Sustainability Management Plan

SMCSWSW8-JHL-WBK-SU-PLN-000001

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Terms of definitions

The following terms, abbreviations and definitions are used in this plan.

Terms	Explanation
ASR	Annual Sustainability Report
BCA	Building Code of Australia
BEW	Bankstown Early Works
CBD	Central Business District
CEMF	Construction Environmental Management Framework
CERT	Carbon Estimate and Reporting Tool
CoA	Conditions of Approval
DPE	Department of Planning & Environment
ECMP	Energy and Carbon Management Plan
EIS	Environmental Impact Statement
GHG	Greenhouse Gas
FTE	Full Time Employee
ISC	Infrastructure Sustainability Council
IS	Infrastructure Sustainability
JH	John Holland Group Pty Limited
JHLOR	John Holland and Laing O'Rourke joint venture
Laing O'Rourke	Laing O'Rourke Australia Construction Pty Limited
Minister, the	NSW Minister for Planning
MMP	Materials Management Plan
MSDR	Monthly Sustainability Data Report
NCC	National Construction Code
ODS	ODS Track (web-based submission management framework)
SDGs v4.0	Transport for NSW Sustainability Design Guidelines v4.0
SLC	Sustainability Leadership Committee
SMCSW	Sydney Metro City and Southwest
SWMC	Southwest Metro Corridor works
SME's	Small and Medium sized Enterprises
SMP	Sustainability Management Plan
QSR	Quarterly Sustainability Report
TfNSW	Transport for New South Wales
WMRP	Waste Management and Recycling Plan

1. Introduction

1.1 Purpose and Application

This Sustainability Management Plan (SMP) outlines John Holland and Laing O'Rourke Joint Venture's (JHLOR) approach to managing sustainability requirements during the construction of the Southwest Metro Corridor works (SWMC),Bankstown Early Works (BEW), Bankstown Additional Corridor Works (BAC) and the Sydney Metro Conversion Station Works (SWM3) as part of the Sydney Metro City and Southwest program of work. Specified sustainability requirements must be met in order to enhance the Project's sustainability performance. Consistent with the Project's Sustainability Policy, the intended outcomes of the SMP with regards to sustainability include:

- enhancement of sustainability performance; and
- fulfilment of compliance obligations; and,
- achievement of sustainability objectives and targets.

The SMP enables the Project to manage sustainability in a systematic manner, and is applicable to the Project, and all of the Project's activities, products and services that the Project determines it can either control or influence considering a life cycle perspective.

1.2 Project Requirements

This Plan specifically addresses the requirements detailed in the Construction Environmental Management Framework (CEMF) Clauses 3.2, the Scope of Works and Technical Criteria (SWTC) Appendix B07, Appendix F08 and Schedule D1 Management requirements - Sustainability (MR-Sy), Schedule E3 – Project Planning Approvals and Conditions, Planning & Environment conditions of approvals (CoA) and Revised Environmental Mitigation Measures (REMMs) as seen in the Plan Compliance in Appendix A.

The table below specifies which documents are relevant to each portion of the works.

Table 1. Project requirement documentation for SWMC, BEW and BAC

Project	CEMF	SWTC Appendix B07	SWTC Appendix F08	Schedule D1 MR-Sy	Schedule E3	COA	REMMs
SWMC	Yes	Yes – Annexure D	N/A	Yes – Third Amendment Deed	N/A	Yes	Yes
BEW	Yes	N/A	Yes	N/A	N/A	Yes	Yes
BAC	Yes	Yes – Annexure E	N/A	Yes – Seventh Amendment Deed	Yes – Fifth Amendment Deed	Yes	Yes
SWM3	Yes	Yes – Annexure B	N/A	Yes	Yes	Yes	Yes

B07 and F08 detail specific requirements related to materials, energy use, carbon emissions, and waste management. The project will focus on sourcing sustainable materials during the procurement process, ensuring that all choices align with environmental and sustainability goals. Additionally, measures will be implemented to minimise carbon emissions and manage waste effectively throughout the project's lifecycle. For comprehensive information on these requirements, please consult the relevant sub-plans:

- Material Management Plan (SMCSWSW8-JHL-WBK-SU-PLN-000004) - Section 2.3
- Energy and Carbon Management Plan (SMCSWSW8-JHL-WBK-SU-PLN-000003) - Section 2.4
- Waste Management and Recycling Plan (SMCSWSW8-JHL-WBK-SU-PLN-000002) – Section 2.4

2. Context

2.1 Sydney Metro

Sydney Metro is Australia's biggest public transport project.

Services started in May 2019 in the city's North West (Stage 1) with a train every four minutes in the peak. Metro Rail Stage 2 will be extended into the CBD and beyond to Bankstown in 2025. There will be new CBD metro railway stations underground at Martin Place, Pitt Street, Barangaroo and new metro platforms under Central Station.

In 2024, Sydney will have 31 metro railway stations and a 66 km standalone metro railway system – the biggest urban rail project in Australian history. There will be ultimate capacity for a metro train every two minutes in each direction under the Sydney city centre.

Sydney Metro City and Southwest project comprises of two (2) core components:

- Chatswood to Sydenham, includes works associated with the Sydenham Station Upgrade and
- Sydenham to Bankstown which received planning approval on 12th December 2018. This component includes works associated with the Southwest Metro Corridor works (SWMC), Bankstown Early Works (BEW) and Bankstown and Additional Corridor works (BAC). SWMC, BEW and BAC will be referred to as "the Project" or 'the works" in this document, or as abbreviated. The John Holland Laing O'Rourke joint venture has named the Project Sydenham to Bankstown (S2B) and will be refer to the Project in this way throughout the document.

2.2 Understanding the Project's Context

The Project has determined external and internal issues that are relevant to its purpose and that affect its ability to achieve its intended sustainability outcomes. An overview of the key high-level issues that are relevant is provided below.

2.2.1 Key High-Level Issues

Key external cultural, social, political, legal, regulatory, financial, technological, economic, natural and competitive circumstances are detailed in this section.

The client is Sydney Metro, a Transport for NSW project. Transport for NSW are a state government department whose role is to lead the development of a safe, efficient, integrated transport system in NSW. Their culture and values include;

- Customer focus – placing the customer at the centre of everything they do
- Collaboration – valuing each other and creating better outcomes by working together
- Integrity – taking responsibility and communicating openly
- Safety – prioritising safety for their people and customers
- Solutions – delivering sustainable and innovative solutions to meet NSW's transport needs

Subsequently, Sydney Metro's guiding principles embed sustainability commitments to the community, customers, and key partners (government and industry), these are seen in Figure 1 below:

Figure 1. Sydney Metro's six guiding principles

- Sydney Metro's Sustainability Strategy for Stage 2 states 'sustainability' means optimising environmental and social outcomes, transport service quality, and cost effectiveness.
- The Southwest Metro Corridor Works (SWMC) and Bankstown Early Works (BEW) form a subsection of the second stage of the Sydney Metro program.
- The client has budgeted approximately $261M for SWMC and it is scheduled for completion in August 2024.
- The client has budgeted approximated $58M for BEW. BEW was completed in December 2022.
- The client has budgeted approximately $123M for BAC and is scheduled for completion in August 2024.
- The client has budgeted approximately $248M for the SWM3 and is scheduled for completion in January 2026.
- The Project is located on the T3 Bankstown line between Sydenham Station and Bankstown Station as detailed in Figures 5, 6, 7 and 8 in Section 2.4. Works will predominately occur within the rail corridor, with some stations including precinct works and all other stations requiring minor works. Of the stations with a smaller scope of works under S2B, the majority of the major station precinct works will be undertaken by other Principal Contractors.

2.2.2 Structure and interface with other management plans

The Sydney Metro Sustainability Framework illustrated in Figure 2 below shows how the project-wide Sustainability objectives, targets and initiatives were developed and how they interface with the SWMC, BEW, BAC and SWM3 specific targets and initiatives, contract requirements and this Sustainability Management Plan and sub-plans.

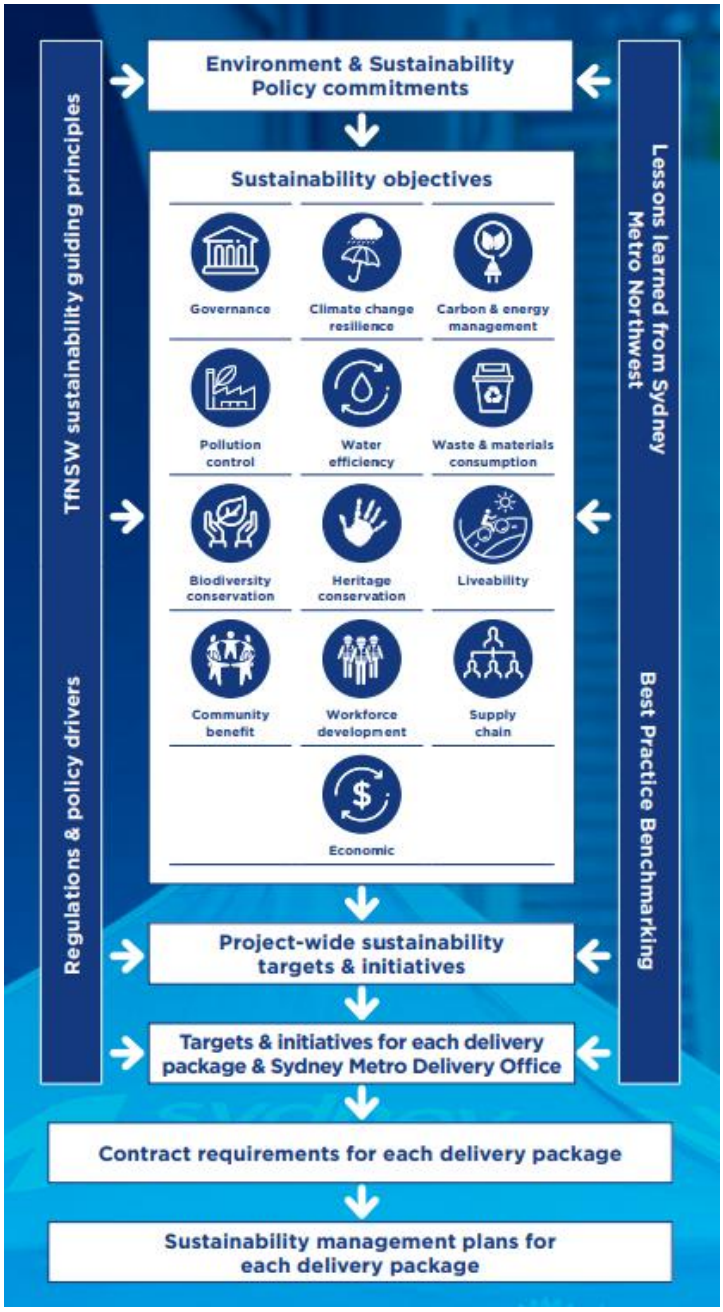


Figure 2. Sydney Metro Sustainability Framework

- Extracted from Sydney Metro's Sustainability Strategy for Stage 2, the project-wide sustainability objectives can be seen in Figure 3 below:

Figure 3. Sydney Metro Sustainability objectives (source: Sydney Metro City & Southwest Sustainability Strategy 2017 - 2024, 2019 update)

Extracted from Sydney Metro's Sustainability Strategy for Stage 2, the project-wide sustainability targets and initiatives can be seen in Figure 4 below:

Figure 4. Sydney Metro Sustainability objectives and targets (source: Sydney Metro City & Southwest Sustainability Strategy 2017 - 2024, 2019 update)

2.3 Needs and Expectations of Interested Parties

The Project has identified the relevant interested parties, assessed their needs and expectations, and determined which of these needs and expectations become its compliance obligations with regards to sustainability.

Substantial ongoing effort will be made to manage the Project's understanding of the needs and expectations of Interested Parties, further detail can be found in the Interface Management Plan (SMCSWSSJ-JHL-WSS-IF-PLN-000019) and the Community Communications Strategy (CCS) (SMCSWSSJ-JHL-WSS-CL-PLN-000023). A high-level overview of the most relevant parties is provided in the table below.

Table 2. SWMC, BEW and BAC interest parties' needs and expectations.

Interested Party	Needs and Expectations
Transport for NSW	Environment and Sustainability Policy Environment and Sustainability Framework Sustainable Design Guidelines v4.0
Sydney Metro	Environment and Sustainability Policy Sustainability Strategy Contract documents
Parent Companies	Policies Systems Procedures
Infrastructure Sustainability Council of Australia (V1.2)	Technical Manual V1.2
Neighbours	Good neighbours
Travelling Public	Uninterrupted travel
Rail Operators	Defined within contract documents
Other Contractors	Defined within contract documents
Local Government and Utilities	Defined within contract documents

2.4 Project Scope

The SWMC, BEW and BAC project are as described in the Scope of Works and Technical Criteria (SWTC) in the Third, Fourth and Fifth Amendment Deed consecutively.

2.4.1 South-West Metro Corridor (SWMC) Works (Third Amendment Deed)

A brief overview is provided below for information only. The Southwest Metro Corridor works include the design and construction of:

- a new combined service route (CSR) for Sydney Metro City & Southwest systems between Sydenham and Bankstown, excluding areas installed under the Southwest Corridor Conversion Enabling Works and at each Station and Traction Substations
- Local route connections from the CSR to trackside equipment, including the installation of footings and foundation
- the replacement of 2 existing crossovers and the installation of 1 new crossover at Campsie, including all associated signalling systems and OHW adjustments

- adjustments to Overhead Wiring Structures (OHWS) within the Bankstown and ARTC corridors
- 3No track hi-rail pads and associated access roads
- the relocation of existing Sydney Trains signalling and communications systems clear of affected Stations and Traction Substations
- Security and segregation fencing along the Bankstown Corridor
- various civils and enabling works, including retaining walls, ballast retention walls, local drainage and culvert refurbishment,
- works to repair, refresh and update bridges including the addition or upgrade of vertical protection screens, safety screens, railings to the following overbridges;
    - Livingstone Road
    - Albermarle Street
    - Melford Street
    - Loch Street
    - Moreton Street
    - Stacey Street
- the following underbridges;
    - Meeks Road dive
    - Charlotte Avenue
    - Ness Avenue
    - Foord Avenue
    - Charles Street
    - Wairoa Street
    - Belmore Oval
- And the following footbridges;
    - Church Street
    - Duke Street
- temporary site facilities required for design and construction of the Works;
- temporary arrangements for people and vehicles to safely access all property, including publicly accessible space affected by the Contractor's Activities;
- temporary infrastructure, safety screens and ground support installed or erected to undertake design and construction of the Works;
- temporary arrangements for Utility Services including water, electricity, stormwater, sewerage, gas and electronic communications;
- temporary works and measures required as a consequence of requirements arising from the stakeholder and community liaison process; and
- all other temporary works and measures required for the construction of the Works.

The South West Metro Corridor work location and site layout is highlighted in Figure 5 and 6 below.

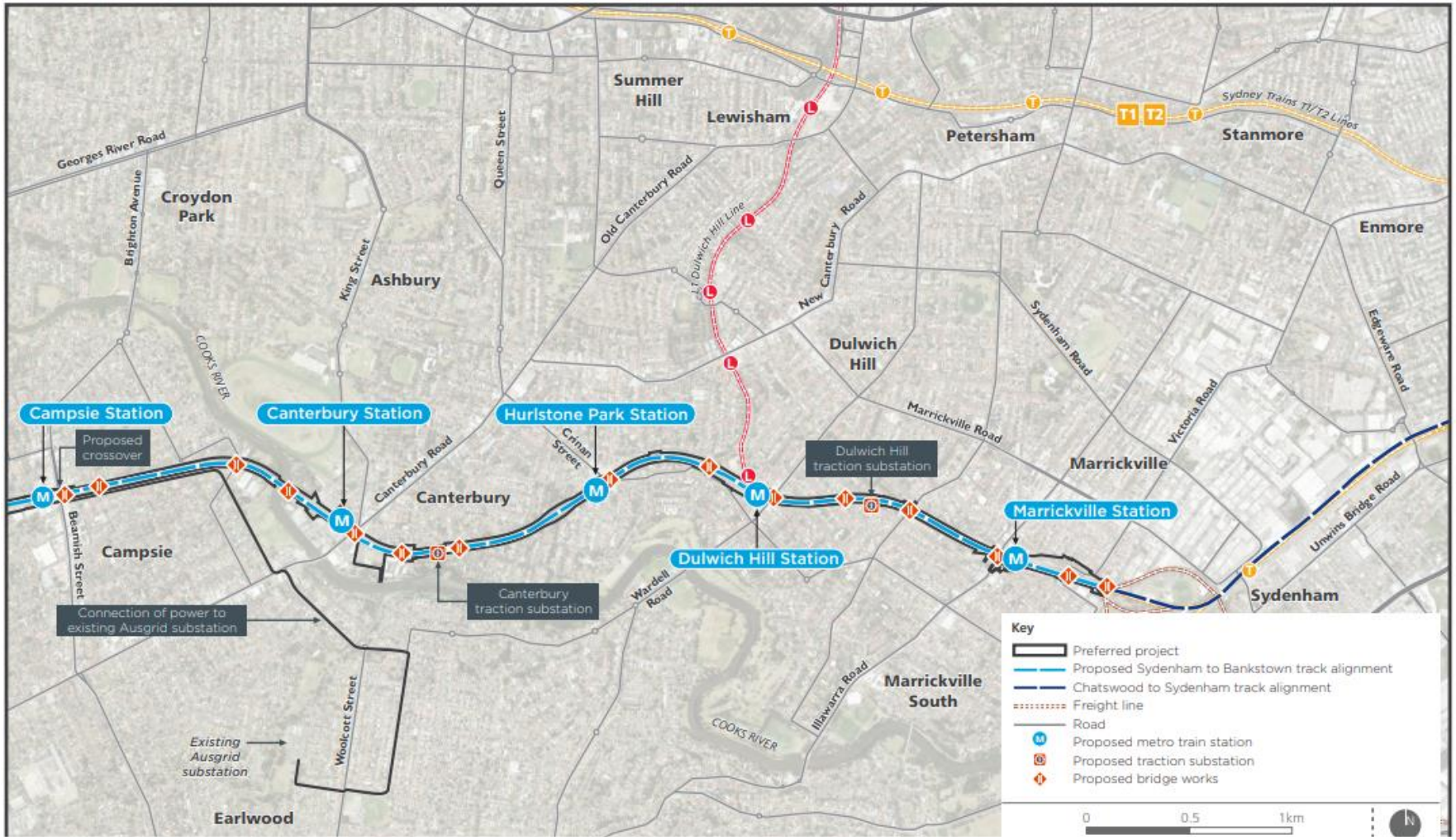


Figure 5. Site Layout (source: Sydney Metro City & Southwest - Sydenham to Bankstown - Submissions and Preferred Infrastructure Report, 2018)

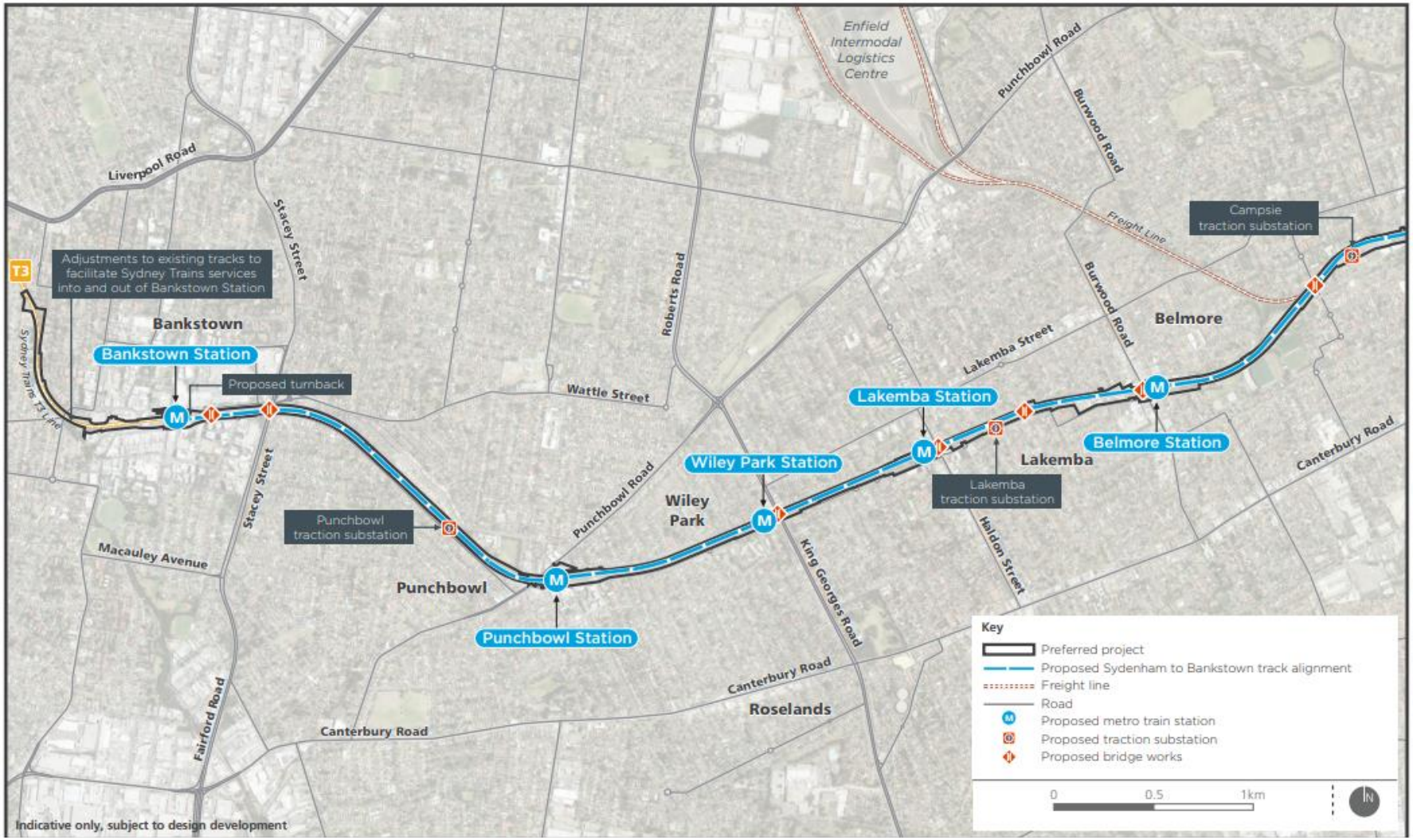


Figure 6. Site Layout (source: Sydney Metro City & Southwest - Sydenham to Bankstown - Submissions and Preferred Infrastructure Report, 2018)

2.4.2 Bankstown Early Works (BEW) (Fourth Amendment Deed)

The Bankstown Early Works (BEW) includes the following construct only scope at Bankstown Station:

- Construction of new Sydney Metro platforms (DOWN side only) to accommodate 6 car trains sets
- Installation of new Metro CSR (including GST and ULX)
- Bankstown Station Service Building construction, including MEP fitout
- OHW&S – install new and remove redundant assets
- Utilities relocation and protection works
- Civil, drainage, earthworks
- Excludes: Track slab, track realignment, architectural finishes and fixtures to Metro platform (i.e. structural elements only).
- SWM1 and SWM2 inclusions
    - Station brackets
    - ULX
    - Up Platform
    - Station security fencing
    - Station segregation fencing

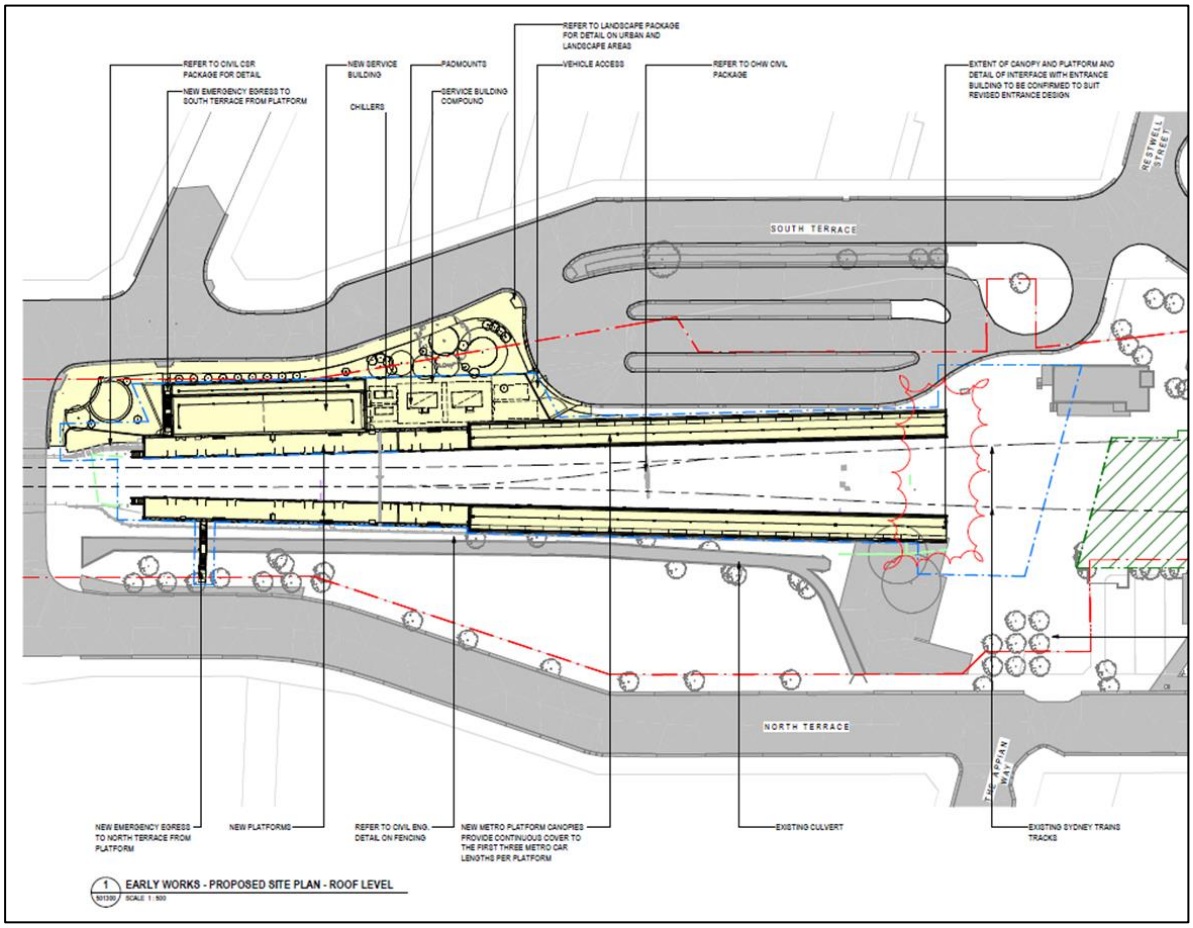


Figure 7.Bankstown Early Works scope (source: Metro T2M – Bankstown Station Design & Precinct Plan – Sydney Metro Southwest Metro Design Services, 2021)

2.4.3 Bankstown and Additional Corridor Works (BAC) (Seventh Amendment Deed)

The Bankstown and Additional Corridor Works (BAC) includes the following:

- Bankstown Station and Precinct Works which includes a new Sydney Metro station and corridor works, upgrades to the Sydney Trains Station and corridor and a new pedestrian precinct.
- Excluded: Track Slab works which include a new track slab within eight of the stations on the Bankstown Line.
- Asset Upgrade Works which includes upgrades to the Bankstown Line OHW assets.
- Interim Conversion Works to support the construction of the Interface Contractor assets.
- Final Conversions Works which includes works to be delivered during the Final Conversion Period, Sydenham Junction segregation, final wayfinding, fencing, rail grind, tamp and station deep clean.

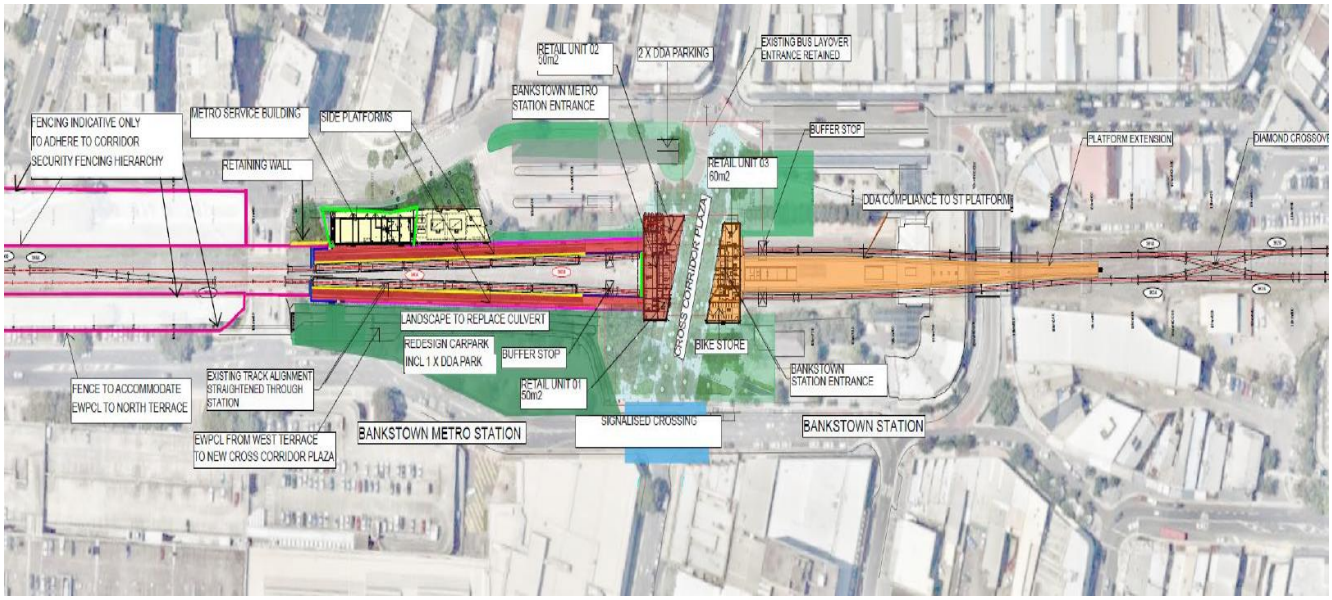


Figure 8. Bankstown portion of BAC work

2.4.4 Southwest Mero Conversion Station Works- SWM3 Package

The SWM3 Package is an additional piece of work that was awarded in March 2024 and was awarded under a new SWTC (Scope of Works Technical Criteria) Contract. The works are a continuation and construction of the original BAC works with the additional design and construction works. This includes the following works packages;

Bankstown Station (ST &SM) and Precinct Works

- New and modification to existing infrastructure and systems to facilitate Sydney Metro operations
- Cross-corridor plaza, retail facilities, station precinct and public domain improvements
- Bankstown Station CSR works, drainage, earthworks, platform works, platform extension, bridge works, plaza, station building and MEP, landscaping, trackside equipment, foundations and local CSR

Corridor Stations

- Platform finishes and configuration, repainting existing stations, landscaping, fire detection, supply and install of heritage interpretation, wayfinding and signage, building finishes, lighting and electrical upgrades, defect rectification, bird proofing.
- Full design and construction of equitable canopies, secondary egress routes, canterbury footbridge redecking, Marrickville shared path.
- Punchbowl demolition, building remediation, new roofing, underpass landscaping, precinct landscaping
- Lakemba bridge and anti throw screens
- Intersection works at Campsie.

3. Leadership

3.1 Sustainability Leadership Committee

A Sustainability Leadership Committee (SLC) will be established on the project. Membership will include Metro's Sustainability Leads, the Project Director, Project Leader, Commercial/Procurement Manager, Design Manager, Environmental Manager, Construction Manager, Community and Stakeholder Engagement Manager, Workforce Development Manager, and the Sustainability Manager.

The SLC will meet on a regular basis to demonstrate leadership and commitment with respect to sustainability by:

- Taking accountability for the effectiveness of the Project's approach to sustainability
- Ensuring that the sustainability policy and objectives are established and are compatible with the strategic direction and the context of the Project
- Ensuring the integration of sustainability requirements into the Project's processes
- Identifying opportunities for best practice, and the mechanisms by which they can be delivered
- Ensuring that the resources needed for sustainability are available
- Communicating the importance of effective sustainability management and of conforming to the requirements
- Ensuring that the Project achieves its intended outcomes
- Directing and supporting persons to contribute to the effectiveness of sustainability efforts
- Promoting continual improvement; and,
- Supporting other relevant management roles to demonstrate their leadership as it applies to their areas of responsibility.

3.2 Sustainability Policy

The Project Sustainability Policy is developed by Project management. It provides a framework for the objectives that have been set in this SMP and includes a commitment to go beyond mitigating negative impacts by undertaking restorative actions (i.e. net positive benefits for society and the environment) and to sustainable procurement.

The Project Sustainability Policy supports the Metro Environment and Sustainability Policy. For further information on both policies, see Appendix B.

The Project Sustainability Policy was updated to reflect new and current leadership for the SWM3 contract. The overarching objectives and targets remain the same.

3.3 Project Roles, Responsibilities and Authorities

Project management ensure that the responsibilities and authorities for relevant roles are assigned and communicated within the Project.

Sustainable infrastructure cannot be delivered by one person or one discipline, it requires a multidisciplinary approach underpinned by collaboration. The following roles are critical to sustainability on the Project.

Table 3. Critical roles and responsibilities within JHLOR

Role	Responsibility
Project Director	Overall responsibility and authority for; • ensuring that the management of sustainability conforms to the requirements of this SMP • reporting on the performance of the Project with regards to sustainability, to top management and interested parties
Sustainability Manager	IS Assessor Day to day responsibility and authority for; • ensuring that the management of sustainability conforms to the requirements of this SMP • reporting on the performance of the Project with regards to sustainability to project management As per the applicable compliance obligations, the Sustainability Manager must; • possess a recognised qualification relevant to the position and the SWMC Contractor's Activities and have recent relevant experience in sustainability management on projects similar to the Project Works; • have at least five years' sustainability management experience in the design and construction of sustainable infrastructure or buildings; • be available as the Principal's Representative's primary contact with the SWMC Contractor on sustainability matters; • be responsible for and have the authority to develop and implement the Sustainability Management Plan; and • be engaged throughout the execution of the SWMC Contractor's Activities and be on or around the Site during the construction phase of the Project Works and Temporary Works with responsibilities limited to sustainability management of the SWMC Contractor's Activities.
Sustainability Advisor/Co-ordinator	IS Assessor Dedicated to assisting the Sustainability Manager fulfil their duties, must; • have at least two years' sustainability management experience in the design and construction of sustainable infrastructure or buildings
Commercial Manager	Work collaboratively with the Sustainability Manager, and promote, encourage, and assist senior management and project teams in implementing effective commercial (contractual and financial) practices.
Design Manager	Work collaboratively with the Sustainability Manager, lead and manage the design delivery process, function and team within the project life cycle to maximise the winning of work and deliver successful project outcomes.
Construction Manager	Work collaboratively with the Sustainability Manager, control and coordinate all site-based construction activities to ensure that assigned construction works are completed to the client's satisfaction and to meet quality, time, and profit objectives.
Environmental Manager	Work collaboratively with the Sustainability Manager, identify and manage project environmental risk and ensure and execute the project environmental program and environmental deliverables.
Community and Stakeholder Engagement Manager	Work collaboratively with the Sustainability Manager, and lead and provide advice to the Project on communications, community relations and stakeholder relations. Develop and implement a communications program and stakeholder management plan which provides project support by projecting a strong and positive image of the Project to the community and key stakeholders and manages stakeholder issues.

Workforce Development Manager	Work collaboratively with the Sustainability Manager, Support the human resources function for the project and ensure that all people management activities – including recruitment, on-boarding, training & development, performance management, remuneration, cultural diversity, employee relations and other HR matters – are conducted in accordance with legislative and policy frameworks and are consistent with business requirements.

It is also noteworthy that critical roles are undertaken by personnel external to the JHLORJV. These individuals have been identified as key facilitators, and the Project will proactively seek to collaborate. Their roles are detailed in the table below.

Table 4. Critical roles and responsibilities by personnel external to JHLOR

Role	Responsibility
Metro Project Leaders	Overall responsibility and authority for; • ensuring that the Project's management of sustainability conforms to Metro's requirements • reporting on the performance of the Project with regards to sustainability, to Metro's top management and interested parties
Metro Sustainability Leads	Day to day responsibility and authority for; • ensuring that the Project's management of sustainability conforms to Metro's requirements • reporting on the performance of the Project with regards to sustainability, to Metro's top management and interested parties
Independent Certifier	Responsibility and authority for certifying compliance with all applicable sustainability compliance obligations
Metro Technical Specialists	Day to day responsibility and authority for; • ensuring that the Project's management of sustainability (including in relation to their areas of expertise) conforms to the technical requirements of Metro (e.g. concrete structures)

4. Planning

4.1 Compliance Obligations

The Project has determined the compliance obligations related to sustainability, determined how these obligations apply, and taken these compliance obligations into account when establishing and updating this SMP.

The key project sustainability compliance obligations are derived from the following contract documents:

Table 5. Key Sustainability compliance obligation documents

SWMC	BEW	BAC	SWM3
Scope of Works and Technical Requirements (SWTC Appendix B07) – Third Amendment Deed	Scope of Works and Technical Requirements (SWTC Appendix F08)	Scope of Works and Technical Requirements (SWTC Appendix B07) – Seventh Amendment Deed	Scope of Works and Technical Requirements (SWTC Appendix B07)
Management Requirements – Sustainability (MR-Sy) (3rd Amendment)	N/A	Management Requirements – Sustainability (MR-Sy) (7th Amendment)	Management Requirements – Sustainability (MR-Sy)
Construction Environmental Management Framework (CEMF)			
Revised Environmental Management Measures (REMMs)			
Planning Approval – Conditions of Approval (CoA)			
Environmental Protection License (EPL)			

Registers for compliance obligations are available on the Projects SharePoint and are available for both Project and Sydney Metro.

4.2 Objectives

The Project has established sustainability objectives, considering risks and opportunities and compliance obligations. The primary sustainability objectives are detailed below:

Table 6. Primary Sustainability Objectives for SWMC, BEW and BAC

Project	Primary Sustainability Objective
SWMC	Achieve an Excellent IS As-built rating score of at least 55 points
BEW	A Gold TfNSW SDG Rating score has already been achieved. Tracking of resources use is to continue under SWM1 and SWM 2 works for submission to Sydney Metro.
BAC	Achieve an Excellent IS Design rating score of at least 65. Track evidence and prepare draft CSFs for As Built for submission to Sydney Metro
SWM3	Achieve an Excellent IS As-built rating score of at least 65 points

The project will aspire to significantly exceed the minimum stipulated scores outlined in Table 6 above, or any equivalent level of performance using a demonstrated equivalent rating tool, as per Condition E42 of SSI 8256. These objectives and targets have been specifically linked with the obligations and targets specified in the Projects sustainability policy, the contractual requirements and the sections within the management plan. Additionally, the Project wants to show that we are committed to go beyond mitigating negative impacts to creating net positive benefits for society and the environment. Below is a detailed list of the key objectives and targets from the Projects contract with Sydney Metro and linked to our Policy, corresponding credit and management plans.

Table 7 Objectives and Targets Table

Policy commitment	Objective	Target	SWMC	BEW	BAC	SWM3	Performance Indicators	Addressed	Environmental	Social	Economic	ISC	SDG	Strategy Document
	ISC IS Rating Tool v1.2. Scores for both 'Design' and 'As-Built'.	65+	✓	×	✓	✓	Certified IS Ratings	Section 4.2	✓	✓	✓	Entire Rating	N/A	Sustainability Management Plan
	SDG rating for Design & As-Built	Gold	×	✓	×	×	SDG Ratings	Section 4.2	✓	✓	✓	N/A	Entire Rating	
Implementing coordinated and transparent decision making, by engaging with stakeholders and suppliers, encouraging innovation and demonstrating sustainability leadership.	Sustainability performance is reported at least quarterly to senior leader.	Quarterly	✓	×	✓	✓	Feedback and Review during Quarterly Senior Leadership Review	Section 6.2	✓	✓	✓	Man-5	N/A	Sustainability Management Plan & Stakeholder Management Plan

	The Principal's Community and Stakeholder representatives will be required to assist the SSJ Contractor in addressing the requirements of the ISCA V1.2 technical manual for the credits that relate to Stakeholder and Community Management.	Endorsed by senior leader	✓	✓	✓	✓	Stakeholder engagement strategy reviews	Section 6.4	✓	✓	✓	Sta 1-4	N/A	Sustainability Management Plan
Establishing robust sustainability objectives and targets, and applying effective assurance processes to monitor performance.	Achieve an Excellent IS As-built rating score of at least 55 points	55+	✓	×	×	×	Certified IS Ratings	Section 4.2	✓	✓	✓	Entire Rating	N/A	
	A Gold TfNSW SDG Rating score has already been achieved.	Gold	×	✓	×	×	SDG Ratings	Section 4.2	✓	✓	✓	N/A	Entire Rating	Sustainability Management Plan
	Achieve an Excellent IS Design rating score of at least 65.	65+	×	×	✓	×	Certified IS Ratings	Section 4.2	✓	✓	✓	Entire Rating	N/A	
	Achieve an Excellent IS As-Built rating score of at least 65.	65+	×	×	×	✓	Certified IS Ratings	Section 4.2	✓	✓	✓	Entire Rating	N/A	
	Minimise water demand including total water consumption and potable water consumption	20%	✓	✓	✓	✓	Monthly sustainability report	Section 6.1	✓	✓	✓	Wat-1	CR7	Sustainability Management Plan
	office waste recycled	60%	✓	✓	✓	✓	Monthly sustainability report	Section 4.4	✓	✓	✓	Was-2	CR4	Sustainability Management Plan & Waste and Recycling Management Plan

Requiring high standards from our designers, contractors and suppliers	Reduction in greenhouse gas emissions associated with the SSJ Contractors Activities.	20%	✓	✓	✓	✓	CERT tools	Section 6.1	✓	✓	✓	Ene-1	CR1	Sustainability Management Plan & Carbon and Energy Management Plan
	Reduction in materials lifecycle impacts compared to a base case footprint	15%	✓	✓	✓	✓	IS Materials calculator	Section 6.1	✓	✓	✓	Mat-1	N/A	Sustainability Management Plan & Materials Management Plan
	Improvement in total annual energy consumption over a reference station.	15%	✓	✓	✓	✓	Sustainability Annual Report	Section 6.1	✓	✓	✓	Ene-1	N/A	Sustainability Management Plan & Carbon and Energy Management Plan
	Use a minimum bio diesel mix for all diesel powered plant and equipment	5%	✓	✓	✓	✓	Monthly sustainability report	Section 6.1	✓	✓	✓	Ene-2	CR10	Sustainability Management Plan & Carbon and Energy Management Plan
	A minimum blended ethanol mix for all petrol powered plant and equipment where practicable	10%	✓	✓	✓	✓	Monthly sustainability report	Section 6.1	✓	✓	✓	Ene-1	N/A	Sustainability Management Plan & Carbon and Energy Management Plan

Adopting ethical and responsible procurement practices by incorporating environmental and social performance in subcontractor selection; adopting a preference for local industry participation and encouraging the supply chain to adopt sustainability practices.	Reusable spoil, including topsoil	100%	✓	✓	✓	✓	Monthly sustainability report	Section 6.1	✓	✓	✓	Was-2	CR5	Sustainability Management Plan and Procurement Management plan
	Renewable sources	30%+	✓	✓	✓	✓	Monthly sustainability report	Section 6.1	✓	✓	✓	Ene-2	N/A	
	Replace potable water with non-potable water sources	33%	✓	✓	✓	✓	Monthly sustainability report	Section 3.6	✓	✓	✓	Wat-2	CR7	
	Materials/products by value have an ISCA approved environmental label	9%	✓	✓	✓	✓	ISC Mat-2 CSF	Section 4.4	✓	✓	✓	Mat-2	N/A	Sustainability Management Plan, Sydney Metro City & Southwest Sustainability Strategy

	Topsoil (by volume) retains its productivity and is beneficially re-used on or nearby to the project	95%	✓	✓	✓	✓	ISC Lan-2 CSF	Section 6.1	✓	✓	✓	Lan-2	N/A	Sustainability Management Plan
	Reinforcing steel has been produced using energy-reducing processes	60%	✓	✓	✓	✓	Production data	Section 4.4	✓	✓	✓	Mat-1	N/A	Sustainability Management Plan & Materials Management Plan
Developing effective and appropriate responses to the challenges of climate change, carbon management, resource and waste management, land use integration, customer and community expectation, and heritage and biodiversity enhancement.	Implement measures to mitigate climate change risks classified as "medium"	25%	✓	✓	✓	✓	Climate Risk Register	Section 4.3	✓	✓	✓	Cli-1	CR3	Sustainability Management Plan, Design Management Plan
Developing effective and appropriate responses to the challenges of climate change, carbon management, resource and waste management, land use integration, customer and community expectation, and heritage and biodiversity enhancement.	Implement measures to mitigate climate change risks classified as "extreme" and "high"	100%	✓	✓	✓	✓	Climate Risk Register	Section 4.3	✓	✓	✓	Cli-1	CR3	Sustainability Management Plan, Design Management Plan
	Minimum of the total electricity being used in carrying out the SSJ Contractor's Activities is being offset.	25%	✓	✓	✓	✓	Offset statement	Section 4.4	✓	✓	✓	Ene-1	N/A	Sustainability Management Plan & Carbon and Energy Management Plan
	Upward Light Ratio	<5%	✓	✓	✓	✓	Light modelling data	Section 5.4	✓	✓	✓	Dis-5	N/A	Construction Environmental Management Plan

Assessing and managing all environmental risks.	Land used for the project is previously disturbed.	100%	✓	✓	✓	✓	Land survey	Section 4.4	✓	✓	✓	Lan-1	N/A	Construction Environmental Management Plan
	Major pollution incidents	0%	✓	✓	✓	✓	Incident Report	Section 4.3	✓	✓	✓	Dis-1	N/A	Construction Environmental Management Plan
Being socially responsible and delivering a workforce legacy which benefits individuals, communities, the project and industry, and is achieved through collaboration and partnerships. Creating desirable places, promoting liveability and cultural heritage, and optimising both community and economic benefit.	Community feedback support	80%+	✓	✓	✓	✓	Community Survey	Section 3.2.3 Section 4.4	✓	✓	✓	Sta-3	N/A	Procurement Management plan Sustainability Policy Sustainability Management Plan
Consolidating upon existing relationships with community and stakeholders to maximise opportunities to add value to local communities.	Provide demonstrable and tangible benefits to local community groups, during the construction period	2	✓	✓	✓	✓	Number of benefit case	Section 4.4	✓	✓	✓	Sta-1	N/A	Sustainability Management Plan and Community and Stakeholder Management Plan.
	Provide demonstrable and tangible benefits to the broader local community beyond the construction period	2	✓	✓	✓	✓	Number of benefit case	Section 4.4	✓	✓	✓	Sta-1	N/A	Sustainability Management Plan and Community and Stakeholder Management Plan.
Providing the appropriate training and resources necessary to meet our sustainability responsibilities.	Undertake sustainable procurement training for high impact suppliers.	Annually	✓	✓	✓	✓	Training record	Section 5.2	✓	✓	✓	Pro-2	CR12	Sustainability Management Plan

Undertaking public sustainability reporting.	Monthly sustainability reports are provided to contribute to the Sydney Metro Annual Sustainability Report	Monthly	✓	✓	✓	✓	Submission receipt	Section 6.2	✓	✓	✓	Man-5	CR4	Sustainability Management Plan

4.3 Risks and Opportunities

The Project Team have determined the sustainability risks and opportunities associated with its activities, products and services that it can control and those that it can influence, and their associated impacts, considering a life cycle perspective.

- The Project has determined those aspects that have or can have a significant impact, by using established criteria. Comprehensive information has been consolidated within the Project's Risk and Opportunity Register prepared in accordance with the Risk Management Plan (SMCSWSSJ-JHL-WSS-RM-PLN-000010).

Sustainability opportunities are also documented within a stand-alone Sustainability Opportunities Register.

Effectively managing opportunities is central to achieving sustainable outcomes. It is typically the management of opportunities, rather than risks, that allow compliance benchmarks to be surpassed and best practice to be achieved. In order to do this, the Project has leveraged recent experience from other successful projects Laing O'Rourke and John Holland have been involved in. These relevant projects include:

- John Holland's NorthLink WA Southern Section project for Main Road Western Australia as part of the $1.2bn NorthLink WA Program. This project achieved a Leading IS Design rating of 93 (version 1.2) and in doing so achieved a number of firsts, all of which stemmed from effectively and proactively managing sustainability opportunities;
- Laing O'Rourke Fulton Hogan and AECOM in an alliance with Public Transport Victoria, Metro Trains Melbourne and Vic Roads delivered the Bayswater Level Crossing Removal Project. The project received a 'Leading' IS Design Rating with an unprecedented score of 93.5 out of 110, and set a new industry benchmark in sustainable delivery.
- CPB Contractors John Holland Dragados Joint Venture for the $1.15bn Sydney Metro Northwest Tunnel and Stations Civil Works project, which achieved a Leading IS As-Built Rating of 92 (version 1.2), the highest As-Built rating achieved to date.

4.3.1 Climate Change Risk Assessment

The Project has undertaken a preliminary climate change risk assessment in respect of the Works in accordance with the guidance and requirements included in the TfNSW Climate Risk Assessment Guidelines 2016, the Infrastructure Sustainability Council's IS Rating Tool Technical Manual V1.2 – Climate Change Adaptation chapter and TfNSW Sustainable Design Guidelines v4.0 – TfNSW Climate Risk Assessment Guideline SD-081. The risk assessment will be reviewed and updated throughout the design and is used as an input to inform the Design Work. Climate change risks and adaptation will be documented in the Design Documentation submitted to the Principal's Representative at Design Stages 1, 2 and 3.

The climate change projections and guidance used to underpin the climate change risk assessment is the most recent available and is consistent with industry best practice, including NWRLSRT-PBA-SRT-SU-REP-000022 Sydney Metro – City & Southwest Technical Services Climate Resilience Report. For BAC, risks identified are to be cross-referenced back to those identified as relevant within NWRLSRT-PBA-SRT-SU-REP-000022 to demonstrate consideration.

The Project has also identified and described in the Design Documentation, climate change initiatives which demonstrate that the Works have been designed to combat and be resilient to the effects of climate change during each Design Stage have included measures to mitigate:

Climate Change Risk mitigation targets

Table 8 Climate Change Risk Mitigation Targets

SWMC	BEW	BAC	SWM3
All climate change risks classified as “extreme” and “high”			
At least 25% of all climate change risks classified as “medium”			

See the Design Management Plan (SMCSWSSJ-JHL-WSS-DM-PLN-000206) and T2M Draft Sustainability Design Report (Teambinder mail reference SMCSWSSJ-SMD-SSJ-SMD-GEN-000849) for more information.

4.4 Planning Action

The Project has planned to take actions to address sustainability risks and opportunities, its compliance obligations, and its objectives. The Project has determined what will be done, what resources will be required, who will be responsible, when it will be completed and how the results will be evaluated. Supporting this is a Sustainability Action Plan which will be completed by all subcontractors within 4 weeks of subcontract award.

Actions to attend to compliance obligations have been planned and documented in a Requirements Analysis Allocation and Traceability Matrix (RVTM) for the project (the RVTM is a single integrated system used to log requirements from both contractual documents and the outputs of service or solution engineering activities) (see Appendix D for an excerpt). An ISC Pathway document was undertaken for BAC to describe the planned action which will be undertaken to achieve the targeted scores (see Appendix C).

Actions to attend to objectives are being planned and documented within multiple trackers including:

- SDG Rating Completion (for BEW) – See Appendix C
- IS Rating Tracker (for SWMC, BAC and SWM3) – See Appendix E for an excerpt

These are excel-based documents for submission management and deliverables associated with the IS Rating, the SDGs Rating and contract deliverables. These trackers have been designed to assist in the management of the large number of deliverables for the sustainability ratings and contract requirements. Review of these trackers will be undertaken weekly and have been tailored to prompt actions from the Sustainability team or deliverables that must be requested from multiple parties and allows what, when, who and how to be defined for each deliverable (see Appendix E for an excerpt). These trackers are key items reviewed within regular sustainability leadership committee meetings and are also shared with the client when requested.

Note, all registers/trackers detailed within this section are live documents that are regularly reviewed and adapted as new information comes to hand. Where possible registers/trackers centralise information from multiple management plans, removing duplication and providing improved flexibility, increased efficiency, performance, and outcomes.

More detailed planning information is also provided in relation to materials, energy and waste in sub-plans;

- Material Management Plan (SMCSWSW8-JHL-WBK-SU-PLN-000004)
- Energy and Carbon Management Plan (SMCSWSW8-JHL-WBK-SU-PLN-000003)
- Waste Management and Recycling Plan (SMCSWSW8-JHL-WBK-SU-PLN-000002)

Similarly, applicable sustainability actions have also been integrated into the following Project plans;

- Contract Management Plan (SMCSWSSJ-JHL-WSS-CT-PLN-000008)
- Interface Management Plan (SMCSWSSJ-JHL-WSS-IF-PLN-005605)
- Risk Management Plan (SMCSWSSJ-JHL-WSS-RM-PLN-000010)
- Procurement Plan (SMCSWSSJ-JHL-WSS-CO-PLN-000003)
- Engineering Management Plans (SMCSWSSJ-JHL-WSS-EN-PLN-000641)
- Environmental Management Plans (SMCSWSSJ-JHL-WEC-EM-PLN-004244)
- Construction and Site Management Plan (SMCSWSW8-JHL-WBK-CM-PLN-000030)
- Community Communications Strategy (SMCSWSSJ-JHL-WSS-CL-PLN-000023)
- Workforce Development Plan (SMCSWSSJ-JHL-WSS-WD-PLN-000614)
- Design Management Plan (SMCSWSSJ-JHL-WSS-DM-PLN-000206)

5. Sustainable Procurement

Sustainable procurement will operate under the Social Procurement Policy, provided in Appendix B. The Sustainability Team will work closely with the Procurement Team to incorporate all sustainability conditions, opportunities, and forward commitments in the procurement management system to ensure subcontracts and suppliers meet minimum requirements, generate opportunities, and address Project challenges through innovation.

The Sustainability Team will be involved in high impact package grading prior to release to the market. They will also review packages upon their return and ensure all social procurement requirements are adhered to, including management of the suppliers and subcontractors throughout the duration of the works.

Procurement on the Project will comply with the requirements of ISO 20400:2017 Sustainable Procurement – Guidance. S2B will adopt and operate under a sustainable procurement framework to balance economic, environmental, and social considerations in the procurement process. The sustainable procurement framework will help identify and support a selection of sustainable products and services, educate our supply chain on sustainability objectives and targets, and develop a process that draws together the knowledge and technical advances our supply chain can offer to improve sustainable outcomes.

S2B will build several sustainability measures into the procurement process, including:

- Identifying key high impact packages in the procurement schedule
- Requiring suppliers and subcontractors to align with the sustainability expectations and requirements of S2B and Sydney Metro
- Integrating a sustainability section into all request for tender packages and scope of work documents
- Ensuring all tenderers complete and submit the tender questionnaire and that each submission includes adequate responses to all sustainability items
- Ensuring qualified representatives are involved in tender evaluations and any tender meetings with potential tenderers where sustainability has been identified as a requirement
- Mandating the provision of sustainability performance data by suppliers on a monthly basis during the delivery of contracted works
- Undertaking audits where required to ensure continuous improvement and adherence to policies
- Considering sustainability principles in making procurement decisions

S2B is committed to upholding the principles and requirements set out in the Modern Slavery Act 2018. In addition to the obligations placed on our sub-contractors, the Project adheres to the following commitments:

1. Risk Assessment and Due Diligence: The Project conducts regular risk assessments and due diligence processes to identify and mitigate risks related to modern slavery within our operations and supply chain.
2. Supplier Code of Conduct: All suppliers and sub-contractors are required to comply with our Supplier Code of Conduct, which includes strict provisions against forced labour, human trafficking, and other forms of modern slavery.
3. Training and Awareness: The Project provides ongoing training and resources to our employees and partners to raise awareness and ensure compliance with the Modern Slavery Act 2018.

Reporting and Remediation: The Project is committed to taking swift and effective action to address any identified issues.

In addition, the Laing O'Rourke Group Modern Slavery Policy as been provided to show best practice in Appendix C: Policies.

5.1 Evaluation of Subcontractors

As part of the evaluation of subcontractor tender responses, all Subcontractors will be requested to:

- Provide details of their Sustainability policy or comply with the S2B Sustainability policy and adhere the Projects objectives ad targets
- provide details of how they will reduce the consumption of potable water, waste generation, materials use and energy applicable to their scope
- Confirm their understanding of the Projects requirements that all Products are sustainably sourced or covered by an environmental label or EPD.
- Provide evidence of environmental, health and safety, quality management systems and policies and previous experience.
- Show an understanding and compliance with the obligations under Modern Slavery Act 2018
- High impact Subcontractors and Suppliers will then be assessed for suitability using a combination of financial and non-financial scoring criteria (including sustainability and innovation) and the total non-price component shall be no less than 20%.

During pre-award and pre-start meetings, there will be discussion of the sustainability aspects of the scope of works and surety gained on the tenderer's ability to deliver that work. Sustainability reporting and requirements will form part of the executed contract.

5.2 Monitoring of Subcontractor Sustainability Performance

Subcontractor performance will be monitored throughout the duration of the contract. Successes will be celebrated, and lessons learned will be shared. When poor performance is identified, S2B will formally raise issues with the Subcontractor and/or Supplier and work together to remedy the situation.

6. Sustainable construction

6.1 Construction water

S2B is committed to minimising water use across the Project wherever feasible and reasonable. We will achieve this by prioritising construction practices and methodologies that remove the requirement for water, harvesting rainwater and reusing non-potable water. Below is a list of initiatives the Project will implement to reduce water.

- Minimising water demand: The project will fit office and that facilities with water efficient controls and fixtures such as water efficient taps and toilets. Additionally, dust suppression utilising polymers and binding solutions will be prioritised over potable water dust suppression.
- Rainwater harvesting: The project is committed to harvesting and using rainwater and have therefore installed 5 x10,000L tanks at the Canterbury site compound which will be used for greywater washing in the site facilities and dust suppression across the Project sites.

- Water monitoring: All water consumption on site will be tracked either manually through water card loads or through bills provided by Sydney water. Additionally, the Project will instal metering at all sites, rainwater tanks and taps to accurately calculate water consumption.

6.2 Construction Carbon and Energy

S2B will prioritise opportunities to use less carbon intensive solutions and methodologies across the construction phase. This will include the investigation of more energy efficient options, optimised construction scope and the use of renewable energy.

Additionally, the Project has made a commitment to purchase 100% green energy from our energy provider for scope 2 emissions. Concurrently the Project has installed 43 solar panels on the Canterbury station to reduce the requirement for purchase energy for construction.

The project has also mandated that subcontractors utilise B5 Biodiesel for all plants and machinery. The Project will be monitoring performance against the subcontractors through monthly sustainability reporting.

Additional opportunities the project is investigating to reduce carbon during the construction phase are:

- Solar powered lighting on site
- Hybrid pool vehicles
- Electric pool vehicles
- Electric plant and machinery

Further details of carbon and energy requirements can be found under Energy and Carbon Management Plan (SMCSWSW8-JHL-WBK-SU-PLN-000003).

6.3 Sustainable materials

During the delivery of the Project, S2B is committed to reducing the Projects scope 3 emissions through selecting materials for the Project that have an associated carbon reduction benefit.

Where applicable materials will be selected with accredited or certified with a relevant product stewardship or organisation. Environmental labels include the following but are not limited to;

- Good Environmental Choice Australia Ecolabel
- Green Building Council of Australia BEP
- Ecospecifier Green Tag
- ISEAL Alliance compliant whole supply chain Stewardship Scheme certification
- Environmental Product Declarations – product-specific
- Environmental Product Declarations – industry-wide

The key sustainable materials in the B07 and F08 is essential for meeting environmental and sustainability goals. This ensures the project adheres to best practices, reduces its ecological impact, and promotes responsible resource use. The key material requirements include:

- Utilising recycled materials and recycling materials from the Project,
- Utilising 100% Sustainable FSC approved timber
- High SCM content concrete
- 15% reduction in the environmental footprint of materials
- Reductions in waste and opting for reuse on site wherever possible.
- Utilising steel sourced from Australia and manufactured with a lower carbon footprint
- Utilise recycled quarried materials wherever feasible and reasonable

For more detailed requirements and explanations, see Section 2.3 of the Material Management Plan (SMCSWSW8-JHL-WBK-SU-PLN-000004).

S2B will manage its impacts associated with Construction materials and will be applied in a systematic manner and determine its applicability to the Project. Additionally, the Project's activities, products, and services that the Project determines it can either control or influence will also be considered from a life cycle perspective.

6.3.1 Concrete

The Project will adopt Laing O' Rourke's minimum standards for carbon reduced of 'green' concrete across the project and work with our subcontractors and materials suppliers to meet the standards at a minimum. Below are the GWP (Global Warming Potential) limits:

Table 9 Laing O'Rourke Minimum Concrete Carbon Limits

	40MPa and Below	**50 MPa**	**60-65 MPa**	**80 MPa**
Concrete Maximum Carbon Tolerance **GWP Limit ($kgCO_2e/m^3$)**	325	365	380	450
Low Carbon Concrete Threshold **GWP Limit ($kgCO_2e/m^3$)**	250	300	340	380

7. Community Benefits

S2B will deliver at least five community benefit initiatives which provide will demonstrable tangible benefits to local community groups during the construction period and at least five initiatives which provide "legacy" benefits beyond the construction period of the Project.

Community benefits will be determined based on locality of the charity and initiative to the Projects location, for example within either the Canterbury and Bankstown council or the Inner West council.

The Inner West Council's priority issues are identified in the Community Engagement Strategy 2022-2024 are:

- Ensure council is seen to be highly engaged with local communities
- Improve digital engagement through embedding new tools on Your Say Inner West and consider mandated registration
- Incorporate deliverable engagement processes and strengthen Local Democracy Groups through deliberations on policy challenges
- Hold a citizens Jury as a deliverable engagement process in 2023
- Improve how we evaluate and measure community engagement
- Improve presentation of engagement outcomes reporting to council and the community

Link to document: IWC_0270_CommunityEngagementStrategy_2022_R6_Web (1).pdf

Additionally, the Canterbury and Bankstown Council's priorities are identified under IAP2 community engagement model and available in the community engagement framework:

- Community advocacy- community leads engagement and the organisation is responsible for the action, for example councils youth advisory committee, youth week annual festivities
- Community act and contribute: community leads the engagement and the community is responsible for the action, for example sports and recreation clubs, environmental education and action groups
- Organisation implementation: Organisation leads the engagement and the organisation is responsible for the action. For example public domain projects, community strategic planning and infrastructure delivery
- Shared leadership in action: leadership and actions can be shared where communities and organisations participate and contribute to the decisions, for example shared leadership and action include community voice panels

Link to document: Community_Engagement_Framework_2022.pdf (hdp-au-prod-app-cbnks-haveyoursay-files.s3.ap-southeast-2.amazonaws.com)

The Project will endeavour to align our community benefits with the priority issues identified in the local council.

8. Implementation

8.1 Resources

The Project has determined and made provision for the resources needed for the establishment, implementation, maintenance and continual improvement of the sustainability management system on the Project. Key human resources have been allocated as per Section 3 Roles, Responsibilities and Authorities.

8.2 Competence and Awareness

The Project :

- Use Training Needs Analysis to determine the necessary competence of persons doing work under its control that affects its materials performance and its ability to fulfil its compliance obligations;
- Obtain records of suitable education, training, experience and verification of competency to ensure that these persons are competent on the basis of appropriate education, training or experience;
- Determine any further training needs associated with sustainability;
- where applicable, take actions to acquire the necessary competence, and evaluate the effectiveness of the actions taken

The Project ensures, via the Project Induction, Toolbox Talks and Pre-Start Meetings (or similar) that persons doing work under the Projects control are aware of the:

- sustainability policy.
- the significant issues and related actual or potential impacts associated with their work in relation to sustainability.

- their contribution to the effectiveness of sustainability management, including the benefits of enhanced sustainability performance.
- the implications of not conforming with the sustainability management requirements, including not fulfilling the organisation's compliance obligations

8.3 Knowledge Sharing

Effective and ongoing sustainability knowledge sharing has occurred within the Project team and with the client, supply chain and parent organisations during the tender and target costing phases. Knowledge sharing continues post-award with these and other key stakeholders and wider industry.

Knowledge sharing takes many forms: informal and formal, spoken and written. It is encouraged at all times, and involves the sustainability leadership committee, facilitated workshops and regular meetings in order to foster mutually beneficial relationships with key stakeholders and subject matter experts.

Knowledge sharing is undertaken in a timely and targeted manner to enable enhanced outcomes to be achieved. While the knowledge sharing process is ongoing, critical junctures are identified below;

- Stakeholder engagement
- Design management
- Procurement
- Construction planning

See the Interface Management Plan (SMCSWSSJ-JHL-WSS-IF-PLN-000019) and the Community and Stakeholder Engagement Plan (SMCSWSSJ-JHL-WSS-CL-PLN-000023) for further information.

8.4 Decision Making

JHLOR ensures that decision making in relation to significant issues* is characterised by:

- A consideration of options including business-as-usual and other proven approaches taken in comparable situations.
- An evaluation of options that considers environmental, social and economic aspects through multi-criteria analysis or other scored means
- An evaluation of options based on the useful forecast life of the infrastructure asset (i.e. 100-year design life).

*The most significant decisions have been made during earlier phases (i.e. planning and tendering and community engagement). These decisions had wide-ranging ramifications for many other economic, social and environmental issues, including those that were most commonly raised within submissions to the EIS, they are listed below in order of total number of issues raised:

- Traffic, Transport and Access
- Noise and Vibration
- Heritage
- Social Impact
- Business Impact
- Landscape and Visual Impact
- Hydrology, Flooding and Water Quality

- Biodiversity

During design, options were developed by Metro (TfNSW), Arcadis and others. These options were reviewed by TfNSW and the preferred option has now been contracted for delivery. Where possible, Metro and Arcadis will assist with the provision of evidence that these significant decisions were evaluated by considering environmental, social and economic aspects by incorporating their value into cost-benefit analysis.

During the delivery of the Project, significant design and construction issues will be identified. Significant issues are defined as issues that have an impact upon the following aspects:

- Departures from the design
- Cost efficiency
- Product performance
- Program efficiency
- Environmental outcomes
- Stakeholder impacts
- Social outcomes (community, workforce, diversity).
- Customer satisfaction.
- Reputation.
- Safety.

Once these significant issues have been identified, they will be analysed against other options as described above through the utilisation of an MCA (See Appendix C).

Generally, when determining what opportunities (derived from knowledge sharing activities) to include, the following question applies:

- Will undertaking the opportunity reduce capital expenditure and comply with applicable requirements?

Where the answer is ‘yes’, the opportunity will typically be included automatically. Other opportunities that may require additional expenditure, or modification/relaxation of applicable requirements are considered for inclusion based on the following questions (a consensus on the answers to these questions will generally be sought during SLC or other appropriate workshops):

- Will undertaking the opportunity reduce whole-of-life cost or impacts?
- Will undertaking the opportunity attend to a material risk or opportunity for the Project, the client or other stakeholders?

Accordingly, once decision making in relation to opportunities has occurred, the opportunities’ status is updated in the Opportunity Register as either ‘Included’ or ‘Abandoned’. If the answers to the relevant questions are unclear, the opportunity status will remain 'Under consideration' and further information will be sought.

9. Performance Evaluation

9.1 Monitoring Measurement and Analysis

The Project team shall monitor, measure, analyse and evaluate its sustainability performance. The Project undertakes weekly sustainability inspections during construction.

Additional monitoring (e.g. materials, energy, water and waste) is also undertaken in accordance with the applicable compliance requirements, including in relation to:

Table 10 Sustainability Performance Metrics

Performance Data	Data Source
Electricity consumption and generation, including any on-site renewable energy generation and any renewable energy sourced for the construction	Metering and bills
Quantity of greenhouse gas emissions associated with electricity consumption which have been offset, and method of offset	Metering and bills (GHG conversion achieved using latest NGERS approved Factors) Offset certificates.
Fuel consumption	Bills and Monthly payment claims from subcontractors
Volume of potable mains water consumed for the contractor's activities	Metering
Volume of non-potable water consumed for the contractor's activities, including details of the sources of non-potable water	Metering
Waste generation, recycling and disposal The volume of spoil Reused within site Beneficially reused off-site Disposed offsite	Reports from Construction & Demolition Waste Contractors
Paper & Carboard General Waste Comingled Organics Coffee Cups Hand Paper Towels Soft Plastic	Reports from Office Waste Contractors
Destinations for spoil which has been beneficially reused off-site or disposed of off-site.	
Quantities of steel and concrete which have been used	Contractor reporting / procurement records
Volume weighted average percentage cementitious content in concrete used which has comprised of fly ash or slag	'Green Star' report from concrete supplier

9.2 Reporting

The Project shall evaluate its sustainability performance. The Project communicates relevant sustainability performance information both internally and externally, as identified in its communication processes and as required by its compliance obligations. The Project evaluates and documents compliance within Project reports and takes action if needed, reports for each scope differ and include:

Table 11 Project reporting requirements

SWMC	BEW	BAC	SWM3
Monthly Project Reports	Monthly Project Reports	Monthly Project Reports	Monthly Project Reports
Monthly Sustainability Data Report (MSDR)		Monthly Sustainability Data Report (MSDR)	Monthly Sustainability Data Report (MSDR)
Quarterly Sustainable Design Report (QSDR)		Quarterly Sustainable Design Report (QSDR)	
Quarterly Sustainability Report (QSR)		Quarterly Sustainability Report (QSR)	Quarterly Sustainability Report (QSR)
Annual Sustainability Report (ASR)			
Carbon Emissions Reporting Tool (CERT)	Carbon Emissions Reporting Tool (CERT)	Carbon Emissions Reporting Tool (CERT)	Carbon Emissions Reporting Tool (CERT)
TfNSW Air Emission Data Collection Workbook 9TP-FT-439	TfNSW Air Emission Data Collection Workbook 9TP-FT-439	TfNSW Air Emission Data Collection Workbook 9TP-FT-439	TfNSW Air Emission Data Collection Workbook 9TP-FT-439

9.3 Audit

The Project is required under the ISC framework to audit its management systems quarterly. The audits will begin three months from the commencement of construction. The audits will be a mixture of both ISP (Independent Sustainability Audits) and Internal audits. The Project audits are conducted separately for each JHLOR project rating, unless otherwise specified, and at planned intervals. The scope of the audit will include but is not limited to:

- Material environmental, social, and economic issues
- Sustainability training records

Sustainability monitoring and inspection results

The Project has established, implemented and maintain an audit programme for the Project for each rating, including the frequency, methods, responsibilities, planning requirements and reporting of its audits. Sustainability audits are conducted at least quarterly with at least one per year being ‘independent’.

The scope of the audits may vary but it is important that the most material issues are audited regularly during the rating period. Sustainability audits cover the most material environmental, social and economic issues. 'Regularly' needs to be described and justified for each project. The audit reports demonstrate that these requirements have been fulfilled.

9.4 Management Review

Project Management review the implementation of the SMP at Project level, at planned intervals, to ensure its continuing suitability, adequacy and effectiveness. Reviews are performed by the Sustainability Leadership Committee. The management reviews incorporate community participation (e.g. record of minutes from community meetings being input to management review).

The management review includes consideration of:

- the status of actions from previous management reviews;
- changes in:
- external and internal issues that are relevant to sustainability;
- the needs and expectations of interested parties, including compliance obligations;
- risks and opportunities;
- the extent to which sustainability objectives have been achieved;
- information on the Project's sustainability performance, including trends in:
- nonconformities and corrective actions;
- monitoring and measurement results;
- fulfilment of its compliance obligations;
- audit results;
- adequacy of resources;
- relevant communication(s) from interested parties, including the community; and,
- opportunities for continual improvement

The outputs of the management reviews include:

- conclusions on the continuing suitability, adequacy and effectiveness of the SMP;
- decisions related to continual improvement opportunities;
- decisions related to any need for changes to the SMP, including resources;
- actions, if needed, when sustainability objectives have not been achieved;
- opportunities to improve integration of the SMP with other Project processes, if needed; and,
- any implications for the strategic direction of the Project.

The Project shall retain documented information as evidence of the results of management reviews.

9.5 Sustainability Inspections

S2B's Environmental and Sustainability Inspection Report Form Appendix G will be used to monitor site sustainability performance. The inspection will be completed by a member of the Environment and Sustainability team on a weekly basis.

Issues identified, and any associated actions raised and unable to be closed on the day, will be captured in Fieldview, the Project HSE digital management platform.

10. Improvement

When a nonconformity occurs, including in relation to sustainability, the Project shall:

- react to the nonconformity and, as applicable:
  - take action to control and correct it;
  - deal with the consequences, including mitigating adverse sustainability impacts;
  - Notify all relevant stakeholders, including Sydney Metro.
- 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 nonconformities exist, or could potentially occur;
- implement any action needed;
- Engage Sydney Metro experts for consultation if needed
- review the effectiveness of any corrective action taken; and,
- make changes to the SMP, if necessary.

Corrective actions shall be appropriate to the significance of the effects of the nonconformities encountered, including the sustainability outcomes(s).

The Project shall retain documented information as evidence of:

- the nature of the nonconformities and any subsequent actions taken; and,
- the results of any corrective action

The detailed report will be provided to Sydney Metro's designated contact.

Appendix A Plan Compliance

Project	Document	Deed Clause	Description	Where Addressed
All	S2B CEMF	3.2 (a)	Principal Contractors are required to prepare and implement a Sustainability Management Plan (SMP) relevant to the scale and nature of their scope of works. The SMP shall comprise of a main SMP document and issue-specific sub-plans.	This SMP
All	S2B CEMF	3.2 (b)	Depending on the scope and scale of the works, TfNSW may decide to streamline the SMP and sub-plan requirements. As a minimum the SMP will address and detail:	This SMP
All	S2B CEMF	3.2 (b)(i)	The requirements of the relevant planning approval documentation, any relevant conditions of all other permits and licences, the Contractor's corporate EMS, the sustainability provisions of the contract documentation, and this Construction Environmental Management Framework	Section 1.2
All	S2B CEMF	3.2 (b)(ii)	The sustainability management team structure, including key personnel authority and roles of key personnel, lines of responsibility and communication, minimum skill levels of each role and interfaces with the overall project organisation structure	Section 3, Table 3 and 4
All	S2B CEMF	3.2 (b)(iii)	A sustainability policy statement and strategies for adaptation to climate change, resource management (including energy, water and waste), workforce development, procurement and biodiversity enhancement	Appendix B
All	S2B CEMF	3.2 (b)(iv)	Sustainability initiatives to be implemented during the project	Section 4, Appendix E and F
All	S2B CEMF	3.2 (b)(v)	How sustainability initiatives will be identified and implemented	Section 4, Appendix E and F
All	S2B CEMF	3.2 (b)(vi)	The processes and methodologies for assurance, monitoring, auditing, corrective action, continuous improvement and reporting on sustainability performance	Section 4.4, Section 5, Section 6, Section 6.2, Section 6.3, Section 6.4, Section 7
All	S2B CEMF	3.2 (b)(vii)	The processes and methodologies which will be used to achieve the required scores under rating systems identified in contract documents	Section 4.4
All	S2B CEMF	3.2 (b)(viii)	The processes and procedures for undertaking climate change risk assessments	Section 4.1.1
All	S2B CEMF	3.2 (b)(ix)	The processes and procedures for the identification and implementation of climate change adaptation measures	Section 4.1.1

All	S2B CEMF	All 3.2 (b)(x)	The approach to sustainable procurement including: - Processes and procedures that will be used to provide environmental and social improvement - The processes and environmental and social criteria that will be used for the selection of Subcontractors - The processes that will be used to ensure ethical sourcing of labour and materials - Where equipment, materials or labour are procured from locations outside Australia, the processes that will be used to ensure human rights impacts and risks are identified and mitigated; and - Intefaces with other Project Plans	SMP and Procurement Management Plan
All	S2B CEMF	3.2 (c)	Depending on the scope of the works, the SMP will also include, as a separate sub plan: (ii) A Construction Carbon and Energy Management Plan (ECMP) (iii) A Materials Management Plan (MMP); and (iv) A Waste Management & Recycling Plan (WRMP)	Section 4.4
All	S2B CEMF	13.1	**Carbon and Energy Management Objectives**	Section 4.4, See ECMP
All	S2B CEMF	13.1 (a)	The following carbon and energy management objectives will apply to construction:	See ECMP
All	S2B CEMF	13.1 (a)(i)	Reduce energy use and carbon emissions during construction	See ECMP
All	S2B CEMF	13.1 (a)(ii)	Support innovative and cost effective approaches to energy efficiency, low carbon / renewable energy sources and energy procurement; and	See ECMP
All	S2B CEMF	13.1 (a)(iii)	Design to reduce energy use and carbon emissions during operations	See ECMP
All	S2B CEMF	13.2	**Carbon and Energy Management Implementation**	See ECMP
All	S2B CEMF	13.2 (a)	Principal Contractors will develop and implement a Carbon and Energy Management Plan that will include, as a minimum:	See ECMP
All	S2B CEMF	13.2 (a)(i)	The carbon and energy mitigation measures as detailed in the environmental approval documentation;	See ECMP
All	S2B CEMF	13.2 (a)(ii)	The relevant requirements of the Sydney Metro Environment and Sustainability Policy and the Sydney Metro Sustainability Strategy;	See ECMP
All	S2B CEMF	13.2 (a)(iii)	The responsibilities of key project personnel with respect to the implementation of the plan;	See ECMP
All	S2B CEMF	13.2 (a)(iv)	The low carbon strategies and initiatives that will be implemented to minimise the carbon emissions associated with construction;	See ECMP

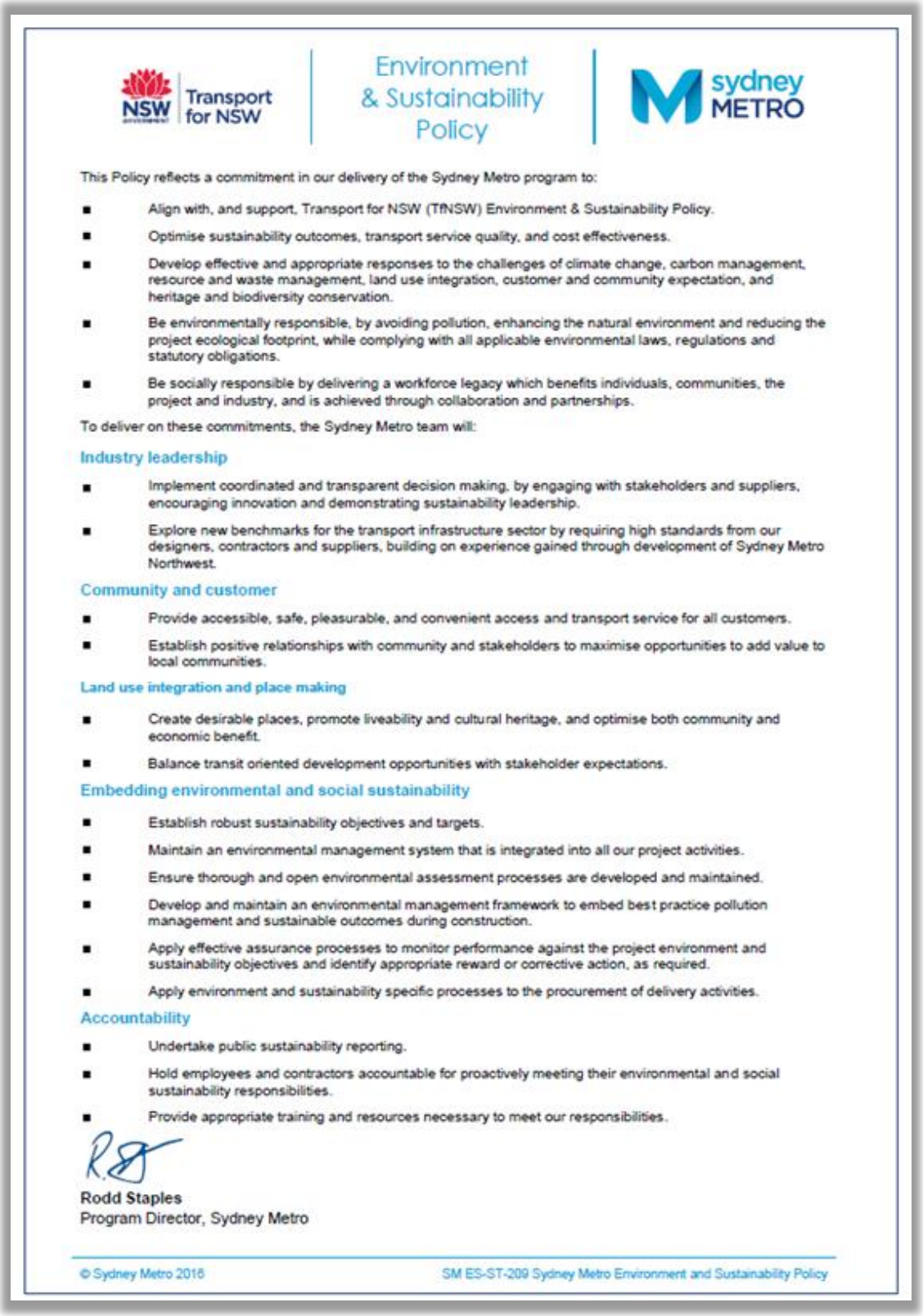
All	S2B CEMF	13.2 (a)(v)	The energy efficiency strategies and initiatives that will be implemented to minimise energy use associated with construction;	See ECMP
All	S2B CEMF	13.2 (a)(vi)	Carbon emission estimates determined using a carbon footprint assessment undertaken in accordance with ISO 14064-1, ISO14064-2 and ISO14064-3 that incorporates direct and indirect emissions associated with construction; and	See ECMP
All	S2B CEMF	13.2 (a)(vii)	Compliance record generation and management.	See ECMP
All	S2B CEMF	13.2 (b)	Reporting of carbon and energy will be undertaken throughout the construction works in accordance with the National Greenhouse and Energy Reporting Act 2007.	See ECMP
All	S2B CEMF	13.2 (c)	The Contractors would be required to retain appropriate records and prepare carbon footprint assessments (inclusive of Scope 1, 2 and 3 emissions) at various stages of construction.	See ECMP
All	S2B CEMF	13.3	**Carbon and Energy Mitigation**	See ECMP
All	S2B CEMF	13.3 (a)	Examples of carbon and energy mitigation measures include:	See ECMP
All	S2B CEMF	13.3 (a)(i)	Equipment and material selection will have consideration of energy efficiencies;	See ECMP
All	S2B CEMF	13.3 (a)(ii)	Construction workers will be encouraged to use sustainable transport options and green travel plans will be developed;	See ECMP
All	S2B CEMF	13.3 (a)(iii)	Inclusion of renewable energy sources to power temporary facilities and equipment where feasible;	See ECMP
All	S2B CEMF	13.3 (a)(iv)	Designing and operating Site offices for energy efficiency;	See ECMP
All	S2B CEMF	13.3 (a)(v)	Offsetting a portion of construction greenhouse gas emissions; and	See ECMP
All	S2B CEMF	13.3 (a)(vi)	Efficient operation of vehicles and equipment.	See ECMP
All	S2B CEMF	14.1	Materials Management Objectives	Section 4.4, See MMP
All	S2B CEMF	14.1 (a)	The following materials management objectives would apply to the construction of the project:	See MMP
All	S2B CEMF	14.1 (a)(i)	Reduce material use throughout the project life-cycle;	See MMP
All	S2B CEMF	14.1 (a)(ii)	Consider embodied impacts in materials selection;	See MMP
All	S2B CEMF	14.1 (a)(iii)	Use recycled materials;	See MMP
All	S2B CEMF	14.1 (a)(iv)	Recycle and reuse materials onsite; and	See MMP
All	S2B CEMF	14.1 (a)(v)	Influence subcontractors and materials suppliers to adopt sustainability objectives in their works and procurement.	See MMP
All	S2B CEMF	14.2	Materials Management Implementation	See MMP
All	S2B CEMF	14.2 (a)	Principal Contractors will be required to develop and implement a Sustainable Procurement Policy that will include as a minimum:	See MMP
All	S2B CEMF	14.2 (a)(i)	The materials mitigation measures as detailed in the environmental approval documentation-	See MMP

All	S2B CEMF	14.2 (a)(ii)	The relevant requirements of the City & Southwest Environment and Sustainability Policy and the City & Southwest Sustainability Strategy-	See MMP
All	S2B CEMF	14.2 (a)(iii)	The responsibilities of key project personnel with respect to the implementation of the policy-	See MMP
All	S2B CEMF	14.2 (a)(iv)	Compliance record generation and management-	See MMP
All	S2B CEMF	14.2 (a)(v)	Ethical sourcing of materials-DQG	See MMP
All	S2B CEMF	14.2 (a)(vi)	Local sourcing.	See MMP
All	S2B CEMF	14.2 (b)	The Contractors will be required to retain records detailing the consideration of sustainability in the procurement of all materials.	See MMP
All	S2B CEMF	14.3	Materials Mitigation	See MMP
All	S2B CEMF	14.3 (a)	Examples of materials mitigation measures include:	See MMP
All	S2B CEMF	14.3 (a)(i)	Consideration of quality and durability in the procurement of materials-	See MMP
All	S2B CEMF	14.3 (a)(ii)	Using recycled materials-	See MMP
All	S2B CEMF	14.3 (a)(iii)	Using materials with a lower embodied impact-	See MMP
All	S2B CEMF	14.3 (a)(iv)	Using recycled steel in concrete reinforcement-	See MMP
All	S2B CEMF	14.3 (a)(v)	Developing deconstruction plans to enable recycling and reuse at end-of-life-	See MMP
All	S2B CEMF	14.3 (a)(vi)	Using low-VOC, low emission materials-	See MMP
All	S2B CEMF	14.3 (a)(vii)	Using sustainably sourced timber and wood products-	See MMP
All	S2B CEMF	14.3 (a)(viii)	Low-carbon concrete-DQG	See MMP
All	S2B CEMF	14.3 (a)(ix)	Consideration of whole-of-life costs during procurement.	See MMP
All	S2B CEMF	17.1	Waste Objectives	Section 4.4, See WRMP
All	S2B CEMF	17.1 (a)	The following waste objectives will apply to construction:	See WRMP
All	S2B CEMF	17.1 (a)(i)	Minimise waste throughout the project lifecycle; and	See WRMP
All	S2B CEMF	17.1 (a)(ii)	Waste management strategies will be implemented in accordance with the Waste Avoidance and Resource Recovery Act 2001 management hierarchy as follows: • Avoidance of unnecessary resource consumption; • Resource recovery (including reuse, reprocessing, recycling and energy recovery); and Disposal.	See WRMP
All	S2B CEMF	17.1 (b)	Targets for the recovery, recycling or reuse of construction waste, and beneficial reuse of spoil will be provided by the Principal Contractor.	See WRMP
All	S2B CEMF	17.2	Waste Implementation	See WRMP
All	S2B CEMF	17.2 (a)	Principal Contractors will develop and implement a Waste Management and Recycling Plan which will include as a minimum:	See WRMP
All	S2B CEMF	17.2 (a)(i)	The waste management and recycling mitigation measures as detailed in the environmental approval documentation;	See WRMP

All	S2B CEMF	17.2 (a)(ii)	The responsibilities of key project personnel with respect to the implementation of the plan;	See WRMP
All	S2B CEMF	17.2 (a)(iii)	Waste management and recycling monitoring requirements;	See WRMP
All	S2B CEMF	17.2 (a)(iv)	A procedure for the assessment, classification, management and disposal of waste in accordance with the Waste Classification Guidelines (DECC, 2008); and	See WRMP
All	S2B CEMF	17.2 (a)(v)	Compliance record generation and management.	See WRMP
All	S2B CEMF	17.2 (b)	Principal Contractors will undertake the following waste monitoring as a minimum:	See WRMP
All	S2B CEMF	17.2 (b)(i)	Weekly inspections will include checking on the waste storage facilities on site; and	See WRMP
All	S2B CEMF	17.2 (b)(ii)	All waste removed from the site will be appropriately tracked from 'cradle to grave' using waste tracking dockets.	See WRMP
All	S2B CEMF	17.2 (c)	Principal Contractors will report all necessary waste and purchasing information to TfNSW as required for TfNSW to fulfil their WRAPP reporting requirements.	See WRMP
All	S2B CEMF	17.2 (d)	Compliance records will be retained by the Principal Contractors in relation to waste management including records of inspections and waste dockets for all waste removed from the site.	See WRMP
All	S2B CEMF	17.3	Waste Mitigation	See WRMP
All	S2B CEMF	17.3 (a)	Examples of waste management and recycling mitigation measures include:	See WRMP
All	S2B CEMF	17.3 (a)(i)	All waste materials removed from the sites will be directed to an appropriately licensed waste management facility;	See WRMP
All	S2B CEMF	17.3 (a)(ii)	The use of raw materials (noise hoarding, site fencing, etc...) will be reused or shared, between sites and between construction contractors where feasible and reasonable; and	See WRMP
All	S2B CEMF	17.3 (a)(iii)	Recyclable wastes, including paper at site offices, will be stored separately from other wastes.	See WRMP
SWM/BAC	Sch D1 MR-Sy	3 (a)	The Contractor must develop, implement and maintain governance structures, processes and systems that ensure integration and implementation of all sustainability considerations, initiatives and reporting.	
SWM/BAC	Sch D1 MR-Sy	3(b)	For the SSJ Contractor's Activities related to the Works, the Contractor must:	Section 4.1
SWM	Sch D1 MR-Sy (3rd Amendment)	Annexure D – update to 3 (b)(ii)	use the IS Rating Scheme to achieve an "As Built" rating score of at least 55 for the constructed Works. The SSJ Contractor is to review opportunities to exceed the 'As-Built' score of 55 throughout the completion of Design. The Principal may issue a Change Order for any opportunities identified to reach a score of up to 65.	Section 4.1

BEW	SWTC App F08	3 (b)	The SSJ Contractor must achieve a gold rating using the Transport for NSW Sustainable Design Guidelines (SDG) version 4.0.	Section 4.1
BAC	Sch D1 MR-Sy (5th Amendment)	Annexure E – update to 3 (b)(ii)	use the IS Rating Scheme to achieve a "Design" rating score of at least 65 for the design of the Works, and an "As Built" rating score of at least 65 for the constructed Works	Section 4.1
SWM/BAC	Sch D1 MR-Sy (5th Amendment)	Annexure D and E – update to 7(a)	develop, implement, and maintain a sustainable procurement policy and processes that comply with the requirements of BS 8903:2010 "Principles and framework for procuring sustainably – Guide", and include them in the Sustainability Management Plan; For SWM Corridor Works any existing plan from the SSJ Contractor can be appended to demonstrate conformance	Appendix B
BAC	Sch D1 MR-Sy (5th Amendment)	Annexure E – update to 9 (h) (viii)	The QSR must, as a minimum, include, address and detail: The sustainability performance of the SSJ Contractor against all other requirements contained in this MR-Sy including a completed copy of the Sustainability Assurance Framework document outlined in 3 (e) (ii) with reference to relevant evidence documents; and	Section 6.2
BAC	Sch D1 MR-Sy (5th Amendment)	Annexure D – update to 9 (j)	The SSJ Contractor's MSDR must as a minimum, detail the SSJ Contractor's performance against the targets identified in the Sustainability Management Plan, Spoil Management Plan, Carbon and Energy Management Plan, and Materials Management Plan (all required under MR-PA), using the Sydney Metro City & Southwest Sustainability Reporting Template and Monthly Reporting Guidance Document including reporting on: (xiv) any other information required as outlined within the Sydney Metro Monthly Reporting Guidance document and other information that the Principal's Representative may request.	Section 6.2

Appendix B Policies



NSW Transport for NSW

Environment & Sustainability Policy

sydney METRO

This Policy reflects a commitment in our delivery of the Sydney Metro program to:

- Align with, and support, Transport for NSW (TfNSW) Environment & Sustainability Policy.
- Optimise sustainability outcomes, transport service quality, and cost effectiveness.
- Develop effective and appropriate responses to the challenges of climate change, carbon management, resource and waste management, land use integration, customer and community expectation, and heritage and biodiversity conservation.
- Be environmentally responsible, by avoiding pollution, enhancing the natural environment and reducing the project ecological footprint, while complying with all applicable environmental laws, regulations and statutory obligations.
- Be socially responsible by delivering a workforce legacy which benefits individuals, communities, the project and industry, and is achieved through collaboration and partnerships.

To deliver on these commitments, the Sydney Metro team will:

Industry leadership

- Implement coordinated and transparent decision making, by engaging with stakeholders and suppliers, encouraging innovation and demonstrating sustainability leadership.
- Explore new benchmarks for the transport infrastructure sector by requiring high standards from our designers, contractors and suppliers, building on experience gained through development of Sydney Metro Northwest.

Community and customer

- Provide accessible, safe, pleasurable, and convenient access and transport service for all customers.
- Establish positive relationships with community and stakeholders to maximise opportunities to add value to local communities.

Land use integration and place making

- Create desirable places, promote liveability and cultural heritage, and optimise both community and economic benefit.
- Balance transit oriented development opportunities with stakeholder expectations.

Embedding environmental and social sustainability

- Establish robust sustainability objectives and targets.
- Maintain an environmental management system that is integrated into all our project activities.
- Ensure thorough and open environmental assessment processes are developed and maintained.
- Develop and maintain an environmental management framework to embed best practice pollution management and sustainable outcomes during construction.
- Apply effective assurance processes to monitor performance against the project environment and sustainability objectives and identify appropriate reward or corrective action, as required.
- Apply environment and sustainability specific processes to the procurement of delivery activities.

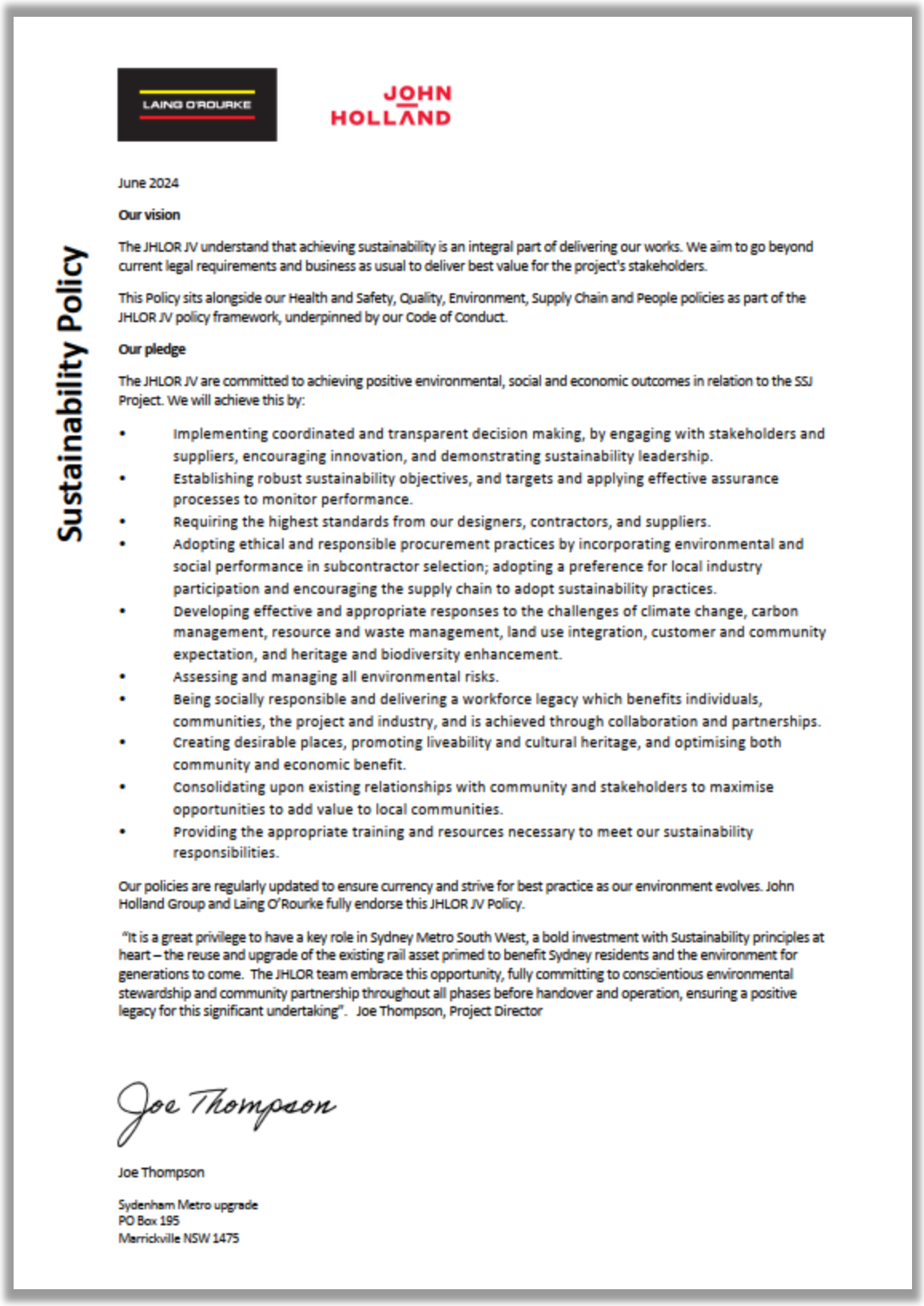
Accountability

- Undertake public sustainability reporting.
- Hold employees and contractors accountable for proactively meeting their environmental and social sustainability responsibilities.
- Provide appropriate training and resources necessary to meet our responsibilities.

Rodd Staples
Program Director, Sydney Metro

SM ES-ST-209 Sydney Metro Environment and Sustainability Policy

Figure 9. TfNSW and Sydney Metro's overarching Environment & Sustainability Policy



LAING O'ROURKE

JOHN HOLLAND

Sustainability Policy

June 2024

Our vision

The JHLOR JV understand that achieving sustainability is an integral part of delivering our works. We aim to go beyond current legal requirements and business as usual to deliver best value for the project's stakeholders.

This Policy sits alongside our Health and Safety, Quality, Environment, Supply Chain and People policies as part of the JHLOR JV policy framework, underpinned by our Code of Conduct.

Our pledge

The JHLOR JV are committed to achieving positive environmental, social and economic outcomes in relation to the SSJ Project. We will achieve this by:

- Implementing coordinated and transparent decision making, by engaging with stakeholders and suppliers, encouraging innovation, and demonstrating sustainability leadership.
- Establishing robust sustainability objectives, and targets and applying effective assurance processes to monitor performance.
- Requiring the highest standards from our designers, contractors, and suppliers.
- Adopting ethical and responsible procurement practices by incorporating environmental and social performance in subcontractor selection; adopting a preference for local industry participation and encouraging the supply chain to adopt sustainability practices.
- Developing effective and appropriate responses to the challenges of climate change, carbon management, resource and waste management, land use integration, customer and community expectation, and heritage and biodiversity enhancement.
- Assessing and managing all environmental risks.
- Being socially responsible and delivering a workforce legacy which benefits individuals, communities, the project and industry, and is achieved through collaboration and partnerships.
- Creating desirable places, promoting liveability and cultural heritage, and optimising both community and economic benefit.
- Consolidating upon existing relationships with community and stakeholders to maximise opportunities to add value to local communities.
- Providing the appropriate training and resources necessary to meet our sustainability responsibilities.

Our policies are regularly updated to ensure currency and strive for best practice as our environment evolves. John Holland Group and Laing O'Rourke fully endorse this JHLOR JV Policy.

"It is a great privilege to have a key role in Sydney Metro South West, a bold investment with Sustainability principles at heart – the reuse and upgrade of the existing rail asset primed to benefit Sydney residents and the environment for generations to come. The JHLOR team embrace this opportunity, fully committing to conscientious environmental stewardship and community partnership throughout all phases before handover and operation, ensuring a positive legacy for this significant undertaking". Joe Thompson, Project Director

Joe Thompson

Joe Thompson

Sydenham Metro upgrade
PO Box 195
Marrickville NSW 1475

Figure 10. JHLOR JV Project Sustainability Policy

Sustainability in Procurement Policy

Our Commitment

The Sydenham to Bankstown (S2B) Project is dedicated to sustainable and ethical procurement. Our aim is to positively impact to the communities we serve by making informed and responsible procurement decisions.

Our Approach

John Holland and Laing O'Rourke Joint Venture (JHLORJV) prioritises supporting our workforce and supply chain partners to be part of our sustainability journey. We consider our suppliers and subcontractors as key allies in achieving our sustainability goals, which include:

- **Compliance with Standards:** Ensuring procurement activities align with the Workplace Relations Management Plan, NSW Code of Practice for Procurement: Building and Construction (NSW Guidelines) and ISO 20400: Sustainable Procurement Guidelines.
- **Fair and Impartial Management**: Conducting all procurement processes with fairness, impartially and consistency.
- **Risk and Opportunity Management:** Environmental, social and economic risks and opportunities will be addressed within our value proposition.
- **Sustainability in Tender Evaluation:** Tender evaluation of high impact procurement packages will consider environment, social and sustainability aspects through a multi-criteria analysis, with a weighting greater than 20% assigned to non-financial criteria.
- **Ethical and Responsible Practices:** Selecting supply chain partners based on past sustainability performance, with a preference for:
    - Local suppliers near the Project's sites or within specified Local Government Areas.
    - Regional suppliers within Greater Western Sydney and NSW.
    - Australian and New Zealand small to medium businesses.
    - Aboriginal and Torres Strait Islander suppliers and social enterprises.
- **Social Responsibility**: Being socially responsible and delivering a workforce legacy which benefits the Project, individuals, communities and industry. This is achieved through collaboration and partnerships.
- **Involvement of Qualified Representatives:** Ensuring qualified representatives have consistent involvement including tender evaluations and meetings, to integrate sustainability effectively into the procurement process.
- **Whole-of-Life Costing:** Adopting a whole-of-life costing model to maximise sustainability benefits.
- **Stimulating Innovation:** Encouraging innovation in procurement to enhance environmental, social and economic outcomes and reward exemplary supply chain performance.
- **Sustainability Training:** Provide sustainability training opportunities to our high impact suppliers.

Stacy Raymond
Senior Commercial Manager - Sydenham to Bankstown
John Holland and Laing O'Rourke Joint Venture

Figure 11. JHLOR JV Project Procurement Policy

LAING O'ROURKE

GROUP MODERN SLAVERY POLICY

Effective April 2024

Laing O'Rourke understands that the establishment of our business strategy and delivery of our business objectives can only be achieved by carrying out business openly, honestly and with integrity. We are accordingly committed to ensuring there is no modern slavery in our operations and supply chain.

Breaches of this policy may result in disciplinary action for staff and/or termination of employment or termination of our relationship with organisations with whom we do business.

This policy forms part of our global policy framework, underpinned by 'Doing the Right Thing' – our Global Code of Conduct, and will be realised by:

- Prohibiting modern slavery in all forms, including threats of violence, harassment, discrimination and intimidation within our operations and supply chain
- Ensuring that employees have freedom of movement, freedom of association and freedom to terminate employment, and communicating our expectation of the same from all of our contractors, suppliers and other business partners, including that they ensure the same from their own suppliers
- Prohibiting the use of worker-paid recruitment fees within our operations and supply chain
- Prohibiting compulsory overtime within our operations and supply chain
- Prohibiting child labour
- Prohibiting the confiscation of workers original identification documents and communicating our expectation of the same from all of our contractors, suppliers and other business partners, including that they ensure the same from their own suppliers
- Appropriately supporting victims of modern slavery in identifying access to remedy, compensation and justice
- Ensuring that we understand and comply with the labour/employment laws and laws against slavery applicable to Laing O'Rourke in the jurisdictions in which we operate
- Training employees to ensure they understand the standards expected of them
- Implementing effective due diligence procedures and other controls to ensure modern slavery is not taking place anywhere in our own business or in our supply chains and communicating our expectation of the same high standards from all of our contractors, suppliers and other business partners, that they will hold their own suppliers to the same high standards
- Ensuring that effective arrangements are in place to allow employees to report where they have concerns about modern slavery, and to ensure that such concerns are investigated and reported appropriately to the relevant authorities
- Ensuring that no one who uses our 'speak up' procedures is subject to victimisation as a result of reporting any suspicion of modern slavery
- Ensuring appropriate oversight of our modern slavery programme
- Reviewing this policy regularly to ensure its effectiveness

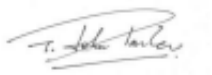
Group Modern Slavery Policy
Effective April 2024

Modern slavery is a violation of fundamental human rights through the severe exploitation of otherpeople for personal or commercial advantage and includes securing services from children and persons vulnerable to modern slavery, slavery, servitude, forced or compulsory labour, human trafficking, debt bondage and deceptive recruiting for labour or services.

Laing O'Rourke expects compliance with this policy across its global operations. This policy applies to all employees and officers of Laing O'Rourke. It also applies to all persons working for us or on our behalf in any capacity, including all employees, directors, officers, agency workers, seconded workers, volunteers, interns, agents, contractors, external consultants, third-party representatives and business partners, and includes suppliers to Laing O'Rourke.

Overall responsibility for this policy rests with the Board of Directors of Laing O'Rourke.

The Board of Directors of Laing O'Rourke fully endorses this policy.



Sir John Parker
Chairman

Laing O'Rourke Group Modern Slavery Policy

Appendix C Score cards

SWMC

The following is an excerpt from the ISC Scorecard. The ISC scorecard is a stand-alone spreadsheet which shall remain live until project completion is achieved. Details shall be updated upon finalising the weightings assessment, which will be submitted to the IS Verifier's for acceptance.

Category	Credit		Materiality Score	Score Possible	Target Level	Target Score
Management Systems						
Man-1	Sustainability leadership and commitment		2	1.00	3/3	1.00
Man-2	Risk and opportunity management		2	1.00	2/2	1.00
Man-3	Organisational structure, roles and responsibilities		2	1.00	2/2	1.00
Man-4	Inspection and auditing		2	1.00	2/2	1.00
Man-5	Reporting and review		2	1.00	2/3	0.66
Man-6	Knowledge sharing		2	2.24	2/3	1.49
Man-7	Decision-making		2	3.24	2/3	2.16
		Sub-total		10.46		8.30
Procurement and Purchasing						
Pro-1	Commitment to sustainable procurement		2	1.25	3/3	1.25
Pro-2	Identification of suppliers		2	1.25	3/3	1.25
Pro-3	Supplier evaluation and contract award		2	1.25	3/3	1.25
Pro-4	Managing supplier performance		2	1.25	2/3	0.83
		Sub-total		4.98		4.57
Climate Change Adaptation						
Cli-1	Climate change risk assessment		4	4.98	2/3	3.32
Cli-2	Adaptation options		4	4.98	2/3	3.32
		Sub-total		9.96		6.64
Energy and Carbon						
Ene-1	Energy and carbon monitoring and reduction		2	8.97	2/3	5.98
Ene-2	Use of renewable energy		2	1.49	1/3	0.50
		Sub-total		10.46		6.48
Water						
Wat-1	Water use monitoring and reduction		1	2.24	1/3	0.75
Wat-2	Replace potable water		1	1.25	2/3	0.83
		Sub-total		3.49		1.58
Materials						
Mat-1	Materials footprint measurement and reduction		2	5.98	2/3	3.99
Mat-2	Environmentally labelled products and supply chains		2	1.00	2/3	0.66
		Sub-total		6.97		4.65

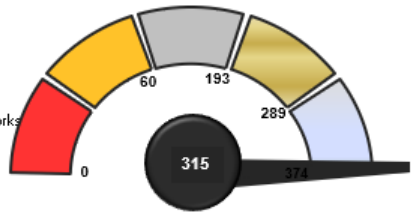
Discharges to Air, Land & Water						
Dis-1	Receiving water quality		2	2.37	1/3	0.79
Dis-2	Noise		4	4.73	2/3	3.15
Dis-3	Vibration		2	2.37	2/3	1.58
Dis-4	Air quality		2	2.37	2/3	1.58
Dis-5	Light pollution		2	1.00	1/1	1.00
		Sub-total		12.83		8.09
Land						
Lan-1	Previous land use		2	2.49	3/3	2.49
Lan-2	Conservation of on site resources		1	-	2/3	-
Lan-3	Contamination and remediation		2	1.99	2/3	1.33
Lan-4	Flooding design		4	2.99	1/2	1.49
		Sub-total		7.47		5.31
Waste						
Was-1	Waste management		2	1.99	2/2	1.99
Was-2	Diversion from landfill		2	3.49	2/3	2.32
Was-3	Deconstruction/ Disassembly/ Adaptability		1	0.75	1/3	0.25
		Sub-total		6.23		4.57
Ecology						
Eco-1	Ecological value		2	7.47	2/3	4.98
Eco-2	Habitat connectivity		1	1.49	1/3	0.50
		Sub-total		8.97		5.48
Community Health, Well-being and Safety						
Hea-1	Community health and well-being		2	2.49	3/3	2.49
Hea-2	Crime prevention		1	1.25	1/2	0.62
		Sub-total		3.74		3.11
Heritage						
Her-1	Heritage assessment and management		2	2.49	2/3	1.66
Her-2	Monitoring and management of heritage		2	2.49	2/3	1.66
		Sub-total		4.98		3.32
Stakeholder Participation						
Sta-1	Stakeholder engagement strategy		3	1.87	3/3	1.87
Sta-2	Level of engagement		3	1.87	3/3	1.87
Sta-3	Effective communication		3	1.87	2/2	1.87
Sta-4	Addressing community concerns		3	1.87	2/2	1.87
		Sub-total		7.47		7.47
Urban and Landscape Design						
Urb-1	Urban design		1	1.99	1/3	0.66
Urb-2	Implementation		1	-	1/2	-
		Sub-total		1.99		0.66
Innovation						
Inn-1	Innovation		2	10.00	0/10	-
		Sub-total		10.00		-
		Grand-total		110.00		70.2

BEW

The following is an excerpt from the Final SDG v4.0 Scorecard. The final rating has now been received, with a final score of 315.

Ongoing resourcing monitoring will continue for the BEW scope.

Project Name: Sydney Metro City and Southwest - Bankstown Early Works
Project CapEx ($ M): 25
Expected construction start date:
Expected construction completion date:



Completion

	Pass	Bronze	Silver	Gold	Platinum
Available Scor	0	60	193	289	374
85% Score	0	51	164	245	317

Requirement	Reference Design	Detailed Design SDR	Detailed Design CDR	6 Month Constructi on Report	6 Month Constructi on Report	6 Month Constructi on Report	6 Month Constructi on Report	6 Month Constructi on Report	6 Month Constructi on Report	Completion
1			P2							P4
			11							34
2			P4							P4
			37							37
2A			P1							P1
			0							0
3			P5							P5
			51							51
4			P4							P4
			18							18
5			P1							P1
			0							0
6			P1							P1
			0							0
7			P2							P3
			6							11
8			P5							P5
			26							26
8A			P1							P1
			0							0
9			P1							P1
			0							0
10			P1							P1
			0							0
11			P1							P1
			0							0
12			P5							P5
			48							48
13			P5							P5
			44							44
14			P3							P5
			23							46
Rating type	Target	Target	Target							Target
Total Score			264							315
Rating			Gold							Gold

BAC/ SWM3

Infrastructure Sustainability Scorecard
Credit Summary

Project: Bankstov
Location: Sydney/E
Rating Type: Design

Category	Credit		Materiality Score	Score Possible	Target Level	Target Score
Management Systems						
Man-1	Sustainability leadership and commitment		2	0.98	3/3	0.98
Man-2	Risk and opportunity management		2	0.98	2/2	0.98
Man-3	Organisational structure, roles and responsibilities		2	0.98	2/2	0.98
Man-4	Inspection and auditing		2	0.98	2/2	0.98
Man-5	Reporting and review		2	0.98	3/3	0.98
Man-6	Knowledge sharing		2	2.20	3/3	2.20
Man-7	Decision-making		2	3.18	0/3	-
		Sub-total		10.28		7.09
Procurement and Purchasing						
Pro-1	Commitment to sustainable procurement		2	1.22	3/3	1.22
Pro-2	Identification of suppliers		2	1.22	3/3	1.22
Pro-3	Supplier evaluation and contract award		2	-	0/3	-
Pro-4	Managing supplier performance		2	-	0/3	-
		Sub-total		2.45		2.45
Climate Change Adaptation						
Cli-1	Climate change risk assessment		4	4.89	2/3	3.26
Cli-2	Adaptation options		4	4.89	3/3	4.89
		Sub-total		9.79		8.15
Energy and Carbon						
Ene-1	Energy and carbon monitoring and reduction		3	13.21	3/3	13.21
Ene-2	Use of renewable energy		3	2.20	1.1/3	0.81
		Sub-total		15.41		14.02
Water						
Wat-1	Water use monitoring and reduction		2	4.40	1.3/3	1.91
Wat-2	Replace potable water		2	2.45	1/3	0.82
		Sub-total		6.85		2.72
Materials						
Mat-1	Materials footprint measurement and reduction		2	5.87	1.66/3	3.25
Mat-2	Environmentally labelled products and supply chains		2	-	3/3	-
		Sub-total		5.87		3.25
Discharges to Air, Land & Water						
Dis-1	Receiving water quality		2	2.32	1/3	0.77
Dis-2	Noise		3	3.49	3/3	3.49
Dis-3	Vibration		2	2.32	2/3	1.55
Dis-4	Air quality		2	2.32	2/3	1.55
Dis-5	Light pollution		3	1.47	1/1	1.47
		Sub-total		11.93		8.83

Land						
Lan-1	Previous land use		2	2.45	3/3	2.45
Lan-2	Conservation of on site resources		0	-	0/3	-
Lan-3	Contamination and remediation		2	1.96	2/3	1.30
Lan-4	Flooding design		2	1.47	1/2	0.73
		Sub-total		5.87		4.49
Waste						
Was-1	Waste management		2	1.96	1/2	0.98
Was-2	Diversion from landfill		2	-	0/3	-
Was-3	Deconstruction/ Disassembly/ Adaptability		2	1.47	2/3	0.98
		Sub-total		3.43		1.96
Ecology						
Eco-1	Ecological value		1	3.67	0/3	-
Eco-2	Habitat connectivity		1	1.47	0/3	-
		Sub-total		5.14		-
Community Health, Well-being and Safety						
Hea-1	Community health and well-being		2	2.45	3/3	2.45
Hea-2	Crime prevention		2	2.45	2/2	2.45
		Sub-total		4.89		4.89
Heritage						
Her-1	Heritage assessment and management		4	4.89	1/3	1.63
Her-2	Monitoring and management of heritage		4	-	0/3	-
		Sub-total		4.89		1.63
Stakeholder Participation						
Sta-1	Stakeholder engagement strategy		3	1.83	2/3	1.22
Sta-2	Level of engagement		3	1.83	2/3	1.22
Sta-3	Effective communication		3	1.83	2/2	1.83
Sta-4	Addressing community concerns		3	1.83	2/2	1.83
		Sub-total		7.34		6.12
Urban and Landscape Design						
Urb-1	Urban design		3	5.87	3/3	5.87
Urb-2	Implementation		3	-	0/2	-
		Sub-total		5.87		5.87
Innovation						
Inn-1	Innovation		2	10.00	1/10	1.00
		Sub-total		10.00		1.00
		Grand-total		110.00		72.5

Score	73
Rating	EXCELLENT

Appendix D MCA Template

		Analysis			Scoring			
		OPPORTUNITY 1						
Multicriteria Factors		Importance (%)	Option 1	Option 2	Weightin	Option 1	Option 2	negative = negative impact
Description					%			
Economic	Initial costs	5			5%			0 = same as bau
	Installation time and cost	5			7%			postive = positive impact
	Maintenance Costs After Construction	5			7%			
Environmental	Installation energy	3			2%			
	Construction Waste	3			5%			
	LCA (embodied carbon)	5			5%			
	Compliance with CEMP (ability to comply with noise, dust, vibration criteria)	2			2%			
	Ecolabel	1			2%			
	Heritage	1			1%			
Construction	Time/schedule	10			5%			
	Construction footprint	1			2%			
	Constructability (time and assembly), pre-fabrication of materials.	3			7%			
	Human and plant Resources	5			1%			
Technical	Durability (40 y design life)	10			8%			
	Compliance with SWTC (minimial interface with relevant parties)	5			2%			
	Simplicity of Maintenance	5			5%			
	Structural Integrity	10			10%			
	Security	4			2%			
	Conductivity - Earthing and	10			10%			
Social	Impacts on community	1			3%			
	Impact on users	1			3%			
Safety	Safety in design	3			3%			
	Construction safety	2			3%			
				SCORING	100%	0	0	
				WEIGHTED RANKING		#DIV/0!	#DIV/0!	
		100						

=Option 1 total scoring / MAX(Option 1 total scoring, Option 2 total scoring)

=Option 2 total scoring / MAX(Option 1 total scoring, Option 2 total scoring)

Appendix E ISC Rating Tracker

The following is an excerpt from the ISC Rating tracker. This excerpt includes detail of the applicable deliverables. The tracker is a stand-alone tracker which shall remain live until project completion is achieved. Further detail shall be populated during the course of the Rating.

Created	27/03/2022
Stage	As Built
	10/02/2022

Difficulty status		IS Points - by level	IS Points - cumulative
Complete/Tracking		-	-
Low		61.99	61.99
Medium		6.41	68.40
High		18.46	86.86
Not Targeting		14.44	101.30

Credit	Title		Level	Stage	Criteria	Must statements	Quotes from the manual	Risk status		Scaled credits - score	IS points	Level risk
Man-1	Sustainability leadership and commitment	1	1	Both	There are commitments to mitigating negative environmental, social and economic impacts	The policy must cover environmental, social and economic aspects		Low			0.37	Low
		1		Both		The policy must apply to the asset/network being rated		Low				
		1		Both		Policies must have been in place for the entire duration of the relevant Rating phases	For the As-Built Rating, there must have been a sustainability policy in place for the design phase and the construction phase (a number of policies are acceptable as long as there is continuous coverage).	Low				
		1		Both		Policies must be endorsed by senior management		Low				
		1		Both	These commitments are embedded into sustainability objectives and/or targets	Sustainability objectives and/or targets must cover environmental, social and economic aspects		Low				
		1		Both		Every policy commitment must have at least one objective and/or target linked to it		Low				
		2	2		The requirements for Level 1 are achieved						0.37	Low
		2		Both	The sustainability objectives and/or targets are reflected in project contracts	The sustainability objectives and/or targets must be reflected in the major project contracts (e.g. for designer, constructor, operator etc.).	Having a contractual requirement to achieve an IS rating is a suitable means and evidence for this. If the contractual requirement for an IS rating is used as evidence for Level 2, then the link between the (policy) commitments and specific IS rating credits that are being targeted, should be explained (as part of meeting the Level 1 criteria).	Low				
		3	3		The requirements for Level 2 are achieved						0.37	Low
		3		Both	The sustainability commitments go beyond mitigating negative impacts to restorative actions (i.e. net positive benefits for society and the environment)	There must be at least 1 commitment to restorative actions	Examples of restorative actions include – restoring a degraded ecological habitat, enhancing the value of a heritage item through adaptive reuse, improving the environmental value of a water course, being 'carbon positive', reducing noise levels compared to previous operation, enhancing the amenity value of a precinct, providing employment for long term unemployed and reducing the likelihood of floods.	Low				
		3		Both	The sustainability commitments are publicly stated			Low				
		1		Both	Environmental, social and economic risks are assessed	Risk register(s) include environmental, social and economic risks (at least one of each)		Low				

Appendix F Water Balance Study Report

Below is an excerpt from the **SWMC** Construction Water Balance Study.

Water Balance Study

Scroll down for Wat-2 ↓

Wat-1

Wat-1 Modelling and Reduction

Project Phase	ID	Usage	Base Case Water Use (ML)	Percentage Water Use (%)	Costs Over Project Phase ($)	Percentage of Total Cost (%)	Reduction Opportunity 1 (ML/%)		Reduction Opportunity 2 (ML/%)		Water Reduction (ML)	Total Water Reduction against base case for Construction or Operation phase (%)	Total Water Reduction against total lifecycle base case (%)	Total Water Use after reductions (ML)	Costs Over Project ($)
Construction	1	Site Facilities	2.59	18.16%	$ 5,470.04	18.16%	0.72	28%	0.00	0%	0.72	5.0%	5.0%	1.87	$ 3,949.68
Construction	2	Water Carts (Dust Suppression/ Vactruck/ Street Sweepers) - Non-potable water demand	10.02	70.20%	$ 21,142.20	70.20%	0.78	8%	0.174	2%	0.95	6.7%	6.7%	9.07	$ 19,130.59
Construction	3	Condition of Subgrade - non potable water demand	0.259	1.81%	$ 546.20	1.81%	0.10	37%	0.00	0%	0.10	0.7%	0.7%	0.16	$ 341.44
Construction	4	Condition of Granular Subbase Materials - non-potable water demand	0.003	0.02%	$ 6.64	0.02%	0.00	0%	0.00	0%	0.00	0.0%	0.0%	0.00	$ 6.64
Construction	5	Condition of Trenching Activities - non-potable water demand	0.702	4.92%	$ 1,481.60	4.92%	0.30	43%	0.00	0%	0.30	2.1%	2.1%	0.40	$ 845.06
Construction	6	Piling Activities	0.06	0.40%	$ 120.41	0.40%	0.01	26%	0.00	0%	0.01	0.1%	0.1%	0.04	$ 89.11
Construction	7	Water Barrier	0.64	4.48%	$ 1,348.59	4.48%	0.17	27%	0.00	0%	0.17	1.2%	1.2%	0.47	$ 982.13
		Total Potable Water During Design & Construction Phase	**14.27**	**100%**	**$ 30,116**	**100%**					**2.26**	**15.8%**	**15.8%**	**12.01**	$ 25,344.63
		TOTAL Lifecycle Water Reduction	**14.27**		**$ 30,116**						**2.26**	**16%**	**16%**	**12.01**	########

Wat 2

Wat-2 Replacing Potable Water / Recycled Water

Project Phase	ID	Usage	Required (ML)	Non-Potable (ML)	Potable (ML)	% Replaceable	Total Water Replacement against base case for Constructio	
Construction	1	**Site Facilities**	1.87	0.33	1.54	18%	3%	Changed reference to cells in table above for Wat-1
		Opportunity 1 - Rainwater Tank						
Construction	2	**Water Carts (Dust Suppression/ Vactruck/ Street Sweepers) - Non-potable water demand**	9.07	6.51	2.55			
		Replacement Opportunity 1 - Use of onsite treated water for street sweeping				72%	54%	
Construction	3	**Condition of Subgrade - non potable water demand**	0.16	0.00	0.16			double counting? May need to remove
		Geogrid for Permanent Works				0%	0%	
Construction	4	**Condition of Granular Subbase Materials - non-potable water demand**	0.00	0.00	0.00			double counting? May need to remove
		Nil opportunity for Replacement				0%	0%	
Construction	5	**Condition of Trenching Activities - non-potable water demand**	0.40	0.58	-0.18			double counting? May need to remove
		Replacement of potable water use with onsite treated water				144%	5%	
Construction	6	**Piling Activities**	0.04	0.06	-0.01			double counting? May need to remove
		Use of onsite treated water				135%	0%	
Construction	7	**Water Barrier**	0.47	0.51	-0.05			double counting? May need to remove
		Use of onsite treated water				110%	4%	
		Water Use - Replaceable (ML)			**7.99**			
		Water Use - Total (ML)			**12.01**			
		Water Use - Total Potable Water Saved (%)			**67%**			
TOTAL Lifecycle Water Replacement		**Water Use - Replaceable (ML)**	**7.99**					
		Water Use - Total (ML)	**12.01**					
		Total Potable Water Saved (%)	**67%**					

Site Facilities

Input Data			
	Unit	Value	Source/ Assumptions
Total Number of Staff	No.	102	Gender Tracker
Number Male of Staff	No.	79	Gender Tracker
Number of Female Staff	No.	24	Gender Tracker
Project duration	years	1.67	Formula
Number of working days per week	d/week	6	
Number of working weeks per year	week/year	52	

Base Case- Site Offices and Facilities											
	Unit	Toilets Female	Toilets Male	Urinal Male	Wash basin	Shower	Dish Washer	Kitchen Sink	TOTAL	Source/ Assumptions
Number of units	No.	1	1	1	1	1	1	1		0 if there is none, 1 if there is one or more units installed.
People in office using equipment	No.	24	79	79	103	3.9	103	103		Assumes 5% of staff shower on-site per day
WELS Star Rating (Standard practice)	Stars	3	3	3	4	3	3.5	4		GBCA Potable Water Calculator Guide 2015 - Section 5.3, pdf p 22 & 24
Usage per day (per person)	per day	2.3	1.3	2	2.5	3.45	3	2.5		GBCA Potable Water Calculator Guide 2015 - Section 5.1.1, pdf p 19
Water consumption / unit	L	4	4	2	7.5	9	14.77	7.5		AS/NZS 6400:2016
UOM	UOM	L / flush	L / flush	L/flush	L/min	L/min	L/wash	L/min		Water Rating Label
Daily consumption	L	220.80	410.80	316.00	1931.25	121.10	44.31	1931.25	4975.51	Formula
Annual consumption	L	68889.60	128169.60	98592.00	602550.00	37781.64	13824.72	602550.00	1552357.56	Formula
Total water consumption (3.7 years)	ML	0.12	0.21	0.16	1.01	0.06	0.02	1.01	2.59	Formula
Water cost	$	$ 242.75	$ 451.63	$ 347.41	$ 2,123.21	$ 133.13	$ 48.71	$ 2,123.21	$ 5,470.04	Formula

Wat-1. Reduction Opportunity 1- Increase Wels Rating in Site Offices										
	Unit	Toilets Female	Toilets Male	Urinal Male	Wash basin	Shower	Dish Washer	Kitchen Sink	TOTAL	Source/ Assumptions
	Source	Non-potable	Non-potable	Non-potable	Potable	Potable	Potable	Potable		
Number of units	No.	1	1	1	1	1	1	1		0 if there is none, 1 if there is one or more units installed.
People in office using equipment	No.	24	79	79	102	3.9	102	102		
WELS Star Rating (Actual)	Stars	4	4	4	6	3	4.5	4		
Usage per day (per person)	per day	2.3	1.3	2	2.5	3.45	3	2.5		GBCA Potable Water Calculator Guide 2010- *Table 1* GBCA Potable Water Calculator Guide 2012- *Table 3 and 4*
Water consumption / unit	UOM	3	3	1	3.5	9	11.6	7.5		AS/NZS 6400:2016
UOM	UOM	L / flush	L / flush	L/flush	L/min	L/min	L/wash	L/min		Water Rating Label
Daily consumption	L	165.60	308.10	158.00	892.50	121.10	34.80	1912.50	3592.60	Formula
Annual consumption	L	51667.20	96127.20	49296.00	278460.00	37781.64	10857.60	596700.00	1120889.64	Formula
Total water consumption (3.7 years)	ML	0.09	0.16	0.08	0.47	0.06	0.02	1.00	1.87	Formula
Water cost	$	$ 182.06	$ 338.72	$ 173.70	$ 981.21	$ 133.13	$ 38.26	$ 2,102.59	$ 3,949.68	Formula

Condition of Subgrade - non potable water demand

Base Case			
	Unit	Value	Source/ Assumption
Basis of Calculation	Allow % of water to subgrade thickness over subgrade area (m^2)		
DSGL Area	m^2	2655	Nagateja Allaparthy
Thickness subgrade	m	0.65	Nagateja Allaparthy
Percentage water	%	15%	Nagateja Allaparthy
Total water consumption (3.7 years)	kL	258.86	Formula
Water cost	$	$ 546.20	Formula

Opportunity 1 Wat-1 - Geogrid use for Permanent Earthworks			
	Unit	Value	Source/ Assumption
Basis of Calculation	% of water x area of backfill x thickness of backfill		
Location		across all sites	Nagateja Allaparthy
Area	m^2	478.5	Nagateja Allaparthy
Thickness	m	0.35	Nagateja Allaparthy
Percentage water	%	15%	Nagateja Allaparthy
Total water saved (3.7 years)	kL	25.12	Formula
Total water saved (3.7 years)	ML	0.03	
Water cost	$	$ 53.01	Formula

SUMMARY- Life of Project			
Base Case			
	Unit	Value	Comments
Total water consumption	ML	**0.2589**	
Total water cost	$	**$ 546.20**	
Wat-1 Reduction Opportunity 1- Geogrid use for Earthworks Permanent Earthworks			
	Unit	Value	Comments
Total water consumption	ML	258.86	
Total cost of opportunity	$	$ 53.01	
Total potable water saving	**ML**	**0.0970**	
Total water saving	**%**	**37%**	
Total cost saving	**$**	**$ 493.19**	

Below is an excerpt from the **BEW** Construction Water Balance Study.

Water Balance Study

Scroll down for Wat-2 ↓

Wat-1

Wat-1 Modelling and Reduction

Project Phase	ID	Usage	Base Case Water Use (ML)	Percentage Water Use (%)	Costs Over Project Phase ($)	Percentage of Total Cost (%)	Reduction Opportunity 1 (ML/%)		Total Water Reduction against base case for Construction phase (%)	Total Water Use after reductions (ML)	Costs Over Project ($)
Construction	1	Site Facilities	0.42	18%	$ 877.48	18%	0.10	25%	4.6%	0.31	$ 656.28
Construction	2	Water Carts (Dust Suppression/ Vactruck/ Street Sweepers)	1.50	66%	$ 3,165.00	66%	1.05	70%	46.2%	0.45	$ 949.50
Construction	3	Condition of Subgrade	0.12	5%	$ 246.05	5%	0.05	46%	2.4%	0.06	$ 132.49
Construction	4	Condition of Granular Subbase Materials	0.00	0%	$ 0.74	0%	0.00	0%	0.0%	0.00	$ 0.74
Construction	5	Condition of Trenching Activities	0.02	1%	$ 40.64	1%	0.00	0%	0.0%	0.02	$ 40.64
Construction	6	Brick washing and Concrete curing	0.12	5%	$ 259.93	5%	0.02	17%	0.9%	0.10	
Construction	7	Water Barrier	0.10	4%	$ 205.18	4%	0.02	20%	0.8%	0.08	$ 164.58
		Total Potable Water During Design & Construction Phase	**2.27**	**100%**	**$ 4,795**	**100%**	**1.25**		**55.0%**	1.02	$ 2,159.44
		TOTAL Lifecycle Water Reduction	**2.27**		**$ 4,795**		**1.25**		**55%**	**1.02**	**$ 2,159.44**

Wat 2

Wat-2 Replacing Potable Water / Recycled Water

Project Phase	ID	Usage	Required (ML)	Non-Potable (ML)	Potable (ML)	% Replaceable
Construction	1	**Site Facilities** Opportunity 1 - Rainwater Tank	0.12	0.05	0.07	41%
Construction	2	**Water Carts (Dust Suppression/ Vactruck/ Street Sweepers)** Replacement Opportunity 1 - Use of onsite treated water for street sweeping	1.50	0.00	1.50	0%
Construction	3	**Condition of Subgrade** Geogrid for Permanent Works	0.12	0.00	0.12	0%
Construction	4	**Condition of Granular Subbase Materials** Nil opportunity for Replacement	0.00	0.00	0.00	0%
Construction	5	**Condition of Trenching Activities** Replacement of potable water use with onsite treated water	0.02	0.00	0.02	0%
Construction	6	**Brick washing and Concrete curing** Nil opportunity for Replacement	0.10	0.00	0.10	0%
Construction	7	**Water Barrier** Use of onsite treated water	0.10	0.00	0.10	0%
		Water Use - Replaceable (ML)		**0.05**		
		Water Use - Total (ML)		**1.95**		
		Water Use - Total Potable Water Saved (%)		**2%**		

Site Facilities

Input Data	Unit	Value	Source/ Assumptions
Total Number of Staff	No.	25	Gender Tracker
Number Male of Staff	No.	19	Gender Tracker
Number of Female Staff	No.	6	Gender Tracker
Project duration	years	1	Formula
Number of working days per week	d/week	6	
Number of working weeks per year	week/year	52	

Base Case- Site Offices and Facilities	Unit	Toilets Female	Toilets Male	Urinal Male	Wash basin	Shower	Dish Washer	Kitchen Sink	TOTAL	Source/ Assumptions
Number of units	No.	2	4	1	9	3	1	1		0 if there is none, 1 if there is one or more units installed.
People in office using equipment	No.	6	19	19	25	3.9	25	25		Assumes 5% of staff shower on-site per day
WELS Star Rating (Standard practice)	Stars	3	3	3	4	3	3.5	4		GBCA Potable Water Calculator Guide 2015 - Section 5.3..pdf p 22 & 24
Usage per day (per person)	per day	2.3	1.3	2	2.5	3.45	3	2.5		GBCA Potable Water Calculator Guide 2015 - Section 5.1.1..pdf p 19
Water consumption / unit	L	4	4	2	7.5	9	14.77	7.5		AS/NZS 6400:2016
UOM	UOM	L / flush	L / flush	L/flush	L/min	L/min	L/wash	L/min		Water Rating Label
Daily consumption	L	55.20	98.80	76.00	468.75	121.10	44.31	468.75	1332.91	Formula
Annual consumption	L	17222.40	30825.60	23712.00	146250.00	37781.64	13824.72	146250.00	415886.36	Formula
Total water consumption (3.7 years)	ML	0.02	0.03	0.02	0.15	0.04	0.01	0.15	0.42	Formula
Water cost	$	$ 36.34	$ 65.04	$ 50.03	$ 308.59	$ 79.72	$ 29.17	$ 308.59	$ 877.48	Formula

Wat-1. Reduction Opportunity 1- Increase Wels Rating in Site Offices	Unit	Toilets Female	Toilets Male	Urinal Male	Wash basin	Shower	Dish Washer	Kitchen Sink	TOTAL	Source/ Assumptions
	Source	Non-potable	Non-potable	Non-potable	Potable	Potable	Potable	Potable		
Number of units	No.	1	1	1	1	1	1	1		0 if there is none, 1 if there is one or more units installed.
People in office using equipment	No.	6	19	19	25	3.9	25	25		
WELS Star Rating (Actual)	Stars	4	4	4	6	3	4.5	4		
Usage per day (per person)	per day	2.3	1.3	2	2.5	3.45	3	2.5		GBCA Potable Water Calculator Guide 2010- *Table 1* GBCA Potable Water Calculator Guide 2012- *Table 3 and 4*
Water consumption / unit	UOM	3	3	1	3.5	9	11.6	7.5		AS/NZS 6400:2016
UOM	UOM	L / flush	L / flush	L/flush	L/min	L/min	L/wash	L/min		Water Rating Label
Daily consumption	L	41.40	74.10	38.00	218.75	121.10	34.80	468.75	996.90	Formula
Annual consumption	L	12916.80	23119.20	11856.00	68250.00	37781.64	10857.60	146250.00	311031.24	Formula
Total water consumption (1 year)	ML	0.01	0.02	0.01	0.07	0.04	0.01	0.15	0.31	Formula
Water cost	$	$ 27.25	$ 48.78	$ 25.02	$ 144.01	$ 79.72	$ 22.91	$ 308.59	$ 656.28	Formula

Wat-2. Replacement Opportunity 1 - On site Rainwater Tank			
	Unit	Value	Source/ Assumptions
Tank connected to	No.	Toilets	3 x male ablution, 1 x female ablution
Number of tanks	No.	1	Design Plans
Capacity total	L	10,000	Design Plans
Roof area available for water collection	m²	212	Rainwater Roof catchment
Mean yearly Average Rainfall	mm	868.0	Bureau of Meteorology
Rainfall volume available	m³	184	Formula
Rainfall litres	L	155983	Formula ((roof area (m2) x mean yearly average rainfall (mm) x catchment absorption)- (first flush diverter x 12 months))
Total rainfall captured over project	ML	0.16	
Supply and installation costs	AUD	$ 2,440.00	Ed B
Payback period	years	7.41	Formula
Total water required	ML	0.12	Formula (includes reduction from increased toilet WELS rating)
Total water replaced	ML	0.05	Formula
Total water replaced	%	41%	Formula
Water cost	$	$101.05	Formula

SUMMARY- Life of Project			
Base Case			
	Unit	Value	Comments
Total water consumption	ML	0.42	
Total water cost	$	$ 877.48	
Wat 1 -Reduction Opportunity 1- Increase Wels Rating in Site Offices			
	Unit	Value	Comments
Total potable water saving	ML	0.10	
Total water saving	%	25%	
Total cost saving	$	$ 221.20	
Wat 2 - Replacement Opportunity 1 - Rainwater Tank			
	Unit	Value	Comments
Total water requirement	ML	0.12	
Total potable water replacement	ML	0.05	
Total water replacement	%	41%	
Total cost saving	$	$ 101.05	

Below is an excerpt from the **BAC** Construction Water Balance Study.

Results			
Wat-1		Wat-2	
Total Reduction	48.2%	Total Replacement	14.7%
Level Achieved	3	Level Achieved	0.4

IS Summary Data			
Description	Unit	Base Case Value	Design Case Value
Total water use during construction	ML	10.60	3.12
Monthly water use during construction	ML/month	0.41	0.12
Annual operational water use	ML/year	0.17	0.13
Total water use over the project's lifecycle	ML	19.01	9.86

Note: The following tables display all water use categories for the project (including from potable and non-potable sources).

Construction						Operations					
Base Case			Design Case			Base Case			Design Case		
Potable (kL)	Non-potable (kL)	Total (kL)	Potable (kL)	Non-potable (kL)	Total (kL)	Potable (kL)	Non-potable (kL)	Total (kL)	Potable (kL)	Non-potable (kL)	Total (kL)
10,598.6	0.0	10,598.6	2,760.8	364.0	3,124.8	8,411.7	0.0	8,411.7	6,057.0	675.0	6,732.0

Total					
Base Case			Design Case		
Potable (kL)	Non-potable (kL)	Total (kL)	Potable (kL)	Non-potable (kL)	Total (kL)
19,010.3	0.0	19,010.3	8,817.8	1,039.0	9,856.8

Note: The following tables exclude water consumption from taps (during both construction and operation) and dust suppression. Substituting for potable water for certain end uses can present significantly negative health and social issues. As such, The ISC v1.2 manual allows these end uses to be excluded from the percentage substitution calculation.

Construction						Operations					
Base Case			Design Case			Base Case			Design Case		
Potable (kL)	Non-potable (kL)	Total (kL)	Potable (kL)	Non-potable (kL)	Total (kL)	Potable (kL)	Non-potable (kL)	Total (kL)	Potable (kL)	Non-potable (kL)	Total (kL)
9,387.0	0.0	9,387.0	1,696.4	364.0	2,060.4	5,547.7	0.0	5,547.7	4,338.6	675.0	5,013.6

Total					
Base Case			Design Case		
Potable (kL)	Non-potable (kL)	Total (kL)	Potable (kL)	Non-potable (kL)	Total (kL)
14,934.7	0.0	14,934.7	6,034.9	1,039.0	7,073.9

Appendix G: S2B Environment and Sustainability Inspection

JV - (ENV / SUS) Weekly Environmental & Sustainability Inspection (WBK)

Form Reference	
Owned By	
Date	
Status	
Project Name	
Project Reference	
Client Project Reference	
Location	

Form Location

Details

Inspection Date / Time
Weather Conditions
Current Works
Location
Area

Attendees

#	Full Name	Organisation
1		

Energy

Including plant selection; plant condition; operator behaviour; wasteful/inefficient practices; and metering/record keeping.
If Yes, is there a positive observation?
If No, is a Corrective Action required?

Water Use

Including plant selection; plant condition; operator behaviour; wasteful/inefficient practices; and metering/record keeping.
If Yes, is there a positive observation?
If No, is a Corrective Action required?

Materials

Including reuse of site won materials; reuse of surplus materials; material selection; material storage/stockpiling and handling; wasteful/inefficient practices; and record keeping.
If Yes, is there a positive observation?
If No, is a Corrective Action required?

Receiving Water Quality

Including erosion and sedimentation controls; provision/quality of adequate drainage routes/basins; management of chemicals etc.; provision of spill kits; monitoring of water quality; and weather cond
If Yes, is there a positive observation?
If No, is a Corrective Action required?

Noise

Including working hours; permits; communication; construction methodology; plant selection; operator behavior; and monitoring.
If Yes, is there a positive observation?
If No, is a Corrective Action required?

Vibration

Including working hours; permits; communication; construction methodology; plant selection; operator behavior; and monitoring.
If Yes, is there a positive observation?
If No, is a Corrective Action required?

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Air Quality

Including construction methodology; plant selection; operator behaviour; effectiveness of dust suppression (water cart, mulching, etc.); and monitoring.
If Yes, is there a positive observation?
If No, is a Corrective Action required?

Light Pollution

Including working hours; communication; light selection and set-up; and operator behaviour.
If Yes, is there a positive observation?
If No, is a Corrective Action required?

Top soil, sub soil and mulch

Including segregation; signage and stockpiling method; and record keeping.
If Yes, is there a positive observation?
If No, is a Corrective Action required?

Contamination

Including provision for known contamination and acid sulfate soils (e.g. qualified subcontractor, removal/treatment method and record keeping); and provision for and awareness of potential unexpected
If Yes, is there a positive observation?
If No, is a Corrective Action required?

Waste

Including house keeping and litter; minimizing packaging; over ordering; reuse of site won material; reuse of surplus materials; waste facilities and signage (spoil, construction, office); and records
If Yes, is there a positive observation?
If No, is a Corrective Action required?

Ecology

Including clearing limits; protection of trees to be retained; weed seed and disease management measures; and provision for injured fauna.
If Yes, is there a positive observation?
If No, is a Corrective Action required?

Community Health and Wellbeing

Including access to active transport; public transport; recreation facilities; services and facilities; sustainability awareness; school visits; volunteer programs and cultural activities.
If Yes, is there a positive observation?
If No, is a Corrective Action required?

Crime Prevention

Including temporary construction diversions applying CPTED principles.
If Yes, is there a positive observation?
If No, is a Corrective Action required?

Community Safety

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Including access ways; fencing; segregation; and information.	
If Yes, is there a positive observation?	
If No, is a Corrective Action required?	
Heritage	
Including disturbance limits; monitoring; record keeping; and provision for and awareness of potential unexpected finds.	
If Yes, is there a positive observation?	
If No, is a Corrective Action required?	
Community Concerns / Complaints	
Are there any Community Concerns/ Complaints?	
If No, is there a positive observation?	
If Yes, is a Corrective Action required?	
Urban and Landscape Design	
Including visual amenity during construction, e.g. graffiti, un-landscaped zones.	
If Yes, is there a positive observation?	
If No, is a Corrective Action required?	
Impacts to Local Business	
Including access to local business; local business activity; local business complaints; local employment; and local skills.	
If Yes, is there a positive observation?	
If No, is a Corrective Action required?	
Sign Off	
Inspection conducted by	

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