumed and water-use that has been avoided (litres)	*Progress* Quarterly at JH leadership team meetings and annual reports during construction *Final compliance* As-built water model
T-28	20% reduction in potable water use from Base Case scenario	Construction Director	All water consumed by source (including water captured onsite and reused)	*Progress* Quarterly at JH leadership team meetings during construction and annual reports during construction *Final compliance* As-built water model
T-29	95% diversion of clean/inert excavation spoil from entering landfill	Construction Director	Clean/inert spoil by volume by final destination (e.g., re-used on site, recycled/beneficially reused or landfill)	*Progress* Quarterly at JH leadership team meetings and annual reports during construction *Final compliance* *Waste & Resource Outputs Register*
T-30	70% diversion of office waste from entering landfill	Construction Director	Office waste by type and final destination (in volume)	*Progress* Quarterly at JH leadership team meetings and annual reports during construction *Final compliance*

				Waste & Resource Outputs Register
T-31	80% diversion of other inert resource outputs from entering landfill	Construction Director	Waste stream type (e.g., concrete, asphalt, plastics, steel) by final destination (e.g. re-used on site, recycled/beneficially reused or landfill)	*Progress* Quarterly at JH leadership team meetings and annual reports during construction *Final compliance* Waste & Resource Outputs Register
T-32	The Project will utilise ≥ 300 tonnes of salvaged and collected woody debris (logs and root balls) in the Project's riparian corridor rehabilitation and revegetation works.	Environment Planning & Approvals Director & Project Urban Design Landscape Architect (Tract)	Progress on identifying usable locations and installation in works area	*Progress* Quarterly at JH leadership team meetings & annual reports during design and construction phase *Final Compliance* Vegetation Management Plan, as built drawings, install schedule, Waste & Resource Outputs Register
T-33	≥ 20 tonnes of sustainable asphalt made from recycled coffee cups and using a bio-bitumen (polymer-modified binder containing biogenic materials) binder will be trialled on-site as part of temporary works during construction to evidence the use/ viability and incorporation of problem waste streams in construction materials.	Construction Manager & Sustainability Manager	Progress on the development, installation and assessing the performance of the new asphalt product to test the use of problem waste in construction materials	*Progress* Quarterly at JH leadership team meetings & annual reports during design and construction phase *Final compliance* Trial mix, installation records, test records, inspection reports, case study and lessons learnt.

T-34	Number of significant heritage-related incidents per million hours worked is 0	Construction Director/ Environment Planning & Approvals Director	Total number of incidents by type and significance per million hours work	*Progress* Quarterly at JH leadership team meetings during construction *Final compliance* Quarterly Environmental Report
T-35	Number of significant water and discharge related incidents per million hours worked is 0	Construction Director/ Environment Planning & Approvals Director	Total number of incidents by type and significance per million hours work	*Progress* Quarterly at JH leadership team meetings during construction and annual reports during construction *Final compliance* Quarterly Environmental Report
T-36	Number of significant of noise-related incidents per million hours worked is 0	Construction Director/ Environment Planning & Approvals Director	Total number of incidents by type and significance per million hours work	*Progress* Quarterly at JH leadership team meetings during construction and annual reports during construction *Final compliance* Quarterly Environmental Report
T-37	Number of significant vibration-related incidents per million hours worked is 0	Construction Director/ Environment Planning & Approvals Director	Total number of incidents by type and significance per million hours work	*Progress* Quarterly at JH leadership team meetings during construction and annual reports during construction *Final compliance* Quarterly Environmental Report

T-38	Number of significant fauna / flora incidents per million hours worked is 0	Construction Director/ Environment Planning & Approvals Director	Total number of incidents by type and significance per million hours work	*Progress* Quarterly at JH leadership team meetings during construction and annual reports during construction *Final compliance* *Quarterly Environmental Report*
T-39	Community and Stakeholder Engagement Plan (CSEP) inspections are conducted monthly	Comms & Stakeholder Engagement Director	Number of inspections held	*Progress and Compliance* Quarterly at JH leadership team meetings during construction and annual reports during construction *Final compliance* Monthly Project report
T-40	Avoidable complaints of less than 12 per calendar year for AWRC and less than 24 per calendar year for Pipelines	Construction Director & Comms & Stakeholder Engagement Director	Number of complaints by type (i.e., avoidable / unavoidable)	*Progress and Compliance* Quarterly at JH leadership team meetings and annual reports during construction (to include monthly total and cumulative total) *Final compliance* Monthly Project report

4 Sustainability Management System

John Holland's Sustainability Management System (SMS) is described in Figure 4-1 below. The SMS is applicable to all Infrastructure, Rail and Building Projects and details how sustainability is implemented during the Win, Deliver and Complete phases across all projects. The Sustainability Management System fits within John Holland's Integrated Management System (IMS) certified to AS/NZ ISO9001, AS/NZ ISO14001 and

AS/NZ ISO4801 and can be accessed via the John Holland Intranet and John Holland HSES SharePoint Portal.

The SMS provides proven procedures, tools and forms to support the Project to achieve successful delivery with a strong focus on risk and opportunities, resource use (energy, water, waste, materials) efficiency and sustainable procurement. There are two key procedures in the SMS, Achieving Sustainability Outcomes - Win Phase (JH-MPR-SST-001) and Achieving Sustainability Outcomes - Deliver Phase (JH-MPR-SST-002), that have been implemented from the Tender Phase of the project and will continue to be implemented throughout project delivery. Other procedures, tools and forms implemented as part of the project will be referenced where applicable.

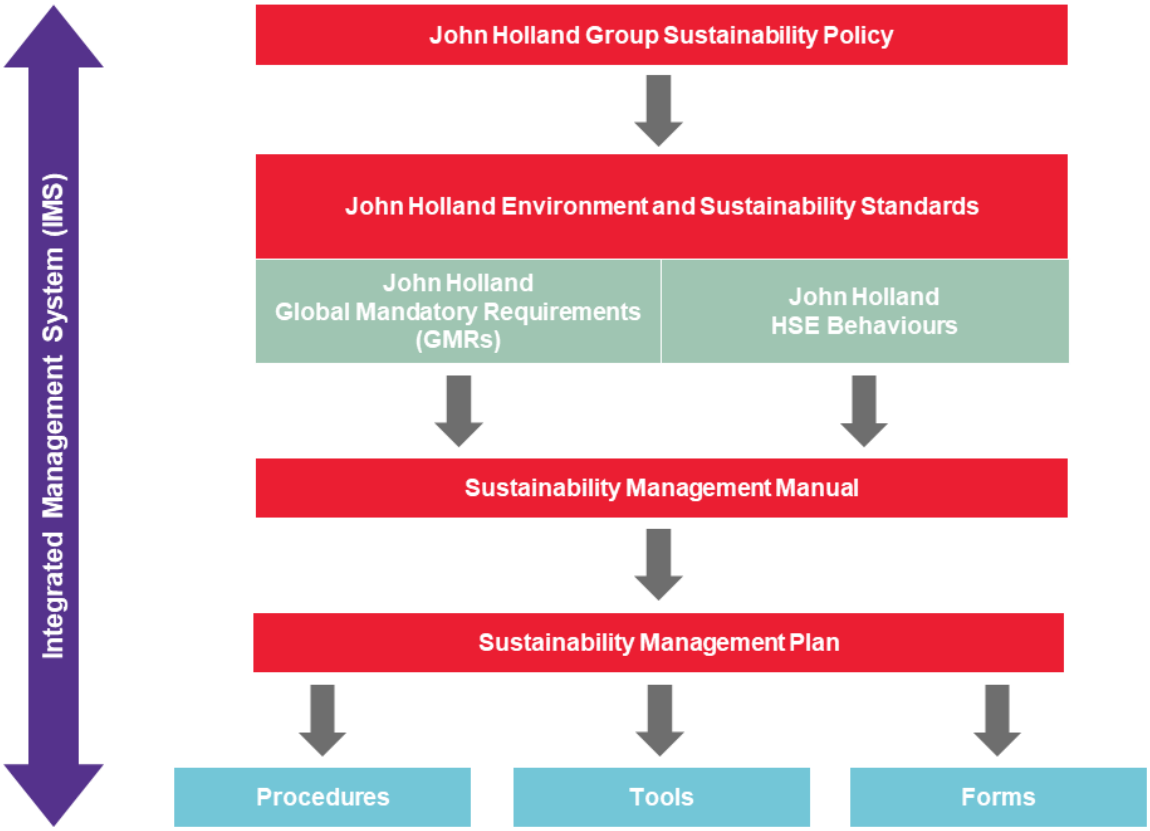


Figure 4-1: John Holland SMS structure

4.1 Project Management System

The Project Management Plan, together with its subordinate plans, forms the basis of the Project Management System (PMS) for The Project. It is based on the John Holland IMS and is structured around the following standards:

- AS/NZS ISO 9001 Quality Management Systems
- AS/NZS ISO 14001 Environmental Management Systems

- AS/NZS ISO 31000 Risk Management – Principles and guidelines
- AS 3806 Compliance Programs
- ISO 20400 Sustainable Procurement
- AS 4269 Complaints Handling Standard
- ISO 26000:2010 Guidance on Social Responsibility

The PMS reflects industry best practice and lessons learnt, ensuring consistent application of our practices and baseline mandatory requirements, as well as the requirements of external certification bodies.

4.1.1 Integration of the SMS

To supplement the requirements of the John Holland SMS and address the Project targeted sustainability strategy to deliver a “Gold” IS v2.1 Design and As built rating a suite of Project specific documents have been developed to manage the delivery of sustainability requirements for the project. These are noted in the Table 9 below and are further detailed in the relevant sections of this plan. The objective is to ensure all requirements for sustainability, specifically IS credits are captured within the functional / discipline specific governing documents, rather than being siloed within the SuMP. Priority should be given to the below topic specific plans to detail topic specific pathways to achieve sustainability on the Project. The below shows the interdisciplinary relationship and accountability of the Project and the SLT with respect to achieving sustainability outcomes across the whole Project.

Table 9: Project specific sustainability documentation and relationship with ISC v2.1 credit pathway

ISC Theme	Inclusion of ISC credit	Credit name	Integration with Governing Management Document	Document Number	LT responsibility
Governance	Pla-2	Urban and Landscape Design	Urban Design and Landscape Plan & Urban and Landscape Design Statement	AWRC-TRA-PLN-DES-0001 TBC	Planning, Development & Completions Director
	Lea-1	Integrating Sustainability	Sustainability Management Plan Achieving Sustainability Outcomes – Deliver Phase Department of Planning and Environment (DPE) SSI 8609 189 Conditions of Approval Sydney Water Environment Policy	USCP-JHG-MPL-PMT-0009 JH-MPR-SST-002 SSI 8609 189 SWEM S044	Project Director

	Lea-2	Risks & Opportunities	Risk and Opportunity Management Plan Risk Management – Delivery Risk management – Manual	USCP-JHG-MPL-PMT-0011 JH-MAN-RCC-001 JH-MPR-RCC-001	Planning, Development & Completions Director & Commercial Director
	Lea-3	Knowledge Sharing	Sustainability Management Plan	USCP-JHG-MPL-PMT-0009	Project Director
	Spr-1	Sustainable Procurement Strategy	Procurement Management Plan USC- Supply Chain Sustainability Specification	JH-SRV-PLN-GEN-001 USCP-JHG-SPC-GEN-004-Rev B	Commercial Director
	Spr-2	Supplier Assessment and Selection			
	Spr-3	Contract and Supplier Management			
	Res-1	Climate and Natural Hazards Risks	Climate Natural Hazard Adaptation Plan and Climate Resilience plan	TBC	Planning, Development & Completions Director
	Res-2	Resilience Planning			
	Inn-1	Innovation	Sustainability Management Plan	USCP-JHG-MPL-PMT-0009	Project Director/ Planning, Development & Completions Director
Economic	Ecn-1	Options Assessment and Significant Decisions	Sustainability Management Plan	USCP-JHG-MPL-PMT-0009	Project Director/ Planning, Development & Completions Director

			Innovation and Continuous Improvement Framework	JH-FRM-SST-0001-01	
Environment	Ene-1	Energy Efficiency and Carbon Reductions	Energy Model and Renewables Investigation Report Subcontractor NGER and Sustainability Report	TBC USCP-JHG-TEM-ENV-001	Planning, Development & Completions Director
	Ene-2	Renewable Energy			
	Env-1	Receiving Water Quality	Surface Water and Groundwater CEMP Sub-Plan Construction Water Reuse Strategy Operational Water Reuse Strategy	USCP-JHG-MPL-ENV-0001 USCP-JHG-PLN-ENV-0001 TBC	Sustainability Manager/ Environment, Planning and Approvals Director / Planning, Development & Completions Director/ Construction Director
	Env-2	Noise	Noise and Vibration CEMP Sub-Plan	USCP-JHG-MPL-ENV-0007	
	Env-3	Vibration			
	Env-4	Air Quality	Air Quality CEMP Sub-Plan	USCP-JHG-MPL-ENV-0009	

	Env-5	Light Pollution	Construction Management Plan	RT0007-RPT-G-0001-0012	Construction Director / Planning, Development & Completions Director
	Rso-1	Resource Strategy Development	Project Resource Efficiency Strategy & Action Plan Waste & Resource Use CEMP Sub-plan	USCP-JHG-PLN-GEN-0004 USCP-JHG-MPL-ENV-0010)	Environment, Planning and Approvals Director / Planning, Development & Completions Director/ Construction Director
	Rso-2	Management of Contaminated Material	Soils and Contamination CEMP Sub-Plan Waste & Resource Use CEMP Sub-plan	USCP-JHG-MPL-ENV-0003 USCP-JHG-MPL-ENV-0010)	Environment, Planning and Approvals Director/ Construction Director
	Rso-3	Management of Acid Sulfate Soil			
	Rso-4	Resource Recovery and Management	Project Resource Efficiency Action Plan Waste & Resource Use CEMP Sub-plan Construction Management Plan CEMP	USCP-JHG-PLN-GEN-0004 USCP-JHG-MPL-ENV-0010) USCP-JHG-MPL-PMT-0001	Construction Director / Planning, Development & Completions Director
	Rso-5	Adaptability and End of Life	Project Resource Efficiency Strategy	USCP-JHG-MPL-PMT-0020	Planning, Development & Completions Director

	Rso-6	Material Life Cycle Impact Measurement & Management	Lifecycle Impact Assessment	TBC	Planning, Development & Completions Director
	Rso-7	Sustainability Labelled Products and Supply Chains	Procurement Management Plan	JH-SRV-PLN-GEN-001	Commercial Director/ Construction Director
	Wat-1	Avoiding Water Use	Construction Water Reuse Strategy Operational Water Reuse Strategy	USCP-JHG-PLN-ENV-0001 TBC	Sustainability Manager/ Environment, Planning and Approvals Director / Planning, Development & Completions Director/ Construction Director
	Wat-2	Appropriate Use of Water Sources			
	Eco-1	Ecological Protection and Enhancement	Biodiversity CEMP Sub-Plan Urban Design and Landscape Plan Pipelines - Rehabilitation Management Plan AWRC - Vegetation Management Plan (AWRC) AWRC - Landscape Management Plan	USCP-JHG-MPL-ENV-0004 AWRC-TRA-PLN-DES-0001 USCP-JHG-MPL-ENV-0014 AWRC-TRA-PLN-DES-0002 AWRC-TRA-PLN-DES-0003	Environment Planning and Approvals Director/ Planning, Development & Completions Director

			Urban Design Landscape Statement	TBC	
Social	Sta-1	Stakeholder Engagement Strategy	Community and Stakeholder Engagement Plan Aboriginal Participation Plan	USCP-MPL-G-0015 USCP-JHG-MPL-PMT-0018	Community and Stakeholder Director/ Construction Director People Director/ Commercial Director/ Planning, Development & Completions Director
	Sta-2	Stakeholder Engagement and Impacts			
	Leg-1	Leaving a Lasting Legacy	TBC	TBC	Project Director/ Sustainability Manager
	Her-1	Heritage Protection and Enhancement	Heritage CEMP Sub-Plan Urban Design Landscape Plan Urban Design Landscape Statement	USCP-JHG-MPL-ENV-0006 AWRC-TRA-PLN-DES-0001 TBC	Environment Planning and Approvals Director/ Construction Director/ Planning, Development & Completions Director/ Construction Director
	Wfs-1	Jobs, Skills and Workforce Planning	Workplace Relations Management Plan Training Management Plan	USCP-MPL-G-0016 USCP-MPL-G-0010	People Director/ Construction Director

	Wfs-2	Workplace Culture and Wellbeing	Wellbeing & Culture Management Plan	USCP-JHG-MPL-HSE-0004	Safety Manager/ Construction Director
	Wfs-3	Diversity and Inclusion	Diversity & Social Inclusion Plan	TBC	People Director/ Project Director/ Construction Director
	Wfs-4	Sustainable Site Facilities	Supply Chain Sustainability Specification Site Shed Supply – Request for Tender – Sustainability Requirements AWRC & Pipelines – Site Facility Installation Inspection Report	USCP-JHG-SPC-GEN-0004 USCP-JHG-CHK-GEN-0001 USCP-JHG-TEM-GEN-0003	Sustainability Manager/ Commercial Director/ Procurement Manager/ Construction Manager

			Supplier Contract	Contract Reference No. (Specific to each supplier)	

4.2 Leadership and Collaboration

To achieve sustainable outcomes, everyone at every level within the Project must actively understand their responsibilities around sustainability outcomes. The following roles within Table 10 below are critical to achieving the required sustainability outcomes of the Project. The sustainability responsibilities identified within the table below are acknowledged by each individual fulfilling the role through their acceptance of this plan.

The Project Director is ultimately responsible for ensuring contract sustainability requirements are achieved inclusive of the achievement of a “Gold” Design and As-built rating under ISC v2.1 rating tool.

The Project has also appointed a dedicated project Infrastructure Sustainability Accredited Professional to drive sustainability performance on the Project, along with numerous Suitably Qualified Professionals, specific to individual credits, details of which can be found in the Sustainability Compliance and Assurance Tool

Table 10: Project roles and sustainability responsibilities.

Role	Responsibilities
Project Director	• Authorising the implementation of the SuMP and ensuring compliance. • Overseeing and reporting on sustainability performance to the Client and John Holland. • Reviewing sustainability performance to ensure compatibility and continued effectiveness with the Sustainability Policy, project objectives and the SuMP. • Assigning sustainability responsibilities to project personnel and ensuring that employees are trained and possess the necessary skills to undertake their designated responsibilities. • Engage with the Community & Stakeholder Director in a timely manner to identify ISC deliverables which require stakeholder feedback and support the Community and Stakeholder Director to gather and respond accordingly to stakeholder responses.
Engineering Manager	• Be accountable to the SLT and work collaboratively with the Sustainability Manager to ensure sustainability requirements, objectives and targets are achieved through design. • Ensure sustainability is embedded in the Design Management processes.

Role	Responsibilities
	• Support Sustainability in Design (SuID) principles by considering alternative materials that contribute to the Project's embodied energy reduction targets and rreviewing designs to maximise energy, water and water use reductions. • Provide design governance to support to the Sustainability Manager to enable the targeted IS Design Rating Score for the relevant Design Credits. • Engage with the Community & Stakeholder Director in a timely manner to identify ISC deliverables which require stakeholder feedback and support the Community and Stakeholder Director to gather and respond accordingly to stakeholder responses.
Construction & Environment, Planning & Approvals Director	• Work collaboratively with the Sustainability Manager to ensure sustainability requirements, objectives and targets are implemented and achieved through construction. • Assist the Sustainability Manager to drive and deliver the environment and sustainability management components of the design and as-built ISC rating. • Ensure sustainability commitments (including inclusion, diversity, energy efficiency, waste, environmental monitoring etc.) are communicated to relevant project personnel and included in relevant ITP's, SWMS, EWMS and AMS's. • Support the Sustainability Team to identify, develop, cost and implement sustainability initiatives and provide evidence to achieve an IS Rating for As Built. • Engage with the Community & Stakeholder Director in a timely manner to identify ISC deliverables which require stakeholder feedback and support the Community and Stakeholder Director to gather and respond accordingly to stakeholder responses.
Sustainability Manager	• Effectively lead and manage the development and implementation of a risk-based Sustainability Management System for the Works, including review and continual improvement of this Plan. • Ensure the SuMP is correctly implemented to meet the requirements of the project sustainability objectives, targets and IS v2.1 Rating Tool obligations. • Ensure adequate environmental and sustainability participation at Value Engineering Workshops using the Innovation and Continuous Improvement Framework.

Role	Responsibilities
	• Oversee the development, implementation, assessment and verification of sustainability measures for the works. • Oversee proactive identification, assigning of responsibility, monitoring and review of sustainability and planning risks and performance expectations, goals and standards for managing all potential adverse impacts. • Develop, review and support others to implement sustainability initiatives. • Report to the Executive Leadership Team on sustainability-related issues. • Assist the procurement team in auditing and assessing major suppliers and subcontractors. • Review subcontractors' performance to ensure they fulfil their sustainability obligations. • Engage with the Community & Stakeholder Director in a timely manner to identify ISC deliverables which require stakeholder feedback and support the Community and Stakeholder Director to gather and respond accordingly to stakeholder responses.
Commercial Director & Procurement Manager	• Be accountable to the SLT and provide suitably qualified resources to deliver the procurement and management components of the Design and As-built ISC rating. • Possess a recognised qualification relevant to the position and the Contractor's Activities and have at least fifteen years' experience in commercial management on Projects. • Engage with the Community & Stakeholder Director in a timely manner to identify ISC deliverables which require stakeholder feedback and support the Community and Stakeholder Director to gather and respond accordingly to stakeholder responses.
People Director, Safety Manager & Commercial Director	• Be accountable to the SLT to deliver the Workforce related components of the Design and As-built IS ratings. • Engage with the Community & Stakeholder Director in a timely manner to identify ISC deliverables which require stakeholder feedback and support the Community and Stakeholder Director to gather and respond accordingly to stakeholder responses.

Role	Responsibilities
Community and Stakeholder Director	• Be accountable to the SLT to deliver the stakeholder (Sta-1 and Sta-2) components of the Design and As-built IS ratings. • Develop and implement the Community & Stakeholder Engagement Plan as well as issue specific sub plans as required. • Manage stakeholder expectations, enquiries and complaints. • Manage liaison with external stakeholders in consultation with design team to ensure community design integration. This could be achieved through attendance at design meetings. • Upload Project interaction, complaints and enquiries into the Project Consultation Manager database. • Manage an effective external communications and community relations program. • Ensure community consultation lead times are incorporated into the Project programs. • Develop, produce and disseminate the Project communications material. • Be responsible for managing community and key external stakeholders. • Identify and manage opportunities for community and stakeholder engagement / community information sessions / events. • Manage the day-to-day community engagement requirements.
Engineers/Site Supervisors	• Providing and coordinating support, as required, to help the Sustainability Team identify, develop, cost and implement sustainability initiatives and provide evidence to achieve an IS Rating for Design and As Built, in accordance with client requirements. • Attending relevant sustainability meetings and programs. • Engage with the Community & Stakeholder Director in a timely manner to identify ISC deliverables which require stakeholder feedback and support the Community and Stakeholder Director to gather and respond accordingly to stakeholder responses.

Role	Responsibilities
Suitably Qualified Professional	• Undertake credit specific, Subject Matter Expert (SME) tasks to support the required level and score for each relevant credit.
Independent Suitably Qualified Professional	• Undertaking independent and objective review and audit tasks, reports (notably in compliance with ISC v2.1 credit Lea-1, DL3.1
IS Project Manager	• An ISC staff member assigned to the Project providing the first point of contact for the assessor and support for the Project.
IS Accredited Professional (ISAP)	• Recognised industry specialist who has completed the IS Training for Professionals and maintained their accreditation to apply the IS Rating Scheme on registered projects and assets.
ISC Verifier(s)	• Verifiers are independent specialists assigned to the Project during the assessment stage to provide independent verification of the weightings assessment, the base case proposal, and the self-assessment.

4.2.1 Project Organisational Structure

Refer to the Project Organisational Chart USCP-JHG-OGC-PMT-0001 for a breakdown of the Project organisational structure at the time of endorsement.

4.2.2 Key Stakeholders and stakeholder engagement

For a complete list of key project stakeholders, all of which are involved (directly or indirectly) with the sustainability success of the Project can be found within the Project's Community and Stakeholder Engagement Plan - USCP-MPL-G-0015, Section 3. The Community and Stakeholder Engagement Plan is a live document and additional stakeholders shall be added and/or removed based on the evolving nature of The Project.

4.3 Governance and Reporting

Sustainability performance will be reported as per the requirements of the Sydney Water Engineering and Construction Contract, the EIS and ISC v2.1 credit requirements. The sustainability reports will include details on objectives, targets, indicators, etc. and identify areas for improvement.

Construction site inspections, internal audits and external audits will be conducted on a regular basis. Details are provided within the sections below.

4.3.1 Processes and Systems

4.3.1 SharePoint

SharePoint is a web-based document and submission management framework that will be used to store all credit benchmark deliverables associated with the IS Rating. It is specifically designed to assist and manage the large number of deliverables that accompany a submission for an IS sustainability rating.

4.3.2 Data Capture

In line with JH requirements, The Project will capture energy, water, waste and materials quantity data. All data will be uploaded to PPW for internal and external reporting purposes e.g., National Greenhouse gas and Energy Reporting (NGER).

4.3.2.1 Sustainability Compliance and Assurance Tool

The Sustainability Compliance and Assurance Tool, a bespoke online tool created for the Project (See Figure 6-1 of this plan for a snapshot of the tool's landing page) will be used to report and monitor all sustainability performance data and progress against sustainability requirements. The tool also provides a sustainability reporting dashboard which has been developed to address the reporting requirements of Sydney Water's Management Specification, including:

- The performance of the Project against the commitments, objectives and targets
- Progress towards achieving each credit, level, benchmark and must statement within the "Design" and "As Built" ISC IS rating tool v2.1
- A live summary dashboard providing a snapshot of SLT member performance and current risk rating towards the achievement of their associated credit benchmark and must statements
- Quantity data to support the reporting of targets on:
    - Waste;
    - Water;
    - Materials; and
    - Energy (including electricity and fuel).

4.3.3 PowerBI

PowerBI software will be utilised to present consolidated subcontractor and JH resource usage data. Raw data will be exported from PowerBI on a monthly basis and linked to the dashboard to provide a monthly and cumulative total of each item. Data will be sourced from subcontractor forms and JH invoices. Subcontractors will report on resource usage monthly through the projects Monthly Sustainability & Environment Report, issued through Project Pack Web. The subcontractor specific reporting procedures are further detailed within the Supply Chain Sustainability Specification - USCP-JHG-SPC-GEN-0004.

4.3.4 Project Pack Web

Project Pack Web (PPW) is a document management and forms system that includes functionality for the collection of data. The system will be used to collect the following sustainability related data for the Project:

- Subcontractor reporting of:
  - NGER data (fuels, electricity, greases, lubricants, explosives etc.)
  - Water
  - Materials
  - Waste
  - Contract specific requirements
- JH reporting of:
  - Energy (fuel & electricity)
  - Water
  - Materials.
  - Waste

Resource use reporting will be conducted in accordance with the John Holland Resource Use Reporting Procedure. Once the data is captured from PPW it shall be transferred to the wider Sustainability Compliance and Assurance Tool to facilitate a range of reporting requirements detailed below in Section 6-1.

4.3.5 Reporting

The Project will provide sustainability reporting to Sydney Water and John Holland to comply with contract requirements. The Project sustainability reporting requirements are noted below and in Table 11:

- **Monthly Report** – a monthly summary of key deliverables, risks, innovations/opportunities and performance summary in meeting sustainability requirements and targets will be provided to Sydney Water, as well as data on carbon emissions, waste disposal, concrete and steel quantities in the form of dashboards extracted from the Project Sustainability Assurance Platform/tool.

- **Quarterly Presentation** – during design and construction a quarterly summary of performance against the sustainability objectives and targets stated in section 3.3.1 Project wide targets.
- **Annual Sustainability Report** – an annual sustainability report will be prepared for John Holland and include a performance update of sustainability requirements, implementation of strategies, targets and initiatives, climate change risks assessments, greenhouse gas reduction initiatives, life cycle assessments, sustainability in procurement and corrective actions taken where non-conformances are identified.
- **Design Reports –** based on Project design program and to include status and progress against design package specific attention to sustainability related requirements subjective to said package.
- **NGER Reporting** – specific reports will be prepared annually to satisfy JH Group NGER data and reporting requirements.

Table 11: Project Sustainability Reports – Audience and Frequency

Report	Audience	Frequency/ Timing – Design	Frequency/ Timing – Construction
Monthly Report – Sustainability Section	Sydney Water	Monthly	Monthly
Quarterly Presentation/Report	John Holland Leadership Team	Quarterly	Quarterly
Annual Sustainability Report	Sydney Water and to be made public	Annually (Commencement from SMP approval)	Annually
Design Reports	Sydney Water	At 100% design milestone	As Built updates at end of construction (as required)
NGER reporting	JHG Corporate	Annually (Financial year relative)	Annually (Financial year relative)

- *Note - Annual report must be made public no later than six (6) months after the end of the reporting period.*

Table 12 below provides a summary of the various Project specific reports and reporting contents and frequency.

Table 12: Project Sustainability Reports – Information required.

Report	Information required

Monthly Report – Sustainability Section	Will include:
	• Summary of sustainability progress for month
	  ○ Key Deliverables – ISC Rating Status
	  ○ Risks & Opportunities/ Innovations
	Appendix
	• Dashboard showing
	  ○ Credit level risks graphs – showing credits in progress, at risk and completed
	  ○ Points per category (tracking) – design and as-built
	  ○ Energy, water, waste and materials tracking

Quarterly Presentation	To include:
	• Objectives and Targets (KPIs embedded here)
	  ○ Project-wide targets:
	  ▪ Qualitative update on implementation with status indicator
	  ▪ IS Rating update including risk-rating of credits.
	  ○ Design targets:
	  ▪ Qualitative update on implementation of all design targets (design phase only)
	  ○ Construction targets:

Report	Information required
	▪ Sustainability Monthly Dashboard to capture quantitative updates against targets. o Sustainability objectives, targets and deliverables embedded in supplier contracts.
Annual Sustainability Report and Review	To include: 1. Executive Summary 2. About Report 3. Project Overview 4. Governance a. Approach to Sustainability b. Material issues c. Project Sustainability Objectives and Targets (most material sustainability issues are embedded) i. General progress ii. Positive and negative impacts the Project has had. iii. UN SDG Goals summary d. Climate Change e. Knowledge Sharing f. Innovation

Report	Information required
	5. Economic a. Context and overview b. Key Economic Outcomes c. Sustainable Procurement and Local Procurement d. Significant Decision Making 6. Environmental a. Context and overview b. Environmental monitoring and management c. Water d. Noise and vibration e. Biodiversity f. Energy and carbon emissions g. Materials and recycling 7. Social a. Context and overview b. Heritage c. Legacy commitments d. Workforce safety e. Training and workforce development

Report	Information required
	The Project Annual Sustainability Report will utilise components and structure from Global Reporting Iniaitivie (GRI) frameworks.
Design Reports	To include: Summary of implementation of sustainability requirements relevant to discipline / design package scope. Confirmation of final compliance to requirements and relevant targets relevant to discipline / design package scope.
NGER reporting	JH Group level reporting against the Projects Scope 1 (fuels), and Scope 2 (electricity). Data automatically extracted from PowerBI dashboards for collective JH Group annual NGER reporting requirements following the end of each financial year.

4.3.6 Monitoring, Review and Improvement

The Project will ensure the requirements for monitoring, review and improvement are met in accordance with the expectations in the Table 13 below. This includes a suite of regular reviews and audits of sustainability performance, including an annual review of this Plan. Further details are provided in the below sub-sections.

Table 13: Monitoring, Review, and Improvement Expectations Table

Expectation	Minimum requirements	Responsibility	Deliverables
Sustainability performance is tracked and reported	Sustainability is tracked monthly through an internal assurance tool and reported to the JH LT on a quarterly basis at LT meetings in the format of a report or presentation.	Sustainability Manager	Quarterly Reports
Sustainability Plan Audits/reviews.	Sustainability audits will be conducted at the frequency dictated by the Sustainability Manager. Audits will include environmental, social, and economic aspects. Audits will be undertaken if a material sustainability change occurs to the Project IS pathway to maintain plan relevancy and effectiveness. The outcomes of the audit/review will be incorporated into the Sustainability Management plan as part of the continuous improvement process. The audit/review must consider: The review must consider the results of: • Audits undertaken. • Communication, participation and consultation. • The performance of the Project. • Progress towards achievement of targeted ISC credits. • The extent to which the objectives and targets have been met. • Changes to legislation. • Actions from previous management reviews and recommendations for improvement.	Project Director Leadership Team	Audit Reports Meeting minutes Updated objectives / targets and SuMP

Expectation	Minimum requirements	Responsibility	Deliverables
Supplier Performance (identified within Project Supply Chain R&O) with Sustainability contractual requirements	Supplier and sub-contractor performance against objectives, targets and deliverables will be reported into the Project and monitored monthly. The performance data shall be internally collated and subsequently reported to the LT at the quarterly LT meeting. Monthly and quarterly internal reporting has been selected as suitable timeframes to ensure the timely collation, interpretating of performance data and meaningful presentation of performance metrics to the Project LT. Throughout contract delivery suppliers and sub-contractors will be proactively engaged with and performance reviewed to verify claims made in tender documents, identify areas of key risk (environmental, social, and economic) and identify areas for improvement or opportunity to create sustainability improvement beyond specification and contract. Suppliers will be monitored for the duration of their contracts. Poor sustainability performance or non-compliance will be actively managed, and feedback will be provided as identified through monthly and quarterly mechanisms.	Sustainability Manager Commercial Manager	Supplier and subcontractor reporting through Project portal. Quarterly Presentations Construction Program Meetings and forums Supplier and sub-contractor feedback reports. (Quarterly) Supplier and subcontractor audit reports (As required)
All audits are undertaken by suitably qualified and experienced personnel	Persons conducting audits and reviews will be suitably experienced and qualified as per the requirements outlined within the IS Rating Tool.	Sustainability Manager	Auditor qualifications

4.3.6.1 Audits

Sustainability-related audits are included within the Project Audit Schedule managed under the Quality Management Plan (USCP-JHG-MPL-QMS-0001).

Internal sustainability compliance audits will be conducted at the discretion of the Sustainability Manager throughout design and construction.

Separately, there are requirements for several discipline-specific audits / reviews which arise from the Project's ISC v2.1 rating requirements. These are summarised in Table 14 below.

Table 14: Audits required under ISC v2.1 TM

Credit	Requirement	Timing
Env-5 Light Pollution	DL1.1 *The location, extent, type and sensitivity of light receptors and their pre-existing exposure to light have been determined.* A lighting audit must be conducted by a suitably qualified professional to establish the condition of any existing lighting systems of the site and to assess the interaction between the lighting and the sensitive receptors. The audit will help in establishing benchmarks for determining the impacts of any new lighting system to be designed or for the current system to be improved. The key steps in conducting an audit are: • Record the location of and risk to sensitive receptors • Identify likely existing lighting impacts • Check scope, expectations or goals for lighting • Where more information is collected through a physical audit, conduct field measurements (where applicable) at an appropriate time of night where light spill could create disturbance to sensitive receptors and to gain representative lighting samples from sensitive receptors. A desktop review of existing site plans and GIS maps will help to establish the existing light environment. A night-time site investigation must be conducted as part of the audit unless justification can be provided for not undertaking.	Prior to design completion
Env-5 Light Pollution	ABL 2.1 *Light spill is limited to no more than 1 horizontal lux level over the project boundary and 1% upward light ratio (includes decorative lighting).* A night-time audit of the commissioned As Built lighting system by a suitably qualified professional must confirm that the installation meets the design intent (DL1.3) and related performance criteria.	Post-construction
Rso-2 Management of Contaminated Material	AB 2.1 *Project-specific targets have been achieved.* Monitoring and auditing of contamination and remediation outcomes must demonstrate that the project specific targets (DL1.2 or updated in ABL1.1) have been achieved.	As required subject to contamination / remediation management program

Rso-4 Resource Recovery and Management	ABL2.1 *Resource output data has been audited.* Reported resource output data (ABL1.2) must be audited annually by a suitably qualified professional. The audit must cover both systems and data and include an objective assessment of the accuracy and completeness of reported resource output information and management practices and performance, and include an audit report covering: • A description of the scope, objectives and criteria of the audit • Evidence of the sampled data and sampling methods used, including examples of raw data used for crosschecking, and error checking methodologies • A statement that the resource output data has been checked to ensure accuracy • The reviewer's or auditor's conclusions on the resource output data, including any qualifications expressed or limitations identified. Remedial actions to address issues or concerns raised in the audit report must be implemented.	Annually during construction
Rso-4 Resource Recovery and Management	ABL2.2 *Resource outputs have been tracked all the way to final destination.* An audit of the movement of resource outputs to their final destination must be undertaken at least once every six months for the full As Built phase. Each audit must cover at least 10% (by volume) of the project's resource output footprint over the six month period. Over the life of the project a minimum of 80% of all resource output streams (i.e., all relevant waste streams for the project) must be audited at least once.	Every six months during construction phase
Her-1 Heritage Protection and Enhancement	ABL2.1 *A heritage audit or review has confirmed that mitigation or enhancement activities are successful.* An audit or review must be completed to confirm that mitigation or enhancement actions implemented result in the heritage outcomes identified in design. The audit or review must be undertaken by a suitably qualified professional relevant to the heritage aspects present e.g., archaeology, architecture, geotechnology, history, indigenous values. Evidence must be provided to demonstrate that any corrective actions raised in the audit or review have been addressed.	During construction

The Project shall retain documented information as evidence of the implementation of the audit programme and the audit results.

4.3.6.2 Independent Sustainability Review

In accordance with ISv2.1 credit Lea-1, DL3.2, the Project will engage an Independent Suitably Qualified Professional (ISQP) to conduct reviews of the Project's sustainability performance reporting on an annual basis.

The following process will applied for the ISQP reviews.

1. A meeting between the Project and the ISQP will be held to discuss the draft Annual Sustainability Report including timeframes of review and any questions/clarifications prior to the ISQP reviews. The draft Annual Sustainability Report will then be provided to the ISQP for their review.
2. The ISQP will review the report against the Global Report Initiative (GRI, 2016) for:
    a. Report content:
        i. Stakeholder inclusiveness
        ii. Sustainability context
        iii. Materiality
        iv. Completeness
    b. Report quality
        i. Accuracy
        ii. Balance
        iii. Clarity
        iv. Comparability
        v. Reliability
        vi. Timeliness.

The findings and feedback from the ISQP's review will be documented in an assessment report.

3. A meeting between the Project and ISQP will be held to discuss the findings and discuss approach and timing for the 'close-out' of actions.
4. Once 'close-out' actions are complete, the Project will provide the ISQP an updated assessment report with evidence/updates against each action.
5. The ISQP assessment will be considered finalised when the ISQP accepts the 'close-out' actions are complete.

4.3.7 Document and Records Management

The Project will ensure that documents and records are managed appropriately in accordance with the expectations in Table 15. Further details regarding the Sustainability Management System are provided in the following sub-sections.

Table 15: Document and Records Management Expectations

Expectation	Minimum requirements	Responsibility
Documentation requirements are clearly defined	The Project must ensure that all documents and records referred to and required to implement the SuMP are controlled and maintained according to the Quality Management Plan requirements. Documents will be managed in accordance with project naming and numbering conventions including those for revision, stage and status.	Sustainability Manager Document Controller
Relevant documents and records will be maintained	Relevant documents and records to be used as evidence will be stored and managed using the project network drive, SharePoint and Aconex. The following records will be stored: Sustainability management records: • Evidence of implementation • Meeting minutes/correspondence • Evidence of review and audit • Reporting and case studies	Sustainability Manager

4.3.8 Record and Data Storage and Retention

The sustainability management system will rely on the generation, collection, and retention of a significant amount of data and records to inform and demonstrate compliance with project requirements, objectives and targets. All data and records to be targeted and collected as evidence for the Rating self-assessment submissions will be collected on SharePoint. These data and records will be managed in accordance with the Quality Management Plan.

4.3.9 Sustainability in Decision Making

In determining credible project solutions to address a problem, initiative, or innovation, it is important to consider all viable options. Key to the options assessment process is the genuine consideration of associated direct and indirect social, economic, and environmental aspects. The Project's approach to sustainability in decision making has been developed to align with the IS v2.1 credit Inn-1 (specifically for innovations) and Ecn-

1 Options Assessment and Significant Decisions for a range of decision making considered as significant. The below sub sections underpin the process.

4.3.9.1 Parameters and Thresholds to determine Significant Decisions

In accordance with the Projects targeted ISv2.1 Design and As Built rating, the Project has developed the decision-making component further under the Ecn-1 credit. The options assessment process has been implemented to provide a framework that will respond to problems, innovations and opportunities in design and construction that may result in a significant impact and increase sustainable outcomes. These decision pathways are called Significant Decisions. The Project has selected two primary parameters and thresholds to determine if a decision is significant. These parameters and thresholds for assessment are:

1. Has a capital expenditure value of >$2mil (refer **Section 4.3.9.2** below)
2. Has a risk/opportunity rating of 'very high' or 'extreme' as determined through the Project Risk & Opportunity Register (Non-financial). The reason for selecting the Project Risk & Opportunity Register (Non-financial) as a means of determining 'significant decisions' is because it provides a robust framework which allows assessment of initiatives, challenges, threats and opportunities to be considered against the following aspects (i.e. potential consequences):
    a. Workplace Health and Safety
    b. Environment / Natural Resources
    c. Reputation / Community / Media / Local economy
    d. Benefit to community and stakeholder / Education (opportunities only)
    e. Governance / Legal / Regulatory
    f. Management Impact

There are two separate pathways for the assessment of options depending on which threshold (above) was triggered: the procurement pathway and the options assessment pathway.

4.3.9.2 Procurement pathway

All supply and subcontract packages with a value of >$2 mil will go through a weighted multi-criteria analysis compliant to Ecn-1 Options Assessment and Significant Decisions. Refer **Section 5 Sustainability in Procurement.**

4.3.9.3 Options assessment pathway

Once a problem, innovation or decision is determined to be significant (i.e., exceeds the aforementioned thresholds) it's further investigation, assessment and implementation is to be tracked through the Significant Decisions Register (USCP-JHG-REG-GEN-0001).

To initiate the options assessment, initiatives, issues and innovations will be assessed using a multi-criteria analysis tool (see MCA Decision Making Tool USCP-JHG-REG-GEN-0003).

The criteria used for the formal multi-criteria options assessment was established collaboratively early in the design phase between a multidisciplinary team, and considers material environmental, social and economic impacts (as well as CapEx, whole-of-life costs and the social cost of carbon) in a variety of ways:

Theme	Criteria	Considerations within criteria
Safety	Safety - D&C	Workforce safety during Design and Construction (D&C) phase
	Safety - O&M	Workforce safety during Operation and Maintenance (O&M) phase
Environment	Environmental Impacts	Impacts to air quality, water quality, land, heritage, ecology, noise and vibration, hazardous / contaminated wastes, etc.
	Planning Approvals and licences	Alignment to existing Planning Approvals and licences
Resource Efficiency	Resource Efficiency - D&C	Energy, water use, materials & waste - D&C phase
	Resource Efficiency - O&M	Energy, water use, materials & waste - O&M phase
	Social cost of carbon	GHG emissions and their broader impact in terms of Net Present Value (NPV)
Future proofing	Climate change mitigation and resilience	Impact on the adaptability of the asset to future climate conditions and resilience
	Adaptability and end-of-life	Consideration to the future adaptability of components (re-use and/or disassembly for recycling) and impact to future stages of work
Social and Economic	Key external stakeholders	Community, Councils, other bodies/agencies etc.
	Key internal stakeholders	Sydney Water, O&M contractor
	Urban Design	Urban design, community amenity, urban heat island effect, etc.
	Economic	Local employment, collaboration with small and medium-sized enterprises (SMEs), engagement with not-for-profits (NFPs) etc.
	Disruption to existing transport networks, services, utilities and impacted users	Disruptions to existing road and pedestrian/active networks, utilities, and services and their impact to users
Quality	Compliance to existing standards, specifications and relevant contractual requirements - D&C phase	Compliance to existing standards, specifications and relevant contractual requirements - D&C phase
	Compliance to existing standards, specifications and relevant contractual requirements - O&M phase	Compliance to existing standards, specifications and relevant contractual requirements - O&M phase
Schedule	USC milestones (including AWRC and/or Pipelines)	Impact (positive or negative) on contractual milestones for programme, critical path and completion milestones
Value for Money	Capital expenditure	Direct costs and indirect costs on D&C contract
	Operational expenditure	Direct and indirect costs on operations and maintenance contract

Once identified as a Significant Decision, an options assessment is undertaken by following these steps:

1. Investigation by the Owner is undertaken to determine a broad range of options relevant to the decision.
2. The Owner will then create a new MCA Tool from the template MCA Tool (USCP-JHG-REG-GEN-0003) by:
    a. Adding document information
    b. Assigning appropriate weightings to each criterion (and add justifications when needed)
    c. Input scores against each criterion for each option (and add justifications when needed)

The MCA will be conducted by the LT assessing each options against the criteria (refer list of criteria above). This list of criteria includes:

- Environmental criteria (e.g., climate change, energy/carbon, social cost of carbon)
- Social criteria (e.g., community, workforce, diversity)
- Economic criteria (e.g., capital and lifecycle costs, reliability/performance)

The MCA will allow the LT to identify the risks, limitations, constraints and assumptions related to an innovation/issue in addition to its benefits, to ensure we take an open, informed approach to innovation / decision making.

The MCA process will also lay the foundations for a recommendation which details the innovation/issue to decision makers. The recommendation may include a simulated trial scenario as well as a suggested criteria to measure success.

3. Once the MCA Tool is drafted by the Owner, a multidisciplinary team will review the weighted MCA when presented or distributed for review (any feedback provided by multi-disciplinary team is to be captured within the MCA Tool)
4. Process and outcome is to be captured in a Significant Decision Report and include:
    a. Background / context for decision
    b. Weighted MCA Tool
    c. Evidence of implementation outcome

Optional: create lessons learned on decision made and distribute as appropriate. This process can be used to help support Project knowledge sharing (and IS V2.1 Lea-3) as discussed within Section 4.5.2 of this plan.

Compliance and assurance against each targeted level, benchmark and must statement of IS v2.1 credit Ecn-1 is managed via the Sustainability Compliance and Assurance Tool (refer to Section 6-1 of this plan).

The options assessment process is to drive genuine consideration of associated social, economic, and environmental aspects, including externalities. The assessment should guide the development of a sustainable infrastructure asset that meets the needs of the users, society, the natural environment, and wider economy in the long term and is financially affordable across the life cycle of the asset.

4.3.9.4 Determination of 'significant decisions' having undergone an options assessment

To achieve Level 2 under the ISC Ecn-1 credit, 75% of identified significant decisions must have undergone an 'options assessment'. On the Upper South Creek Project, a key SMART target for the Project is to achieve this requirement. Both pathways identified above (i.e. Section 4.2.9.2. Procurement pathway and Section 4.3.9.2. Options assessment pathway) comply with the requirements of an options assessment as per Ecn-1. To determine the final percent of options assessment undertaken, all significant decisions from pathways will be considered together.

4.3.9.5 Innovations / decision making not considered "significant"

This process is focused on starting conversations about what needs to change to drive an initiative or innovation and creating an understanding of how to do this. The Project must question why a change is needed, identify what needs to change and how could this be achieved. Examples of what to consider include:

- How can we minimise cost, without compromising program, environmental and social outcomes?
- What materials do we use and are there alternatives to reduce our impact?
- Can we improve our construction methodology to be more efficient and use fewer resources?

Innovative sustainability solutions and or initiatives can be discussed through collaborative workshops or at specific discipline meetings to encourage all disciplines of the project (including Design, Engineering, Construction, Environment, Safety, Community, Procurement and Workforce) to identify innovations, initiatives, and efficiencies. Innovations should be captured in the Project Initiatives and Innovation Register (USCP-JHG-REG-GEN-0002) which has been developed to align with the Inn-1 criteria of IS v2.1.

The ISv2.1 technical manual breaks innovations into four categories:

1. 'First' innovative technology, process or method - World (5pts), National (3pts) or State (1pt)

2. Market transformation (1pt)

3. Improving on credit benchmarks (1pt)

4. Innovation Challenge (pts outlined in Innovation Challenge Appendix).

As a first instance the Project will assess the initiative or innovation based on merit and the out puts of the process flow of the Project Initiatives and Innovation Register (USCP-JHG-REG-GEN-0002) to determine the viability and the net gains in social, economic and environmental benefits, prior to proceeding with its implementation.

Refer to the ISv2.1 technical manual for full details of the ISC innovation process. Compliance and assurance against requirement of ISv2.1 credit Inn-1 and its must statement is managed via the Sustainability Compliance and Assurance Tool (refer to Section 6.1 of this plan).

4.4 Risks and Opportunities

The Project's risk and opportunity management framework is governed by the Risk Management Plan – JH-PLN-SQE-006. This document specifies the processes and procedures for the identification, assessment and selection of treatment/implementation measures for risks and opportunities across the Project's lifecycle (i.e. design, construction and operation/hand-over). This plan has been tailored for the USC Project to align with the above whilst also taking consideration for the requirements of IS v2.1 credits Lea-2 Risk and Opportunity (Level 1 and Level 2). This section seeks to summarise the Risk Management Plan as relevant to the assessment of 'sustainability' risks and opportunities.

The Project Risk and Opportunity Register (Non-Financial) facilitates the identification, assessment and documentation of risks and opportunities on aspects such as Environment and Natural Resources, Workplace Health and Safety, Quality, Community & Stakeholder impacts, Local Economy / Education, Management Impacts (i.e. Governance) and more (i.e. social, environmental, economic and governance). This register has the capacity to assess both direct and indirect risks and opportunities across all project phase (i.e. deign, construction and operation). (Note: this register does not assess financial/commercial/legal risks and opportunities which are managed in a separate register).

4.4.1 Risks and Opportunities Criteria Matrices

The following tables are the criteria used for the Non-Financial Risk and Opportunity assessment on the Project.

Consequence Matrix – Risk (Non-Financial)

RATING	1	2	3	4	5
Workplace Health and Safety	* First aid injury, and/or * Minor safe working issues	* Medical treatment, and/or * Moderate safe working breach likely to impact on operations	* Serious medical / hospital treatment resulting in need alternate working or resulting in lost time injury, and/or * Significant safe working breach with actual impact on operations	* Serious or permanent Injury, and/or * Significant safe working beach with immediate impact on operations on one or more worksites	* 1 or more fatalities, and/or * Major breach of safe working with immediate and extensive impact on one or more worksites
Environment & Natural Resources	* Low severity environmental impact(s) or impact on natural resources availability that are promptly reversible and affected area is within the site boundary * Minor loss of natural resources (e.g. energy, water, materials) as compared to standard practice	* Nuisance or low severity environmental impact(s) or impact on natural resources availability that are promptly reversible and affected area is outside the site boundary * Minor-moderate loss of natural resources as compared to standard practice	* Moderate severity environmental impact(s) or impact on natural resources availability where the affected area is within the site boundary * Moderate loss of natural resources as compared to standard practice	Moderate severity environmental impact(s) or impact on natural resources availability where the affected area is outside the site boundary * Moderate-significant loss of natural resources as compared to standard practice	High severity environmental impact(s) or impact on natural resources availability at local scale significance * Moderate-significant loss of natural resources as compared to standard practice
Quality	* Rework Costs less than or equal to 20K	* Rework Costs less than or equal to 100K but greater than 20K	* Rework Costs less than or equal to 250K but greater than 100K	* Rework Costs less than or equal to 5% contract value but greater than 250K	Rework Costs greater than 5% of contract value
Reputation / Community / Media / Local economy	* Public concern restricted to local complaints * Lack of contribution to the community * Lack of engagement with local businesses	* Minor, adverse local public or media attention and complaints * Employees warned only * Minor change in community amenity values * Minor negative impacts on local businesses adjacent to Project (e.g. traffic or similar impacts resulting in loss of business/productivity)	* Attention from media and/ or heightened concern by local community * Stakeholder action will disrupt planned project activities * Disciplinary action may be taken * Temporary reduced community access to services or employment	* Significant adverse national media / public / NGO attention * Considerable and prolonged adverse community impact and dissatisfaction publicity expressed * Stakeholder action will delay achievement of major elements of the Project * Permanently reduced	* Serious public or media outcry with international coverage * Significant adverse community impact & condemnation * Stakeholder action will prevent achievement of the project objectives * Reduced cohesion of community

			* Moderate negative impacts on local businesses	community access to services or employment * Moderate/significant negative impacts on local businesses	* Significant negative impacts on local businesses
Governance / Legal / Regulatory	* Very minor technical breach of regulation or policy or code of ethics. No fine / penalty	* Minor legal issues, non-compliances and breaches of regulation, policy or code of ethics * Enforceable Undertaking	* Moderate breach of regulation, policy or code with investigation or report to authority * Moderate legal proceedings initiated * Several Improvement Notices	* Significant breach of regulation, policy or code with fine or other regulatory action. Significant litigation / legal action * Shut down of part of a project due to regulatory breach * Prohibition Notice	* Major breach of regulation, policy or code with fine * Major litigation * Major investigation by regulatory body * Prosecution / Accreditation loss
Management Impact	* Impact of event absorbed through normal activity * Minor reduction in personnel/subcontractor resource efficiency related to governance/management	* Will require some local management attention over several days * Minor-moderate reduction in personnel/subcontractor resource efficiency related to governance/management	* Significant event that can be managed with careful attention, will take some project managers much time for several weeks * Local operation of contingency plan * Moderate reduction in personnel/subcontractor resource efficiency related to governance/management	* Major event that requires the implementation of crisis and contingency plans at a project level, regional area or support function (DRP) * Will require the involvement of senior managers and will take up the time of project managers for several weeks * Moderate/significant reduction in efficiency of resource requirements related to governance/management	* Critical event or disaster with significant impact on John Holland that requires considerable senior management time to handle over several months * Full implementation of an John Holland's crisis management plan for days to weeks * Significant reduction in efficiency of resource requirements related to governance/management

Consequence Matrix – Opportunity (Non-Financial)

RATING	1	2	3	4	5
Workplace Health and Safety	* Prevents first aid injury * Prevents minor safe working issues * Unlikely to impact on operational activities	* Prevents medical treatment * Prevents moderate safe working beach likely to have impacted operational activities	* Prevention of serious medical / hospital treatment that would have resulted in a lost time injury or required alternate working.	* Prevents serious major, reversible injury, requires long term ongoing treatment and rehabilitation	* Prevention of a single or multiple fatality * Prevent any type of permanent disability or major injury to < 10 people
Environment & Natural Resources	* Minor positive environmental and natural resource benefits that is within the site boundary * Minor saving of natural resource use (e.g. energy, water, materials) as compared to standard practice	* Minor positive environmental and natural resource benefits that extends outside the site boundary * Minor-moderate saving of natural resource use (e.g. energy, water, materials) as compared to standard practice	* Moderate positive environmental and natural resource benefits that within the site boundary * Moderate saving of natural resource use (e.g. energy, water, materials) as compared to standard practice	* Moderate positive environmental and natural resource benefits that extends outside the site boundary * Moderate-major saving of natural resource use (e.g. energy, water, materials) as compared to standard practice	* High positive environmental and natural resource benefits that is of local scale significance * Major saving of natural resource use (e.g. energy, water, materials) as compared to standard practice
Quality	* Prevents Rework Costs less than or equal to 20K	* Prevents Rework Costs less than or equal to 100K but greater than 20K	* Prevents Rework Costs less than or equal to 250K but greater than 100K	* Prevents Rework Costs less than or equal to 5% contract value but greater than 250K	* Prevents Rework Costs greater than 5% of contract value
Reputation / Community / Media / Local economy	* No complaints from community, stakeholders or local businesses * No negative coverage * Minor improvement to local economy (e.g. 1 additional employment opportunity or minor goods/services contract)	* Brief positive local media coverage * Minor stakeholder praise * Minor-moderate improvement to local economy (e.g. 1-5 opportunities created)	* Positive local media attention * Sectional community praise publicly expressed * Stakeholder action resulting in enhanced ability to achieve project activities * Moderate improvement to local economy (e.g. 5-10 opportunities created)	* Consistent positive local media attention * Community praise and satisfaction expressed publicly * Stakeholder action resulting in enhancements to project key elements * Moderate-significant improvements to local economy (10-20 opportunities created)	* Consistent, significant positive local media attention * Significant community praise and satisfaction expressed publicly * Stakeholder action resulting in enhancements to project outcomes * Significant improvements to local economy (>20 opportunities created)

Benefit to community and stakeholders / Education	* One person upskilled or enrolled in an accredited course * Intangible positive social outcome * Benefit period of <1 week	* 1-5 people upskilled or enrolled in an accredited course * Tangible positive social outcome directly adjacent to Project location * Benefit period of 1 week – 1 month	* 5-15 people upskilled enrolled in an accredited course * Tangible positive social outcome with impacts across one LCA in which the Project operates * Benefit period of 1-12 months	* 15-50 people upskilled or enrolled in an accredited course * Tangible positive social outcome for multiple LCAs in which the Project operates *Benefit period of 12-24 months	* >50 people upskilled or enrolled in an accredited course * Tangible positive social outcome with impact within multiple LCAs both where the Project does and doesn't operate * Benefit period >24 months
Governance / Legal / Regulatory	* Prevents very minor technical breach of regulation or policy or code of ethics	* Prevents minor legal issues, non-compliances and breaches of regulation, policy or code of ethics. * Prevent Enforceable Undertaking	* Prevents moderate breach of regulation, policy or code with investigation or report to authority * Prevents moderate legal proceedings being initiated * Prevent several Improvement Notices	* Prevents significant breach of regulation, policy or code with fine or other regulatory action * Prevent significant litigation / legal action * Prevent shut down of part of a project due to regulatory breach * Prevent Prohibition Notice	* Prevents major breach of regulation, policy or code with fine * Prevents major litigation * Prevents major investigation by regulatory body * Prevent prosecution / Accreditation loss
Management Impact	* Prevents additional impact * Minor increased efficiency of resource requirements related to governance/management	* Prevents an impact that would have otherwise required minor management attention over several days to weeks * Minor-moderate increase in efficiency of resource requirements related to governance/management	* Prevents an impact that would otherwise have required moderate management attention over several weeks to month * Prevents implementation of an operation contingency plan * Moderate increase in efficiency of resource requirements related to governance/management	* Prevents an impact that would otherwise require the implementation of crisis and contingency plans at a project level, regional area or support function (DRP) * Prevent the requirement to involve John Holland managers and taken up the time of managers for several weeks * Moderate-significant increase in efficiency of resource requirements related to governance/management	* Prevent a critical event or disaster with significant impact on John Holland that requires considerable senior management time to handle over several months * Prevent the full implementation of a John Holland crisis management plan for days to weeks * Significant increase in efficiency of resource requirements related to governance/management

Likelihood scale

LIKELIHOOD RATING	PROBABILITY	FREQUENCY	SIMILIARITY
ALMOST CERTAIN (5)	75 - 100%	Event occurs on a weekly basis	Event occurs in almost all similar projects
LIKELY (4)	50 - 75%	Event occurs on a monthly basis	Event occurs in most similar projects
MODERATE (3)	25 - 50%	Event occurs on an annual basis	Event occurs in half of similar projects
UNLIKELY (2)	5 – 25%	Event occurs once	Event occurs in some similar projects
RARE (1)	0 - 5%	Unlikely for the event to occur	Event occurs in almost no similar projects

Overall Risk Rating

		CONSEQUENCE				
	RATING	1	2	3	4	5
LIKELIHOOD	ALMOST CERTAIN	D	C	B	A	A
	LIKELY	D	D	C	B	A
	POSSIBLE	E	D	C	C	B
	UNLIKELY	E	E	D	C	B
	RARE / REMOTE	E	E	D	D	C

Overall Opportunity Rating

		CONSEQUENCE				
	RATING	1	2	3	4	5
LIKELIHOOD	ALMOST CERTAIN	D	C	B	A	A
	LIKELY	D	D	C	B	A
	POSSIBLE	E	D	C	C	B
	UNLIKELY	E	E	D	C	B
	RARE / REMOTE	E	E	D	D	C

4.4.2 Project Risk and Opportunity Register (Non-Financial)

The Project Risk and Opportunity Register is updated/reviewed quarterly in a multidisciplinary workshop to identify and evaluate risks and opportunities and determine suitable treatment options or implementation actions. The workshops involve a cross section of the wider project team (multidisciplinary), including:

- Design team
- Construction team
- Environment team
- Community and Stakeholder Engagement team
- Commercial team
- Commissioning and Operations team (where relevant)
- A member of the Senior Management Team (or representative)

During the quarterly workshop the multidisciplinary team discuss review the Project Risk and Opportunity Register (Non-Financial) to determine:

- The risks/opportunities and their assessment/ratings; and
- The treatment option / implementation actions and the reason for selection; and
- Resources required to implement the treatment options/implementation actions; and
- Timing and schedule; and
- Reporting and monitoring requirements; and
- Persons (or roles) responsible for implementing the treatment options, measurement, monitoring and reporting (where required).

An example Project Risk and Opportunity Register (Non-Financial) is provided in Appendix 4. (Note: for financial risks and opportunities, refer to the Risk Management Plan – JH-PLN-SQE-006). The Project will ensure risks and opportunities are reviewed by a multidisciplinary team and updated quarterly as the minimum to satisfy the above John Holland and ISv2.1 credit Lea-2 requirements as documented within the Project Risk Management Plan - JH-PLN-SQE-006.

Compliance and assurance against each targeted level, benchmark and must statement of ISv2.1 credit Lea-2 is managed via the Sustainability Compliance and Assurance Tool (refer to Section 6-1 of this plan).

4.5 Training, Communication and Knowledge Share

4.5.1 Training

The Project is committed to the ongoing development of its staff and workforce in relation to sustainability knowledge. The People & Performance Director (or similar suitably qualified) supported by the Sustainability Manager will assess the following at the start of the project and as required:

- Determine the necessary skills of persons doing work under its control that affects its sustainability performance and its ability to fulfil its compliance obligations.
- Ensure sustainability is a priority within contractor business operations as a key criterion for selecting contractors.
- Ensure that these persons are competent on the basis of appropriate education, training or experience
- Ensure that these persons understand the projects commitments and obligations to sustainability through project specific inductions.
- Determine training needs associated with sustainability.
- Where applicable, taken actions to acquire the necessary competence, and evaluate the effectiveness of the actions taken.

The Project will undertake the above initiatives to ensure effective sustainability training, awareness and communication is provided throughout duration of the project. Training records are maintained by the People & Performance Director and supporting team.

The People & Performance Director shall be responsible for ensuring workforce training needs are satisfied in accordance with the Project Training Management Plan - USCP-MPL-G-0010.

The Project Training Management Plan has also been written with special attention to ISv2.1 credit Wfs-1 - Jobs, Skills and Workforce Planning which should be read in conjunction with this plan.

Compliance and assurance against each targeted level, benchmark and must statement of ISv2.1 credit Wfs-1 is managed via the Sustainability Compliance and Assurance Tool (refer to Section 6-1 of this plan).

4.5.2 Communication and Knowledge Share

The Project has established the processes needed for internal and external communications relevant to sustainability. When establishing its communication processes, the Project has:

- Considered its compliance obligations as detailed within ISv2.1 credit Lea-3, Knowledge Sharing.
- Ensured that sustainability information communicated is reliable.

Internal knowledge sharing will occur throughout the duration of the project through project newsletters/ updates, training and induction and formal knowledge sharing sessions. These will be discussed and developed with the project communications team. Internal communication measures will include:

Table 16: Internal Sustainability communication expectations

Expectation	Minimum requirements	Responsibility	Deliverables
Internal sustainability communications delivered	Project team meetings - Sustainability will be added as an agenda item in key project team meetings	Sustainability Manager Project Team	Team meeting minutes, presentations & attendance records.
	Project team training and briefings – Trainings and briefings will be provided to the design and construction management team to ensure a wider understanding and commitment against the Project objectives, targets and initiatives supporting sustainable outcomes.		As above.
	Toolbox talks and prestart meetings of the wider workforce - The Sustainability Team will coordinate toolbox presentations and awareness sessions to ensure a high-performing sustainability culture is built into the Project as required.		Toolbox talk records of attendance & presentations.
	Project sustainability performance reporting - The Project will report to the Client and JH on sustainability performance against objectives and targets through the monthly report and quarterly at the JH leadership team meetings.		Project Monthly Report Quarterly Presentation

External knowledge sharing will be undertaken by sharing lessons learned and achievements via John Holland and relevant key external stakeholders. External communication and knowledge sharing measures as indicated by Table 17 below includes:

Table 17: External Sustainability communication expectations

Expectation	Minimum requirements	Responsibility	Deliverables

External sustainability communications program developed and implemented.	John Holland Infrastructure and Major Projects Sustainability Forums –The Sustainability Manager will participate in the forum to share knowledge.	Sustainability Manager Stakeholder Manager Topic SME	Network meeting minutes
	Case studies, lessons learnt/HSES SharePoint site - The Project will communicate learnings and project outcomes with John Holland & ISC		Case studies
	Rating Scheme bodies - Coordinate directly with ISC where technical clarification is required		
	Conferences / forums hosted by Client, published articles, Government authorities, selected industry conferences/ journals, professional online platforms (LinkedIn), academic journals		

Any external communication and knowledge sharing shall be conducted in compliance with the content, review and approval procedures as detailed within the Community and Stakeholder Engagement Plan- USCP-MPL-G-0015.

Compliance and assurance against each targeted level of ISv2.1 credit Lea-3, benchmark and must statement is managed via the Sustainability Compliance and Assurance Tool (refer to Section 6.1 of this plan).

4.6 Innovations and Continuous Improvement

The John Holland Innovation and Continuous Improvement Process (Figure 4-2) is a fundamental element of the Sustainability Management System (SMS). It guides decision making relating to sustainability innovations and opportunities across all aspects and stages of the Project to help drive positive Environment, Social and Cost differences in the way we design, construct, maintain and operate assets.

The Process helps us achieve this by defining a cyclical process that enables us to continuously improve how we develop solutions by challenging business as usual practices and implementing efficient change processes to generate value for money for our business, clients, and communities and deliver positive customer outcomes.

The Process contains five phases, each of which are designed to facilitate collaboration and instil an innovative culture on The Project. The below phases in Figure 4-2 form part of the SMS. However, in alignment with The Projects targeted IS v2.1 Design and As built rating, the Project has developed the decision-making component

further under the Innovation theme; Inn-1 credit and for decision making which can be considered as "significant" under Ecn-1 credit. This is explored above in Section 4.3.9.1 of this plan.

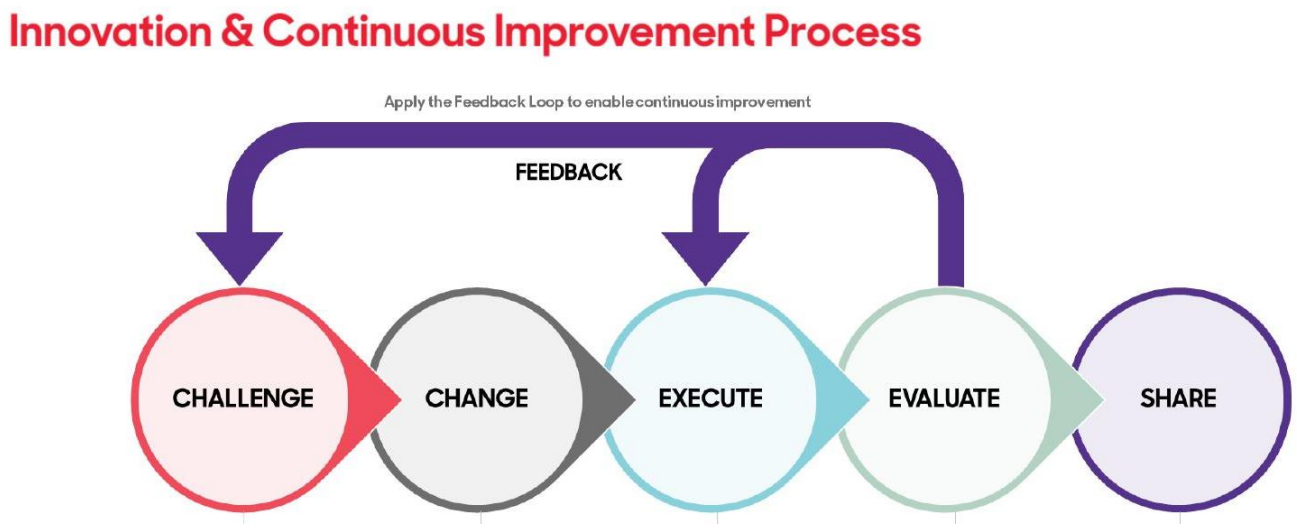


Figure 4-2: Innovation and Continuous Improvement Process

5 Sustainability in Procurement

Under the Project targeted "Gold" rating via ISv2.1 Design and As Built the Project is targeting all three supply chain credits:

- Spr-1: Sustainable Procurement Strategy
- Spr-2: Supplier Assessment and Selection
- Spr-3: Contract and Supplier Management

The Project is also targeting an additional credit directly linked to sustainable supply chain management and product selection:

- Rso-7: Sustainability Labelled Products and Supply Chains

The explicit processes and management of the Projects strategy against each of the IS v2.1 supply chain credits is documented with three key Project documents (and a suite of supporting documents) which should be read in conjunction with this Plan:

- Project Procurement Plan - JH-SRV-PLN-GEN-001

- Project Supply Chain Risk & Opportunity Assessment - USCP-JHG-PLN-GEN-0001
- Supply Chain Sustainability Specification - USCP-JHG-SPC-GEN-0004

Compliance and assurance against each targeted level, benchmark and must statement of IS v2.1 credits, specific to sustainable procurement shall be managed via the Sustainability Compliance and Assurance Tool (refer to Section 6-1 of this plan).

As a summary and for context, commitment to sustainable procurement is embedded within the John Holland Procurement Policy (Refer to Section 1.5.1 of the Project Procurement Plan - JH-SRV-PLN-GEN-001) and procurement process, as well as the procedures Letting of Consultant Subcontract Supply Packages (JH-MPR-PMA-005) and Achieving Sustainability Outcomes – Deliver Phase (JH-MPR-SST-002).

All potential suppliers (including consultants and sub-contractors) requested to tender for products and services will be required to complete a suite of documentation including the Sub-Contractor / Major Supplier Tender Interview Questionnaire (JH-FRM-PMA-005-04) and Modern Slavery Questionnaire for International Suppliers (JH-FRM-PMA-004-05), which ask specific questions about project specific sustainability requirements, sustainability performance and management systems.

These responses are assessed and scored by a multidisciplinary Project team in a subcontractor evaluation MCA to assess which subcontract / supplier has the best capability and capacity to help support The Projects sustainability objectives and targets.

Sustainability commitments and targets that are relevant to the procurement process are be included in the Procurement Management Plan and supporting Supply Chain Sustainability Specification, ultimately forming a key set of deliverables within the subcontracts of chosen suppliers.

The Project will ensure sustainable procurement requirements are met, aligned with contractual requirements and benchmark requirements per IS v2.1 credit, by implementing the following process:

1. Engagement with Project procurement & commercial team (training sessions and workshops)
2. Conduct a supply chain Risk and Opportunity assessment on the Projects suppliers of “material” goods and services, in accordance with ISO 20400.
3. Incorporate sustainability requirements into the ITT process, Scope of Works & Contracts
4. Establish and include sustainability criteria in tender evaluation process.
5. Incorporate successful tenderer sustainability commitments into a contractual agreements and sustainability actions plans.
6. Engagement with suppliers at each stage of the procurement process.
7. Implement ongoing reporting, review and supplier management processes.

This process and the related expectations are detailed in the Table 18 below. Further details regarding supplier agreements and compliance are provided in the following sub-sections.

Table 18: Sustainable Procurement Expectations Table

Expectation	Minimum requirements	Responsibility	Deliverables
Early and effective procurement planning	Sustainability team will provide support to the procurement and engineering teams including: • Articulate the Sustainability Management requirements for the project (e.g., contractual and/or any rating tool requirements) to potential suppliers prior to any formal market engagement. • Assist the supply chain risk and opportunities assessments in accordance with ISO 20400 and ISCv2.1 credit Spr-1. • Assist in the development of procurement packages. • Participate in tender interview meetings for key packages. • Participate in the post tender clarification process	Sustainability Manager, Commercial Director/ Commercial Manager	Meeting minutes, presentations, ITT deliverables
Sustainability requirements included in Scope of Works & Contracts	A Supply Chain Sustainability Specification has been prepared and incorporated into ITT processes, scope of works, sub-contracts and supply agreements. Supply Chain Sustainability Specification - AWRC-SPC-G-0001 will be amended depending on the nature of the sub-contract or supply agreement.	Sustainability Manager & Commercial Manager	Sustainability clauses in contract
Sustainability considerations incorporated into supplier selection processes	Subcontractors and suppliers during the tendering process are required to complete a sustainability questionnaire as part of their tender returnables prior to selection. Sustainability policies and evidence of implementation will be requested. Supplier sustainability tender responses will be reviewed and included in the subcontractor/supplier selection process.	Sustainability Manager, Commercial Manager & Project Engineers	Supplier sustainability questionnaires Procurement MCAs
Engagement with suppliers	Subcontractors and suppliers engaged by the Project throughout the tender, contracting and delivery process to ensure they are familiar with and meeting Project	Sustainability Manager,	Sustainability clauses in contract

Expectation	Minimum requirements	Responsibility	Deliverables
	sustainability requirements and expectations, and are encouraged where possible to meet or exceed expectations in relation to their contracted deliverables.	Commercial Manager & Project Engineers	
Suppliers must report sustainability performance	Suppliers will report periodically on sustainability performance metrics as outlined in their contractual requirements. Compliance with reporting and documentation requirements will be monitored and corrective actions taken where non-compliant.	Sustainability Manager & Commercial Manager	Sustainability performance reporting

5.1 Supplier Agreements

All suppliers (includes partners, consultants, sub-contractors) working on the Project will be required to:

- Understand the project sustainability requirements and follow instructions issued by Project management and supervisory personnel.
- Nominate project / site representatives to liaise with Project representatives with respect to sustainability requirements for their activities and take responsibility for these requirements.
- Adhere to the Project Management System and sustainability program as it applies to their operations.
- Be willing to undergo audits and inspections as may be required by the Project team to check compliance with Project sustainability requirements.
- Provide sustainability documentation to allow tracking of relevant sustainability actions including system compliance (quality, environment, safety), risk management, ethical behaviour, social responsibility, supply chain management, resource use (materials, energy, fuel and water consumption) and waste management.

5.2 Supplier Performance

Sustainability performance of suppliers will be monitored on a regular basis through a review of sustainability information submitted each month. This monitoring process will allow trends and deviations from specifications and commitments to be identified, and corrective actions developed and implemented. This monitoring may be supplemented by audits and inspections by the Project team to check compliance with Project sustainability requirements.

5.3 Certification

Suppliers with any certifications (or approved environmental product labelling under ISCv2.1 Rso-7) will be required to supply these certificates, per product supplied to the contractor. Performance of this supply of information will be tracked monthly by the Commercial team.

Certified Suppliers for key construction materials include:

- Steel – certified under the Australian Certification Authority for Reinforcing Steels (ACRS) or a similar association or organisation; manufacturer using energy-reducing processes.
- Timber - recycled timber or from Forest Stewardship Council (FSC) certified suppliers. This will include suppliers of timber adhering strictly and consistently with the chain of custody requirements that form part of the FSC certification.
- Concrete - members of the Cement Concrete and Aggregate Association of Australia (CCAA) or a similar association or organisation
- Polyvinyl chloride (PVC) - signatories to the Vinyl Council of Australia Product Stewardship Program or a similar program.

As stated above, the explicit processes and management of the Projects strategy against each of the ISv2.1 supply chain credits is documented with two key Project documents (and a suite of supporting documents) which should be read in conjunction with this Plan:

- Project Procurement Plan - JH-SRV-PLN-GEN-001
- Supply Chain Sustainability Specification - AWRC-SPC-G-0001

These documents and their supporting documents have been written to comply with each must statement of the ISv2.1 Technical Manual relating to sustainable procurement.

6 Sustainability in Design

The Sustainability team will play an active role with the Design team to assist with embedding Sustainability in Design (SuID) principles into each design package. The team will:

- Participate in design team meetings.
- Work with each design discipline to ensure sustainability requirements, inclusive of specific ISv2.1 credit requirements are incorporated into the relevant design packages / reports and specifications.

- Coordinate with the design team on all design related ISV2.1 credits and Project design related commitments, objectives and targets.
- Coordinate and facilitate SuID modelling for materials (Life Cycle Assessment), energy (energy model covering Scope 1&2 emissions), water (water footprint model), environmental discharges (noise, vibration, lighting, flood, stormwater and air quality) and climate (based on climate projections).
- Facilitate and participate in various multi-disciplinary design workshops (internal and external as required) to identify sustainability opportunities that will allow the project to achieve sustainability targets and objectives in design, particularly for the key themes of materials, energy, water & innovation.
- Facilitate and coordinate SuID stakeholder engagement in collaboration with Design team and Community and Stakeholder team.
- Evaluate opportunities using the multi-criteria analysis (MCA) Decision Making Tool (USCP-JHG-REG-GEN-0003) and follow the process associated to significant decisions of this plan if the opportunity / decision meets the criteria of “significant”. Each opportunity will be scored and compared to alternative options.
- Provide an interface role between the Design Team and design consultants where required to deliver sustainability assessments.
- Support Design Managers and the Design Team to respond and close out client RFIs and comments.

6.1 Sustainable Design Assurance

To support design integration with the Project objectives and targets and the overall ISv2.1 Design rating, the team have developed a Sustainability Compliance and Assurance Tool that simplifies the ratings approach which the Project team can use to understand, plan and track progress to mitigate risks. This tool will be available throughout the whole design and construct phases to facilitate the submission of the IS rating. See Figure for a snapshot of the tool’s landing page.

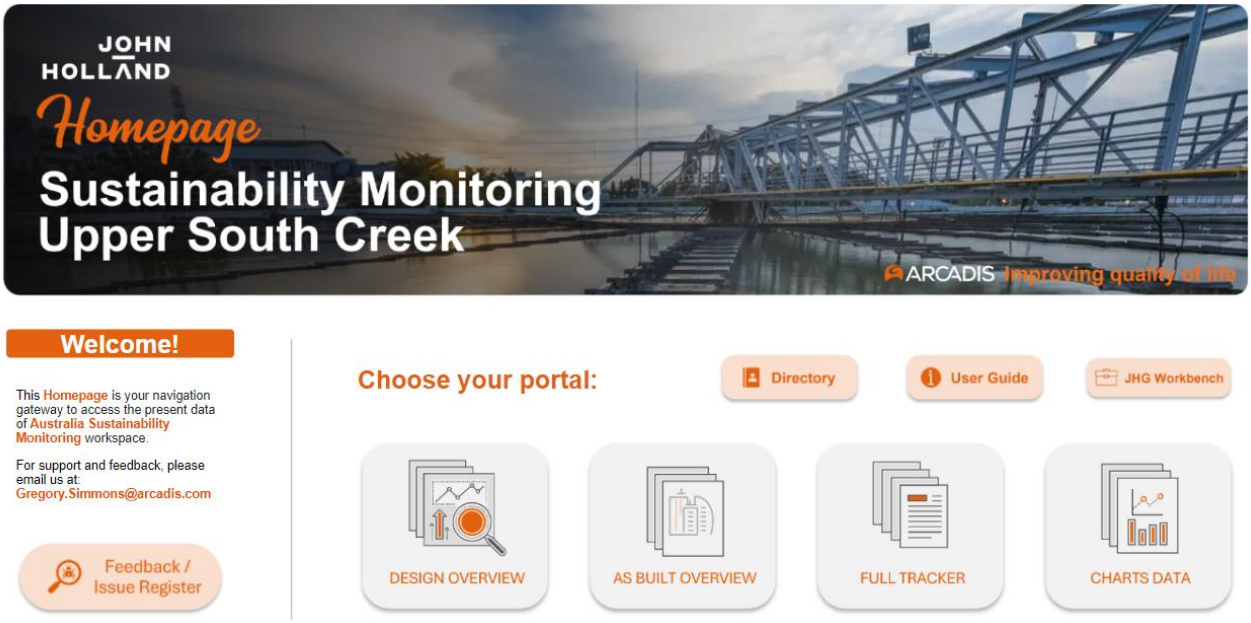


Figure 6-1 ISC Compliance Tracking digital tool snapshot.

The SuID expectations and deliverables are outlined in Table 19 below.

Table 19: SuID Requirements Table

Expectation	Minimum requirements	Responsibility	Deliverables
Define sustainability requirements	Sustainability compliance requirements for the Project are clearly documented in this Plan. This includes sustainability rating benchmarks being targeted, as well as specific design deliverables (e.g., percentage (%) materials reduction or incorporation of climate adaptation measures).	Sustainability Manager Planning Development & Completions Director Sustainability Advisor Engineering Manager Project Director	This Plan
Link sustainability requirements to design packages	Sustainability requirements (notably Project objectives and targets and ISv2.1 design specific credits) for key design packages will be articulated and communicated with relevant design leads. This involves: • Discussing sustainability requirements and identifying	Sustainability Manager Sustainability Design Advisor Engineering Manager	Design Package Report Reviews Design Reports Design Modelling Design Drawings

Expectation	Minimum requirements	Responsibility	Deliverables
	opportunities at Interdisciplinary Design Workshops • Updating and monitoring the status of sustainability deliverables using the Sustainability Compliance and Assurance Tool Specific records and documentation required during the Design Phase to evidence the delivery of sustainability requirements will be defined and agreed.		
Identify and assess sustainability risks and opportunities	Sustainability risks and opportunities will be assessed and documented in the Project Risk & Opportunity Register (Refer to Section 6 of this plan) and any initiatives identified will be documented in relevant registers (i.e. Resource Efficiency Opportunities Register).	Sustainability Manager Sustainability Design Engineer/Advisor Engineering Manager Project Team	Project Risk Register Project Opportunities Registers
Support and review sustainability outcomes and evidence	Review and support will be established. This includes: • Sustainability as an ongoing agenda item for relevant design meetings. • The sustainability team as key members of the design review process and workflows to ensure a consistent approach and expected level of accuracy and detail of sustainability compliance in design documentation. • Reviewing the Sustainability Compliance and Assurance Tool at each relevant design stage	Sustainability Manager Sustainability Design Engineer/Advisor Engineering Manager Project Team	Meeting minutes Sustainability Compliance and Assurance Tool

Compliance and assurance against each targeted level, benchmark and must statement of IS v2.1 credits specific to design and hold Design team responsibility (refer to credit and responsibility mapping exercise within Section 4.1 of this plan) shall be managed via the deliverables listed within the above Table – 18 and the Sustainability Compliance and Assurance Tool (refer to Section 6-1 of this plan).

7 Sustainability in Delivery

Embedding Sustainability through the Delivery process for the Project will be achieved through establishing a collaborative working environment between the Sustainability Manager and each Project functional lead to ensure that sustainability requirements (as detailed within this plan) are understood and specified across delivery documentation, including:

- Project director and Leadership team – Decision making process, risk and opportunity register and Leg-1
- Commercial and procurement – supply chain risk and opportunity assessment, invitation to tender, subcontractor/supplier evaluation, contracts, performance management (as discussed in Sections 4 and 5 of this plan)
- Construction – Inspection test plans, procurement of materials, resource use efficiency, innovation
- Health, Safety and Environment – Leading best practice safety and environment outcomes, prevention of pollution / discharges and enhancement of the environment including waste, ecology, natural and cultural heritage. Key ISv2.1 credits specific to environmental management and delivery include: Env-1, Env-2, Env-3, Env-4, Env-5, Rso-2, Rso-3, Rso-4, Eco-1 and Her-1.
- Communication and Stakeholder – effective IAP2 consultation, stakeholder management. Key ISv2.1 credits specific to community and stakeholder delivery include: Sta-1, Sta-2 and Leg-1
- People (HR) & Health & Safety – Health and wellbeing indicators, training and personnel development in respond to skills gap assessment, social inclusion, and diversity. Key ISv2.1 credits specific to workforce and training include: Wfs-1, Wfs-2, Wfs-3 and Wfs-4.

The Project will ensure sustainability requirements are embedded during construction, aligned with contractual requirements and benchmark requirements per IS Credit, by implementing the requirements outlined in this Plan.

Compliance and assurance against each targeted level, benchmark and must statement of IS v2.1 credits specific to the Construction (As Built) stages of the Project shall be managed via the credit relevant Management Plan and performance tracked and monitored via the Sustainability Compliance and Assurance Tool (refer to Section 6.1 of this plan).

The mapping exercise presented within Section 4.1 of this plan demonstrates the relationship between each IS v2.1 credit, its primary governing Management Plan/ respective deliverable and the responsible SLT representative. Each document listed within the mapping exercise of Section 4.1 (Integration of the SMS) should be read in conjunction with this plan for a detailed strategy / pathway to achieve the specific sustainability deliverables / credits related to said document.

7.1 Non-conformity and Corrective Action

Sustainability will be embedded into the Quality Management Plan (USCP-JHG-MPL-QMS-0001) and Project Management Plan (USCP-JHG-MPL-PMT-0003) for the Project to ensure that sustainability deliverables are appropriately implemented, assessed and reported.

In the event that any nonconformity occurs (internally or with the Project supply chain), the Project will:

- React to the nonconformity and, as applicable:
    - take action to control and correct it.
    - deal with the consequences, including mitigating adverse sustainability impacts.
- Evaluate the need for action to eliminate the causes of the nonconformity, in order that it does not recur or occur elsewhere, by:
    - reviewing the nonconformity
    - determining the causes of the nonconformity
    - determining if similar non-conformities exist, or could potentially occur.
- Implement any action needed.
- Review the effectiveness of any corrective action taken.
- When a non-conformance is identified, actions, close-out details and verification will be documented in a non-conformance register in the project's Quality Management System. Sustainability non-conformances, corrective and preventative actions will be managed by the Sustainability Manager and reported to the LT.
- If the non-conformity is traced to a supplier-related issue, then the following actions be considered:
    - The need for a supplier audit or inspection to trace the source and extent of the non-conformance and its impact on the Project;
    - The need for the supplier to immediately implement corrective action to prevent a recurrence;
    - The need for the supplier to demonstrate to the Project that the corrective action has been effective in addressing the non-conformity and preventing its future recurrence.

8 Sustainability in Completion Phase

At the end of the Project Construction Phase, the Project will move into a Completions Phase including Testing/ Commissioning and Handover whereby the Project is focused on achieving practical completion, commissioning of the asset, and handover to the asset owner (or client). Acknowledging the importance of this phase, a suite of deliverables must be completed and provided to the asset owner (or client) as part of the requirements under the IMS.

The Project will ensure the following will be completed as a minimum to ensure sustainability deliverables and innovations have been completed on the project and are communicated:

- Completions, Handover and Commissioning tasks required, as per the Project Completion Procedure (JH-MPR-PMA-016), will be implemented to ensure proper handover of the asset.
- The Environment and Sustainability Completions Checklist (JH-FRM-SST-002-01) and the Project Sustainability Compliance and Assurance Tool will be completed (inclusive of ISC hand-over / completions requirements).
- NGER Operational Control Determination Record (JH-FRM-ENV-002-03) will be completed to transition tracking and collation of data relevant to the *National Greenhouse and Energy Reporting Act 2007* to the operator.
- IS ratings documents will be submitted to ISC for verification, and any relevant details communicated to John Holland and the Client.
- Documents to close out contract requirements supplied to the Client via InEight.
- Lessons learnt and communications will be drafted and communicated to relevant stakeholders.

9 Appendices

A-1 Sustainability Policies

A-1-1 JHG Sustainability Policy

Policy

JOHN HOLLAND

Sustainability Policy

Our commitment

John Holland is committed to integrating economic growth, environmental resilience, and social progress as priorities into decision-making at every level of the business, with the ambition to create long-term value.

Our approach

John Holland will undertake its business in a manner that maximises positive social and economic impact for our people and stakeholders. We are adopting a resilient and enduring strategic approach to meet and mitigate the existing and emerging challenges for society and our infrastructure environment. John Holland acknowledges that sustainability enables long term financial resilience.

Sustainability Policy in practice

- Create a sense of place for communities, by making a positive and meaningful difference to the community by genuinely engaging with the community and stakeholders
- Work closely with our customers to achieve optimal and resilient outcomes for users and society
- Decision making to integrate economic, social, environmental and governance aspects, and seek to achieve positive outcomes in each
- Minimise whole of life asset impact by future proofing our assets and responding to climate change
- Address environment considerations in a manner that is sensitive to the needs of our stakeholders and the environment, creating enhanced environmental outcomes wherever practical
- Be recognised as an industry leader in making our workplaces safer through innovation, collaboration and effective planning and management of risks
- Enhance workforce health and wellbeing and inclusion and diversity, through employee empowerment to deliver sustainable outcomes
- Source sustainably and ethically, including prioritising local industry participation, social procurement initiatives and a commitment to avoiding modern slavery
- Encourage innovation amongst our delivery teams and supply chain to achieve sustainable outcomes
- Manage all activities ethically, measuring and reporting the sustainability performance of the project
- Govern for sustainability by implementing project systems and processes to ensure the effective and efficient delivery and operation of the project
- Support the UN Sustainable Development Goals

Joe Barr
Chief Executive Officer
John Holland Group Pty Ltd
January 2023

Caring
Empowering
Imaginative
Future-focused

A-1-2 Sydney Water Environmental Policy

Environmental Policy

Sydney Water is committed to protect, restore and enhance our natural environment. We deliver world-class essential and sustainable water and wastewater products and services to our city, creating a better life for our customers and communities

Scope

This policy applies to all Sydney Water staff and contractors. It covers all aspects of our business including property acquisitions and disposals; and the planning, construction, operation, maintenance of systems, products and services for water, wastewater, recycled water and stormwater throughout our area of operations.

Objective

We will conduct our operations in compliance with the principles of ecologically sustainable development. We will continually improve our environmental performance until our operations cause no harm to the environment while supporting a thriving, livable and sustainable city.

We are committed to:

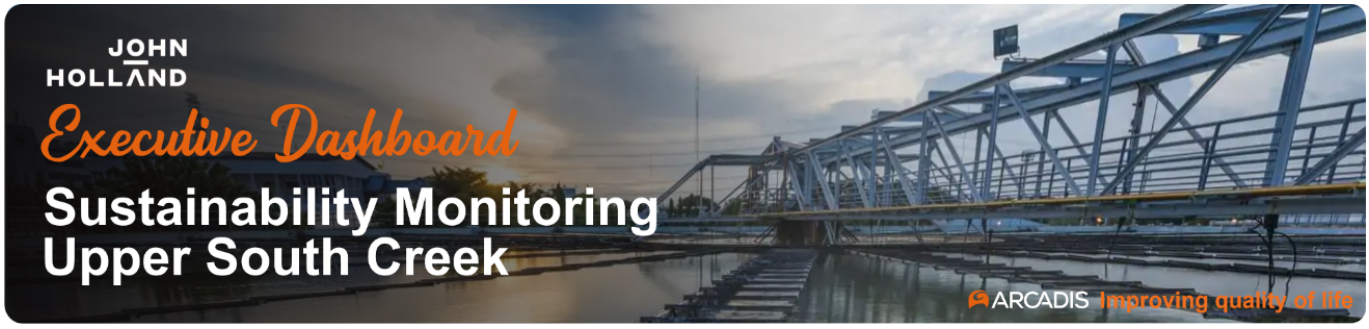
- having no net impact from our discharges to the air, water or land
- maximising resource value and supporting a circular economy by responsibly managing energy, water and materials, and minimising waste creation
- achieving net carbon zero in our operations by 2030 and supply chain by 2040
- managing the entire integrated water cycle
- protecting, restoring, and enhancing our natural and heritage assets
- social responsibility by having at the forefront the wellbeing of the community to improve our overall environmental performance.

We will achieve this by:

- proactively engaging and partnering with stakeholders, customers and community groups to achieve positive environmental outcomes and build their values into our environmental management decisions
- promoting a supportive work culture and embracing behaviours that contribute to sustainable and improved environmental outcomes
- requiring staff and contractors to operate in an environmentally responsible manner and providing environmental awareness and training
- adopting a systematic and integrated risk management approach
- pursuing opportunities that enable our services to be resilient to increasing environmental challenges, including climate extremes
- making decisions (from supply chain to infrastructure and servicing) that are sustainable, socially responsible and contribute to a reduction in carbon emissions
- continually improving our certified ISO14001 Environmental Management System (EMS)
- complying with all applicable legal, contractual and internal environmental obligations.

Roch Cheroux
Managing Director

A-2 Sustainability Compliance and Assurance Tool



This **Executive Dashboard** is created to provide executives with a bird's eye view of project performance. It contains important reporting links, data and information across the project.

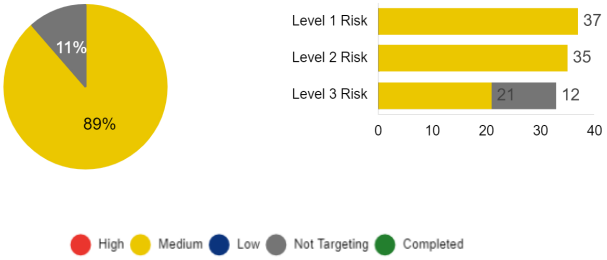
For support and feedback, please e-mail us at: **Gregory.Simmons@arcadis.com**

Back to Homepage

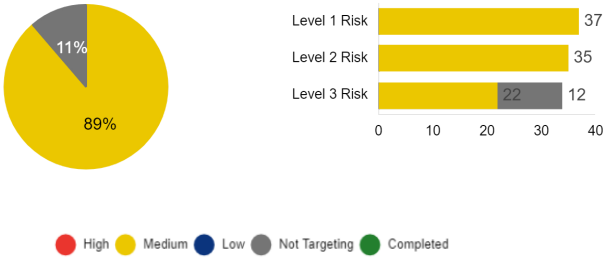
Feedback / Issue Register

Credit Level Risk

Design



As Built



Overview

Design

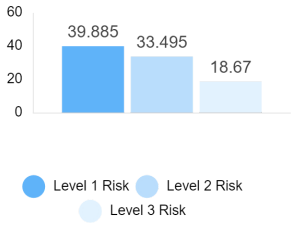
Total Project Points Available	110.03
Project Targeted Points	92.05
Project Points Achieved	0
Approved Project Points	0

As Built

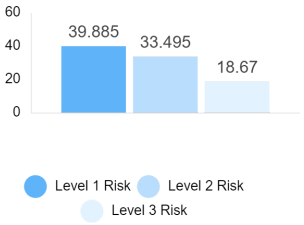
Total Project Points Available	110.03
Project Targeted Points	92.05
Project Points Achieved	0
Approved Project Points	0

Project Target Points per Level

Design

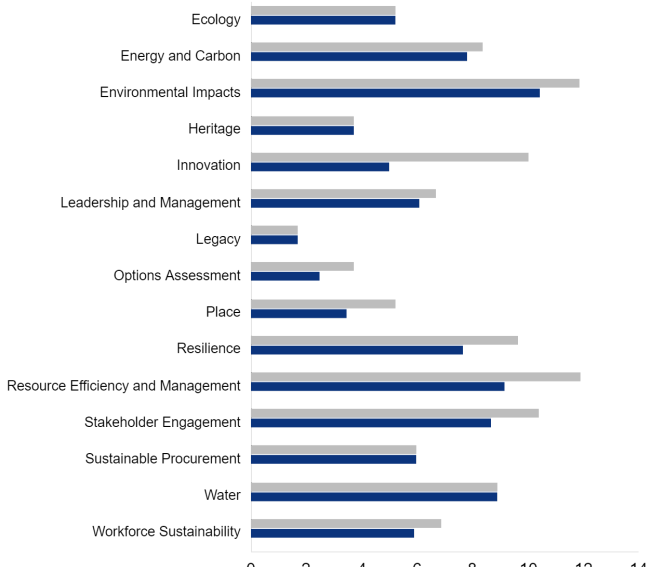


As Built

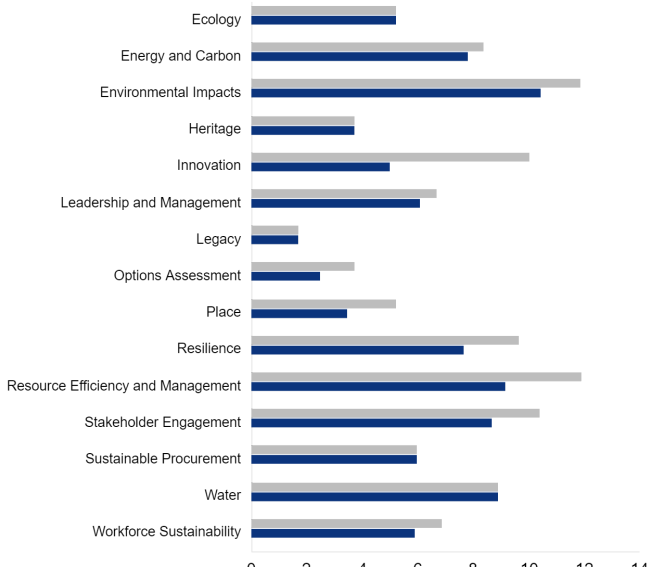


Points per Category

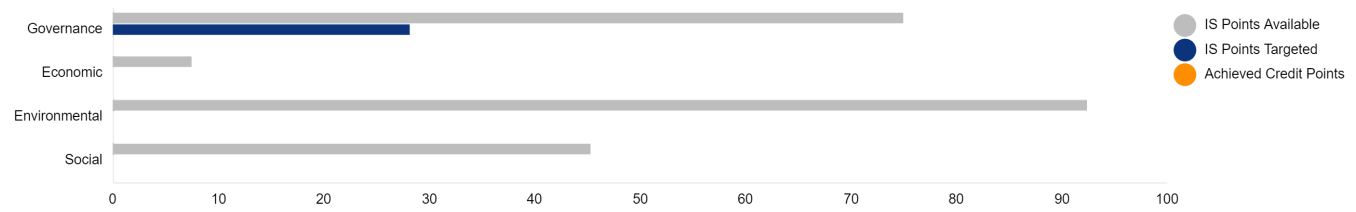
Design



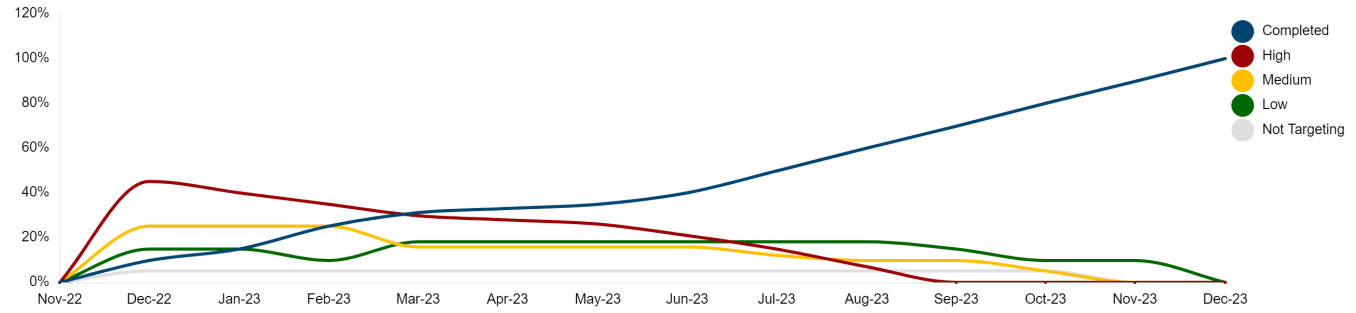
As Built



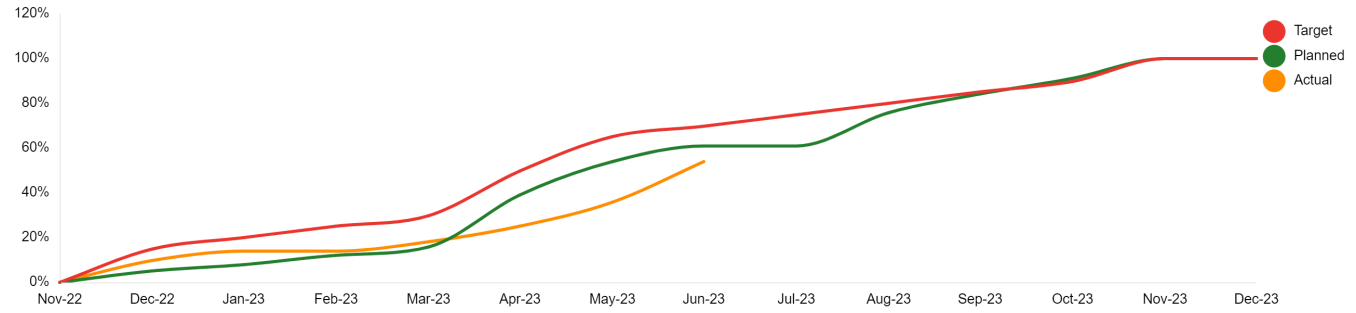
IS Points by Theme



Credit Risk Levels over Time



Credit Achievement over Time



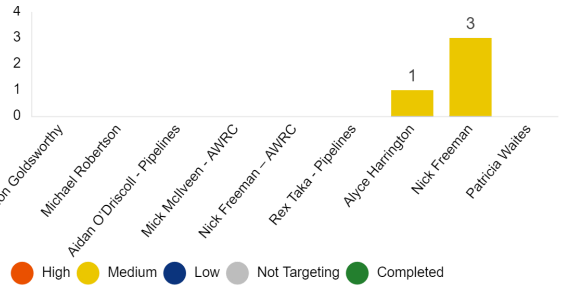
High Risk Must Statements

Results are empty

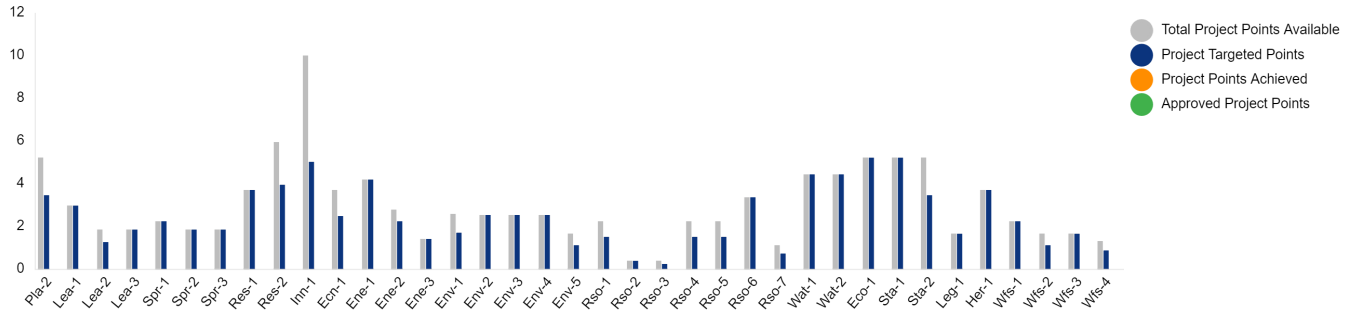
We couldn't find any results based on this report's current criteria.

Must Statement Risk Level by Person

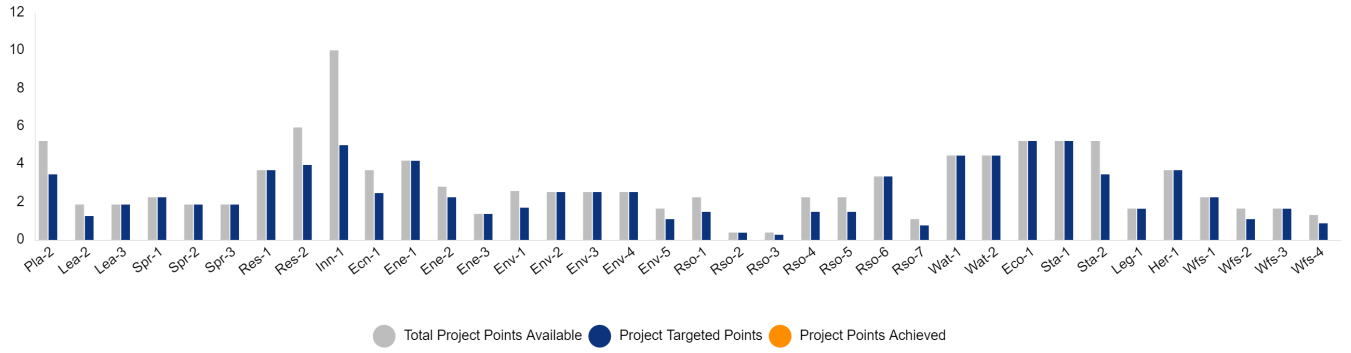
Design | As Built



Points per Credit (As Built)



Points per Credit (Design)



USC | Full Tracker

	Credits	Criteria	Unique Must Statement ID	Must Statements	Evidence	Owner	Discipline	Must Level Risk Status	High Effort/ Risk Flag	Delivery Date	Submission Date	Evidence Status Round 1	Evidence Status Round 2	Link To JHG Process/ Document/ Link to Evidence	Evidence Response	General Comments	Hierarchy Checker
1	Governance																0
2	Place																1
3	Design: Pla-2: Urban and Landscape Design																2
4	Level 1							Medium									3
5	1	An urban and landscape design plan has been developed and design options implemented	Pla-2/DL1.1a	The urban and landscape design plan must be prepared for the project by a suitably qualified professional.	• The urban and landscape design plan, as specified above • Evidence of urban and landscape design option implementation e.g. Design drawings; urban and landscape design report • Documentation for the suitably qualified professional e.g. CV, LinkedIn profile.	Nick Freeman	Client Commercial Community & Stakeholder	Medium	Suitably Qualified Professional								4
6	1	An urban and landscape design plan has been developed and design options implemented	Pla-2/DL1.1b	The plan must include an urban and landscape design vision and supporting principles, and the objectives and design options which outline how the design vision and principles will be fulfilled.	• The urban and landscape design plan, as specified above • Evidence of urban and landscape design option implementation e.g. Design drawings; urban and landscape design report • Documentation for the suitably qualified professional e.g. CV, LinkedIn profile.	Nick Freeman	Commercial	Medium									4
7	1	An urban and landscape design plan has been developed and design options implemented	Pla-2/DL1.1c	The plan's objectives must consider the following aspects as relevant to the project context (e.g. urban or rural): Integrating with existing and likely future infrastructure and development, Urban form, Community connectivity, Public and active transport, Activity centres and employment, Green infrastructure integration, including water urban sensitive design, Biodiversity and habitat connectivity, and Response to the natural landscape.	• The urban and landscape design plan, as specified above • Evidence of urban and landscape design option implementation e.g. Design drawings; urban and landscape design report • Documentation for the suitably qualified professional e.g. CV, LinkedIn profile.	Alyce Harrington		Medium									4
8	1	An urban and landscape design plan has been developed and design options implemented	Pla-2/DL1.1d	If an urban and landscape design plan was developed in the Planning phase, this plan must be reviewed by a suitably qualified professional to ensure it aligns with the requirements of this credit.	• The urban and landscape design plan, as specified above • Evidence of urban and landscape design option implementation e.g. Design drawings; urban and landscape design report • Documentation for the suitably qualified professional e.g. CV, LinkedIn profile.	Aidan O'Driscoll		Medium	Suitably Qualified Professional								4
9	1	An urban and landscape design plan has been developed and design options implemented	Pla-2/DL1.1e	The urban and landscape design options proposed in the plan must be implemented.	• The urban and landscape design plan, as specified above • Evidence of urban and landscape design option implementation e.g. Design drawings; urban and landscape design report • Documentation for the suitably qualified professional e.g. CV, LinkedIn profile.	Alyce Harrington		Medium									4
10	1	The maintenance arrangements for the project's urban and landscape design components have been reviewed	Pla-2/DL1.2a	The maintenance arrangements for the urban and landscape design options must ensure that the design objectives and detailed design components will be maintained over the life of the infrastructure asset.	• Documentation and review of on-going maintenance arrangements, as specified above • Documentation for suitably qualified professional e.g. CV or LinkedIn profile.			Medium									4
11	1	The maintenance arrangements for the project's urban and landscape design components have been reviewed	Pla-2/DL1.2b	The proposed maintenance must be reviewed and confirmed by a suitably qualified professional. These may be documented in the urban and landscape design plan or relevant management plans.	• Documentation and review of on-going maintenance arrangements, as specified above • Documentation for suitably qualified professional e.g. CV or LinkedIn profile.			Medium	Suitably Qualified Professional								4
12	Level 2							Medium									3
21	Level 3							Not Targeting									3
25	As Built: Pla-2: Urban and Landscape Design																2
43	Leadership and Management																1
160	Sustainable Procurement																1
253	Resilience																1
335	Innovation																1
361	Economic																0
362	Options Assessment																1
397	Environmental																0
935	Social																0
1220																	
1221																	
1222																	
1223																	
1224																	
1225																	
1226																	
1227																	
1228																	
1229																	
1230																	
1231																	
1232																	
1233																	
1234																	
1235																	
1236																	
1237																	

A-3 Project Initiatives and Innovation Register Template (JH-FRM-SST-001-05)

Optional Weightings Assessment for Initiatives- Impact Assessment Criteria		
3	=	High positive impact generally long term. Substantial improvement over BAU outcomes and/or substantial time/cost benefit.
2	=	Medium positive impact, for any duration. Moderate improvement over BAU outcomes and/or moderate time/cost benefit.
1	=	Low positive impact, possibly only short-term. Minimal improvement over BAU outcomes and/or minimal time/cost benefit. Benefits may be confined to a limited area/scope.
0	=	Neutral Impact.
-1	=	Low negative impact, likely short-term. May cause limited effects to reputation, community, supply chain, physical environment, time & cost. Impact may be easily mitigated or be tolerable. Impact may be confined to a limited area/scope.
-2	=	Medium negative impact for any duration, with potential effect reputational, community, supply chain, physical environment, time & cost. Unmitigated impact not deemed tolerable. Impact requires further controls / considerations to manage or mitigate impacts.
-3	=	High (long-term) negative impact. May result in serious damage to reputation, community, supply chain, physical environment, time & costs. Requires major re-design and/or requires major commitment to extensive management strategies to mitigate the effect.

Weighted Impact Score			
	<	0	Low
0	-	3	Med
3	-	6	High
	>	6	Very High

Project Initiatives and Innovation Register

JOHN HOLLAND

													FINANCIAL IMPACT SCORE				55%	NON-FINANCIAL IMPACT SCORE						45%					
Ref	Project	Resource Category	Minimum or Stretch Target	Owner	Title	Initiative	Benefit	Temporary Works or Permanent	Innovation	Significant Decision? [Do not proceed - refer Project Significant Decision Register] - R&O register; or - Major Change Form	Implementation Timing	Actions	CAPEX	OPEX	Program	Other	TOTAL	Safety	Environment	Community & Stakeholder Engagement	Workforce	Procurement	Other	Total	Non weighted impact Score	Weighted impact Score	Benefit Rating	Feasible Y/N	Status (A-Adopt, IF-Investigate Further, H-Hold)
OPP-001	Pipelines	Aggregate	Stretch	Michelle Huang/Alex Lazarou	Deviation of Virgin embedment material to Recycled Bedding Sand	Replacement of virgin washed bedding sand with recycled bedding sand that complies with WSA PS-350 Spec	reduced embodied CO2e associated with virgin washed material	Permanent			Procurement / Design		3	3	-2	0	4	3	3	0	1	1		8	12	5.8	High	Y	
OPP-002	USC	Asphalt	Stretch	Mark Trethewy/ Daniel Hipwell	Reclaimed Asphalt Pavement	Use of 100% RAP or ecolabelled binder/sealant on compound temporay and permanent roads	Reduced embodied carbon. Circular economy	Temporary Works or Permanent			Design	Can we propose this for council roads? Significantly more asphalt there (150,000m2 asphalt)																
OPP-003	AWRC	Asphalt	Stretch	Belinda Dechnik	Sustainable road seals-Recycled glass in roads-100% recycled Australian glass	OmniGrip Direct – Fixing Blackspots on Roads, Paths & Buildings		Temporary Works or Permanent		Possible option in Sonia not uptaken	Design				-1	0	-1	2	3	0	0	-2	0	3	2	0.8	Med	Y	
OPP-004	AWRC	Asphalt	Stretch	Belinda Dechnik	SoNiA's PMB in asphalt	Polymer modifer increases the sevice life and decreases the maintence of asphalt - trial in temp carpark-Trial in compound carpark -links to EPA circular plastics program	Polymer modifer increases the sevice life and decreases the maintence of asphalt - trial in temp carpark; Help us achieve level 3 for Rso-1	Tempoary			Design				-1	0	-1	2	3	0	0	-2	0	3	2	0.8	Med	Y	
OPP-005	USC	Asphalt	Stretch	Michelle Huang/Alex Lazarou	INNOVO Asphalt - Plastic, tyres, printer catridges	Customisable asphalt mix containing a number of salvaged mateirals such as recycled plastic, recycled glass and end of use tyres that would otherwise become landfill	reduced embodied CO2e associated with typical BAU Asphalt	Permanent			Design / Construction	Alternatives to geopolymer and polyrok			-1	0	-1	2	3	0	0	-2	0	3	2	0.8	Med	Y	
OPP-006	USC	Asphalt	Stretch	Michelle Huang/Alex Lazarou	INNOVO Asphalt - Plastic, tyres, printer catridges	https://www.boral.com.au/news/media-release/boral-australia-launches-innovo-adelaide-world-earth-day	Used in Adelaide - Resurfacing of Carlisle road	Permanent				Alternatives to geopolymer and polyrok			0	0	0	0	2	0	0	0	0	2	2	0.9	Med	Y	
OPP-007	USC	Asphalt	Stretch	Michelle Huang/Alex Lazarou	INNOVO Asphalt - Plastic, tyres, printer catridges	https://www.boral.com.au/news/media-release/boral-builds-perth-street-recycled-asphalt-glass-plastic-and-tyres	Used in Perth - suburban street	Permanent				Alternatives to geopolymer and polyrok	1	1	1	0	3	1	3	0	0	0		4	7	3.45	High	Y	
OPP-008	USC	Asphalt	Stretch	Michelle Huang	TonerPlas	Close the Loops asphalt additive with a key ingredient of recycled soft plastic to making high performance asphalt roads. Designed to melt, extend and motify bituminous binder mastic in asphalt which ipmroves the mechanical properties of asphalt leading to improved durability	repurposes plastic bags and toner cartidges					Alternatives to geopolymer and polyrok					0							0	0	0	Med	Y	
OPP-009	USC	Asphalt	Stretch	Michelle Huang	TonerPave	TonerPave™ is new asphalt with high-recycled content and reduced carbon footprint. Has a 23% lower carbon footprint. more than 1000km has been laid in Australian minicipal council jurisdictions in most states of Aus	lower carbon footprint. requires less maintenance					Alternatives to geopolymer and polyrok	1	1	0		2	0	2	0	0	0		2	4	2	Med	Y	
OPP-010	AWRC	Concrete	Stretch	Jeff Powell	Bio-San - Concrete	Bio-San additive into concrete for anerobic tanks and inlet works	Eliminate the need for epoxy or HDPE plastic liner both of which would need to be replaced every ~30 years	Permanent	Potentially State First - Only Used in VIC	Yes	Design / Operations (Maintenance)	Jeff to disscuss variation of spec with SW					0							0	0	0	Med	Y	
OPP-011	USC	Concrete	Stretch	Jeff Powell/ Daniel Hipwell	Polyrock as an alternative material in walkways	Polyrock - aggregate replacement in concrete. Potential use in walkways.	Reduced embodied CO2 emission through replacement of quarried aggregates to plastic rocks	Permanent	Potentially State First - Only Used in VIC		Design	Mark to speak to Boral					0							0	0	0	Med	Y	
OPP-012	USC	Concrete	Stretch	Jeff Powell/ Daniel Hipwell	Polyrock as an alternative material in project compound	Polyrock - aggregate replacement in concrete. Potential use in Project compound.	Reduced embodied CO2 emission through replacement of quarried aggregates to plastic rocks	Temporary	Potentially State First - Only Used in VIC		Design	Mark to speak to Boral					0							0	0	0	Med	Y	
OPP-013	AWRC	Concrete	Stretch	Jeff Powell/ Daniel Hipwell	Geopolymer concrete as an alternative material	Geopolymer concrete for compound base slab - refined process of dry mixing all components at the batch plant and add water at site to prevent further slumping issues	Reduced embodied carbon	Temporary	Potentially Australaia first based on refined process of combing all components in a dry mixture then adding water at site		Design																	
OPP-014	AWRC	Concrete	Stretch	Daniel Hipwell	Glass Reinforced Concrete Pits	https://civilmart.com.au/products/stormwater-drainage/grc-pits-stormwater/					Design	Clarify what this is															FALSE	
OPP-015	AWRC	Concrete	Stretch	Mark Trethewy	Macrosynthetic fibres as an alternative material	Macrosynthetic fibres (such as emesh) in concrete for non-structural concrete (civil & pavement)	Reduce embodied CO2 emissions associated with reinforcing steel - emesh replaces the reinforcement (steel mesh)	Temporary Works or Permanent			Design						0							0	0	0	Med	Y	
OPP-016	AWRC	Design	Minimum	Nick Freeman	Design optimization - drainage discharge	Relative to Reference Design, optimised the drainage discharge to reduce bulk earthworks	Reduced bulk earthworks				Design	Has this aleady been completed and actioned in latest design?	1	1	0	0	2	0	1	2	1	0	0	4	6	2.9	Med	Y	
OPP-017	USC	Design	Minimum	Nick Freeman	Design optimization - process units	Master planning approach to optimise the size of process units for the life of the facility	Reduced materials from optimised size of process unites (confirm with Nick Freeman)	Permanent			Design						0							0	0	0	Med	Y	
OPP-018	Pipelines	Design	Minimum	Rex Taka	Design optimization - pipe diameter	Master planning approach to optimise the pipe diameter for the pipeline for the life of the facility	Reduced materials from optimised pipe diameters in pipeline (reduction of concrete, sand, excavated material)	Permanent									0							0	0	0	Med	Y	
OPP-019	AWRC	Design	Minimum	Nick Freeman	Design optimization	Overall facility plans results in significant rationalisation of civil & mech unit installation	Reduced materials from rationalised civil and mech unit installation (confirm with Nick Freeman)				Design						0	2	2	0	1			5	5	2.25	Med	Y	
OPP-020	USC	Office Waste	Minimum	Michelle Huang	Coffee Cup recycling - Simply Cups	Coffee cups are recycled and repurposed into other products	increase office waste diversion from landfill										0							0	0	0	Med	Y	
OPP-021	USC	Office Waste	Minimum	Michelle Huang	Close the Loop - Battery recycling	Recovery rate of 95% of all batteries in Aus - partnered with Envirostream	increase office waste diversion from landfill										0							0	0	0	Med	Y	
OPP-022	USC	Office Waste	Minimum	Michelle Huang	Close the Loop - Printer Cartridge recycling	Partner with close the loop to take back empty printer cartridges to be repurposed into other product i.e. TonerPlas	repurposing of toner cartidges - increasing office waste diversion from landfil										0							0	0	0	Med	Y	
OPP-023	AWRC	Pavement	Stretch	Belinda Dechnik	Engineered permeable pavement	https://porouslane.com.au/applications/	Divert waste tyres from landfills by reusing them in an engineered permeable pavement. pavement lessen risk of flash flooding/Heat Island effect-UDLP	Temporary Works or Permanent	Potentially State First - Only Used in VIC		Design						0							0	0	0	Med	Y	
OPP-024	AWRC	Piping	Stretch	Daniel Hipwell	Deviation from CRP to BLACKMAX	BLACKMAX pipes for permanent scope – https://www.iplex.com.au/assets/Environment-Sustainability/Iplex-BlackMAX-and-SewerMAX-Polypropylene-Pipes-EPD-HR-v2.pdf -	EPD- transparency in emissions-link to RSO-7	Permanent	Potentially State First		Design																	
OPP-025	USC	Spoil	Minimum	Michelle Huang/Alex Lazarou/Rex Taka?	Reuse of site won material (spoil)	Reuse of all site won material as fill on site - Opportunity to purchase recycled material from elsewhere	Note EIS (App Z) stated only 20% of spoil to be re-used on site. Latest design has a shortfall in spoil material??	Permanent			Design / Procurement / Construction	Confirm owner and how much spoil will be needed / excavated																
OPP-026	Pipelines	Spoil	Stretch	Belinda Dechnik	Reuse of site won material (spoil - ASS)	Treatment of ASS on site and treated fill reused on site. Possible ASS loacted near and aroud prospect creek in the eastern portion of the brine pipeline (underbore)?	eliminate waste haulage costs, zero embodied emission of site won spoil, increase in waste diversion from landfill (target)	Permanent			Design / Construction																	
OPP-027	AWRC	Steel	Minimum	Sustainability and Procurement Team	Responsibly Sourced Structural Steel	At least 60% of fabricated structural steelwork is supplied by a steel fabricator / steel Subcontractor accredited to the ASI Environmental Sustainability Charter (ESC) or equivalent scheme to be approved by TfNSW.	eliminate waste haulage costs, zero embodied emission of site won spoil, increase in waste diversion from landfill (target)	Permanent			Procurement / Design																	
OPP-028	AWRC	Steel	Stretch	Michelle Huang	Energy efficiencient reinforcement steel	Polymer Inject Technology (PIT) uses recycled polymers (such as car tyres) as an alternate carbon injectant to produce foaming slab in the steel making process	Ensures compliance with Industy best practice Reduced embodied carbon through the use of recycled material in steel making process, improved electrical energy effiency, improved heat transfer, decreased heat loss.	Permanent																				
OPP-029	AWRC	Waste	Stretch	Belinda Dechnik/Daniel Hipwell	Worm Farm	Takes effluent from construction compound and turns it into a primary treated liquid used for irregation of landscape as oppose to pumping out and disposal as a liquid waste	Circular economy	Temporray	Possible innovation		Construction																	
OPP-030	Pipelines	Waste	Minimum	Alyce Harrington	Eucalypt leaves as Koala feed	Divert green waste from landfill to Koala feed for Sydney Zoo/Featherdale wildlife Park. Koala feed impacted by recent flooding over the last 12 months	Circular economy	Permanent		No	Construction	Also a CoA- will be coordinated by enviro team																
OPP-031	Pipelines	Waste	Stretch	Alyce Harrington/Belinda Dechnik	Treatment of weeds (greenwaste)	Treatment of weeds (greenwaste) to be re-used as compost material to divert from landfill. Can buy back once treated and used as part the rehabilitation mangement plan or UDLP	Circular economy	Permanent			Design / Construction	Awaiting award of clearing contractor																
OPP-032	AWRC	Waste	Minimum	Nick Freeman	Reuse of Plant output	100% re-use of biosolids	Waste diverted from landfill	Permanent			Operations	Aleady agreed and actioned in design?																
OPP-033		Waste	Minimum	Michelle Huang/Alex Lazarou	Boral-circular economy	Boral- take project C&D waste and return as recycled aggregate products	Circular economy				Construction																	
OPP-034																												
OPP-035	AWRC	Materials	Mark Trethewy	Alternative Materials / Impact Reduction	Emesh for non-structural concrete (civil & pavement)	Reduce embodied CO2 emissions associated with reinforcing steel			Yes - refer SD-001	NA	NA																	
OPP-036	AWRC				Bio-San additive into concrete for anerobic tanks and inlet works				Potentially State First - Only Used in VIC	No																		
OPP-037	Pipelines	Circular Economy - Materials			Pipeline material																							
OPP-038	AWRC	Circular Economy - Materials	Jeff Powell/ Daniel Hipwell	Alternative Materials / Impact Reduction	Polyrock - aggregate replacement in concrete. Potential use in walkways.	Reduced embodied CO2 emission through replacement of quarried aggregates to plastic rocks	Permanent	Potentially State First - Only Used in VIC																				
OPP-039	AWRC	Circular Economy - Materials	Jeff Powell/ Daniel Hipwell	Alternative Materials / Impact Reduction	Polyrock - aggregate replacement in concrete. Potential use in Project compound.	Reduced embodied CO2 emission through replacement of quarried aggregates to plastic rocks	Temporary	Potentially State First - Only Used in VIC																				
OPP-040	AWRC	Energy	Henry Zhang/ Nikhil Patil	Compound Solar Array	Install 30W solar for compound power generation and electric vehicle charging		Temporary																					
OPP-041	AWRC	Circular Economy - Materials	Jeff Powell/ Daniel Hipwell	Alternative Materials / Impact Reduction	Geopolymer concrete for compound base slab - refined process of dry mixing all components at the batch plant and add water at site to prevent further slumping issues	Rediced embodied carbon	Temporary	Potentially Australaia first based on refined process of combing all components in a dry mixture then adding water at site																				
OPP-042	USC	Energy	Brad Johnstone	Electric Vehicles	Elective vehicle replacement of traditional diesel utes for Project use.																							
OPP-043	AWRC	Water	Daniel Hipwell	Site Water capture - Rainwater tanks	Rainwater tank establishment																							
OPP-044	AWRC	Water	Daniel Hipwell	Smart meter set up on tanks and water sources including standpipes																								
OPP-045	Pipelines	Energy	Belinda Dechnik	Satellite Compound Power Setup	Assessment of multiple solar power generator options and hydrogen																							
OPP-046	AWRC	Circular Economy - Materials	Daniel Hipwell	Deviation from CRP to Blackmax																								
OPP-047	AWRC	Circular Economy - Materials	Daniel Hipwell	Glass Reinforced Concrete Pits - https://civilmart.com.au/products/stormwater-drainage/grc-pits-stormwater/																								
OPP-048	USC	Energy	Belinda Dechnik	Biodiesel																								
OPP-049	USC	Circular Economy - Materials	Mark Trethewy/ Daniel Hipwell	Asphalt/ Binder	Use of 100% RAP or ecolabelled binder/sealant on compound temporay and		Temporary Works or Permanent																					

A-4 Sustainability Risk and Opportunities Dashboard

RiskTrend™ - JV Tenders - Sustainability Demo

Risk Overview (Risk Data Date: 31/07/2023)

Please Note: Opportunities are positive +; Threats are negative -; DML = Deterministic Most Likely

Risk Count - Number of Open Risks

	This Month	Last Month	Change
All Open Risks	23	0	23
Financial Impact	0	0	0
Schedule Impact	0	0	0

Financial Summary - Risk Index

Title	This Month	Last Month	Change
Threats	-1,010	0	-1,010
Opportunities	246	0	246
Total:	**-764**	**0**	**-764**

Opportunity Summary

Open Opportunities by Rating

Rating	Open Opps	Open Controls	Without Open Controls
Extreme	0 0	0 0	0 0
Very High	0 0	0 0	0 0
High	2 0	2 0	0 0
Moderate	6 0	4 0	2 0
Low	4 0	1 0	3 0
Total:	**12 0**	**7 0**	**5 0**

Top 5 Movements

Risk ID	Title	Current Risk Index	Last Risk Index	Movement
USC230710	Addressing employment barriers by providing public transport at Kemps Creek	90	0	90
USC230723	Quality Management Systems	60	0	60
USC230702	On-site solar generation for AWRC construction site	15	0	15
USC230708	Training and employment opportunities for diverse groups in Western Sydney	15	0	15
USC230709	Supporting the growth of Aboriginal and Torres Strait Islander business sector.	15	0	15
Total:		**195**	**0**	**195**

Threat Summary

Open Threats by Rating

Rating	Open Threats	Open Controls	Without Open Controls
Extreme	0 0	0 0	0 0
Very High	0 0	0 0	0 0
High	10 0	6 0	5 0
Moderate	1 0	0 0	1 0
Low	0 0	0 0	0 0
Total:	**11 0**	**6 0**	**6 0**

Top 5 Movements

Risk ID	Title	Current DML Value	Last DML Value	Movement
USC230714	Industry skills shortage affecting availability of competent workers for governancemanagement	-150	0	-150
USC230712	Failure to meet Infrastructure Skills Legacy Program and WIC targets	-120	0	-120
USC230711	Failure to meet 3 percent Aboriginal Participation Spend target	-120	0	-120
USC230717	Unapproved Negative impact to Fauna or Flora protected by the EPBC Act andor BC Act	-90	0	-90
USC230713	Traffic affecting local businesses	-90	0	-90
Total:		**-570**	**0**	**-570**

Top 10 Opportunities by Risk Index

Risk ID	Category	Title	Current Risk Index	Period Movement	Current Rating	Residual Rating	Control Effectiveness	Open Controls (Open Actions)
USC230710	Reputation - Community - Media	Addressing employment barriers by providing public transport at Kemps Creek	90	90	High	High	Partial	• Establish a shuttle bus service (0)
USC230723	Quality	Quality Management Systems	60	60	Moderate	Moderate		• No Controls
USC230702	Environment and Natural Resources	On-site solar generation for AWRC construction site	15	15	Moderate	High		• Sustainability Management Plan (0)
USC230708	Reputation - Community - Media	Training and employment opportunities for diverse groups in Western Sydney	15	15	Moderate	High		• Seek out job opportunities within USC and subcontractors (0)
USC230709	Reputation - Community - Media	Supporting the growth of Aboriginal and Torres Strait Islander business sector.	15	15	Moderate	High	Partial	• Encourage suppliers to seek out supply chain and partnership opportunities with Aboriginal and Torres Strait Islanders. (0)
USC230715	Environment and Natural Resources	Remote IO	15	15	Moderate	High		• Design investigation and implementation (0)
USC230706	Environment and Natural Resources	Reduction in excavation needed for pipelines smaller impact area and less spoil	10	10	Low	Moderate		• Design investigation and implementation (0)
USC230716	Management Impact	Data management systems enhancement for governance purposes	10	10	Low		In Planning	• No Controls
USC230707	Reputation - Community - Media	Fowler Reserve natural rehabilitation community initiative	5	5	High	Very High		• Assessment of viability (0)
USC230704	Environment and Natural Resources	Re-use of water in hydrostatic testing avoidance of significant quantities of water	5	5	Low		In Planning	• No Controls
USC230703	Reputation - Community - Media - Local Economy	Opportunity to collaborate with local indigenous supplier for AWRC plantings	4	4	Moderate		In Planning	• No Controls
Total:			**244**	**244**				

A-5 Significant Decision-Making MCA

Example MCA

Weighted Multi-Criteria Analysis for Significate Decision-Making

Workshop date	TBC
Author(s)	TBC
Decision	What is the best way to protect concrete from sulphuric acid attack?

Score	Level	Definition
0	Not Viable	Cannot proceed
1	Poor Outcome	Significant issue or risk to manage
2	Moderate Outcome	Minimum acceptable outcome with issues or risks to be addressed
3	Strong Outcome	Great outcome with no material issues or risks to be managed
4	Exceptional Outcome	Enhanced outcome with high impact benefits

	Criteria	Criteria weighting	Weighting justification	Score: Option 1 HDPE Liner	Score: Option 2 Epoxy Coating	Score: Option 3 BioSan C500	Score comment / justification	Workshop feedback
Safety	Safety - D&C	10%	Large safety component to the challenge being addressed	2	2	4	Option 1. Welding in restricted spaces Option 2. Application in restricted places Option 3. Added to concrete in batching plants (removal of BaU safety risks)	
	Safety - O&M	10%	Large safety component to the challenge being addressed	2	1	4	Option 1 and 2 - similar to construction risk profile as maintenace requires similar work to construction (grinding, restricted spaces, chemicals). Option 3 lessens maintenance risks as longer life of concrete and removes restricted spaces etc. risks.	
Environment	Environmental impacts	5%	Minor potential environmental impacts	3	3	4	1. Minimal waste (however operational risk of cleaning) 2. Waste removal of containers 3. Application away from site	
	Planning Approvals and licences	5%	Minor potential environmental impacts	3	3	3	Option 1 and 2 - BaU. Option 3 no change to BaU.	
Resource Efficiency	Resource Efficiency - D&C	5%	Potential impact on resource use (material/chemcial inputs)	2	2	3	Option 1 and 2 - material/chemical inputs needed. Option3. Additive to concrete	
	Resource Efficiency - O&M	3%	Potential impact on resource use (material/chemcial inputs)	2	2	4	Option 1 and 2 - ongoing material/chemical inputs needed Option 3 - reduces need for ongoing inputs (extends time until major maintenance)	
	Social cost of carbon ($20 tCO2e)	2%	Small impact on emissions	2	1	3	Option 3 requires less material inputs than the epoxy and HDPE. Option 1 - 3.03E+03 kg CO2 eq/unit Option 2 - 3.80E+0 kg C02 eq/unit Option 3 - Xypex Similar Product Used as no EPD available - 1.8 kg C02 eq/unit	
Future-proofing	Climate change mitigation and resilience	0%	NA - no impact					
	Adaptability and end-of-life	3%	Potential small impact to adaptability/end-of-life/etc.	3	3	3	All the same, no impact to end-of-life or Stage 2	
Social and Economic	Key external stakeholders	0%	NA - no impact					
	Key internal stakeholders	10%	Internal stakeholders affected	3	2	1	Option 1 and 2 - BaU included in specs etc. . Option3 - requires additional approval and stakeholder buy-in	
	Urban Design	0%	Not applicable - no impact to visual					
	Economic	0%	NA					
	Disruption to existing transport networks, services and utilities including users	2%	Impacts to road from delivers etc.	3	3	3	Differences in deliiveries / trucks on road but likely similar outcomes	
Quality	Compliance to existing standards, specifications and relevant contractual requirements - D&C phase	5%	Potential to impact on standards/specs/contract requirements	3	3	1	Option 1 and 2 current complies with existing specs Option 3 - new product, needs technical review and approval before proceeding	
	Compliance to existing standards, specifications and relevant contractual requirements - O&M phase	5%	Potential to impact on standards/specs/contract requirements	3	3	1	Option 1 and 2 current complies with existing specs Option 3 - new product, needs technical review and approval before proceeding	
Schedule	USC milestones (including AWRC and/or Pipelines)	5%	Potential for impact to milestones	2	2	4	Option 1 and 2 - large risk to existing construction milestones for epoxy coatings (humidity, rainfall, etc. etc.) Option 3. Removal of HDPE & Epoxy existing activites. Removal of risk time for install of HDPE lining and epoxy. Risk in timing of spec approval (currently unknown)	
Value for Money	Capital expenditure	20%	Impact on CapEx	2	2	4	Option1. BaU Option2. BaU Option3. Exceptional improvement	
	Operational expenditure	10%	Potential impact on OpEx	3	2	2	Option 1 and 2 - BaU (20-30 year replacement life) Option 3 - new technology, maintence reduces but major maintenance needed at end of life. Potential for under performance in the future as new product - however excellent data coming from existing trials in US and South Australia.	
	Total:	100%						

Sustainability criteria: (must be >20%)	55%

Total: Option 1 HDPE Liner	Total: Option 2 Epoxy Coating	Total: Option 3 BioSan C500	Comment on Total
6.1	5.3	7.6	

Options Assessment

Multi-disciplinary team

Decision

Contract award scope

1. Potential improvement identified (either design or construction related)

"Major Design Change" thresholds test Refer adjacent

Below threshold

Not "significant"

Above threshold

Significant Decision

Options Assessment

Weighted Multi Criteria Analysis

CRITERIA*	WEIGHT**	OPTION 1	OPTION 2
CapEx	1		
OpEx***	0		
Enviro	4		
Social / Stakeholder	4		
Economic	4		
Social Cost of Carbon	2		
		Score	Score

Multi-disciplinary team to review relative merits of each option

Decision

Yes

End of Process

No

Reason for Decision

Documentation:	Sustainability Management Plan (or Project Management Plan)	Project Initiative and Innovation Register (potentially internal only)	Project Significant Decision Register	Weighted MCA Tool; and PowerPoint Summary	Attendance list; Minutes from Reference Group meeting	Significant Decision Report

3. Procurement Packages

Supply Chain Risk & Opportunity Assessment

Non-identified material, service, plant and equipment

Not "Significant"

Identified material, service, plant and equipment

Options Assessment - Procurement

Weighted Multi Criteria Analysis

CRITERIA*	WEIGHT**	TENDERER 1	TENDERER 2
CapEx / OpEx***	1		
Enviro	4		
Social	4		
Economic	4		
		Score	Score

Tender submissions (i.e. options) reviewed and assessed by multi-disciplinary team

Decision

Documentation (TBC):	Procurement Management Plan	Tender return record / register	Records of assessment of tenders	Final contract award list

A-6 IS Verified Materiality Assessment

IS v2.1 Design & As Built Scorecard

Country: **Australia**

Rating stage: **Design**

Category	Credit	Question 1	Answer	Question 2	Answer	Question 3	Answer	Materiality	Alternative Materiality	Justification where alternative proposed	Final Materiality	Points Available	Suggested Evidence	Evidence supplied	R1 Assessor comments	R1 Verifier feedback	R2 Assessor comments	R2 Verifier feedback
Place	Pla-2	Is the project a local, regional or nationally significant development?	Yes	Does the project or completed asset interface with residential, public use, mixed use areas, national parks, or land considered important to local indigenous communities?	Yes			4	3	The Upper South Creek Project has reviewed the verifier R1 commentary and agrees with the proposed alternative materiality value of 3. The Project accepts the materiality reduction as the most appropriate final materiality for the credit in relation to the Project currently.	3	3.95	• Project planning documentation demonstrating project purpose • Location map showing proximity to various sensitive land use types	WA1a. USC - Executive Summary	The Sydney Water Upper South Creek (USC) Project is Critical State Significant Infrastructure (SSI 8609189) that spans five Local Government Areas (LGAs) and will provide essential wastewater treatment and water recycling services to meet Western Sydney's current and future growth needs, including the Western Sydney 'Aerotroplis' growth area. The Project has been conceptualised into two primary parts. The Advanced Water Treatment Centre (AWRC) and the Pipelines (including the 'brine pipeline, and the 'treated water pipeline'). Note that an 'environmental flow pipeline' was included in the Planning Approvals however, this pipeline has not been included in the current design and construction scope and does not form part of this ISC rating. 1. For a more detailed scope overview, please refer to WA1a. USC - Executive Summary [Section 4 Project Description, page 18] 2. For an overall map of the location of the AWRC and both pipelines, refer WA1a. USC - Executive Summary [Figure ES2: Overview of the project site and pipelines, page 19] 3. Visualisation of AWRC site (showing adjacent receivers), refer WA1a. USC - Executive Summary [Figure ES3 Indicative visualisation of AWRC site, page 21] 4. Map showing the length of the treated water and the brine pipelines through various LGAs refer WA1a. USC - Executive Summary [Figure ES6 Brine pipeline alignment, page 21] Note on materiality for pipelines: although place-making and urban design are integral to the AWRC site, the pipelines post-construction will be entirely underground therefore place-making / urban design is considered immaterial for the project outside of the ARWC site and its integration into the immediate area. Refer WA1a. Executive summary (paragraph "All pipelines will be underground…", page 27]	Very High Materiality Verified. High Materiality recommended, and if selected, verified. I am prepared to accept a Mat score of 4 if that is the project's considered opinion; however, it appears to over-state the significance of this credit. A Mat score of 3 seems more suitable.	The USC Project accepts the verifier proposed lower alternative materiality. Note: While the Project assessor accepts the revised materiality as the more appropriate materiality for the green space at the Advanced Water Treatment Plant currently, please note the proponent (Sydney Water) is currently undertaking a high-level assessment regarding the staging and development within Stage 1 that John Holland is contracted to construct. Sydney Water is assessing the viability of transitioning the AWRC green space surrounding the facility from private to public access. The access would be transitioned if components of the urban design concept master plan are elected for construction in Stage 1 rather than the currently forecasted Stage 2. The assessor would like to flag at this time to the verifier that if the above-stated changes are confirmed, the	Verified: 18/04/2023
Leadership and Planning	Lea-1							2			2	3.01	N/A		N/A	Verified		
	Lea-2											1.88						
	Lea-3											1.88						
Quality Procurement	Spr-1							2			2	2.26	N/A		N/A	Verified		
	Spr-2											1.88						
	Spr-3											1.88						
Resilience	Res-1	Is the project/ asset located in an area which is vulnerable to climate change and/or natural hazards?	Yes	What is the asset life?	Medium (10 - 75)	Have the community and key stakeholders expressed concerns about climate and/or natural hazard risks related to the project?	Yes	4			4	3.76	•Design life •Mapping or projections showing vulnerability to natural hazards and climate change (e.g. fire prone land mapping.) • Stakeholder consultation data; stakeholder input at materiality workshop	WA1g. Sustainability and resource management impact WA1k. Determination Report Assessment Report WA1p. EIS Project Information and Consultation Part 2	1. Vulnerability The project's climate change risk assessment was initially completed during the planning phase. A summary of the climate change risk assessment and proposed adaptation responses included risks such as flooding, increased wet weather events affecting peak flows and bushfire–related risks. Refer to WA1g. Sustainability and resource management impact [Section 12.1.7 Climate change risk assessment, page 969] 2. Asset life The project has a range of different types of asset types which will be included in the final design each with different estimated asset life spans. These include: •structuries and civil (excluding building): about 100 years •buildings: about 50 years •pumps and motors: about 30 years •electrical assets: about 30 years •general mechanical assets: about 20 years •control assets: about 15 years •general mechanical assets: about 20 years The Project has selected "Medium (10 - 75)" to provide a reasonable average of the various components' design life. Refer WA1p. EIS Project Information and Consultation Part 2 [Section 4.4.3 Design standards, page 119] 3. Stakeholders Regarding stakeholder concerns, although 'climate change' was not a key issue raised by stakeholders, 'flooding' (i.e. natural hazard) was raised as a key issue. For this reason, the Project has responded 'Yes' to the final question in the materiality assessment. Refer WA1k. Determination Report Assessment Report [Section Community Engagement, page vii]	Verified, 14/3/2023			
	Res-2	Does (or will) the project/ asset serve a critical role in the community/ locality? i.e. would asset failure have a significant impact?	Yes	Has the local region historically had significant exposure to a number of shocks and stresses (see Table G21)?	Yes	Have the community and key stakeholders expressed concerns about resilience in a local or regional context?	Yes	4			4	6.02	•Project planning documentation demonstrating asset criticality and interdependencies •Mapping showing vulnerability to relevant shocks and/or natural hazards •Local resilience strategy • Stakeholder consultation data; stakeholder input at materiality workshop;	WA1h. Sustainability and resource management impact	As mentioned above, the planning approval documentation highlighted risks such as flooding, increased wet weather events affecting peak flows and bushfires as the primary risks. Refer WA1h. Sustainability and resource management impact [Section 12.1.7 Climate change risk assessment, page 969].	Verified, 14/3/2023		
Innovation	Inn-1							2			2	10.00	N/A		N/A	Verified		
Decision Assessment	Ecn-1							2			2	3.76	N/A		N/A	Verified		
Energy and Carbon	Ene-1	What is the asset type?	Water (wastewater)	Does construction involve earthmoving and/or use of diesel plant and equipment (i.e. energy intensive)? Does the construction involve tunnelling?	Diesel plant and equipment	How energy intensive is the asset operation?	Medium (e.g. water treatment/supply, communications assets, significant mechanical ventilation requirements)	4		The Upper South Creek Project has reviewed the verifier R1 commentary, the Project acknowledges the verifier's point of energy consumption and agrees that wastewater treatment plants typically are significant operational power consumers and that the construction of such a plant from a greenfield site will additionally generate an increased energy demand. As such the Project accepts increasing the credit materiality to 4 (very high) and the value of points associated with reducing energy demand and undertaking all activities as efficiently as possible towards the achievement of the Ene-1 credit as the most appropriate final materiality for the credit in relation to the Project currently.	4	5.64	•Construction and maintenance methodology •Operational energy activities or projections	WA1c. Air Quality Impact Assessment WA1a. USC - Executive Summary WA1a. Refer to Appendix Y Ecologically Sustainable Development	1. Construction phase The project will use diesel and electricity in the construction phase for both the plant and the network of treated water and brine pipelines. The Project's advanced water treatment plant site will require the use of diesel plant and equipment to complete such activities as earthworks, excavation for detention basins, civil works and structure construction. Refer to WA1c. Air Quality Impact Assessment [Section 8.1 Construction, page 27], WA1a. USC - Executive Summary [Figure ES7 and Figure ES8, page 27] and WA1a. USC - Executive Summary [Section 4 Project Description, page 18]. For the anticipated Scope 1, 2 and 3 GHG emissions profile for construction and operations, refer WA1a. Refer to Appendix Y Ecologically Sustainable Development [Appendix B GHG Assesment, Table 4 (see column 3 "Development phase: construction"), page 5-14 (page 117-126 of PDF]	Not verified. Please consider a Mat score of 4. Given the energy required in operations as well as construction, this seems to be very high materiality.	The USC Project accepts the verifier proposed higher alternative materiality.	Verified: 18/04/2023
	Ene-2							3		The Upper South Creek Project has reviewed the verifier R1 commentary, the Project acknowledges the verifier's point of energy consumption and agrees that wastewater treatment plants typically are significant operational power consumers and that the construction of such a plant from a greenfield site will additionally generate an increased energy demand. As such the Project accepts increasing the credit materiality to 4 (very high) and the value of points associated with the replacement of non-renewable energy sources with renewable towards the achievement of the Ene-2 credit as the most appropriate final materiality for the credit in relation to the Project currently.	4	3.76		WA1a. USC - Executive Summary WA1x. Appendix Y Ecologically Sustainable Development	2. Operational phase As above, the asset type is a water treatment plant that uses energy to treat water and pump it to the appropriate offsite locations. The asset will include renewable energy technologies on-site to reduce the reliance on electricity purchased from the grid. Refer WA1a. USC - Executive Summary [Section 4 Project Description, page 18] For the anticipated Scope 1, 2 and 3 GHG emissions profile for construction and operations, refer WA1x. Appendix Y Ecologically Sustainable Development [Appendix B GHG Assessment, Table 4 (see column 3 "Development phase: operation"), page 5-14 (page 117-126 of PDF]	As above	The USC Project accepts the verifier proposed higher alternative materiality.	Verified: 18/04/2023

	Ene-3								2	The Upper South Creek Project has reviewed the verifier R1 commentary for the energy category to increase the materiality of Ene-3 to a materiality of 4, in alignment with Ene-1 and Ene-2 and proposes alternatively that the materiality be reduced to a 2. The Project's justification for the alternative is in alignment with the reasoning for the increase in materiality for Ene-1 and Ene-2. The Project agrees with the verifier that the first three steps of the energy and carbon reduction hierarchy defined in the ISv2.1 TM (pg. 143) relating to elimination and substitution prior to offsetting are the most important in relation to the Upper South Creek Project and should be prioritised by the Project team. The Project proposes the reduction in materiality as it aligns with the Project's sustainability objectives and targets of the Project to firstly maximise emission reductions and secondly replace with solar and other sustainable energies. The Project team believes that prioritising the materiality reduction and replacement in	**2**	**0.94**				As above	The USC Project seeks verifier feedback on the alternative lower materiality proposed in response to verifier feedback on the energy category.	Materiality score of 2 for Ene-3 verified as per project's request: 18/04/2023
Environmental impacts	**Env-1**	Is there a risk of pollution to waterways from discharges (including groundwater)?	Yes	Are the receiving waters considered ecologically sensitive?	Yes	Are the receiving waters highly valued by stakeholders, including the local community?	Yes	4			**4**	**2.60**	•Construction and maintenance methodology •Location mapping demonstrating receiving waters •Stakeholder consultation data; stakeholder input at materiality workshop	WA1a. USC - Executive Summary WA1w. Upper South Creek Environmental Impact Assessment WA1k. Determination Report Assessment Report	1. Proximity The project is in close proximity to waterways during operation and construction and will discharge to waterways. A map of the entire project boundary showing proximity to various waterways can be found WA1a. USC - Executive Summary [Figure ES2: Overview of the project site and pipelines, page 19]. 2. The treated water pipeline discharges into the Nepean River, the Blue Mountains World Heritage Area is located along the Nepean river bank and is classified as a Matter of National Environmental Significance under the EPBC Act. Refer to WA1w. Upper South Creek Environmental Impact Assessment [Section 8.5.2, page 33] and [Figure 8-11 to 8-13, page 33-335] 3. Stakeholders Regarding stakeholder concerns, 'water impacts from treated effluent discharges to South Creek, Nepean River and Warragamba River' was a key issue raised by stakeholders. Refer WA1k. Determination Report Assessment Report [Section Community Engagement, page vii]			
	Env-2	Does the construction/maintenance/operation involve noisy activities (piling, grinding, rock hammering, demolition, blasting, tunnelling)?	Yes	How close are noise receptors?	< 10m away	Are project noise impacts an important issue for nearby residents, ecological receptors, or other land uses?	Yes	4			**4**	**2.59**	•Construction and maintenance methodology •Location mapping demonstrating population density and/or noise receivers •Stakeholder consultation data; stakeholder input at materiality workshop	WA1a. USC - Executive Summary WA1e. Noise and Vibration Impact Assessment WA1k. Determination Report Assessment Report WA1s. Brine Pipeline Reference Design WA1p. EIS Project Information and Consultation Part 2	1. Proximity The project is in close proximity to residential receivers along the pipeline construction routes. A map of the entire project boundary showing proximity to receivers can be found WA1a. USC - Executive Summary [Figure ES2: Overview of the project site and pipelines, page 19]. Regarding closest receivers, plans of the brine pipeline have been extracted to show the distance of the pipeline to receivers when construction begins in residential areas as being less than 10 meters. Refer WA1s. Brine Pipeline Reference Design extract for resident distances [all pages]. (The red line within the drawings indicates the exact route of the pipeline, noting that excavation is required on either side of this line in order to install the pipe itself). 2. Stakeholders Regarding stakeholder concerns, noise impacts during construction were considered an important issue for the project. Refer WA1k. Determination Report Assessment Report [Section Community Engagement, page vii]. For detailed responses for submissions received during public consultation, in relation to noise, refer WA1p. EIS Project Information and Consultation Part 2 [Section 6, Table 6-3, page 227] For further detailed information on noise refer WA1e. Noise and Vibration Impact Assessment.	Verified, 14/3/2023		
	Env-3	Does the construction/maintenance/ operation involve piling, grinding, rock hammering, vibratory rolling, tunnelling (vibratory activities)?	Yes	How close are vibration receptors?	< 10m away	Are project vibration impacts an important issue for nearby residents, ecological receptors, or other land uses?	No	4	3	The Upper South Creek Project has reviewed the verifier R1 commentary and agrees with the proposed alternative materiality value of 3. The Project accepts the materiality reduction as the most appropriate final materiality for the credit in relation to the Project currently.	**3**	**1.94**	•Construction and maintenance methodology •Location mapping demonstrating population density and/or vibration receivers •Stakeholder consultation data; stakeholder input at materiality workshop	WA1a. USC - Executive Summary WA1s. Brine Pipeline Reference Design extract for resident distances WA1p. EIS Project Information and Consultation Part 2	1. Proximity The project is in close proximity to residential receivers along the pipeline construction routes. A map of the entire project boundary showing proximity to receivers can be found WA1a. USC - Executive Summary [Figure ES2: Overview of the project site and pipelines, page 19]. Regarding the closest receivers, the same as noise impacts mentioned above, plans of the brine pipeline have been extracted to show the distance of the pipeline to receivers when construction begins in residential areas as being less than 10 meters. Refer WA1s. Brine Pipeline Reference Design extract for resident distances [all pages]. 2. Stakeholders Regarding stakeholders, although some responses were noted under a "noise / vibration" subject area, when reviewing in further detail it should be noted that all of these responses were in regard to noise only and none in response to vibration. Specifically, Section 6 within the EIS confirms that nearby residents and other land users did not raise concerns with vibration, only noise. Council as a likely party within "other land uses" responses are specific to noise. Liverpool, Penrith, and Wollondilly Shire all specify their queries on noise, not vibration. Refer WA1p. EIS Project Information and Consultation Part 2 [Section 6.4.3, page 231 onwards]	Very High Materiality Verified. High Materiality recommended, and if selected, verified. I will accept a Mat score of 4; however, they project may wish to consider a score of 3 (high).	The USC Project accepts the verifier proposed lower alternative materiality.	Verified: 18/04/2023
	Env-4	Does the construction involve significant earthmoving, tunnelling and/or use of diesel plant and equipment (i.e. air emissions)?	Yes	Are project air quality impacts an important issue for nearby residents, ecological receptors, or other land uses?	Yes			4			**4**	**2.59**	•Construction and maintenance methodology •Location mapping demonstrating surrounding population density and/or sensitive receivers •Stakeholder consultation data; stakeholder input at materiality workshop	WA1a. USC - Executive Summary WA1c. Air Quality Impact Assessment WA1k. Determination Report Assessment Report	1. Project scope As stated above, the project will use diesel and electricity in the construction phase for both the plant and the network of treated water and brine pipelines. The Project's advanced water treatment plant site will require the use of diesel plant and equipment to complete such activities as earthworks, excavation for detention basins, civil works and structure construction. Refer to WA1c. Air Quality Impact Assessment [Section 8.1 Construction, page 27], WA1a. USC - Executive Summary [Figure ES7 and Figure ES8, page 27] and WA1a. USC - Executive Summary [Section 4 Project Description, page 18]. 2. Air quality impacts Regarding air quality, the Air Quality Impact Assessment has two areas of potential air quality areas as follows: - Dust during construction of all proposed infrastructure; - Odour from the AWRC during operation. (Note that emissions from co-generation had been previously identified within the planning approvals as an area for air quality this has been removed from scope and will not be included in the Project going forward). Refer to WA1c. Air Quality Impact Assessment [Section 9 Conclusions, page 32] 3. Stakeholders Regarding stakeholder concerns, air quality, particularly odour, was raised as a key concern by stakeholders. Refer WA1k. Determination Report Assessment Report [Section Community Engagement, page vii]	Verified, 14/3/2023		
	Env-5	Does the construction/ maintenance/operation involve nightworks which requires lighting?	Yes	How close are light receptors?	> 100m away	Are asset lighting impacts an important issue for nearby residents, ecological receptors, or other land uses?	No	1			**1**	**0.41**	•Construction and maintenance methodology •Location mapping demonstrating surrounding population density and/or sensitive light receivers •Stakeholder consultation data; stakeholder input at materiality workshop	WA1k. Determination Report Assessment Report WA1o. No operational lighting on pipelines	1. Proximity From an operational lighting perspective, the project is located more than 100 meters from the closest receiver. For works on the pipelines, the construction stage will be closer to residential receivers (important for noise and air quality impacts) however no operational lighting will be installed outside of the fixed AWRC site. Refer WA1o. No operational lighting on pipelines [email chain]. The closest receiver to the AWRC site is >100 meters away. Refer WA1k. Determination Report Assessment Report [Figure 2. Page 5]. 2. Stakeholders Lighting was not considered to be a 'key issue' for stakeholders. This was determined through the Determination Report Assessment Report which summarised all submissions from key stakeholders. Refer WA1k. Determination Report Assessment Report [Section Key Assessment Issues, page iv and Section Community Engagement, page vii]. When lighting was considered by stakeholders, it was only raised from the perspective of the potential risk to distract pilots (given the proximity to the Western Sydney Airport). This risk has been mitigated by the design of the lighting scheme for AWRC to abide by the National Airport Safeguarding Framework (NASF) 2018 requirements. For more detail on this issue, refer WA1k. Determination Report Assessment Report [Section 6.9, page 125].	Verified, 14/3/2023		

Resource Efficiency and Management	Rso-1	What is the project construction materials spend as a percentage of the capital value?	Medium (10 - 50%)	Does the project involve significant earthworks/ tunnelling or significant resource output generation?	Yes	Is resource efficiency a significant focus in the project jurisdiction or for other key stakeholders?	Yes	3			3	2.26	•Construction and maintenance methodology •Relevant regional, local, or proponent policies and commitments •Stakeholder consultation data; stakeholder input at materiality workshop	WA1a. USC - Executive Summary WA1c. Air Quality Impact Assessment WA1h. Percent material spend WA1i. Western Sydney Aerotropolis Plan WA1j. Sydney Water One Strategy	1. Material spend The Project's material spend is estimated to be 16.64% of the total contract sum (i.e. medium). This includes the estimate for the plant and pipelines combined for all materials but does not include the cost of labour, plant / equipment costs to install the materials etc. For evidence, refer to the confirmation email from the Project Commercial Manager WA1h. Percent material spend [email chain]. 2. Tunnelling / earth moving The project will have significant earth-moving activities on the plant site to accommodate the permanent treatment structures. For the pipelines, although the excavations will be minimised as much as possible, they are still considered to be significant due to the length of each. Refer WA1a. USC - Executive Summary [Figure ES2: Overview of the project site and pipelines, page 19] and WA1c. Air Quality Impact Assessment [Section 8.1 Construction, page 27] 3. Relevant strategies/commitments There are several overarching policies/plans that the Project has sought to incorporate and abide by. Generally, these plans refer to optimising resource use and efficiency. Two of the primary documents are given as examples. Firstly, the Western Sydney Aerotropolis Plan (overarching regional Plan) and Sydney Water's "Our strategy blueprint 2020-2030". The Western Sydney Aerotropolis Plan has specific objectives for resource efficiency and circular economy targets: SRO4) Buildings, infrastructure and public domain elements maximise the recycling and reuse of materials SRO5) Facilitate the design, construction and operation of environmentally sustainable buildings and precincts, including energy efficiency, renewable energy, efficient resource and energy use and reduced emissions and waste; SRO6) Effectively uses waste as a resource through its collection, transport and recycling in a manner that is safe, efficient, cost-effective and does provide a positive impact on liveability and the environment. Refer WA1i. Western Sydney Aerotropolis Plan [Section Sustainability targets, page 42] The Sydney Water "Our strategy blueprint 2020-2030" focuses on "Embracing a circular economy" by creating value for customers and communities by embracing circular economy practices with the use of water, energy and materials to	Verified, 14/3/2023			
	Rso-2	Has it been concluded that there is low or none risk of contamination on site?	Yes	Is contamination an important issue for, or risk to nearby residents or other land uses? E.g. if contaminated groundwater is migrating beyond the asset boundary	No			1			1	0.38	•Contamination investigations and studies •Stakeholder consultation data; stakeholder input at materiality workshop	WA1a. USC - Executive Summary WA1k. USC – Determination Assessment Report WA1t. USC AWRC Submissions Report WA1u. Att A_Consolidated agency and council response	1. Risk of contamination The potential for contamination was investigated during the planning phase, with "no widespread contamination" identified. Similarly, operational impacts are expected to be minimal due to the negligible ongoing ground disturbance after the construction phase is completed. Refer WA1a. USC - Executive Summary [Section 7.8 Soils and contamination, page 42] for a summary of the contamination impacts. 2. Stakeholders As noted above, the risk of wide-spread contamination is low both onsite and for adjacent land owners/users. Regarding stakeholder concerns, contamination was not considered an important issue for nearby residents or other land uses as summarised within the Determination Report released in November 2022. Refer WA1k. USC – Determination Assessment Report [Section Community Engagement issues, page vii]. It should be noted, prior to the Determination Report being released, routine queries were submitted by the Environment Protection Authority (EPA) and Councils regarding potential contamination, these submissions were included in the Sydney Water USC AWRC Submission Report, dated March 2022: - EPA's submissions (Sections 5.10.40-45). These sections contain each query/issue raised by the Environment Protection Authority (EPA) and the Sydney Water response summarising any amendments made to the Planning Approvals or management methods in response. Refer WA1t. USC AWRC Submissions Report [Sections 5.10.40 - 5.10.45, page 246-250] - Liverpool City Council (Section 6.3.12). This section summarises Liverpool City Council's comments on soils and contamination and Sydney Water's accompanying full response. Refer WA1t. USC AWRC Submissions Report [Section 6.3.12, page 313] - Penrith City Council (Section 6.4.28). Similarly, this section states the Council's issues and provides detailed responses from Sydney Water on how each query has been addressed and accounted for in the Planning Approvals. Refer WA1t. USC AWRC Submissions Report [Section 6.4.28, page 352-353]	Verified, 14/3/2023			
	Rso-3	Has it been concluded that there is low or none risk of Acid Sulfate Soils (ASS) on site?	Yes					1			1	0.38	•Contamination investigations and studies	WA1a. USC - EIS Executive Summary WA1r. Soil and Contamination Impact Assessment	As mentioned above, no widespread contamination was found during the planning phase. Specifically, the risk of Acid Sulfate Soils has been noted as low to none. The assessments identified a small section of land within the project pipelines boundary that has been identified as having the potential for Potential Acid Sulfate Soils (PASS). This are would constitue less than 1% of the total Project construction footprint. This area is highly localised near the Georges River and Prospect Creek. WA1a. USC - EIS Executive Summary [Section 7.8 Soils and contamination, page 42]. Moreover, within this localised area, the potential for potential acid sulfate soils was only noted for the land >2mbgl (below ground level) which is currently highly unlikely to be disturbed based on excavation profiles (refer to WA1r. Soil and Contamination Impact Assessment [Section 4.12, page 66]. If the level of impact to this potential PASS/ASS area changes significantly in the future during detailed design, then the materiality will be reassessed in accordance with the Project Acid Sulfate Soil Management Plan or equivelant Project plan.	Verified, 14/3/2023			
	Rso-4	What is the project construction materials spend as a percentage of the capital value?	Medium (10 - 50%)	Does the project involve significant earthworks/ tunnelling or significant resource output generation?	Yes	Is resource efficiency a significant focus in the project jurisdiction or for key stakeholders?	Yes	3			3	2.26	•Construction and maintenance methodology •Relevant regional, local, or proponent policies and commitments •Stakeholder consultation data; stakeholder input at materiality workshop		Refer to discussion and evidence within Rso-1	Verified, 14/3/2023			
	Rso-5	What is the project construction materials spend as a percentage of the capital value?	Medium (10 - 50%)	Is resource efficiency a significant focus in the project jurisdiction or for other key stakeholders?	Yes			3			3	2.26	•Construction and maintenance methodology •Relevant regional, local, or proponent policies and commitments		Refer to discussion and evidence within Rso-1	Verified, 14/3/2023			
	Rso-6	What is the project construction materials spend as a percentage	Medium (10 - 50%)	Is operational materials spend (replacement and maintenance)	No			2			2	3.38	•Construction and maintenance methodology		Refer to discussion and evidence within Rso-1.	Verified, 14/3/2023			
	Rso-7							2			2	1.13							
Water	Wat-1	Does the project have high water use requirements for construction activities?	Yes	Does the asset operation/ maintenance have high water use requirements?	Yes	Is water use and efficiency a significant focus or issue in the project jurisdiction, or for key stakeholders?	Yes	4			4	4.51	•Construction and maintenance methodology •Relevant regional, local, or proponent policies and commitments •Stakeholder consultation data; stakeholder input at materiality workshop	WA1i. Western Sydney Aerotropolis Plan WA1j. Sydney Water Our Strategy WA1q. USC - Conditions of Approval	1. Water demand during construction The Project has deemed the need for water as 'high' for several reasons. The overall time frame for the AWRC and the Pipelines construction is approximately 36 months. Regarding types of water use, every project phase requires water to complete the construction. The main water uses during construction are: - water trucks for dust and stockpile suppression, - the use of water in high-pressure hoses to enable non-destructive digging (NDD) in areas where existing services need to be uncovered before further excavation - 'wetting down' areas during material import, excavation and compaction - water for use in site amenities - during horizontal directional drilling (HDD) which is the methodology needed for several section of pipelines, a mix of water (~95%) and bentonite (5%) is required in the underground excavation process - water for use at the commissioning of the AWRC and both pipelines (expected to be multiple megalitres (MLs)) In addition to the uses of water, the large geographical extent of the pipelines (~40kms) is another reason the Project has selected 'significant'. For a table of each construction phase, the associated activities, and the standard equipment needed for each phase (e.g. water trucks), refer WA1p. EIS Project Information and Construction Part 2 [Table 4-10 AWRC construction phases, timing, activities and required equipment, page 139-141] and [Table 4-11 Pipeline construction phases, timing, activities and required equipment] 2. Water use during operation The are several critical processes within the operation of the AWRC plant which require water as an input for treatment of incoming wastewater and sewage. Initial indications from the design team place the figure of water use in operations to be approximately 2.85 ML per day (however design is in early stages and this will be addressed in further detail during detailed design). Regardless of the exact figure, the operational phase of the water recycling centre will require significant water consumption to function. The new greenspaces will require water for irrigation, at least in the establishment period (although this will be minimised as far as possible and is far less than the treatment plant itself). 3. Relevant regional, local or proponent policies and commitments and stakeholders	Verified, 14/3/2023			
	Wat-2							4			4	4.51			As per Wat-1 above	Verified.			

Ecology	Eco-1	Is the construction land and contiguous areas previously disturbed?	Yes	What percentage of the land and contiguous areas is ecological habitat?	Low (<10%)	Is the ecological habitat remnant native vegetation or highly valued by stakeholders?	Yes	2			2	5.26	•Ecological impact assessment(s) •Mapping of biodiversity and/or flora and fauna •Stakeholder consultation data; stakeholder input at materiality workshop	WA1a. USC - Executive Summary WA1f. Biodiversity Assessment Part 1 WA1k. USC – Determination Assessment Report WA1l. Landscape and Visual Impact Assessment WA1m. Biodiversity Assessment – Part 7	Potential impacts to biodiversity were assessed in depth in the planning phase of the project. The EIS identified construction phase potential impacts as moderate and operational impacts were predicted to be minor. Refer WA1a. USC - Executive Summary [Section 7.4 Terrestrial biodiversity, page 38]. 1. Discussion on previously disturbed The Project area and contiguous areas are previously disturbed through a "long history of pastoral and agricultural farming, specifically, cattle, poultry, beekeeping and market gardens, supplying the Sydney market with products from 1800 to the mid-20th century. The majority of the study area remains peri-urban whilst suburban and urban development predominates to the east. The northern section of Kemps Creek currently contains land used for commercial agriculture including cattle grazing." Refer WA1f. Biodiversity Development Assessment Report [Section 6 Landscape context, page 41]. The AWRC is located in land currently zoned 'RU4 – Primary Production Small Lots', and 'ENZ – Environmental and Recreation'. Current land use includes grazing and agriculture. Rural lots and rural residential lots surround the AWRC with various riparian corridors traversing the locality, and dams dotted around the area. The Brine Pipeline would generally align with existing streets and roads in rural and residential suburbs. Most of the pipeline will be located in residential suburban areas that contain predominately low-density single and double storey detached dwellings with residential buildings near commercial areas. Refer WA1l. Landscape and Visual Impact Assessment [Section 3.2 Landscape and visual context, page 24] 2. Percent of land and contiguous areas that are ecological habitat Regarding the per cent of land, and contiguous land, which is ecological habitat, the Biodiversity Assessment report confirmed the figure to be 9.6%. The total construction work zone and contiguous land (i.e. impact assessment area) equated to 416 ha (this was calculated by combining the Impact Area (all land on 12.5m on either side of the route) with the Impact Assessment Area (the inclusion of an additional 12.5 meters either side of the Impact Area (i.e. a doubling of the Impact Area)). Of this land, 40.21 ha was considered to be ecological habitat (15 hectares of native vegetation within the Impact Area and a further 25.21 hectares in the Impact Assessment Areas). Calculation performed was 40.21 divided by 416 to find a 9.6% figure. Refer to WA1x. Biodiversity Assessment [Section 7.1.1	Verified, 14/3/2023			
Stakeholder Engagement	Sta-1	Does the project change the socio-economic profile of the	Yes, significantly	Is there potential for conflict to arise between the project and key	Yes, it is likely			4			4	5.26	• Project planning documentation	WA1a. USC - Executive Summary	1. Socio-economic impacts of the project were assessed in the planning approvals and determined to be, overall, positive, generating substantial economic benefit to Western Sydney. Refer WA1a. USC - Executive Summary [Section	Verified, 14/3/2023			
	Sta-2							4			4	5.26	demonstrating project impacts to socio-	WA1p. EIS Project Information and Consultation Part 2					
Economy	Lag-1							2			2	1.69	N/A		N/A	Verified.			
Heritage	Her-1	Have project early consultations/studies identified areas or objects of heritage value within or near the project boundary?	Yes	Does the project scope impact on identified areas or objects of heritage value?	Yes	Are heritage areas/objects highly valued by stakeholders, including the local community?	Yes	4			4	3.76	•Project heritage assessments, including mapping of known heritage objects/ areas of value •Results of public consultation with regard to heritage value • Stakeholder input at materiality workshop	WA1a. USC - Executive Summary WA2d. Statement of Heritage Impact Assessment WA1k. USC – Determination Assessment Report	Heritage impacts have been divided into 1. "Aboriginal heritage", 2. "Non-Aboriginal heritage", and 3. "World and National heritage". 1. Aboriginal heritage The construction of the project will impact 15 known Aboriginal sites during construction. These sites are either artefacts or potential archaeological deposits located both within the main site boundary and along the pipelines. Detailed design and construction will endeavour to further minimise impacts to these items however some impacts remain unavoidable. Refer WA1a. USC - Executive Summary [Section 7.9 Aboriginal heritage, page 43]. Regarding stakeholders, Sydney Water undertook extensive consultation with 26 Registered Aboriginal Parties during the planning phase WA1a. USC - Executive Summary [Section 7.9 Aboriginal heritage, page 43]. 2. Non-Aboriginal heritage The Project has the potential to impact 17 identified non-Aboriginal heritage items during construction. Measures will be implemented to reduce these impacts during detailed design and managed through the Construction Environmental Management Plan. Refer WA1a. USC - Executive Summary [Section 7.10 Non-Aboriginal heritage, page 43]. 3. World and National Heritage Although the project boundary is not directly adjacent to World or National heritage-listed items, water will be released into rivers located adjacent and upstream of the Greater Blue Mountains World Heritage Area (GBMWHA). Refer WA1a. USC - Executive Summary [Section 7.11 World and National Heritage, page 44] 4. Regarding stakeholders, heritage is considered an important issue for the Project. Refer WA1k. USC – Determination Assessment Report [Section Key assessment issues, page iv]. For further detailed information, refer to WA2d. Statement of Heritage Impact Assessment	Verified, 14/3/2023			
Workforce Sustainability	Wfs-1							2			2	2.26	N/A		N/A	Verified.			
	Wfs-2							2			2	1.69							
	Wfs-3							2			2	1.69							
	Wfs-4	Does the project have prefabricated or purpose built construction site facilities? Note, this credit does not apply to site offices located in existing buildings.	Yes, >2					2			2	1.32	•Construction site plans	WA1b. Site map.	The project has prefabriacted site facilities which will be hired for the construction phase of the project. For general site layout and staging refer WA1b. Site map.	Verified, 14/3/2023			