Prepared for
Queanbeyan-Palerang Regional Council
ABN: 12842195133

Sustainability Management Plan

Queanbeyan-Palerang Regional Council
Sewage Treatment Plant Upgrade Project

13-Nov-2024
Queanbeyan STP Upgrade Project
Doc No. 60436407-004

Sustainability Management Plan

Client: Queanbeyan-Palerang Regional Council

ABN: 12842195133

Prepared by: AECOM Australia Pty Ltd

13-Nov-2024

Job No.: 60436407

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Quality Information

Document	Sustainability Management Plan
Ref	60436407
Date	13-Nov-2024
Originator	Jesse Sounness
Checker/s	Allan Klindworth
Verifier/s	Adam Davis

Revision History

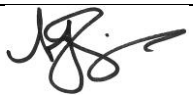
Rev	Revision Date	Details	Approved	
			Name/Position	Signature
A	14-November-2019	Draft for QPRC review and comment	James Herbert	
B	03-December-2019	T&T comments included	James Herbert	
C	10-December-2019	QPRC approval of DRAFT	James Herbert	
D	3-December 2021	Two-year review and update - draft	Adam Davis Technical Director, Sustainability & Resilience, ANZ	
E	27-Jan-2022	Two-year review and update – for issue	Adam Davis Technical Director, Sustainability & Resilience, ANZ	
F	13-Nov-2024	Two-year review and update – for issue	Adam Davis Technical Director, Sustainability & Resilience, ANZ	

Table of Contents

1.0 Introduction

1.1 Overview

The Queanbeyan Sewage Treatment Plant (STP) has been operating since the mid-1930s, treating Queanbeyan's wastewater before discharge into the Molonglo River. The condition of the site's assets has been deteriorating for several years, and the plant is running critically close to its design capacity due to increased population and subsequent flow. Queanbeyan-Palerang Regional Council (QPRC) has decided to upgrade the Queanbeyan STP with the aim to provide 'a level of service that conforms to industry best practice for the protection of public health and the environment.' The upgrade is expected to be completed in 2024 and will address issues such as structural failure, equipment obsolescence and maintenance issues. A masterplan, completed in September 2016, has been developed outlining the strategic approach to the upgrade. Beca Hunter H2O formally Hunter H20, was contracted to begin the design phase in April 2019.

QPRC has a strong commitment to delivering on the principles of ecologically sustainable development and has an extensive legislative and policy framework that highlights this commitment for providing services to its customers. Additionally, QPRC has become a member of the Infrastructure Sustainability Council (ISC) (formerly Infrastructure Sustainability Council Australia (ISCA)) and has committed to pursue Infrastructure Sustainability (IS) ratings under the ISC Rating Scheme for the delivery of the Queanbeyan STP Upgrade (the Project). This will drive a culture of sustainable decision-making to benefit the wider Queanbeyan community.

1.2 Purpose

This Sustainability Management Plan (the SMP) outlines how sustainability initiatives will be integrated into the Project through a sustainability management system that allocates roles and responsibilities and tracks performance throughout the design and construction of the project. This SMP describes how the project team proposes to manage the Project to achieve 'Excellent' Design and As-Built ISC Ratings.

1.3 Scope

This SMP applies to the design and construction phases of the Project. It is a dynamic document that will be developed, amended and updated throughout the duration of the design and construction. An initial version of the SMP was developed at the start of the design process and updated periodically throughout the design.

1.4 Interface with other Project Documents

Relevant documentation linked to this Sustainability Management Plan for the Project includes the following:

- QPRC Policies: Sustainable Design Policy for Council Buildings, QPRC Operations Sustainability Policy and QPRC Procurement Policy
- Queanbeyan STP Stakeholder & Community Engagement Plan
- Construction Procurement Strategy
- ISC Technical Manual Version 1.2
- ISC Rating Tracking Database
- Project Risk Register
- ISC Scorecard.

2.0 Sustainability Management System

Sustainability management of the QPRC project is a shared responsibility between QPRC and the contractors for project management, sustainability, design and construction. The implementation of this SMP is fundamental to the successful achievement of positive sustainability outcomes for the new STP and the achievement of an ISC rating.

2.1 Embedding Sustainability

2.1.1 QPRC Sustainability Commitments

QPRC's sustainability commitments are outlined in two publicly available policies: Sustainable Design Policy for Council Buildings (December 2022) and QPRC Operations Sustainability Policy (October 2022). These are provided in Appendix A. These policies include commitments that all projects over $2 million require third party best practice certification (e.g. Green Star, Infrastructure Sustainability or equivalent) with a targeted "Excellent" ISC rating and that there is zero net increase in greenhouse gas emissions and water use for overall QPRC operations compared to previous years.

2.1.2 ISC Design and As-Built Rating

ISC is a member-based industry association dedicated to improving the sustainability of Australia's infrastructure through the evaluation of sustainability outcomes in the planning, design, construction and operation stages of infrastructure projects. The association has developed the ISC rating scheme to measure sustainability outcomes and provides a score that indicates the level of sustainability proficiency.

The ISC Rating types relevant to the STP upgrade include:

- 'Design' – an interim rating awarded at the end of detailed design and replaced by the 'As-Built' rating after construction
- 'As-Built' – awarded at the end of construction
- 'Operations' – awarded during infrastructure operation.

QPRC is committed to achieving an "Excellent" Design and As-Built ISC rating V1.2 for the Project. This SMP will focus on the steps required to achieve these two ratings.

A preliminary assessment has identified the target level and opportunities for each category that are deemed achievable to attain an 'Excellent' rating. This has been documented in the ISC scorecard, ISC Rating Tracking Database and in Section 3.3 of this SMP. The tracking database will enable the project team to track progress against projected targeted credits, collate evidence captured for the IS rating phases and ensure that the appropriate actions are undertaken to achieve the rating (for more information see Section 4.2).

2.2 Roles and responsibilities

The successful integration of sustainability initiatives into the design and construction of the new STP requires inputs from a range of individuals: from those managing and tracking sustainability performance to those driving initiatives on site. It is therefore important to identify responsible parties and ensure these roles and responsibilities are fully understood.

Table 2-1 outlines key sustainability roles and responsibilities for the Project. Note that QPRC has engaged the following stakeholders on the project:

- Principal Design Consultant – Beca Hunter H2O
- Sustainability Support – AECOM
- Community and Stakeholder Engagement Co-Ordinator – QPRC
- Construction Contractor – TBC after the Tender phase.

Identified personnel responsible for the central management of the ISC rating in design and as-built ratings should hold ISC Accredited Professional (ISAP) qualifications.

Table 2-1: Queanbeyan STP upgrade sustainability roles and responsibilities

Role	Personnel	Responsibility
QPRC Project Director	Derek Tooth	• Review sustainability performance at least annually
QPRC Project Manager / Owner	Simon Boulton	• Central responsibility for the review and alignment of the project with broader council objectives. • Central responsibility for managing sustainability • Ensure adequate resources to fulfil sustainability commitments • Ensure sustainability objectives and targets are reflected in project contracts • Co-ordination of sustainability tasks/deliverables managed by QPRC • Provide review and feedback of sustainability tasks and deliverables • Maintain documentation to evidence sustainability requirements • Report sustainability progress and performance to the assessor
Sustainability Support/Assessor (ISC Accredited Professional)	AECOM (Jesse Sounness and Allan Klindworth)	• Develop and monitor implementation of this SMP • Advise the project team on the adoption of sustainability initiatives • Maintain ISC Rating Tracking Database, Project Risk Register and ISC Scorecard • Review and update SMP as needed • Collate evidence and develop credit summary forms for ISC rating submission • Draft and finalise rating application for submission to ISC • Coordinate and track sustainability ideas and outcomes with QPRC and broader discipline leads and stakeholders. • Report on the sustainability progress and performance of the project on a quarterly basis • Assess and drive feasible sustainability initiatives within project delivery • Principal point of contact for ISC in relation to the IS rating (monthly meetings with the ISC Case Manager) • Make sure community and stakeholder engagement plan incorporates ISC requirements
Designer	Beca Hunter H2O	• Identify and implement sustainability initiatives across design teams • Coordinate sustainability requirements with design disciplines • Report sustainability progress and performance to the assessor • Develop a sustainability strategy for the construction of the works. • Submit documentary evidence for ISC rating application as required

Role	Personnel	Responsibility
Construction Contractor	TBC	• Engage with the Construction Sustainability Manager to ensure sustainability requirements are embedded in construction plans and processes • Ensure selected subcontractors meet project sustainability requirements. • Ensure subcontractors achieve sustainability objectives during construction and direct/oversee corrective actions where appropriate.
Construction Contractor - Sustainability Manager	TBC	• Report against sustainability requirements monthly • Undertake three internal audits and one external audit of the sustainability management system per year • Undertake weekly sustainability inspections during construction • Demonstrate implementation of identified recommendations in construction. • Coordinate with Sustainability Assessor/Support in provision of targeted ISC evidence documentation. • Manage delivery of identified sustainability initiatives and deliverables during construction
Construction Contractor - Procurement Manager	TBC	• Incorporate sustainability requirements in the selection and evaluation of subcontractors and supply chain • Incorporate sustainability requirements in the procurement process, including alignment with AS ISO 20400:2018 and ISC requirements • Monitor supplier sustainability performance for the duration of contracts, against objectives and/or targets
ISC Verifiers (appointed by ISC)	Scott Losee	• Independent verifiers of ISC rating including verification of scope outs, base case proposals and IS rating submission
ISC Case Manager (appointed by ISC)	Diego Uzzun	• ISC member providing a single point of contact to the project team • Responsible for managing the verification and feedback process • Providing marketing opportunities and support

2.3 Project Phases

2.3.1 Design

The design will be completed by Beca Hunter H2O who will produce a detailed design and technical specifications for the upgrade, suitable for a Construct Only contract. In the Design Consulting Services Terms of Reference (TOR) for the Project, it states that QPRC is targeting an “Excellent" Rating for design and construction of the STP, with an ISC score in the range of 65 to 75.

The TOR requires that Beca Hunter H2O undertake activities and develop designs to achieve the target Design rating. QPRC requires Beca Hunter H2O to undertake activities needed to achieve the target Design rating by:

- Managing design activities to achieve the target ISC score
- Pursuing design approaches and decisions that maximise the design rating within the constraints of capital cost, recurring cost, discharge quality and operability of the proposed works
- Working in collaboration with QPRC to resolve issues that may impact on the design rating
- Assisting QPRC to prepare a draft sustainability strategy for the construction of the works.

- Producing evidence to demonstrate the design complies with the credits in the sustainability strategy
- Assisting QPRC to establish compliance and evidence.

QPRC (with Sustainability Support from AECOM) will produce other studies and documentation including technical studies, base case reports, workshop proceedings, papers, etc.

While acknowledging that the final decision may be out of the Beca Hunter H2O's control, the TOR stipulates that the design consultant must "demonstrate that it used all reasonable care to achieve the minimum sustainability rating."

A "Sustainability in Design" workshop (slides and minutes provided in Appendix B) with Beca Hunter H2O was held on 15 May 2019, to develop sustainability initiatives to be embedded in planning and design.

During detailed design, the design team, with the support of AECOM and QPRC, will develop minimum sustainability requirements to include in the terms of reference for the construction contractor to achieve the As-Built rating. This will include a section on the Construction and Environmental Management Plan requirements as well as materials and equipment specifications.

2.3.2 Procurement

Project procurement will align with QPRC's Procurement Policy and the IS V1.2 criteria for procurement (Pro-1, Pro-2, Pro-3 and Pro-4). Beca Hunter H2O has identified sustainability opportunities with QPRC early in the design process through the Sustainability in Design workshop. These opportunities will be embedded in the procurement and early identification of supply chains to make more informed, sustainable decisions, particularly when selecting materials.

Decision makers should seek to prioritise local procurement and recycled or environmentally labelled materials where cost effective. Suppliers should be requested to provide details of their sustainability policy and its implementation and should also be compared for social, environmental and financial appropriateness using multi-criteria analysis to select the most sustainable option. Finally, supplier sustainability performance should be monitored for the duration of contract against sustainability targets and non-compliance should be actively managed.

2.3.3 Construction

This Main Works Construction Package will be delivered through a Construct Only contract where the Detailed Design is managed by the Owner (QPRC) with early tenderer involvement then Construct by Contractor. This delivery model means that suitable contractors can participate in the design review which should increase the collaboration between designers and the contractors leading to better sustainability outcomes.

At the beginning of construction, this SMP will be handed over to the construction contractor to be updated with their input. Similar to the sustainability in design workshop, a sustainability in construction workshop will allow QPRC and the contractor to identify where key sustainability efficiencies can be made in construction methodology. These efficiencies, combined with following the specifications outlined in their contract, will help the contractor achieve the ISC As-Built rating.

The construction contractor must also complete their responsibilities outlined in Section 2.2 and follow the implementation process outlined in Section 4. AECOM's role will be to set out the necessary steps that the contractor needs to follow, provide advice on sustainability and manage the overall IS process. The contractor will need to provide evidence for the ISC credits to assist in delivering the As-Built rating.

2.4 Management Process

2.4.1 Monitoring, Review and Auditing

Table 2-2 provides a breakdown of the monitoring, auditing and reviews required for the ISC Design and As-Built submission.

Table 2-2 ISC Monitoring, Audit and Review Requirements

Category	Credit	Audit/Review Requirements	Project Phase	Responsibility
Management Systems	Man-3	An independent sustainability professional is engaged to monitor and review sustainability performance quarterly in design.	Design	Independent Sustainability Professional - The independent sustainability professional needs to have qualifications in an environmental, social or economic field. They also need to have at least 10 years' experience practicing in one or more of these aspects including at least five years' experience providing sustainability advice. They must be independent and have no vested interest in the project.
		An independent sustainability professional is engaged to monitor and review sustainability performance six monthly in construction.	As-Built	Independent Sustainability Professional
	Man-4	At least one external review or audit is conducted during design.	Design	Independent Sustainability Professional
		Internal sustainability inspections of site management are undertaken at least weekly during construction (Template available in Appendix D).	As-Built	Independent Sustainability Professional
		During construction at least four audits are conducted per year where at least one is external.	As-Built	Independent Sustainability Professional
	Man-5	Sustainability performance is reviewed formally at least annually by senior management.	Design and As-Built	QPRC Senior Management
Procurement and Purchasing	Pro-4	Supplier sustainability performance is monitored for the duration of contracts, against the objectives and/or targets.	As-Built	Construction Sustainability Manager

Category	Credit	Audit/Review Requirements	Project Phase	Responsibility
Energy and Carbon	Ene-1	The monitoring and modelling of energy and GHG emissions must be either managed by, reviewed by, or audited by a suitably qualified person.	Design and As-Built	Professional with a formal qualification and a minimum of five years' experience in energy or GHG management. Being registered on the NGERS Register of GHG and Energy Auditors meets this Requirement.
Discharges to Air, Land and Water	Dis-1	Monitoring of water discharges and receiving waters demonstrates no adverse impact on receiving water environmental values.	As-Built	Sustainability Manager
	Dis-2	For construction, monitoring demonstrates no recurring or major divergences from the noise management process in ISC approved noise guidelines.	As-Built	Sustainability Manager
	Dis-3	For construction, monitoring demonstrates no exceedances of vibration goals for structural damage to buildings and structures.	As-Built	Sustainability Manager
	Dis-4	Monitoring demonstrates no recurring or major exceedances of air emission or air quality goals.	As-Built	Sustainability Manager
Land	Lan-3	The site assessment and remediation appraisal should be managed, reviewed or audited by a suitably qualified professional.	Design and As-Built	Professional who meets the requirements of Schedule B(9) of the NEPM 1999 (as amended 2013). While a contaminated land auditor accredited by the relevant state authority would be acceptable, others who meet the NEPM requirements would also be acceptable.
Waste	Was-1[1]	Waste monitoring and management must be managed, reviewed and audited at least annually for construction and operation. Waste auditing to final destination required at least every 6 months for construction.	As-Built	Professional with at least five years' waste management experience, or a NABERS Assessor, or equivalent.
Ecology	Eco-1	The ecological management plan must be managed, reviewed or audited by a suitably qualified professional.	Design	Professional with a CEnvP (Ecology Specialist) certification from the EIANZ or an ecology related degree and/or a minimum of five years' continuous experience working as an ecologist.

Category	Credit	Audit/Review Requirements	Project Phase	Responsibility
Community Health, Wellbeing and Safety	Hea-1	Monitoring of community health and wellbeing indicators related to the priority issues is undertaken at appropriate intervals during construction of the asset.	As-Built	Sustainability Manager
Heritage	Her-2	Heritage aspects relevant to this credit must be managed, reviewed or audited by a suitably qualified professional. Monitoring demonstrates maintenance of heritage values.	Design and As-Built	Professional with a formal cultural heritage qualification and minimum of five years' experience.
Stakeholder Participation	Sta-3	The community has been provided with information that: • was provided in a timely manner • supported community participation • was meaningful and relevant • was accessible This has been verified by: independent reviews/audits (at least once during design and at least annually during construction).	Design and As-Built	A suitably qualified professional: (a) has at least five years' experience in stakeholder engagement, is a current member of the International Association for Public Participation and has completed the IAP2 Certificate In Public Participation, or (b) has at least ten years' experience in stakeholder engagement.
	Sta-4	The community believe their concerns have been considered and addressed. This has been verified by: independent reviews/audits (at least once during design and at least annually during construction).	Design and As-Built	A suitably qualified professional: (a) has at least five years' experience in stakeholder engagement, is a current member of the International Association for Public Participation and has completed the IAP2 Certificate In Public Participation, or (b) has at least ten years' experience in stakeholder engagement.
Urban and landscape design	Urb-1	The urban and landscape design plan has been independently reviewed by a suitably qualified professional.	Design	A suitably qualified professional for the purposes of this credit is a person with a planning or design qualification with a minimum of five years' experience.
	Urb-2	The infrastructure is managed in accordance with the urban and landscape design plan and achieves a high degree of compliance.	As-Built	*Likely to be scoped out for the As-Built rating*

Note:

1. Preparation or review of monitoring and management plan is all that is required for the design phase.

2.4.2 Reporting

AECOM will be responsible for collating the latest information on the sustainability performance of the project through liaison with the design manager, and the project manager. This will be recorded in sustainability reports (refer to Appendix C for a template) that will be completed and reported to senior management quarterly to meet the Man-5 credit.

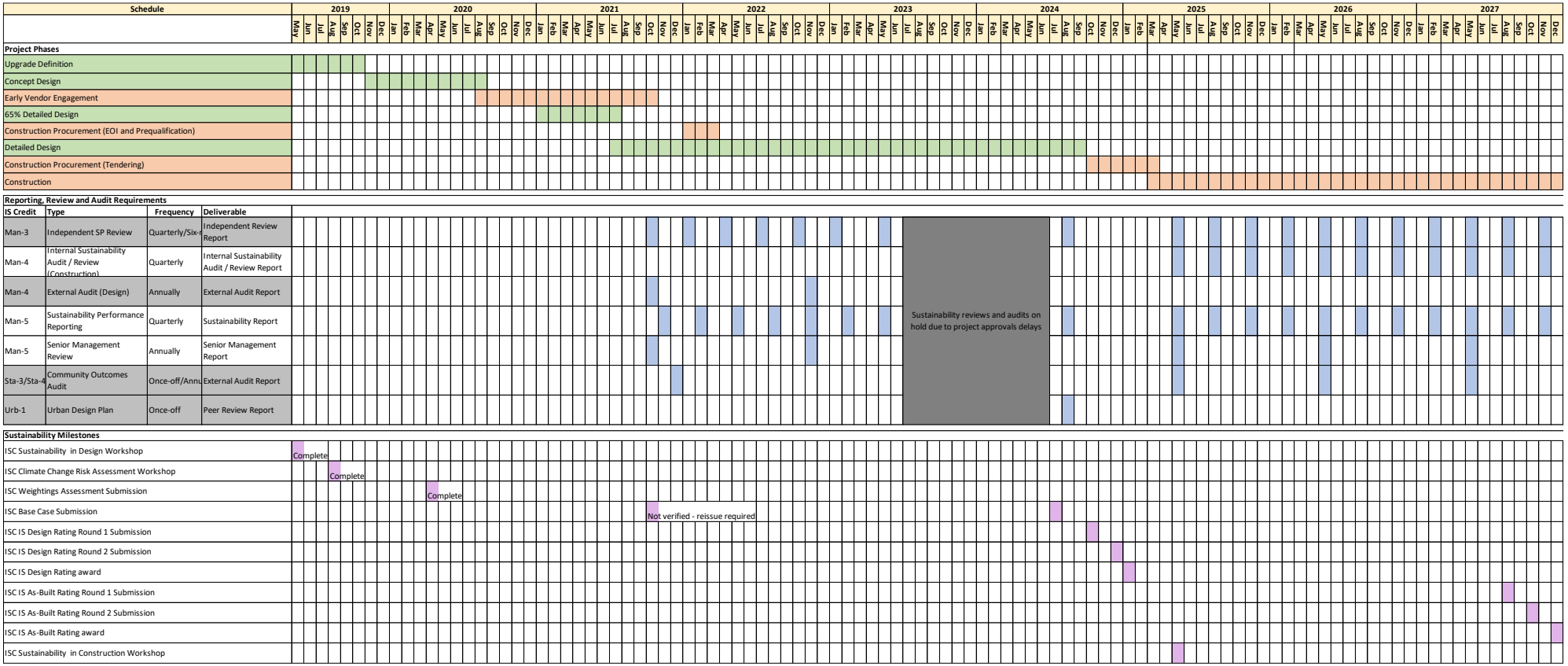
During the construction phase, sustainability reports will continue to be completed by AECOM quarterly. However, construction data (e.g. waste generation, spoil, fuel consumption, etc.) will need to be compiled monthly in order to keep up to date with changing conditions on-site. This will then feed into the quarterly reports.

Annual sustainability reports will be produced and provided to senior management for review during both design and construction.

2.4.3 Schedule

Table 2-3 outlines the Project schedule including the timeframes of the project phases, the audit schedule and sustainability milestones. The reviews highlighted in grey require external contracting to achieve the credit.

Table 2-3: Project Schedule



2.4.4 Decision-Making

All significant decisions made on the Project will be 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. 50-year design life).

The significant decisions for the Project are determined by following the process outlined in Figure 2-1.

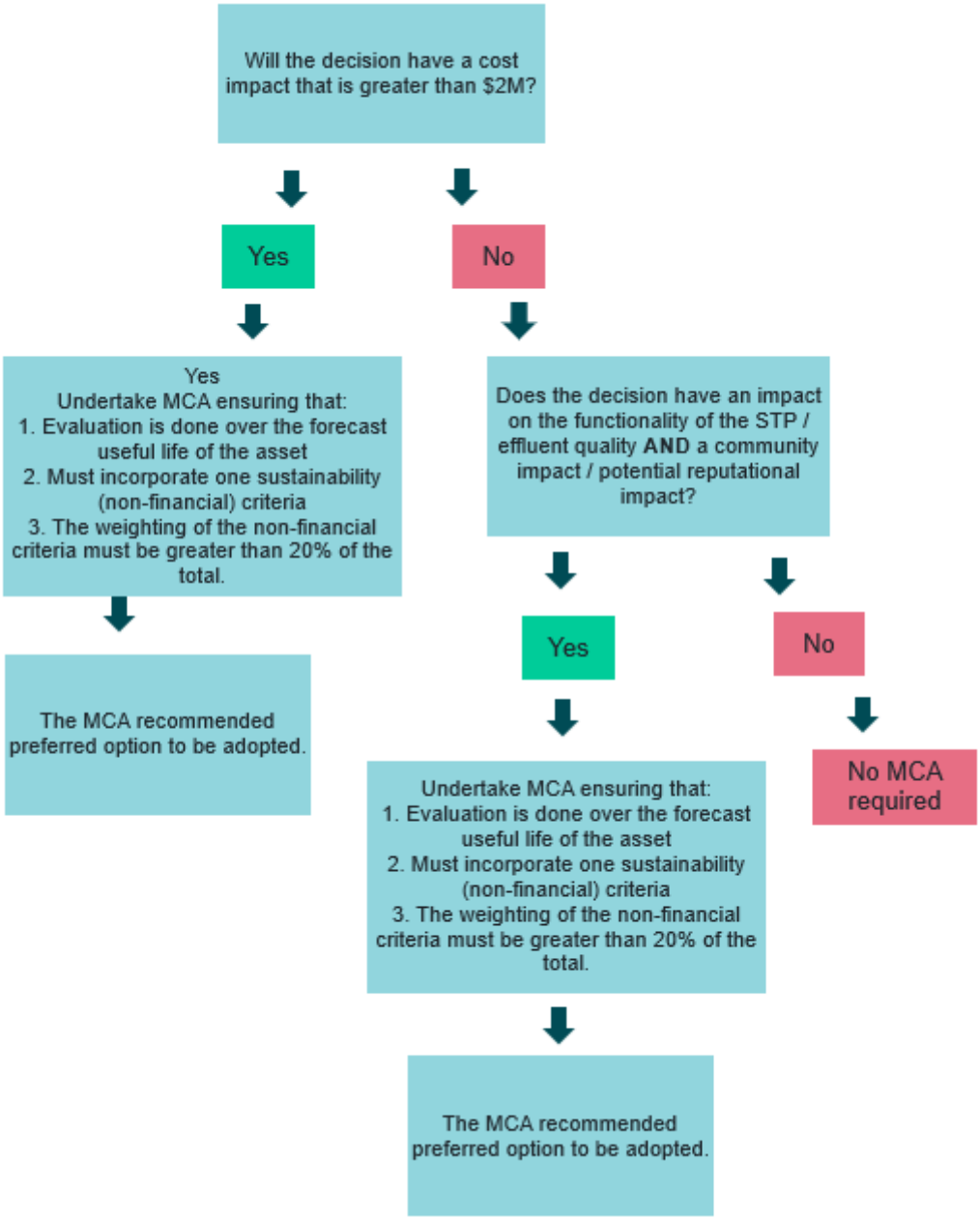


Figure 2-1: Decision-Making Flow Chart

These significant decisions include the following:

- Aeration – surface or diffused
- Tertiary filtration – granular media filtration or membrane
- Selection of secondary treatment process
- Site location.

2.4.5 Knowledge Sharing

Knowledge sharing of sustainability initiatives will be undertaken throughout the Project to ensure the best possible sustainability outcomes. This will include knowledge from within the Project team, any organisations involved in the design, delivery and ultimate operation and the wider industry.

During construction, knowledge sharing will be done by including a sustainability component in the site induction. Since the site induction is compulsory, this ensures that all personnel are aware of the sustainability requirements of the Project and will have the necessary information to implement this SMP.

Innovative ways to generate and share knowledge within the Project team, and with external Project stakeholders, will continue to be explored and documented throughout the Project duration. Knowledge sharing will be captured in the meeting minutes of knowledge sharing forums. Knowledge sharing will also leverage existing communication tools to share lessons learnt.

2.5 Alignment with Other Documentation

Figure 2-2 provides an overview of the documents that are included in the project's sustainability management system.

This SMP has been informed by QPRC's sustainability and procurement policies, the project specific Construction Procurement Strategy and the ISC Technical Manual that outlines the requirements to be fulfilled for each credit. The Project Risk Register and the ISC Rating Tracking Database are both tools to help in the implementation of this SMP. The other documents such as the design management plan, community and stakeholder engagement plan, procurement plan and the CEMP requirements will be informed by this SMP.

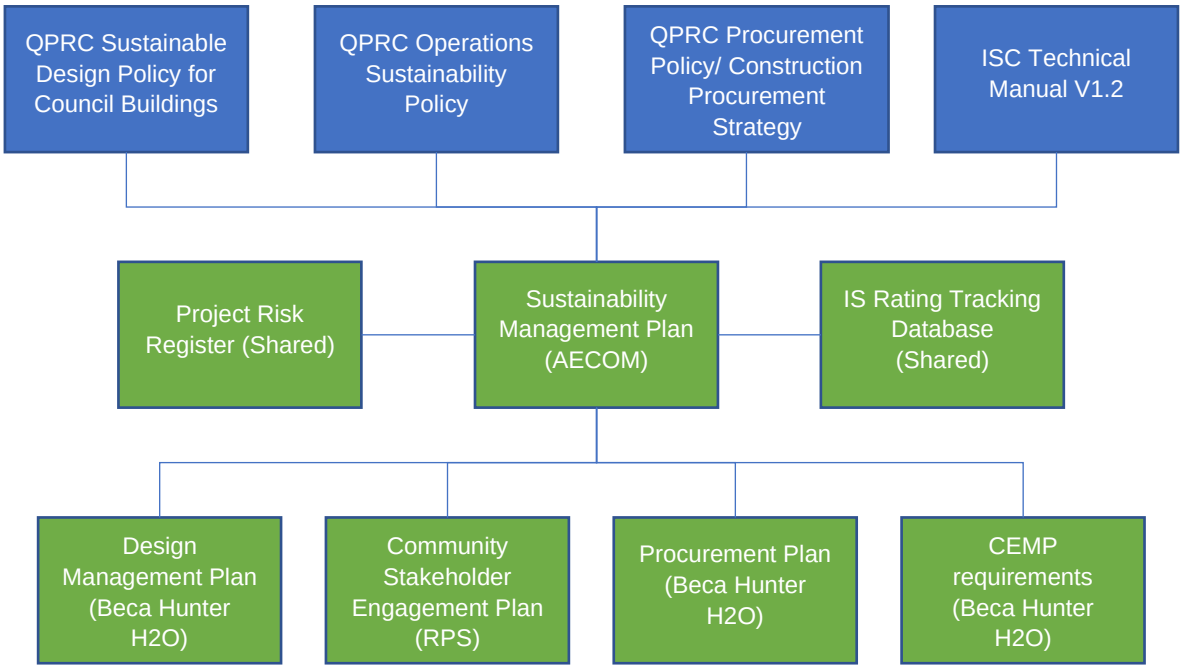


Figure 2-2: Indicative design documentation for sustainability (including reference to organisations responsible for development)

3.0 Sustainability Objectives

This section outlines the key sustainability targets and the forecast performance based on the targeted levels for each credit.

3.1 Key Sustainability Targets

Council's Sustainable Design Policy for Council Buildings sets out seven goals. Table 3-1 outlines project specific targets (and related ISC credits) that align with each of the goals. Specific targets are identified related to energy, water and waste goals. Achieving the range of credits required for an Excellent ISC rating will support the broader policy goals related to sustainability leadership, reduced operating costs, reduced environmental footprint and increasing sustainability awareness.

Table 3-1 Sustainability Targets

Goal	Target	Relevant IS Credit
Reduced energy consumption, water use and waste	15% reduction in GHG emissions compared to the base case through modelling (design) and monitoring (construction). 10% reduction in total water use compared to the base case. Opportunities to reuse spoil are identified and implemented, targeting a >80% (by volume) of spoil to be reused. Minimise total waste to landfill through waste avoidance initiatives and prioritisation of reuse and recycling, targeting >40% by volume of office waste to be recycled.	Ene-1 Wat-1 Was-1 Was-2
Demonstrating community leadership in implementing renewable energy and passive solar design	20% substitution of non-renewable energy using renewable energy.	Ene-2
Using alternative water sources and improving stormwater quality	50% substitution of potable water use using non-potable water.	Wat-2
Continued Council growth and development with reduced environmental footprint	Embedding consideration of environmental, social, and economic factors when selecting suppliers/services using multicriteria analysis.	Pro-1 Pro-2
Reduced on-going operating and maintenance costs	Reduce energy costs through a 15% reduction in GHG emissions compared to the base case through modelling (design) and monitoring (construction). Reduce water costs through a 10% reduction in total water use compared to the base case.	Ene-1 Wat-1
Better occupant health and comfort	Identify and implement measures to positively contribute to community health and wellbeing for two priority issues.	Hea-1
Increased staff and community awareness	Provide the community with information that: • Is provided in a timely manner • Supports community participation • Is meaningful and relevant • Is accessible.	Sta-3

Council's Procurement Policy sets out seven objectives for sustainable procurement, as well as two commitments to local economic benefit. Table 3-2 outlines project specific targets (and related IS credits) that align with each of the objectives.

Table 3-2 Sustainable Procurement Targets

Objective	Target	Relevant IS Credit
Council is committed to supporting the local economy and enhancing the capabilities of local business and industry. Council will give due consideration to benefits to the local economy when sourcing goods and services where it is efficient to do so, while achieving Council's overall value for money objectives.	Embed consideration of environmental, social, and economic factors when selecting suppliers/services using multicriteria analysis (as aligned to Table 3-1).	Pro-1 Pro-2 Pro-3 Pro-4 Hea-1
Where local content is included in the value for money assessment, a weighting is applied to the overall assessment taking into account all other price and non-price criteria to determine the best outcome for Council and the community.	Embed consideration of environmental, social, and economic factors when selecting suppliers/services using multicriteria analysis (as aligned to Table 3-1).	Pro-1 Pro-2 Pro-3 Pro-4 Hea-1
Minimise unnecessary purchasing – consider alternatives to purchasing and only purchase when a product is necessary.	Minimise total waste to landfill through waste avoidance initiatives and prioritisation of reuse and recycling, targeting >40% by volume of office waste to be recycled (as aligned to Table 3-1).	Pro-1 Pro-2 Pro-3 Pro-4 Was-1 Was-2
Minimise waste – purchase in accordance with the waste management hierarchy of reduce, re-use and recycle.	Minimise total waste to landfill through waste avoidance initiatives and prioritisation of reuse and recycling, targeting >40% by volume of office waste to be recycled (as aligned to Table 3-1).	Pro-1 Pro-2 Pro-3 Pro-4 Was-1 Was-2
Reduce natural resource consumption – purchase products that conserve natural resources such as energy, water, and fuel.	Embed consideration of environmental, social, and economic factors when selecting suppliers/services using multicriteria analysis (as aligned to Table 3-1).	Pro-1 Pro-2 Pro-3 Pro-4 Mat-1 Ene-1 Ene-2 Wat -1 Wat -2
Minimise pollution – where possible avoid purchasing products that pollute the environment (air, water soil, light, and noise).	Design and procure systems that minimise environmental pollution, in alignment with level 3 for Dis-1, Dis-2, Dis-3, and Dis-4. Targeting level 1 for Dis-5.	Pro-1 Pro-2 Pro-3 Pro-4 Dis-1 Dis-2 Dis-3 Dis-4 Dis-5
Eliminate toxic products – where possible avoid purchasing hazardous	Embed consideration of environmental, social, and economic factors when	Pro-1 Pro-2

Objective	Target	Relevant IS Credit
chemicals or substances that may be harmful to ecosystems or human health.	selecting suppliers/services using multicriteria analysis (as aligned to Table 3-1). At least 3% of materials/products by value have an ISC approved environmental label.	Pro-3 Pro-4 Mat-2
Reduce greenhouse emissions – purchase products that can reduce emissions or have lower associated emissions. Prioritise products that are carbon neutral or carbon negative.	15% reduction in materials lifecycle impacts compared to a base case footprint.	Pro-1 Pro-2 Pro-3 Pro-4 Mat-1
Achieve biodiversity and habitat protection – purchase in accordance with biodiversity and conservation objectives.	At least 3% of materials/products by value have an ISC approved environmental label.	Pro-1 Pro-2 Pro-3 Pro-4 Mat-2

3.2 Sustainability Initiatives

A “Sustainability in Design” workshop was undertaken on 15 May 2019, identifying sustainability initiatives that have the potential to be adopted during the design and construction of the project. The initiatives are recorded in the “Sustainability Initiatives” tab in the Project Risk Register (refer to Section 4.2.4 for more information).

The feasibility of initiatives will be considered during design by Beca Hunter H2O in conjunction with AECOM. If an initiative is identified as feasible, it will be modelled against the sustainability targets identified in Section 3.1. The design team should update the “Sustainability Initiatives” tab in the Project Risk Register at least monthly to ensure that the initiatives are being considered throughout design and are encouraged to add initiatives at any time. This process is central to supporting the achievement of the project’s sustainability targets identified in Section 3.1.

The quarterly sustainability reports will detail implementation of sustainability initiatives.

3.3 Indicative ISC V1.2 Scorecard – Design Rating

Table 3-3 provides target levels for each ISC credit, highlighting the steps necessary to achieve the sustainability outcomes. The ISC Scorecard forecasts a total score of 74.86 points when these levels are applied to the weightings assessment. This equates to an ‘Excellent’ Design Rating meeting QPRC’s targeted rating level.

Table 3-3: Indicative design phase sustainability targets

Credit	Name of credit	Materiality Score	Target Level	Target Score (74.86)	Approach
Man-1	Sustainability leadership and commitment	2	3	0.95	Sustainability objectives outlined in the QPRC Operations Sustainability Policy and Sustainable Design Policy for Council Buildings and available on the QPRC website.
Man-2	Risk and opportunity management	2	2	0.95	Project risk register maintained by Beca Hunter H2O. Opportunity and Innovations to be included in the “Sustainability Initiatives” tab in the Project Risk Register (refer to Section 4.2.4).
Man-3	Organisational structure, roles and responsibilities	2	2	0.95	The appointed sustainability advisor (AECOM) fulfils Level 1 of this requirement as they are a principal participant in the team in design and construction who is ISC accredited. An independent sustainability professional will be engaged to monitor and review performance to achieve Level 2.
Man-4	Inspection and auditing	2	2	0.95	The audit schedule outlined in Section 2.4.3 will be followed by the project team.
Man-5	Reporting and review	2	2	0.63	Quarterly sustainability reports will be developed by AECOM (with input from Beca Hunter H2O) that track sustainability performance against credit targets and identify areas for improvement. These will need to be reported to senior management quarterly and reviewed by senior management annually.
Man-6	Knowledge sharing	2	2	1.42	Knowledge sharing with the local community, stakeholders and those in the broader industry will be paramount to demonstrating the Queanbeyan STP’s sustainability credentials. Industry events such as the ISC awards and conference would provide a platform to highlight achievements as well as lessons learnt. These will be presented by Beca Hunter H2O following construction and commissioning.
Man-7	Decision Making	2	2	2.05	Major decisions that will have the greatest bearing on capital and economic costs such as treatment technology, materials procurement, effluent water quality targets and water reuse or energy recovery facilities will be characterised by a multi-criteria analysis that considers economic, social and environmental impacts.
Pro-1	Commitment to Sustainable Procurement	2	3	1.18	Commitments to sustainable procurement will include stating what sustainability entails for the STP in procurement policies and will align with QPRC’s current procurement policy.

Credit	Name of credit	Materiality Score	Target Level	Target Score (74.86)	Approach
					Sustainable procurement commitments will be embedded into sustainability objectives/targets.
Pro-2	Identification of Suppliers	2	2	0.79	All suppliers will need to go through QPRC's rigorous procurement process that will involve an appraisal of sustainable development and procurement policies and procedures they have in place. Early involvement with key suppliers will be encouraged to drive innovation.
Pro-3	Supplier Evaluation and Contract Award	As-Built Rating only			-
Pro-4	Managing Supplier Performance	As-Built Rating only			-
Cli-1	Climate change risk assessment	4	2	3.15	A climate change risk assessment, completed by a multi-disciplinary team, identified the direct and indirect risks posed by climate change to the Queanbeyan STP over its forecast useful life based on a number of available climate change projections.
Cli-2	Adaptation measures	4	2	3.15	The climate change risk assessment workshop identified necessary mitigation measures. These mitigation measures will be recorded in a register and progress on their implementation in design will be monitored and reported.
Ene-1	Energy and carbon monitoring and reduction	3	2	8.51	Baseline modelling will be undertaken to evaluate the greenhouse gas emissions of the base case developed for this Project. Energy and carbon reduction initiatives will be developed by Beca Hunter H2O and these will be modelled to evaluate percentage emissions reduction to achieve the targets set out in Section 3.1.
Ene-2	Use of Renewable Energy	3	2	1.42	The use of renewable energy for the STP operations will be investigated during detailed design and sourced on site as a priority before purchasing green energy from the grid. Opportunities for renewable energy use in construction will be investigated using evaluation of payback periods.
Wat-1	Water use monitoring and reduction	1	2	1.42	Modelling of water use will be undertaken by Beca Hunter H2O to develop water reduction opportunities and achieve the targets set out in Section 3.1.

Credit	Name of credit	Materiality Score	Target Level	Target Score (74.86)	Approach
Wat-2	Replace Potable Water	1	2	0.79	Replacement of potable water will be investigated during design development. Opportunities may include non-potable water use for onsite irrigation and washdown during operation and may (to be confirmed) be provided by the existing Queanbeyan STP.
Mat-1	Materials lifecycle impact measurement and reduction	4	2	7.56	Modelling, utilising the ISC materials calculator, of the Bill of Quantities from detailed design and the base case will be completed to compare the materials lifecycle impacts and achieve the targets set out in Section 3.1. Potential opportunities to minimise material impacts include increases in the supplementary cementitious materials content of concrete, recycled aggregates and sourcing materials locally.
Mat-2	Environmentally labelled products and supply chains	As-Built Rating only			-
Dis-1	Receiving Water Quality	3	3	3.37	The design will be developed so that the Queanbeyan STP meets the discharge licence limits for the wastewater effluent. Modelling of water discharges should demonstrate no adverse impact on receiving water environmental values.
Dis-2	Noise	1	3	1.12	Noise impacts particularly during construction will need to be assessed for community and workforce considerations and noise mitigation measures such as noise walls and plant sheds will be included in the design where appropriate.
Dis-3	Vibration	1	3	1.12	It has been determined (and confirmed by ISC) that the risk of vibration impacts from operations is insignificant, and therefore modelling of operational vibration impacts is not required.
Dis-4	Air Quality	2	3	2.24	Beca Hunter H2O will ensure contractor CEMP requirements include development of Air Quality and Dust Management Plan and measures to minimise adverse impacts to local air quality.
Dis-5	Light Pollution	Scoped out			
Lan-1	Previous land use	2	3	2.36	GIS mapping will be undertaken to determine the percentage of disturbed versus undisturbed land. Based on current estimations, it is expected that 25% of the land will be previously disturbed (existing site) and will be sufficient to achieve level 1 of this credit.

Credit	Name of credit	Materiality Score	Target Level	Target Score (74.86)	Approach
Lan-2	Conservation of on-site resources	2	3	0.95	Opportunities to conserve topsoil for beneficial reuse on-site will be prioritised to achieve the target that 95% of all topsoil (by volume) must retain its productivity and be beneficially re-used on or nearby to the project site. These opportunities will be assessed and modelled as the design is developed. Protection of subsoil and topsoil from degradation, erosion or mixing with fill or waste will be documented in the Construction and Environmental Management Plan.
Lan-3	Contamination and remediation	4	1	1.26	A site assessment has been undertaken which follows the recommended approach in Schedule A 'Recommended general process for assessment of site contamination' of National Environment Protection (Assessment of Site Contamination) Measure 1999. Remediation options align with the sustainability hierarchy provided in the additional guidance notes set out in the ISC Technical Manual.
Lan-4	Flooding design	2	1	0.71	Design that minimises flooding impacts will need to be prioritised to ensure no adverse impacts on neighbouring land use.
Was-1	Waste management	4	2	3.78	Plans will be formulated for use of waste matter from the operation of the STP. There may be a number of sustainability opportunities to reuse biosolids for beneficial purposes and these will be considered at design stages. A waste avoidance and reuse hierarchy will be adopted for construction and operation of the asset. Waste management and monitoring will be audited by a suitably qualified professional and waste handling and disposal/recycling all the way to final destination audited at appropriate intervals. This will be included in the CEMP requirements developed by Beca Hunter H2O and included in the construction contractor's terms of reference.
Was-2	Diversion from landfill	As-Built Rating only			
Was-3	Deconstruction / Disassembly / Adaptability	2	2	0.95	Design for deconstruction and adaptability (i.e. further expansion) will be considered in design development of the new STP. This includes the use of materials and provision of space for staged upgrades or future technology deployment, as well as providing access for future upgrades.

Credit	Name of credit	Materiality Score	Target Level	Target Score (74.86)	Approach
Eco-1	Ecological value	2	2	4.73	Detailed ecological assessments including identification of ecologically sensitive areas have been undertaken in early planning as part of detailed environmental assessments. Golden Sun Moths (a threatened species) have been identified on the site and mitigation measures will be implemented to protect the species.
Eco-2	Habitat connectivity	2	2	1.89	The project site will be designed to maintain existing habitat connectivity where appropriate.
Hea-1	Community health and wellbeing	2	2	1.57	Community consultation will be undertaken in accordance with the QPRC Community and Stakeholder Engagement Plan. Priority issues for the community will be identified and measures to contribute positively to community health and wellbeing will be implemented during design. Monitoring of community health and wellbeing indicators will be undertaken at appropriate intervals.
Hea-2	Crime prevention	Scoped out			-
Her-1	Heritage assessment and management	4	2	3.15	Heritage assessments will be made as part of the broader environmental assessment of the area. Heritage values of the area, beyond those listed in government registers, will be assessed with community and stakeholder input. Where heritage is identified, mitigation measures will be implemented where feasible to minimise adverse impacts to heritage.
Her-2	Monitoring of heritage	As-Built Rating only			-
Sta-1	Stakeholder engagement strategy	3	2	1.18	The QPRC Community and Stakeholder Engagement Plan for the Project will be developed in line with the ISC Sta category. An important consideration includes the timing of stakeholder review to enable early stakeholder involvement, allowing for them to influence design outcomes and the final Community and Stakeholder Engagement Plan.
Sta-2	Level of engagement	3	2	1.18	This credit requires use of the IAP2 spectrum for stakeholder engagement. The negotiable and non-negotiable issues are identified and communicated with the level of participation reaching at least “involve” on the IAP2 spectrum. This will be included in the Community and Stakeholder Engagement Plan.

Credit	Name of credit	Materiality Score	Target Level	Target Score (74.86)	Approach
Sta-3	Effective Communication	3	2	1.77	Performance of the Community and Stakeholder Engagement Plan and the initiatives identified within it will be gauged through audits. The feedback will be captured at community meetings, workshops and through queries made directly to QPRC.
Sta-4	Addressing community concerns	3	2	1.77	As with Sta-3, feedback will need to be captured and questions asked to the community to address the bullet pointed criteria in Sta-4.
Urb-1	Urban design	1	3	1.89	An Urban and Landscape Design Plan will be developed and implemented to include the listed criteria in Urb-1. This plan will identify key features of the planning and early design of the STP and will be required to be independently reviewed.
Urb-2	Implementation	As-Built Rating only			
Inn-1	Innovation strategies and technologies	2	2	2	Innovation throughout the design process is encouraged through the use of the “Sustainability Initiatives” tab in the Project Risk Register (refer to Section 4.2.4) to capture creative thinking.

4.0 Implementation

The implementation of the ISC Design and As-Built ratings follows the rating process outlined in Figure 4-1.

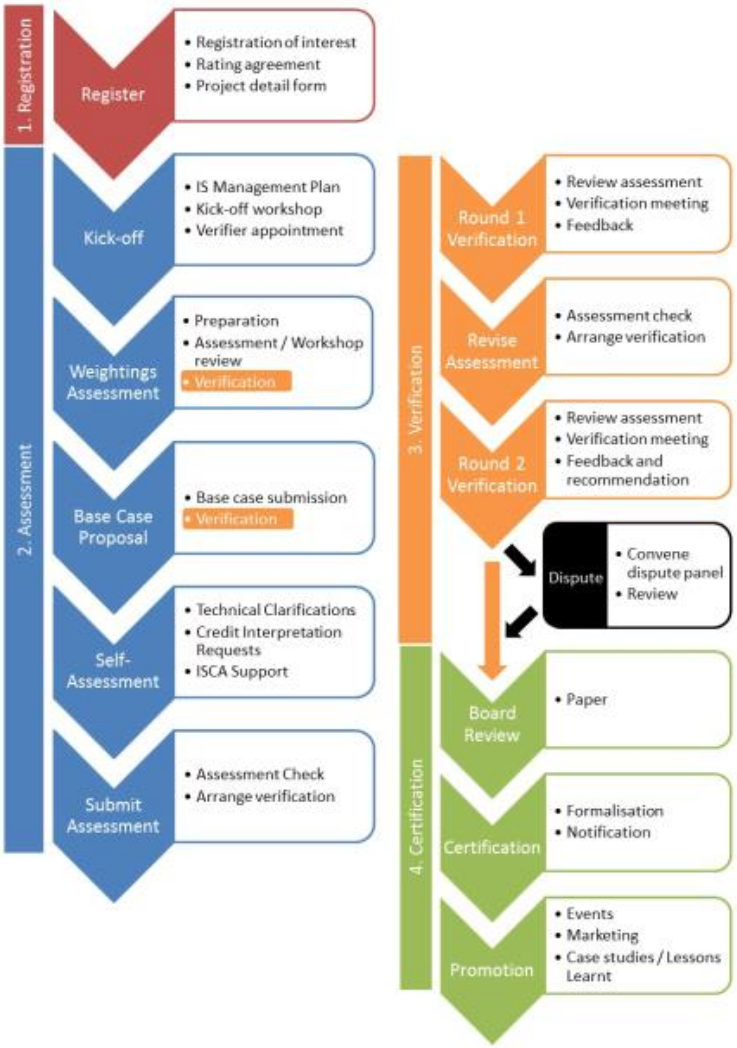


Figure 4-1: ISC Rating Process (ISC, 2018)

4.1 Registration

Queanbeyan STP has been registered for an ISC Design and As-Built Rating under V1.2 of the rating scheme.

4.2 Assessment

The assessment phase involves developing the base case and the weightings assessment as well as setting up the project so that the design and construction teams are implementing sustainability initiatives and compiling evidence to meet the submission requirements. The main tools to guide implementation are outlined in the following sections.

The ISC Rating Tracking Database, Project Risk Register and ISC Scorecard are available on the Beca Hunter H2O SharePoint so that all principal members of the project team have access to these documents. Sustainability progress meetings are scheduled monthly to track sustainability performance.

4.2.1 Base Case Proposal

In order to demonstrate reductions in the use of materials, water, and energy and emissions for the Design and As-Built ratings, a 'Base Case' needs to be developed for the project. The term 'Base Case' refers to developing a Business As Usual (BaU) example for the design and construction of a similar asset. The assumptions made in the verified *Base Case Proposal Form* allow for the modelling of baseline figures to detail and monitor reductions in the final design. This would typically be submitted in the concept design/reference design phase to allow time to model reductions when reduction opportunities are identified.

4.2.2 Weightings Assessment

Each credit has a default weighting, but this can be adjusted based on a weightings assessment that changes the materiality of each credit to suit the project context. For some credits, where there is low or medium materiality, the credit criteria are simplified.

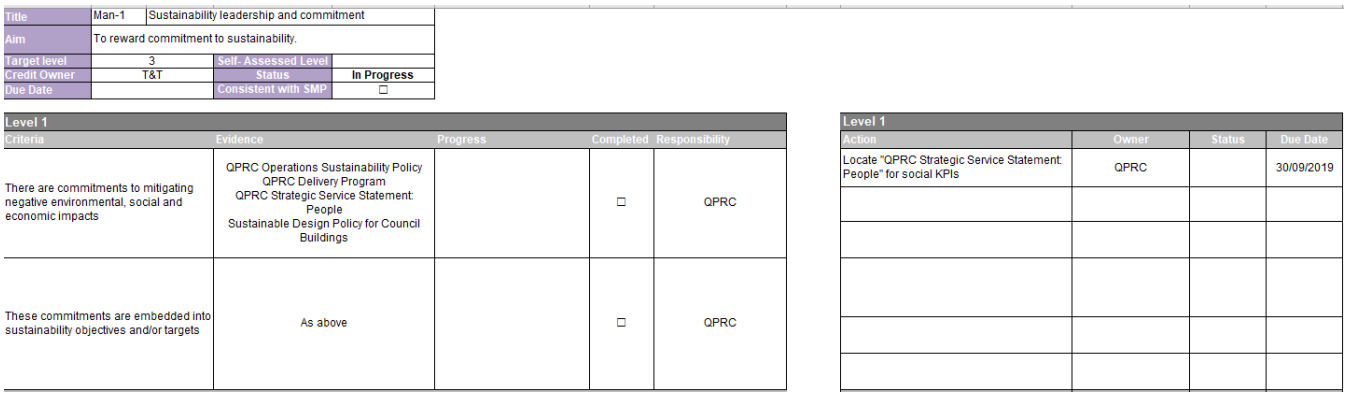
The weightings assessment was completed during a multi-stakeholder weightings assessment workshop on the 11th of November 2016 and reviewed by Beca Hunter H2O in August 2019. The weightings assessment was verified by an ISC Verifier in April 2020. The weightings assessment was reassessed and reverified in June 2022.

4.2.3 ISC Rating Tracking Database

The ISC Rating Tracking Database (snapshot included in Figure 4-2), includes a tab for each credit that outlines the credit's target level and responsible party(ies). The criterion for each benchmark level is included on a separate row with the corresponding evidence requirements, responsibilities and actions required to achieve each criterion.

All internal stakeholders can document the status of each criterion that they are responsible for using the "progress" and "completed" columns. The "progress" cell provides space for comments and the "completed" cell is a check-box cell. When the evidence has been generated by the party responsible, it should be sent to the ISC assessor (AECOM), with a subject heading including the appropriate credit, who will then review and rename the evidence and compile it with the other evidence for that particular credit for the ISC submission. The responsible party can then mark that row as complete in the tracking database. This process ensures that all evidence is compiled in the appropriate place and that the necessary reviews are completed.

Once actions have been completed, project team members responsible will be required to update the status of the deliverable to mark completion in the tracking database.



Title	Man-1	Sustainability leadership and commitment	
Aim	To reward commitment to sustainability.		
Target level	3	Self- Assessed Level	
Credit Owner	T&T	Status	In Progress
Due Date		Consistent with SMP	☐

Level 1				
Criteria	Evidence	Progress	Completed	Responsibility
There are commitments to mitigating negative environmental, social and economic impacts	QPRC Operations Sustainability Policy QPRC Delivery Program QPRC Strategic Service Statement: People Sustainable Design Policy for Council Buildings		☐	QPRC
These commitments are embedded into sustainability objectives and/or targets	As above		☐	QPRC

Level 1			
Action	Owner	Status	Due Date
Locate "QPRC Strategic Service Statement: People" for social KPIs	QPRC		30/09/2019

Figure 4-2: ISC Rating Tracking Database

4.2.4 Project Risk Register

The Project Risk Register aims to provide a central place for review of existing and projected ISC performance and highlighted risks, opportunities and key actions for initiatives implementation. The aim of the "Sustainability Initiatives" tab in the Project Risk Register is to keep the whole project team informed of the status of sustainability on the project. The "Sustainability Initiatives" tab should be updated by the design and construction teams to document the status of sustainability initiatives.

4.2.5 ISC Scorecard

The ISC Scorecard is the official rating tool that has tabs for the weightings assessment and each credit with information on the target level and criteria. This is to be made available to the project team to be used as reference but should only be updated by the assessor. This will be used as a basis of the submission to ISC and will explain how the compiled evidence addresses the criteria for each credit.

4.2.6 Other key documents

The other key documents for the ISC rating are outlined in Table 4-1.

Table 4-1 Key documents for ISC rating

Document	Description	Responsibility
Base Case Proposal Form	The ISC base case outlines a “business as usual” footprint for the “Using Resources” categories: energy and carbon, water and materials use. The Base Case Proposal Form outlines the assumptions behind the base case.	AECOM will develop the proposal form with input from the design team in choosing a relevant base case.
Energy and carbon report	The energy report calculates the total greenhouse gas emissions that are modelled over the STP’s lifecycle based on the detailed design and compares it to the base case to demonstrate emissions reductions.	The design team will provide the estimated greenhouse gas emissions for the lifecycle of the new STP to inform the energy and carbon report developed by AECOM.
Water report	The water report calculates the total water use over the STP’s lifecycle based on the detailed design and compares it to the base case to demonstrate water use reductions.	The design team will provide the estimated water use for the lifecycle of the new STP and prepare a water use report. AECOM to review the report.
Completed materials calculator	The ISC Materials Calculator calculates the lifecycle impacts of the materials used in the STP across the STP’s lifecycle based on the detailed design and compares it to the base case to demonstrates reduction in materials lifecycle impacts.	The design team will provide the bill of quantities to AECOM who will use it to fill out the ISC materials calculator. A quantity surveyor from Beca Hunter H2O will need to approve and sign off on the completed materials calculator.

4.3 Verification

The round 1 submission for the ISC Design Rating is anticipated to be submitted in the second-last month of detailed design (est. 2024). After the first round, the project team will address the comments from the verifier to ensure a complete submission for the second round. This process usually takes between three to four months and therefore the timing of the round 1 submission maximises the amount of time to compile evidence while ensuring that the design team will still be on the Project (assisting during the early tender phases) in order to answer any questions from the verifiers.

For the ISC As-Built Rating, the round 1 submission is anticipated to be submitted before the end of construction so that the construction contractor will still be active on the Project to answer questions from verifiers.

4.4 Certification

It is anticipated the Project will be certified with an ISC Design rating within four months of detailed design completion and the ISC As-Built rating shortly before construction is completed.

Appendix A

QPRC Sustainability Policies

Operations Sustainability Policy

Date policy was adopted:	13 October 2022
Resolution number:	368/22
Next Policy review date:	September 2024
Reference number:	52.5.4
Strategic Pillar	Natural & Built Character
Responsible Branch	Natural Landscapes & Health

1 OUTCOMES

1.1 The aim of this policy is to provide a clear statement of Queanbeyan-Palerang Regional Council's (QPRC) commitment to reducing the environmental impact of our operations.

2 POLICY

2.1 Council acknowledges it has a responsibility and key role to play in promoting and implementing sustainable development (operations and practices).

Council will strengthen, adjust and build internal management frameworks that ensure that the quadruple bottom line is integrated as a core part of Council's strategic and operational management. This will be achieved via effective integrated management plans, specific action plans, standard operating procedures, training, communication, monitoring and reporting. To this end, this policy includes sustainability performance related targets. Council will strive to meet these targets and report on performance annually within the State of the Environment Report (SOER).

3 SCOPE OF THE POLICY

3.1 This policy applies to Council operations only.

4 DEFINITIONS

4.1 *ESD* – Ecologically Sustainable Development - development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainability, sustainable development and ESD are used interchangeably.

Sustainable development refers to all our operations and practices and is much broader than the term 'development' used to describe the use of land and work on buildings. Principles underpinning ESD are:

- Precautionary principle
- Inter-generational equity
- Biodiversity and ecological function, and
- An economic framework / valuation which includes environmental factors.

Quadruple bottom line - is a concept which seeks to broaden the focus on the financial bottom line by organisations to include social, environmental and governance responsibilities. It is a measure of a company's degree of social responsibility, its economic and governance values and its environmental impact.

5 LEGISLATIVE OBLIGATIONS AND/OR RELEVANT STANDARDS

Some of the legislation relevant to this policy includes:

5.1 Local Government Act 1993 No 30

The following principles apply to decision-making by Councils (subject to any other applicable law).

- Section 8(2c) “Councils should consider the long term and cumulative effects of actions on future generation”.
- Section 8(2d) “Councils should consider the principles of ecological sustainable development”.

5.2 Biodiversity Conservation Act 2016

Section 1.3 “The purpose of this Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecological sustainable development”.

5.3 Biosecurity Act 2015

Section 22 imposes a duty to prevent, eliminate or minimise a biosecurity risk, including the control of pest plants and animals on council land and avoiding the spread of weed material.

5.4 Environmental Planning and Assessment Act 1979

The objects of this Act, which are reflected in Council’s environmental planning instruments that council development activities often must comply with, include:

- Section 1.3(b) “to facilitate ecologically sustainable development in decision-making about environmental planning and assessment”;
- Section 1.3(e) “to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats”; and
- Section 1.3(f) “to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage)”.

5.5 Pesticides Act 1999

Part 2 specifies controls on the use of pesticides in accordance with labels and to prevent harm to non-target plants or animals, and material harm to endangered, vulnerable or protected animals.

5.6 Protection of the Environment Operations Act 1997

Administered by the NSW Environment Protection Authority (EPA). The objects of the Act include to protect, restore and enhance the quality of the environment having regard to ecologically sustainable development. The EPA regulate all scheduled activities with licence requirements such as landfills and wastewater treatment plants. They are also the Appropriate Regulatory Authority (ARA) for all Council activities to ensure environmentally compliance.

5.7 QPRC Procurement Policy

Council acknowledges that it has a vital role to play at the local level in promoting sustainable development and can make a contribution towards meeting the global challenges of creating a sustainable society.

5.8 Water Management Act 2000

The objects of the Act are to provide for the sustainable and integrated management of water sources, such as the use of water at council's facilities and for irrigating urban landscapes and roadworks.

5.9 Waste Avoidance and Resource Recovery Act 2001

Council is expected to contribute to meeting the targets in the NSW Waste Avoidance and Resource Recovery Strategy.

6 CONTENT

6.1 Queanbeyan-Palerang Regional Council will work to lead the region in sustainable practices. In relation to environmental impact and in relevance to this policy, this will include (but not be limited to): water use, energy use, waste management, fleet management, natural resource management, and parks management.

Council's commitment to applying the principles of sustainability to all decision making, functions and activities is underpinned by the principles adopted by all levels of government in Australia in the 1992 ESD National Strategy. These are:

- decision making processes should effectively integrate both long and short-term economic, environmental, social and equity considerations
- where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation
- the global dimension of environmental impacts of actions and policies should be recognised and considered
- the need to develop a strong, growing and diversified economy which can enhance the capacity for environmental protection should be recognised
- the need to maintain and enhance international competitiveness in an environmentally sound manner should be recognised
- cost effective and flexible policy instruments should be adopted, such as improved valuation, pricing, and incentive mechanisms

- decisions and actions should provide for broad community involvement on issues which affect them
- the quadruple bottom line impacts of any new process or procedure shall be investigated so as to prevent any harm

7 PERFORMANCE INDICATORS

7.1 This policy will be reviewed every four years or earlier as necessary if:

a) legislation requires it, or

b) Council's functions, structure or activities change.

Sustainable Design for Council Buildings Policy

Date policy was adopted:	21 December 2022
Resolution number:	522/22
Next Policy review date:	September 2024
Reference number:	52.5.4
Strategic Pillar	Development & Environment
Responsible Branch	Natural Landscapes & Health

1 OUTCOMES

1.1 Council is committed to improving its operational sustainability

2 POLICY

2.1 All Council owned buildings and other infrastructure should contribute to improving the sustainability of Council operations.

3 SCOPE OF THE POLICY

3.1 This policy applies to all new building and other infrastructure construction, refurbishment and upgrades. This policy sets standards to ensure that all Council building and infrastructure works support Council's Sustainability goals and transition to net zero emissions over time. This includes, but is not limited to,

- Reduced greenhouse gas emissions
- Reduced energy consumption, water use and waste;
- Increased use of electricity generated from renewable sources (Green Power)
- Use of gas is discouraged and will only be permitted when strong justification for its use can be provided (e.g. swimming pool heating etc).
- Reduced on-going operating and maintenance costs;
- Demonstrating community leadership in implementing renewable energy and passive solar design;
- Using alternative water sources and improving stormwater water quality;
- Better occupant health and comfort;
- Continued Council growth and development with reduced environmental footprint; and
- Increased staff and community awareness of sustainability.

4 DEFINITIONS

4.1 ESD – Ecologically Sustainable Design - is building design that promotes environmental quality, economic vitality and social benefit.

4.2 SDA – Sustainable Design Assessment – an early opportunities analysis which identifies strategies to integrated sustainable design elements in a building design, and meet targets in the most cost effective manner.

5 LEGISLATIVE OBLIGATIONS AND/OR RELEVANT STANDARDS

5.1 Local Government Act 1993

Section 7(e) "purposes of the Act" requires "Councils, Councillors and Council employees to have regard to ESD principles in carrying out all of their responsibilities".

Section 8 of the Local Government Act 1993 (as amended 1997) sets out the charter of a local council in NSW and includes the requirement for a council to "properly manage, develop, protect, restore, enhance and conserve the environment of the area for which it is responsible in a manner which is consistent with and promotes the principles of Ecological

Sustainable Development and "have regard to the long term and cumulative effect of its decisions".

5.2 The Environmental Planning and Assessment Act 1979

5.3 High level objectives include "encouraging ecological sustainable development". Sustainability Policy.

Section 2 “Policy” requires: “Council will systematically review its internal policies, Ecologically Sustainable Development performance, processes and practices to further build the organisation’s capacity to deliver ongoing triple bottom line performance improvement within its own operations”.

5.4 Procurement Policy, 2020

Section 6.4 provides Council’s objectives for sustainable procurement. These objectives are as follows:

(a) Minimise unnecessary purchasing – consider alternatives to purchasing and only purchase when a product is necessary;
(b) Minimise waste – purchase in accordance with the waste management hierarchy of reduce, re-use and recycle;
(c) Reduce natural resource consumption – purchase products that conserve natural resources such as energy, water and fuel.
(d) Minimise pollution – where possible avoid purchasing products that pollute the environment (air, water soil, light and noise)
(e) Eliminate toxic products – where possible avoid purchasing hazardous chemicals or substances that may be harmful to ecosystems or human health;
(f) Reduce greenhouse emissions – purchase products that can reduce emissions or have lower associated emissions. Prioritise products that are carbon neutral or carbon negative;
(g) Achieve biodiversity and habitat protection – purchase in accordance with biodiversity and conservation objectives.

The following actions are required to support the above sustainable procurement objectives:

(a) Foster innovation in sustainable products and services
(b) Eliminate inefficiency, waste and expenditure
(c) Contribute to the combined purchasing power of Local Government to stimulate demand for sustainable products
(d) Advance sustainability by conducting complete lifecycle analysis during procurement activities
(e) Increase staff awareness of sustainable product ranges available in each procurement category
(f) Deliver Council’s commitments in relation to ecologically sustainable development and other environmental and social obligations
(g) Take a leadership role in the advancement of long term social and environmental sustainability
(h) Include relevant Community Strategic Plan objectives within evaluation criteria to achieve sustainable outcomes.

6 CONTENT

6.1 All budgeting, procurement and tender documentation shall refer to this policy. During project planning, all projects are required to either:

6.1.1 Complete a Sustainable Design Assessment (SDA) in consultation with Council's Environment and Sustainability Officers; or

6.1.2 Register and undertake external certification process.

In either case, the project team will specify how Council's sustainability targets are to be met once the building or infrastructure is operational.

6.1.3 Supporting Documents

a) Template A - Project Sustainability Design Assessment Checklist - Sustainability of Council Buildings Policy (C1779128)
b) Template B - Sustainable Design Policy for Council Building - SDA Checklist – Building (C1779126)
c) Template C - Sustainable Design Policy for Council Building - SDA Checklist – Infrastructure (C1779127)
d) Template D – Lifecycle Cost Calculator (C1779129)

6.2 Targets

6.2.1 Council has the following targets for this policy:

- Zero net impact on greenhouse gas and water use compared to previous years.
- No Net Increase in Greenhouse Gas Emissions
- No Net Increase in Council Water Use
- Increase waste recovery rates to 80%
- What this means in practice is that as new projects are added:
- They will be as low environmental impact as practical

6.3 All projects (including renovations and upgrades) must contribute to meeting the following targets:

6.3.1 Allocate a minimum of 10% of the budget towards sustainability measures to ensure that these targets can be met.

6.3.2 Additionally, mandatory minimum and optional sustainability measures are nominated for each project type depending on the contract value of the project, defined as follows:

- Minor works (<$300,000);
- Major works ($300,000-$2,000,000); and
- Showcase works (>= $2,000,000).

For minor and major works a Sustainability Design Assessment (SDA) Checklist, Template A, and ESD checklist, Template B (for buildings) or Template C (for infrastructure projects) have been developed.

For Showcase works sustainability measures are referenced in third party tools, which each contain relevant sustainability benchmarks. All showcase works require third party best

practice certification, which could include Green Star, Infrastructure Sustainability (IS) or equivalent.

6.4 Specific requirements for building types

	Examples	Sustainable Design Target	Process and Review
Minor Works and refurbishments <$300,000	Toilets and Small Pavilions Kiosks / Ticket Boxes Depot buildings Stores / Sheds Bridges or roads Parks Water or sewerage infrastructure	Use Template A to conduct the SDA **And** Template B (for buildings) **OR** Template C (for Infrastructure) All minimum and some additional requirements outlined in template B or C are to be met	Internal review including Infrastructure Sustainability Officer
Major Works $300,000 to $2,000,000	Pavilions Childcare and maternal and child health centres Aged Care centres Neighbourhood Houses Community centres/halls Bridges or roads Parks Water or sewerage infrastructure	Use Template A to conduct the SDA **And** Template B (for buildings) **OR** Template C (for Infrastructure) All minimum and most additional requirements outlined in template B or C are to be met	Internal review including Infrastructure Sustainability Officer and/or external ESD consultant input
Showcase Projects >$2,000,000	Libraries Aquatic Recreation centres Sports Stadiums Offices /Town halls Larger Community Centres Water or Sewerage Infrastructure Parks Roads	Third party certification - '5 Star' Green Star or equivalent* rating for buildings, or 'Excellent' IS rating for infrastructure projects.	External third party review and certification

*Equivalent third party certification programs include, but are not limited to, Living Building Challenge, LEED and NABERS. Certification is to be of the as built product.

6.5 Roles and Responsibilities

Project Element	Sustainable Design Considerations	Primary Responsibility
Feasibility and budget allocation	As part of capital works planning a Sustainable Design budget should be allocated as appropriate to achieve the relevant targets.	Project initiator and Council Management to approve projected budget for showcase projects

Architectural Tender Brief and Contractor Specifications Guidelines	The Sustainable Design targets applicable to the project should be included in all Architectural Tender Brief and Contractor Specifications guidelines	Project initiator (e.g. Capital Works and Assets, Community Facilities, Recreation Officer, etc)
Detailed Design	Ensure all sustainability requirements are met and these features are clearly and accurately documented in the building plans, specifications and working drawings / schematics before the project goes to tender. Undertake Planning review and Quality Assurance check	Project initiator, Design Team, Infrastructure Sustainability Officer, Facilities Maintenance
Construction	An Environmental Management Plan for the construction site is required. Ensure compliance with Sustainable Design requirements and specifications.	Project initiator, Infrastructure Sustainability Officer, Construction contractor
Project Commissioning and Handover	Ensure that buildings or other infrastructure occupants and operators are trained in relevant systems. For all Major and Showcase Capital Works: A copy of the following documents should be provided to the building occupants or infrastructure users as well as the Council maintenance department: • Sustainable design intent • Building or other infrastructure user's guide, outlining the efficient use of the sustainable design features and technologies. • As built drawings; • Maintenance manuals; and • Commissioning checklists, reports and recertification details.	Project initiator, Infrastructure Sustainability Officer, Main building contractor, Facilities Maintenance, Relevant Council department facility manager/ Project manager
Building tuning and maintenance (during defect liability phase)	Ensure the building or infrastructure operates effectively in all seasons as per the design specifications during the 12 month Defects Liability Period by the builder and subcontractors supervised by the Council Maintenance Staff.	Facilities Maintenance Relevant Council department (facility manager) / Project manager Project Initiator
Refurbishment and required maintenance	Comply with this policy and Procurement Policy to consistently improve the environmental performance of Council assets.	Facilities Maintenance
Project Element	Sustainable Design Considerations	Primary Responsibility
Green Use Agreements (as part of License, Lease, Venue Hire and Ground and Pavilion Allocation Agreements)	Include lease terms and conditions governing the management and operation of a building and tenant and Council responsibilities to encourage environmentally sustainable use.	Relevant Council department (facility manager) and Tenant
Building user engagement	Provide tenants with Building User Guides to educate and encourage the effective use of the sustainable features of their premises. For showcase projects, Council and tenant must develop an Environmental Management Plan to ensure sustainable design	Project initiator Relevant Council department (facility manager) / Project manager
Annual Sustainable Operation Review	Council will annually monitor and review each applicable asset's resource use in relation to its targets.	Relevant Council department (facility manager) Facilities Maintenance Environmental planning

7 REVIEW

7.1 This policy will be reviewed every four years or earlier as necessary if:

a) legislation requires it, or

b) Council's functions, structure or activities change

Appendix B

Sustainability Workshop

QPRC STP Sustainability Workshop

15th May 2019

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Agenda

12:30 Welcome and workshop objectives (Shlomi Bonet)

12:35 Discussion of key project sustainability ambitions (Shlomi Bonet)

12:50 Sustainability works undertaken to date (15 mins) (James Herbert)

13:00 ISCA

- Introduction to ISCA (Shlomi Bonet)
- QPRC STP targeted IS rating levels and pathways (Shlomi Bonet)
- Group activity: Run through the IS tracking register to discuss requirements and identify roles and responsibilities of stakeholders

14:00 Break (10 mins)

14:10 Sustainability in Design- Risks and opportunities (James Herbert)

- Group activity: Identify the top 5 sustainability in design outcomes for the project.
- What initiatives should we consider?

15:40 Summary of workshop findings and next steps

16:00 Close

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Workshop Objectives

This workshop will aim to identify the following objectives:

- Outline the process for ISCA rating achievement to target a minimum 'Excellent' rating for Design and As-Built using V1.2.
- Provide an overview of project and sustainability works undertaken to date.
- Discuss and agree upon ratings approach and pathways using IS tracking register. Identifying roles and responsibility and timings.
- Identify the key sustainable outcomes and initiatives required to achieve those outcomes. Discuss the risks and opportunities associated with achieving sustainable outcomes.

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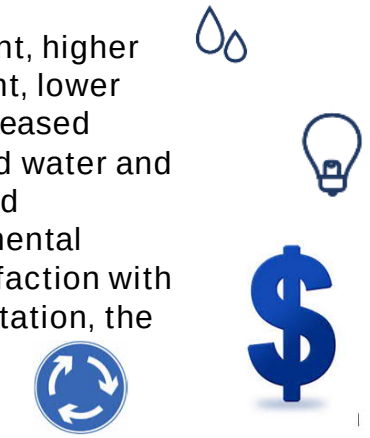
QPRC Ambitions

Healthier environment, higher returns on investment, lower operating costs, increased productivity, reduced water and energy use, increased community environmental awareness and satisfaction with council, council reputation, the list goes on…



Legislation and Policy

NSW Local Government Act 1993
"Councils, Councillors and Council employees to have regard to ESD principles in carrying out all of their responsibilities"

The Environmental Planning and Assessment Act 1979

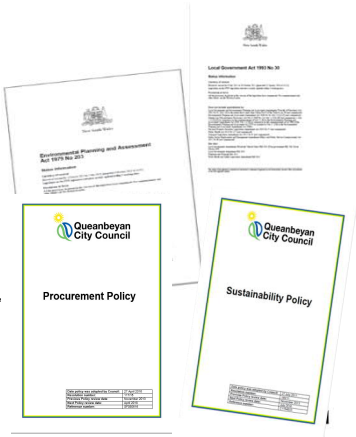
"Encouraging ecological sustainable development"

QPRC Sustainability Policy, 27 July 2011

"Council will systematically review its internal policies, Ecologically Sustainable Development (ESD) performance, processes and practices to further build the organisation's capacity to deliver ongoing triple bottom line performance improvement within its own operations"

QPRC Procurement Policy, 25 March 2009

"Purchasing practices must ensure value for money, having consideration for the following factors:... total cost over the life of an asset, in the case of plant and equipment this shall include assessment of the purchase, installation and operating costs over the life of the asset"



Sustainable Design Policy for Council Buildings

- Council policy since July 2013
- "All Council owned buildings and facilities are to contribute to improving the sustainability of Council operations"
- Applies to all new building and other infrastructure construction, as well as refurbishment and upgrades
- Aims to:
  - Reduced energy consumption, water use and waste generation;
  - Reduced on-going operating and maintenance costs;
  - Demonstrating community leadership in implementing renewable energy and passive solar design;
  - Using alternative water sources and improving stormwater quality;
  - Better occupant health and comfort and productivity;
  - Continued Council growth and development with reduced environmental footprint; and
  - Increased staff and community awareness of sustainability.

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Sustainable Design Policy for Council Buildings – continued

The policy requirements are:

Minor Works and refurbishments <$300,000 - Council ESD Toolkit

Major Works $300,000 to $2,000,000 - Template C - Council ESD Toolkit

Showcase Projects >$2,000,000 - External best practice certification (Green Star or IS)

- **Green Star Rating Tools** – Buildings of all types, including interior fitout works only.
- **Infrastructure Sustainability Rating Tools** – Infrastructure Projects in Transport, Energy, Water, Communication, Waste, Etc

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Sustainability scope of works

Completed items:

- Review masterplan and operation rating to undertake preliminary assessment gap analysis.
- Complete an ISCA Rating Assessment to determine applicability for each IS tool credit and demonstrate limitations/opportunities to achieving credits in design and construction.
- Developed the IS Implementation Plan outlining the rating process, IS rating methodology, project targets, timings and key roles and responsibilities. To be updated and reissued following this workshop.
- Developed a draft Sustainability Strategy addressing the broader sustainability governance framework for the project. This includes requirements to enable future project compliance with regard to policies, reporting, auditing and decision making. This will influence the design and delivery contractors' own Sustainability Plans. To be updated and reissued following this workshop.
- Held workshops with QCC to present credit strategy and discuss impact assessment and discuss initiatives to take forward/further investigate. Technical papers developed to ascertain

Future items:

- Finalisation and circulation of IS Implementation Plan and Sustainability Strategy.
- Development of the IS 'base case' and 'weightings assessment for ISCA verification.
- Feasibility analysis of sustainability design initiatives through research and draft technical papers in the context of proposed EP and design life.
- Collaboration with design team to embed feasible initiatives.
- Development of evidence to meet IS Design and As-Built rating requirements.
- Governance and management of contractors deliverables.

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Introduction to ISCA

Infrastructure Sustainability Council Australia (ISCA)

- First and only national sustainability rating tool for infrastructure
- Released by the Infrastructure Sustainability Council of Australia in 2013
- The "IS Rating Scheme" measures sustainability performance across the quadruple bottom line (environmental, social, economic and governance)
- 4 available rating types- Planning, Design, As-Built and Operations

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What is the IS Rating Scheme?

The IS Tool comprises of
- IS Rating Tool Scorecard
- IS Materials Calculator
- IS Technical Manual

Assessment process involves
- Registration
- Assessment support
- Independent support
- Certification and rating award

Qualifications required
- IS Accredited Professional (ISAP)

Version control
- V1.2 released in April 2016
- V1.2 provides a consolidated update using feedback from V1.0 and V1.1

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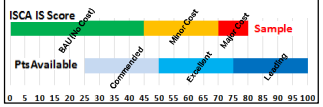
IS Rating Categories

Infrastructure Sustainability (IS) Ratings

Themes	Categories
Management and Governance	Management Systems
	Procurement and Purchasing
	Climate Change Adaptation
Using Resources	Energy and Carbon
	Water
	Materials
Emissions, Pollution and Waste	Discharges to Air, Land and Water
	Land
	Waste
Ecology	Ecology
People and Place	Community Health, Well-being and Safety
	Heritage
	Stakeholder Participation
	Urban and Landscape Design



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QPRC STP Target

Score	Rating Level
< 25	Not eligible to apply for a certified rating
25 - 49	Commended
50 - 74	Excellent
>75	Leading

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What is being done?

ISCA is now adopted as standard for major infrastructure developments. Examples include:

- Sydney Metro TSC Works set the benchmark for NSW- 'Leading' rating for Design and As-Built
- Bayswater level crossing removal- 'Leading' rating for Design .Won IS project of the year award for 2016.

STP IS ratings include:

- Whitsundays STP upgrade- 'Excellent' rating achieved
- Yarra Park Water Recycling Facility 'Excellent' rating achieved.
- Lower South Creek- Ongoing
- Parkes STP- Ongoing
- Mullumbimby STP- Ongoing

For more information : https://www.isca.org.au/ratings_water#search

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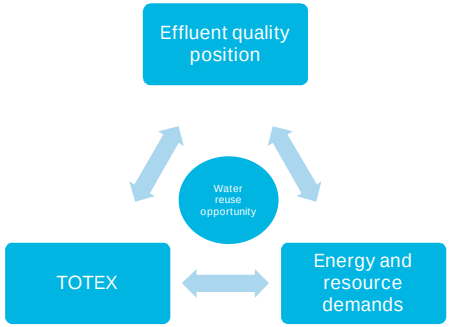
Group Activity
IS Tracking Register

Sustainability in Design

The big talking point – main sustainability (TBL) balance effort for QPRC STP



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ISCA Requirement: Dis-1

Dis-1 Receiving Water Quality

Aim

To reward the management of impacts on local receiving water quality.

Criteria

	Level 1	Level 2	Level 3
Benchmark	Measures to minimise adverse impacts to receiving water environmental values during construction and operation have been identified and implemented. AND Monitoring of water discharges and receiving waters is undertaken at appropriate intervals and at times of discharge during construction and operation.	The requirements for Level 1 are achieved. AND Monitoring and modelling of water discharges and receiving waters demonstrates no adverse impact on receiving water environmental values. AND The infrastructure does not increase peak stormwater flows for rainfall events of up to a 1.5 year ARI event discharge.	The requirements for Level 2 are achieved. AND Opportunities to improve receiving water environmental values have been identified and implemented. AND Monitoring and modelling demonstrates improvement of receiving water environmental values.
Evidence	Design report, as-built drawings, environmental management plan, asset management plan. Monitoring reports.	The evidence for Level 1.	The evidence for Level 1.

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Effluent Quality – Issues and Possibilities

Parameter	NORBI (for increasing EP) based on AECOM 2015 report	EPA proposal for future effluent quality	Current licence	River criteria (values-based water quality criteria)
TN (mg/L)	10 (90th %ile) 5 (median)	20 (max.)	35 (90th %ile) 30 (median)	0.25
TP (mg/L)	0.15 0.10	0.08 (N:P ratio 12:1)	0.3 0.2	0.1
Faecal coliforms (cfu/100mL)	200 30		1000 200	150 (recreational)
BOD (mg/L)	10 5	5	10 5	
SS (mg/L)	10 5	5	20 8	25
Cond (uS)	-	650	-	500 (irrigation, turf farm)

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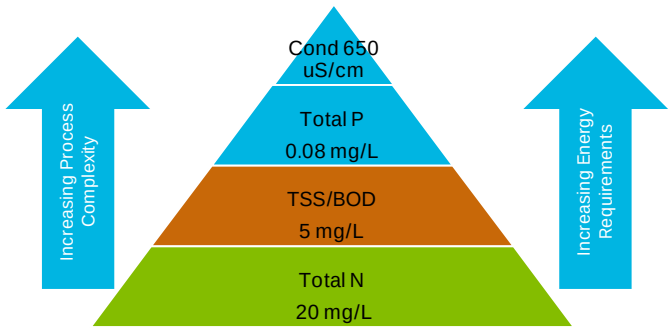
Water Quality – effluent quality relationship with energy and process complexity



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Water Quality – % reductions from raw sewage to meet proposed EPA requirements

	QPRC Influent		EA	Avg	95%
	Avg	95%	Draft design discharge standards	% Rem	% Rem
TSS	242	459	5	98	99
Cond	961	1071	650	32	39
TN	69	88	20	71	77
TP	8.6	12	0.08	99	99
BOD	185	300	5	97	98

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Water Quality

Outcomes (implications of EPA proposal on treatment and materials, energy, cost aspects)

- - 100% ile drives process complexity and sophisticated control
- - 0.08 mg/L TP requires chemical P removal
- - 0.08 mg/L TP requires <1 mg/L TSS – 3% of TSS is P – Tertiary Filtration
- - 650 µS/cm requires partial desalination

Initiatives

- - Challenge the 100% ile
- - Challenge the conductivity
- - Carry out process modelling
- - Develop influent sampling programme
- Couple the effluent/Molonglo River modelling with LBG models developed for BPP

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Outcomes and Initiatives- Energy

Targets

- Contribute to: "no net increase in GHG emissions" (Council-wide Building Sustainability objective)
- Implement economically (TBL) viable energy generation measures
- ISCA (next slide) – depends on materiality/influence to IS scoring (this will be discussed at weightings discussion later today). As a starting point, suggest targeting:
  - Level 2 for Ene-1 (20% reduction on GHG from base-case) and
  - Level 1 for Ene-2 (Exploration of renewables – no commitment to delivering; only if economically justified. If renewables are adopted, then this will deliver 'bonus points')
- Stretch target: Energy Neutrality? Feasibility can be explored. (Do the ACT Government's energy efficiency and renewable energy targets apply?)

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Ene-1

Ene-1 Energy and carbon monitoring and reduction

Aim

To reward monitoring and minimising of energy use and GHG emissions across the infrastructure lifecycle.

Criteria

	Level 1	Level 1 to 3 on sliding scale
Benchmark	Monitoring and modelling of energy use and GHG emissions, and actions taken to reduce them, is undertaken, covering at least Scope 1, Scope 2 and land clearing across the infrastructure lifecycle.	The requirements for Level 1 are achieved. AND Monitoring and modelling demonstrates a reduction in GHG emissions compared to a base case footprint. For every reduction up to 30% for Level 3, fractions of Levels may be achieved on a sliding scale.
Evidence	Energy and carbon footprint Report.	The evidence for Level 1. AND Report comparing actual and modelled GHG emissions to a base case footprint.

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Ene-2

Ene-2 Use of Renewable Energy

Aim

To reward investigation of, and use of, renewable energy.

Criteria

	Level 1	Level 1 to 3 on sliding scale
Benchmark	Opportunities for use of renewable energy fully investigated.	The requirements for Level 1 are achieved. AND For every substitution of energy from renewable sources up to 40% for Level 3, fractions of Levels may be achieved on a sliding scale.
Evidence	Design reports. Management plans. Monitoring reports.	The evidence for Level 1.

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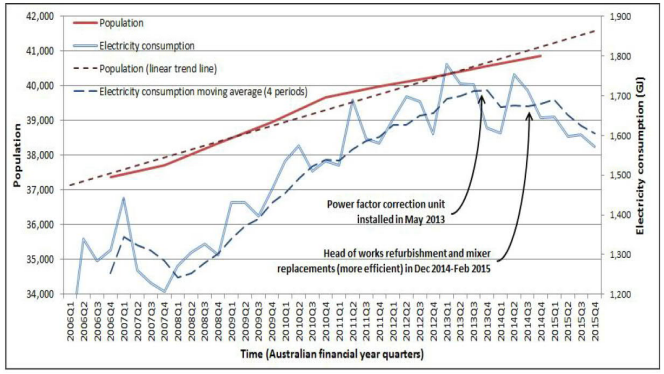
Energy baselining – Historical at plant



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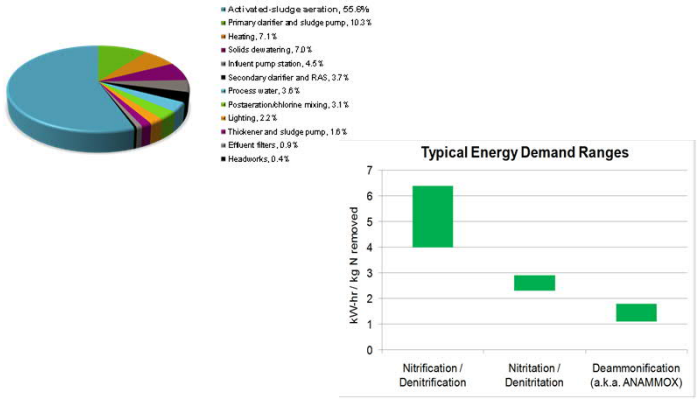
Energy baselining – Typical energy distribution for full secondary treatment + Aeration Energy Demand



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WSAA Energy Benchmarking

Plant Type	Plant details	Count of WWTP	Average Flow-Specific Energy Use, kWh / ML	Average Load-Specific Energy Use, kWh/EP/y	Adopted Benchmark Value, kWh/EP/y			Adopted Benchmark Target Value, kWh/EP/y Note 1
					Average All Size Classes	Min	Max	Average All Size Classes
Type 1	(PST + Act. Sludge + An. Dig. + Cogen.)	18	629	45	30	27	41	20
Type 2	PST + Act. Sludge + An. Dig.	16	973	66	38	27	110	24
Type 3	Extended Aeration Act. Sludge	81	924	68	44	30	175	26
Type 4	Trickling Filters	10	580	68	27	20	32	17
Type 5	Lagoons	17	668	57	34	25	40	17
All		142	837	64	39	20	175	23

Data from Water Services Association of Australia

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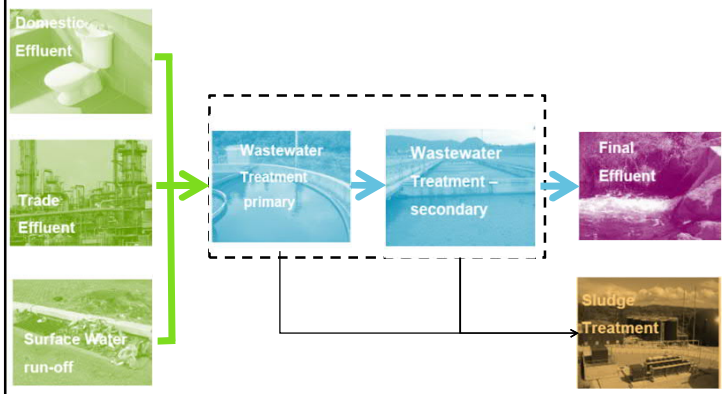
Conventional Wastewater Treatment



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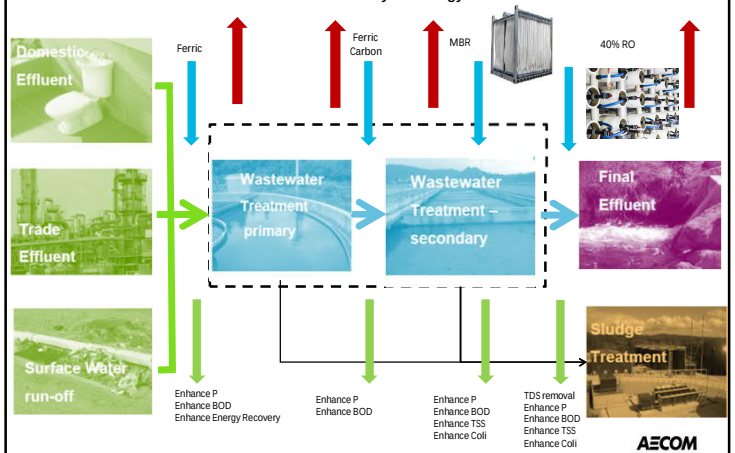
Nutrient Removal and Energy Recovery

Reduced Sustainability – energy + chemicals + waste



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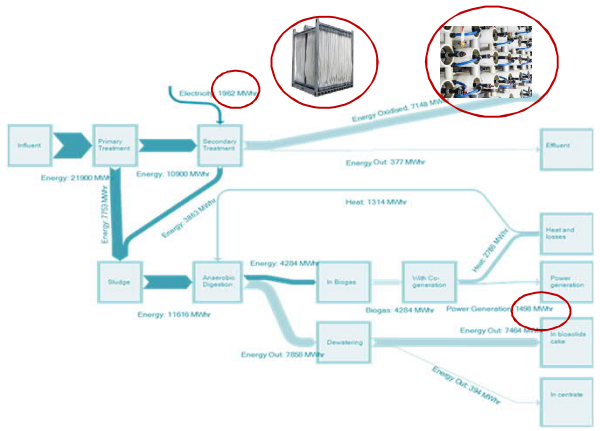
Energy Neutrality Challenge



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Considerations

- Tightening wastewater treatment increases the proportion of secondary and chemical sludge relative to primary sludge
  - But likely to result in less sludge being produced
  - Primary sludge has more energy, digests and dewaters better, and has fewer nutrients to remove than other sludge
  - Chemical addition lowers CV by dilution and composition change
- Removal of primary treatment for nutrient removal has a number of negative downstream impacts. These include:
  - increased aeration requirements of > 20%
  - reduction in biogas production of approximately 60%
  - loss of primary sludge, and
  - nutrient starved conditions in the digestion stage

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Considerations

- Tightening wastewater consent has a number of detrimental impacts on energy demands and OPEX. These include:
  - increased energy demand during aeration
  - decreased biogas generation during digestion
  - poorer dewaterability; and
  - production of cake with higher water content

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Energy

Outcomes

- - more nutrient removal = more energy
- - more chemicals
- - possible enhance energy recovery
- - energy neutrality challenging

Initiatives

- - process modelling – link to effluent quality target requirements
- - new and emerging technologies reviews
- - develop energy models
- - renewable energy initiatives
- - CBA/TBL – real environmental and social costs

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Case Study

Parkes STP

Officially opened in March 2018.

Aerobic biological process adopted

New plant included a number of benefits

- Reduced odours
- Improved effluent quality
- Increased operational efficiency

High degree of automation including remote modelling

Combined 405kW solar PV system at STP (298kW) and AWRF (107kW), saving $88,866 on grid electricity in first year of operation.

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Outcomes and Initiatives- Water

Wat-1

Wat-1 Water use monitoring and reduction

Aim

To reward monitoring and minimising water use as much as possible across the infrastructure lifecycle.

Criteria

	Level 1	Level 1 to 3 on sliding scale
Benchmark	Monitoring and modelling of water use is undertaken.	The requirements for Level 1 are achieved. AND Monitoring and modelling demonstrates a reduction in water use compared to a base case footprint. For every reduction up to 20% for Level 3, fractions of Levels may be achieved on a sliding scale.
Evidence	Report on actual and modelled water use across the infrastructure lifecycle.	The evidence for Level 1. Report comparing actual to base case footprint.

QPRC aim: “No net increase in water use” across all facilities

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Wat-2

Wat-2 Replace Potable Water

Aim

To reward replacing potable water where this makes economic and environmental sense across the infrastructure lifecycle.

Criteria

	Level 0 to 3 on sliding scale
Benchmark	Monitoring and modelling demonstrates that some proportion of total water use is from non-potable sources (substituting for potable). Fractions of Levels may be achieved on a sliding scale up to 100% for Level 3.
Evidence	Design reports. Management plans. Monitoring reports.

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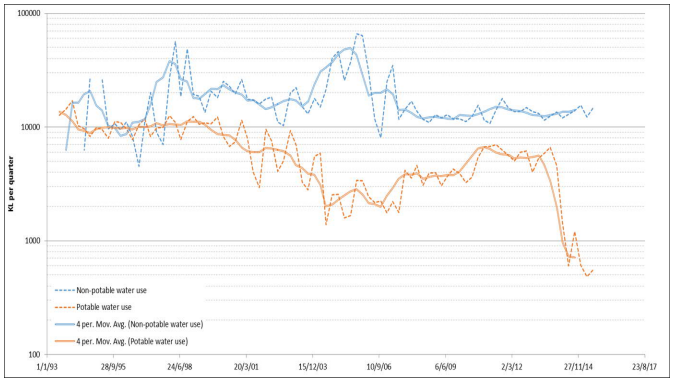
Historical use – water at STP



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Historical use – water at STP

Potable water use 1993-2000 (average KL/quarter) -	10,678
Non-potable water use1993-2000 (average KL/quarter) -	18,209
Total water use1993-2000 (average KL/quarter) -	28,888
Potable water use 2010-14 (average KL/quarter) -	5,422
Potable water use 2015 (average KL/quarter) -	817
Non-potable water use 2010-15 (average KL/quarter) -	13,447
Total water use 2010-14 (average KL/quarter) -	18,869
Total water use 2015 (average KL/quarter) -	14,264
Reduction in potable water use in 2015 compared 2010-14 -	85%
Reduction in potable water use in 2015 compared pre-2000 -	92%
Reduction in total water use in 2015 compared 2010-14 -	24%
Reduction in total water use in 2015 compared pre-2000 -	51%
Ratio potable:non-potable water used pre-2000 -	59%:41%
Ratio potable:non-potable water used 2010-14 -	40%:60%
Ratio potable:non-potable water used 2015 -	6%:94%

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Outcomes and Initiatives- Materials

Mat-1

Mat-1 Materials lifecycle impact measurement and reduction

Aim

To reward design and practice that reduces lifecycle environmental impacts of materials.

Criteria

	Level 1	Level 1 to 3 on sliding scale
Benchmark	Monitoring and modelling of materials lifecycle impacts is undertaken using the Materials Calculator (or other suitable Lifecycle Assessment technique) across the infrastructure lifecycle.	The requirements for Level 1 are achieved. AND Monitoring and modelling demonstrates a reduction in materials lifecycle impacts compared to a base case footprint. For every reduction up to 30% for Level 3, fractions of Levels may be achieved on a sliding scale.
Evidence	Completed copy of the Materials Calculator.	The evidence for Level 1. AND Report comparing actual and modelled GHG emissions to a base case footprint.

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Mat-2

Mat-2 Environmentally labelled products and supply chains

Aim

To reward procurement of major materials that have environmental labels or are from sustainable supply chains.

Criteria

	Level 1	Level 2	Level 3
Benchmark	One material/product has an ISCA approved environmental label.	3-9% of materials/products by value have an ISCA approved environmental label.	>9% of materials/products by value have an ISCA approved environmental label.
Evidence	Report showing use of a product with the environmental credentials above. Product certificate.	The evidence for Level 1.	The evidence for Level 1.

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Materials

Outcomes

- Meet IS criteria for Mat-1 and Mat-2
- Reduce total material use- design optimisation
- Substitute using recycled/sustainable materials

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Initiatives

Use of recycled content:

- Recycled Steel content (generally 80% + recycled content)
- Recycled cementitious material such as fly-ash and slag in concrete.
- Recycled timber for formwork and temporary structures
- Recycled aggregates in road base and civil sub base works
- Reuse of soil on site
- Integration of existing STP materials into rehabilitation of site where possible

Specification of sustainable products:

- Forest Stewardship Council (FSC) or Programme for the Endorsement of Forest Certification (PEFC) sourced from within Australia
- steel from suppliers that are certified under the Australasian Certification Authority for Reinforcing and Structural Steels (ACRS) or a demonstrated equivalent approved association or organisation
- concrete used from members of the Cement Concrete & Aggregates Australia (CCAA) or a similar international association or organisation
- PVC from suppliers that are demonstrate compliance with the Green Building Council of Australia Best Practice Guidelines for PVC in the Built Environment

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Outcomes and Initiatives- Waste

Was-1

Was-1 Waste management

Aim

To reward sustainable waste management plans and practices.

Criteria

	Level 1	Level 2	Level 3
Benchmark	Predictions for waste quantities and types have been developed for construction and operation. AND Measures to minimise waste during construction and operation have been identified and implemented. AND Monitoring of all wastes is undertaken during construction and operation.	The requirements for Level 1 are achieved. AND Waste monitoring and management has been managed, reviewed or audited by a suitably qualified professional. AND Waste handling and disposal/recycling all the way to final destination has been audited at appropriate intervals.	Not applicable
Evidence	Design reports Management plans. Waste monitoring records and reports.	Evidence as for Level 1. Review/audit reports.	Not applicable

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Was-2

Was-2 Diversion from landfill

Aim

To reward diversion of spoil, inert, non-hazardous and office waste from landfill.

Criteria

	Level 1	Level 2	Level 3
Benchmark	All of the following targets for landfill diversion have been achieved or bettered: 70 to <80% by volume of spoil AND 25 to <50% by volume of inert and non-hazardous waste AND 25 to <40% by volume of office waste.	All of the following targets for landfill diversion have been achieved or bettered: 80 to <100% by volume of spoil AND 50 to 90% by volume of inert and non-hazardous waste AND 40 to 60% by volume of office waste.	All of the following targets for landfill diversion have been achieved or bettered: 100% by volume of spoil AND >90% by volume of inert and non-hazardous waste AND >60% by volume of office waste material.
Evidence	Waste monitoring records and reports.	Evidence as for Level 1.	Evidence as for Level 2.

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Waste

Outcomes

- MP- Increase waste recovery rates to 80%
- Meet IS criteria for Was-1 and Was-2

Initiatives

- Construction:
- Waste recovery and reuse for demolition and construction materials
- Spoil reuse- reuse for landscaping on site/engineering fill off site.
- Operation:
- Reuse of biosolids- broader council strategy for agricultural use/non-agricultural use (e.g. forestry)
- Auditing, review and tracking of waste suppliers to final destination.

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Outcomes and Initiatives- Community and stakeholders

Hea-1

Hea-1 Community health and wellbeing

Aim

To reward making a positive contribution to community health and wellbeing.

Criteria

	Level 1	Level 2	Level 3
Benchmark	Measures to positively contribute to community health and wellbeing for one priority issues have been identified and implemented.	Measures to positively contribute to community health and wellbeing for two priority issues have been identified and implemented. AND Monitoring of community health and wellbeing indicators related to the priority issues is undertaken at appropriate intervals during construction and operation of the asset.	Measures to positively contribute to community health and wellbeing for three priority issues have been identified and implemented. AND Monitoring of community health and wellbeing indicators related to the priority issues is undertaken at appropriate intervals during construction and operation of the asset and demonstrates improvement of relevant indicators.
Evidence	Plans, drawings, photos or similar showing implementation of measures.	The evidence for Level 1. Monitoring reports	The evidence for Level 2

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Sta-1

Sta-1 Stakeholder engagement strategy

Aim

To development and implementation of a comprehensive stakeholder engagement strategy.

Criteria

	Level 1	Level 2	Level 3
Benchmark	A comprehensive stakeholder engagement strategy is developed.	The requirements for Level 1 are achieved. AND The strategy is implemented and formal monitoring, evaluation and corrective action is undertaken. AND The community is informed of the draft strategy and provided an opportunity to give feedback. Community feedback is documented and used to guide completion of the final strategy.	The requirements for Level 2 are achieved. AND Stakeholders, including the community, have input to the strategy by way of a facilitated workshop(s) OR The strategy is independently reviewed.
Evidence	Stakeholder engagement strategy Community relations plan	Evidence as for Level 1. Review report.	Evidence as for Level 2. Minutes of workshop.

AECOM

Sta-2

Sta-2 Level of engagement

Aim

To reward an appropriately high level of engagement, particularly on negotiable issues.

Criteria

	Level 1	Level 2	Level 3
Benchmark	Negotiable issues are identified and the level of participation on these issues is at least 'consult' or higher on the IAP2 spectrum. AND Stakeholders are informed about non-negotiable issues.	Negotiable issues are identified and the level of participation on these issues is at least 'involve' or higher on the IAP2 spectrum. AND Stakeholders are informed about non-negotiable issues.	Negotiable issues are identified and the level of participation on these issues is at least 'collaborate' or higher on the IAP2 spectrum. AND Stakeholders are informed about non-negotiable issues.
Evidence	Stakeholder engagement plan Stakeholder meeting minutes Community newsletters Stakeholder letters Stakeholder engagement database	Evidence as for Level 1.	Evidence as for Level 2.

AECOM

Sta-3

Sta-3 Effective Communication

Aim

To reward clear, timely and relevant communication with the community.

Criteria

	Level 1	Level 2	Level 3
Benchmark	The community has been provided with information that: • was provided in a timely manner • supported community participation • was meaningful and relevant • was accessible AND This has been verified by: • internal management/ reviews/ audits OR • community feedback with 65-80% support	The community has been provided with information that: • was provided in a timely manner • supported community participation • was meaningful and relevant • was accessible AND This has been verified by: • independent reviews/ audits OR • community feedback with >80% support	Not applicable
Evidence	Community survey(s) or equivalent Stakeholder engagement strategy Community relations plan Management, review or audit reports	Evidence as for level 1.	Not applicable

AECOM

Sta-4

Sta-4 Addressing community concerns

Aim

To reward proper consideration and addressing of community concerns.

Criteria

	Level 1	Level 2	Level 3
Benchmark	The community believe their concerns have been considered and addressed. AND This has been verified by: • internal management/ reviews/ audits OR • community feedback with 65-80% support	The community believe their concerns have been considered and addressed. AND This has been verified by: • independent reviews/ audits OR • community feedback with >80% support	Not applicable
Evidence	Community survey(s) or equivalent. Stakeholder engagement strategy Community relations plan Management, review or audit reports	Evidence as for Level 1.	Not applicable

AECOM

Community and Stakeholders

Outcomes

- MP- Staff training and in water sensitive urban design, sewerage treatment
- Legacy for surrounding community
- Minimisation of disruption during construction
- Meet IS criteria for Hea-1, Sta-1, Sta-2, Sta-3 and Sta-4

Initiatives

- Community involvement during planning an design review. Aim to “involve”.
- Identification of “Indicators” to take forward. How do we identify improvements using these indicators?
- Aboriginal and non-indigenous heritage preservation and enhancement
- Complaints management and resolution. Documentation and auditing.

AECOM

Group Activity

Lessons Learnt


Thank You
AECOM

Minutes

Client:	Queanbeyan - Palerang Regional Council (QPRC)
Project:	Queanbeyan Sewage Treatment Plant Upgrade (STPU) Project
Workshop date:	15 May 2019
Workshop location:	QPRC Offices: Googledome
Workshop title:	AECOM/QPRC: Sustainability Workshop

Attendees

Inv.	Attd.	Dist.	Full name (Initials)	Company name	Person's initials / Position
☒	☐	☒	Gordon Cunningham (**GC**)	QPRC	Service Manager – Utilities – Waste Operations
☒	☐	☒	Derek Tooth (**DT**)	QPRC	Project Director
☒	☒	☒	Peter Cox (**PC**)	QPRC	Project Manager
☒	☒	☒	Natasha Abbott (**NA**)	QPRC	Project Administrator
☒	☒	☒	Andrew Grant (**TP**)	QPRC	Asset Management
☒	☒	☒	Shlomi Bonet (**SB**)	QPRC	Sustainability Officer
☒	☐	☒	Cameron Pensini (**CP**)	QPRC	Portfolio General Manager
☒	☒	☒	Martin Lomé (**ML**)	Turner & Townsend	Project Director
☒	☒	☒	Kim Raysmith (**YM**)	Turner & Townsend	Senior PM
☒	☒	☒	Michael Guarriello (**MG**)	Turner & Townsend	Senior CM
☒	☒	☒	Christie Hyde (**CH**)	Turner & Townsend	Graduate PM
☒	☒	☒	Roger Swinburne	ARUP	Project Director
☒	☒	☒	Therese Flapper (**TF**)	ARUP	Approvals Manager
☒	☒	☒	James Logan (**JL**)	ARUP	Project Manager - Environment
☒	☒	☒	David Perry (**DP**)	HH2O	Principal Design Engineer
☒	☐	☒	Craig White (**CW**)	HH2O	Design Project Manager
☒	☐	☒	Jeremy Smith (**JS**)	HH2O	Design Lead

Signed: **Date:** 16/05/2019

Discussion topic		Resp.	Due
1	**ISCA**		
1.1	AECOM to provide advice on evidence requirements for economic credits.	James Herbert	23/05/2019
2	**Sustainability for QPRC**		
2.1	QPRC, HH2O and ARUP to define what business-as-usual means for the project and define BAU assumptions so that comparisons in design can be made.	QPRC/HH2O/ARUP	23/05/2019
2.2	QPRC to outline contract regarding rates sensitivity (per kWh).	Shlomi Bonet	23/05/2019
3	**Sustainable Design Policy**		
3.1	T&T to ensure that they have audit information for the STP in the background documents. T&T to request documents if they do not currently have them.	T&T	23/05/2019
3.2	AECOM to update IS Implementation Plan.	James Herbert	23/05/2019
3.3	QPRC to update Sustainability policies.	Shlomi Bonet	23/05/2019
4	**IS Tracking Register**		
4.1	AECOM to provide IS Tracking Register to T&T.	James Herbert	23//05/2019
4.2	T&T to make procurement plan available for review by QPRC.	Martin Lomé	23/05/2019
4.3	QPRC to provide ISCA Manual v1.2 to ARUP.	Peter Cox	23/05/2019
4.4	AECOM and QPRC to define what elements of ISCA credits are negotiable or non-negotiable. Negotiable credits will be given minimum requirements in tender documentation for construction.	James Herbert/ Shlomi Bonet	23/05/2019
5	**Sustainability in Design**		
5.1	QPRC and ARUP to discuss proposed EP, as 60k EP is likely to be reached within 10-15 years.	Peter Cox	23/05/2019
6	**Sustainability Design Outcomes and Initiatives**		
6.1	QPRC to provide Asbestos and on-site risk register to T&T so that information can be added to Project Risk Register.	Peter Cox	23/05/2019

Discussion topic	Resp.	Due

6.2 Top 5 key outcomes:

- High water quality (social improvement)
- Efficiency with energy (minimisation), chemicals and minimising carbon
- Maximise use of waste streams (circular economy)
- Social responsibility (indigenous heritage, intergenerational equity, training/upskilling of staff)
- Adaptability/Resilience (60k EP – 100k EP)

6.3 Identified initiatives:

6.3.1 Energy and Carbon

- On-site renewables
- Waste mixing (including biosolids for fuel)
- Biogas (cogen/turbine) – probably too small but worth further investigation
- Fertiliser (carbon/nutrient capture)
- Export wet biosolids (reduced treatment)
- Good hydraulic design
- Site layout that minimises pipe runs
- Reduced pumping (VSD)
- Energy efficiency in aeration
- Motor selection
- Load shedding – Automation (Power Factor Correction)
- Water - defined by quality thresholds
- Recycled effluent (on-site irrigation, wash-down, dust suppression)
- In-ground bioreactors (insulation) (operators want to be able to look at their reactors and see what is going on)

6.3.2 Waste

- Biosolids strategy
- Reduction/reuse of operational modules
- Reuse of construction waste/demolition waste
- Contaminated waste (identity options)
- Chemical reduction
- Community education (disposable wipes)

6.3.3 Social

- Community education
- Ergonomic design (above safety standards)
- Training/recertification
- Potential for existing STP to be open to university and TAFE students to learn, and conduct research and development

End of Minutes.

Appendix C

Sustainability Report Template

Appendix C Sustainability Report Template

TO:

FROM:

SUBJECT:

OUR REF:

DATE:

QPRC STP Upgrade –Sustainability Report

Key Sustainability Deliverables Status

Required Outputs	Deliverable / Target	Current Status
Infrastructure Sustainability Management Plan (ISMP)	Infrastructure Sustainability Management Plan (ISMP)	
Infrastructure Sustainability Project Workshop	IS Kick-off Workshop	
ISCA Weightings Assessment	Weightings Assessment Scorecard	
Preparation of ISC Base Case Proposal (For Using Resources credits)	Base Case Proposal	
Independent reviews	Independent Sustainability Professional Review (Quarterly)	
	Urban and Landscape Design Plan Review (Once-off during Design)	
	External Sustainability Audit (once during	

Required Outputs	Deliverable / Target	Current Status
	Design, annual during Construction)	
	External Stakeholder Management Plan Audit (Annual)	
Coordination and preparation of IS Design rating submission	IS Design rating submission	

ISCA Weightings Assessment

ISC Base Case Assessment

Coordination and Preparation of IS Design Rating Submission

Risks to Achievement of Sustainability Items

Innovations and Opportunities for Improvement

Sustainability Meetings and Workshops

Next Steps and Other Business

Appendix A – Credit Summary Form Status

Credit	Target Level	Target Points	Status	Comment
Man-1				
Man-2				
Man-3				
Man-4				
Man-5				
Man-6				
Man-7				
Pro-1				
Pro-2				
Pro-3				
Pro-4				
Cli-1				

Cli-2				
Ene-1				
Ene-2				
Wat-1				
Wat-2				
Mat-1				
Mat-2				
Dis-1				
Dis-2				
Dis-3				
Dis-4				
Dis-5				
Lan-1				
Lan-2				
Lan-3				
Lan-4				
Was-1				
Was-2				
Was-3				
Eco-1				
Eco-2				
Hea-1				
Hea-2				
Her-1				
Her-2				
Sta-1				
Sta-2				
Sta-3				
Sta-4				
Urb-1				
Urb-2				
Inn-1				

Appendix D

Sustainability Inspection Checklist

Appendix D Sustainability Inspection Checklist

SUSTAINABILITY INSPECTION CHECKLIST

Management System Form

Project: Queanbeyan Sewage Treatment Plant Upgrade **Date:**

Inspection:

Name: **Company:**

Name: **Company:**

Previous Inspection Date: **Proposed next Inspection Date:**

Check List Key	Satisfactory	✓	Unsatisfactory risk category	I
	Not Applicable	N/A	Unsatisfactory risk category	H
	Note Inspected	NI	Unsatisfactory risk category	M
	Repeat Non-Compliance	R	Unsatisfactory risk category	L
	No. of repeats (list for each item)	2,3, etc.		

Item No.	Description	Check (see above)	Area	Sustainability Action List Reference	Comments
	Environmental				
1					
2					

List all requirements in the Sustainability Actions Register

Category	*Consequence	Action
Immediate- significant	Tier 1- loss of License/Permit, Irreversible Environmental Damage	Rectify immediately
H (Major/high potential)- significant	Tier 2 Fine, Reversible environmental damage with substantial time, cost and difficulty.	Rectify within 1 day
M (Medium/moderate potential)	Tier 3 Fine, Reversible environmental damage with moderate time, cost and difficulty	Rectify within 2 days
L (Minor/low potential)	Reversible environmental damage with minor time, cost and difficulty	Rectify within 5 days

*For guidance only.

Comments

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_____

Distribution