Metro Trains Sydney

Operational Environmental Management Plan

M1 Metro Northwest and Bankstown Line

Information

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Compliance Table

This table displays a description of the requirement and Section Number in outlining how this OEMP evidences its compliance to the CSSI 7400 Sydney Metro City & Southwest Chatswood to Sydenham Conditions of Approval (CoA) and CSSI 8256 Conditions of Approval for Sydney Metro Sydenham to Bankstown.

Table 1 Compliance Table for CoA 7400

CoA #	Condition Class	Description	Compliance
A2	General	The CSSI must be carried out in accordance with all procedures, commitments, preventative actions, performance criteria and mitigation measures set out in the EIS as amended by the documents listed in A1, unless otherwise specified in, or required under, this approval.	OEMP
A5	General	The Proponent must comply with all requirements of the Secretary in relation to: (a) the environmental performance of the CSSI; (b) any document or correspondence; (c) any notification given to the Secretary under the terms of this approval; (d) any audit of the construction or Operation of the CSSI; (e) compliance with the terms of this approval (including anything required to be done under this approval); and (f) the carrying out of any additional monitoring or mitigation measures.	OEMP
A8	General	Without limitation, all strategies, plans, programs, reviews, audits, report recommendations, protocols and the like required by the terms of this approval must be implemented by the Proponent and in accordance with all requirements issued by the Secretary from time to time in respect of them.	OEMP and sub plan
A9	General	Where the terms of this approval require consultation with identified parties, details of the consultation undertaken, matters raised by the parties, and how the matters were considered must accompany the strategies, plans, programs, reviews, audits, protocols and the like submitted to the Secretary.	Each OEMP sub plan
A11	General	The Proponent is responsible for any breach of the conditions of this approval resulting from the actions of all persons that it invites onto any site, including contractors, sub-contractors and visitors.	OEMP
A12	Staging	The CSSI may be constructed and operated in stages. Where staged construction or Operation is proposed, a Staging Report (for either or both construction and Operation as the case requires) must be prepared and submitted to the Secretary for information. The Staging Report must be submitted to the Secretary no later than one month before the commencement of construction of the first of the proposed stages of construction (or if only staged Operation is proposed, one month before the commencement of Operation of the first of the proposed stages of Operation), or within another timeframe agreed with the Secretary.	OEMP - Confirm only one stage proposed for Operations
A13	Staging	The Staging Report must: (a) if staged construction is proposed, set out how the construction of the whole of the CSSI will be staged, including general details of work and other activities to be carried out in each stage and the general timing of when construction of each stage will commence; (b) if staged Operation is proposed, set out how the Operation of the whole of the CSSI will be staged, including general details of	Not applicable as only one stage proposed

CoA #	Condition Class	Description	Compliance
		work and other activities to be carried out in each stage and the general timing of when Operation of each stage will commence; (c) specify the relevant conditions of approval that apply to each stage and how compliance with those conditions will be achieved across and between each of the stages of the CSSI; and (d) set out mechanisms for managing any cumulative impacts arising from the proposed staging.	
A25	Acoustics Advisor	A suitably qualified and experienced Acoustics Advisor (AA), who is independent of the design and construction personnel, must be nominated by the Proponent and engaged for the duration of construction and for no less than six (6) months following Operation of the CSSI. The details of the nominated AA must be submitted to the Secretary for approval no later than one (1) month before commencement of works, or within another timeframe as agreed with the Secretary. The Proponent may nominate additional suitably qualified and experienced persons to assist the lead Acoustics Advisor for the Secretary's approval. The Proponent must cooperate with the AA by: (a) providing access to noise and vibration monitoring activities as they take place; (b) providing for review of noise and vibration plans, assessments, monitoring reports, data and analyses undertaken; and (c) considering any recommendations to improve practices and demonstrating, to the satisfaction of the AA, why any recommendation is not adopted.	Operational Noise and Vibration Management Plan
A30	Compliance Tracking Program	The Compliance Tracking Program in the form required under Condition A28 of this approval must be implemented for the duration of construction and for a minimum of one (1) year following commencement of Operation, or for a longer period as determined by the Secretary based on the outcomes of independent environmental audits, Environmental Representative Reports and regular compliance reviews submitted through Compliance Reports. If staged Operation is proposed, or Operation is commenced as part of the CSSI, the Compliance Tracking Program must be implemented for the relevant period for each stage or part of the CSSI.	Addressed in Sydney Metro C&SW Compliance Tracking Program / Environmental Audit Program Staged Operation is not proposed
A37	Auditing	An Environmental Audit Program for independent annual environmental auditing against the terms of this approval must be prepared in accordance with AS/NZS ISO 19011:2014 - Guidelines for Auditing Management Systems and submitted to the Secretary for information no later than one month before the commencement of construction or within another timeframe agreed with the Secretary.	OEMP – Section 8.2
A38	Auditing	The Environmental Audit Program, as submitted to the Secretary, must be implemented for the duration of construction and Operation.	OEMP – Section 8.2
B10	Complaints Management System	The telephone number, postal address and email address required under Condition B9 of this approval must be published in a newspaper circulating in the local area and on-site hoarding at each construction site before commencement of construction and published in the same way again before commencement of Operation. This information must also be provided on the website required under Condition B15 of this approval.	OEMP

<table>
<tr><th>CoA #</th><th>Condition Class</th><th>Description</th><th>Compliance</th></tr>
<tr><td>D1</td><td>Operational Environmental Management</td><td>An Operational Management Plan (OEMP) must be prepared in accordance with the Department's Guideline for the Preparation of Environmental Management Plans to detail how the performance outcomes, commitments and mitigation measures made and identified in the EIS as amended by the documents listed in A1 will be implemented and achieved during operation. This condition does not apply if Condition D2 of this approval applies.</td><td>OEMP</td></tr>
<tr><td>D2</td><td>Operational Environmental Management</td><td>An OEMP is not required for the CSSI if the Proponent has an Environmental Management System (EMS) or equivalent as agreed with the Secretary, and can demonstrate, to the written satisfaction of the Secretary, that through the EMS:

(a) the performance outcomes, commitments and mitigation measures, made and identified in the EIS as amended by the documents listed in A1, and requirements specified in the conditions of this approval can be achieved;
(b) issues identified through ongoing risk analysis can be managed; and
(c) procedures are in place for rectifying any non-compliance with this approval identified during compliance auditing, incident management or any other time during operation.</td><td>OEMP - MTS have developed an OEMP, therefore this condition is not applicable</td></tr>
<tr><td>D3</td><td>Operational Environmental Management</td><td>Where an OEMP is required, the Proponent must include the following OEMP sub-plans in the OEMP:
<table>
<tr><th>Required OEMP sub-plan</th><th colspan="2">Relevant government agencies to be consulted for each OEMP sub-plan</th></tr>
<tr><td>(a)</td><td>Noise and vibration</td><td>N/A</td></tr>
<tr><td>(b)</td><td>Groundwater Management</td><td>DPI Water</td></tr>
<tr><td>(c)</td><td>Traffic and Transport</td><td>Sydney Coordination Office, Relevant Road Authority and non-private transport operators</td></tr>
<tr><td>(d)</td><td>Flooding and hydrology (including emergency response planning)</td><td>Directly affected landowners, DCCEW, DPI Water, SES, Sydney</td></tr>
</table></td><td>OEMP - Section 2.3.2</td></tr>
<tr><td>D4</td><td>Operational Environmental Management</td><td>Each of the OEMP sub-plans must include the requirements set out in Condition D2 (a), (b) and (c).</td><td>Noise and Vibration Management Plan (SMCSWTS2-MTS-CSW-EM-PLN-002106)

Groundwater Management Plan (SMCSWTS2-MTS-1NL-EM-PLN-002712)</td></tr>
</table>

CoA #	Condition Class	Description	Compliance
			Traffic and Transport Management Plan (SMCSWTS2-MTS-CSW-TF-PLN-002803) Flooding and Hydrology Management Plan (SMCSWTS2-MTS-1NL-EM-PLN-002711)
D5	Operational Environmental Management	The OEMP sub-plans must be developed in consultation with relevant government agencies as identified in Condition D3. Where an agency's (or agencies') request(s) is not included in an OEMP sub-plan, the Proponent must provide the Secretary with justification as to why. Details of all information requested by an agency to be included in an OEMP sub-plan as a result of consultation, including copies of all correspondence from those agencies, must be provided with the relevant OEMP sub-plan.	N/A
D6	Operational Environmental Management	The OEMP sub-plans must be submitted to the Secretary as part of the OEMP.	OEMP - Section 2.5
D7	Operational Environmental Management	The OEMP or EMS or equivalent as agreed with the Secretary, must be submitted to the Secretary for information no later than one (1) month before the commencement of operation unless another timeframe is agreed with the Secretary.	OEMP - Section 2.5
D8	Operational Environmental Management	The OEMP or EMS or equivalent as agreed with the Secretary, as submitted to the Secretary and amended from time to time, must be implemented for the duration of operation and the OEMP or EMS must be made publicly available before the commencement of operation.	OEMP - Section 2.5
D10	Operational Performance	The ongoing maintenance and operation costs of urban design and landscaping items and works implemented as part of this approval must remain the Proponent's responsibility until satisfactory arrangements have been put in place for the transfer of the asset to the relevant entity. Before the transfer of assets, the Proponent will maintain items and works to the design standards established in the Station Design and Precinct Plan required by Condition E101.	OEMP – Section 4.3
D11	Operational Performance	Within 15 months of the completion of construction, or any other timeframe as agreed with the Secretary, the Proponent must commission an independent, qualified person or team to undertake an Operational Performance Audit of the CSSI. The independent person or team must be approved by the Secretary before commencement of the Audit. The Operational Performance Audit Report must be submitted to the Secretary within one month of the completion of the Audit or other timeframe agreed with the Secretary. The Audit must: (a) assess compliance with the requirement of this approval; (b) assess the environmental performance of the CSSI against the predictions made and conclusions drawn in the EIS as amended by the documents listed in A1; and (c) review the effectiveness of the environmental management of the CSSI, including any environmental impact mitigation.	OEMP – Section 8.2
D13	Operational Monitoring	The Proponent must prepare an Operational Noise and Vibration Monitoring Program to confirm that the Operational noise and vibration levels meet the CSSI proposed design objectives as determined in the Track Attenuation and Operational Ground-	Noise and Vibration Management Plan

CoA #	Condition Class	Description	Compliance
		borne Noise Review in Condition D9 following the commencement of Operations.	
D14	Operational Monitoring - Noise and Vibration	Should the Operational noise and vibration levels exceed the CSSI design objectives, the Proponent is to prepare a report outlining actions that will be taken so that the CSSI meets the design objectives in the future. The report is to be prepared within three (3) months following the identification of the exceedance and be forwarded to the Secretary for information. All recommendations in the report must be implemented within three (3) months of the date of the report or as agreed with the Secretary.	Noise and Vibration Management Plan
E1	Suburban & Inter-Urban Rail	The Proponent must manage Operational and asset interface risks to ensure the successful Operational integration of the CSSI and the heavy railway network and the protection of physical and Operational Sydney Trains' assets and services during construction and Operation.	OEMP – Section 4.3
E5	Air Quality	In addition to the performance outcomes, commitments and mitigation measures specified in PIR, all reasonably practicable measures must be implemented to minimize the emission of dust and other air pollutants during the construction and Operation of the CSSI.	OEMP – Section 4.3
E10	Heritage	The Proponent must not destroy, modify or otherwise physically affect any Heritage item not identified in documents referred to in Condition A1.	OEMP – Section 4.3 Heritage Management Plan (SMCSWTS2-MTS-CSW-HE-PLN-002100)
E19	Heritage	An Unexpected Heritage Finds Procedure must be prepared: (a) to manage unexpected heritage finds in accordance with any guidelines and standards prepared by the Heritage Council of NSW or DCCEW; and (b) by a suitably qualified and experienced heritage specialist. The procedure must be included in the AARD and must be implemented for the life of the project.	Heritage Management Plan (SMCSWTS2-MTS-CSW-HE-PLN-002100) Sydney Metro's Unexpected Heritage Finds Procedure
E26	Heritage	This approval does not allow the Proponent to harm, modify, or otherwise impact human remains uncovered during the construction and Operation of the CSSI, except in accordance with the Exhumation Management Plan (Condition E27).	Heritage Management Plan (SMCSWTS2-MTS-CSW-HE-PLN-002100)
E27	Aboriginal Heritage	An Exhumation Management Plan must be prepared to guide the relocation of recovered human remains. The Exhumation Management Plan must be prepared: (a) in consultation with, and meeting the requirements of, the DCCEW and NSW Health; and (b) in accordance with the Guidelines for Management of Human Skeletal Remains (NSW Heritage Office, 1998b) and NSW Health Policy Directive – Exhumation of human remains (December 2013), and other relevant guidelines and standards prepared by the Heritage Council of NSW or DCCEW. The Exhumation Management Plan must be provided to the Secretary for information before the commencement of excavation works.	OEMP – Section 4.3
E72	Sustainability	The Proponent must prepare a Sustainability Strategy to be submitted to the Secretary within six (6) months of the date of this approval, or within another timeframe agreed with the Secretary, which must be implemented throughout design, construction and Operation of the CSSI. The Sustainability Strategy must include: (a) details of the sustainability objectives and targets for the design, delivery and Operation of the CSSI;	OEMP – Section 6.1

CoA #	Condition Class	Description	Compliance
		(b) details of the sustainability initiatives which will be investigated and / or implemented; and (c) a description of how the strategy will be implemented for the CSSI.	
E73	Sustainability	Opportunities to reduce Operational greenhouse gas emissions must be investigated during detailed design. The sustainability initiatives identified must be implemented, reviewed and updated regularly throughout design development and construction, and annually during Operation.	OEMP – Section 4.3
E74	Sustainability	The Proponent must fully offset the greenhouse gas emissions associated with consumption of electricity during Operation of the CSSI.	OEMP – Section 4.3
E75	Traffic, Transport & Pedestrian Access	The CSSI must be designed, constructed and operated with the objective of integrating with existing and proposed road and related transport networks and minimizing adverse changes to the safety, efficiency and accessibility of the networks, and facilitate an improved level of service in relation to permanent and Operational changes. Detailed design and assessment of related traffic, parking, pedestrian and cycle accessibility impacts and changes shall be undertaken: (a) in consultation with, and to the reasonable requirements of the Traffic and Transport Liaison Group(s) established under Condition E77; (b) in consideration of existing and future demand, connectivity (in relation to permanent changes), performance and safety requirements; (c) to minimize and manage local area traffic impacts; (d) to ensure access is maintained to property and infrastructure; and (e) to meet relevant design, engineering and safety guidelines, including Austroads, Australian Standards, and RMS (RTA) requirements. Copies of civil, structural and traffic signal design plans shall be submitted to the Relevant Road Authority for consultation before the commencement of the relevant works.	Traffic and Transport Management Plan
E77	Traffic, Transport & Pedestrian Access	The Proponent must establish a Traffic and Transport Liaison Group(s) (TTLGs) to inform traffic and transport management measures during construction and Operation of the CSSI. Management measures must be coordinated with and approved by the RMS following endorsement by the Sydney Coordination Office and consultation with the Relevant Roads Authority. The TTLG must comprise representatives from the Relevant Road Authority's (including the RMS, relevant Councils, and the Barangaroo Delivery Authority as appropriate), transport operators (including bus and taxi operators), emergency services and Port Authority of NSW as required. TTLG must be consulted on to inform the preparation of the Construction Traffic Management Plan(s) and Interchange Access Plan(s).	Traffic and Transport Management Plan
E78	Traffic, Transport & Pedestrian Access	The Proponent must undertake supplementary analysis and modelling as required by the TTLG to demonstrate that construction and Operational traffic can be managed to minimize disruption to traffic network Operations, public including changes to and the management of pedestrian, bicycle and public transport networks transport services, pedestrian and cyclist movements. Revised traffic management measures must be incorporated into the Construction Traffic Management Plan(s), Interchange Access Plan(s) and Station Design and Precinct Plan(s).	Traffic and Transport Management Plan
E106	Waste	Waste generated during construction and Operation is to be dealt with in accordance with the following priorities: (a) waste generation is to be avoided and where avoidance is not	OEMP – Section 4.3

CoA #	Condition Class	Description	Compliance
		reasonably practicable, waste generation is to be reduced; (b) where avoiding or reducing waste is not possible, waste is to be re-used, recycled, or recovered; and (c) where re-using, recycling or recovering waste is not possible, waste is to be treated or disposed of.	
E107	Water	The CSSI must be constructed and operated so as to maintain the NSW Water Quality Objectives where they are being achieved as at the date of this approval, and contribute towards achievement of the NSW Water Quality Objectives over time where they are not being achieved as at the date of this approval, unless an EPL in force in respect of the CSSI contains different requirements in relation to the NSW Water Quality Objectives, in which case those requirements must be complied with.	OEMP – Section 4.3
SCW7	Operation - Soils, contamination and water quality	Discharges from the tunnel water treatment plant would be monitored to ensure compliance with the discharge criteria within the WDIA or discharge criteria determined in consultation with the NSW Environment Protection Authority and set out in an environmental protection license.	OEMP – Section 4.3
HR5	Operation	All hazardous substances that may be required for Operation would be stored and managed in accordance with the Storage and Handling of Dangerous Goods Code of Practice (WorkCover NSW, 2005) and Hazardous and Offensive Development Application Guidelines: Applying SEPP 33 (Department of Planning, 2011).	OEMP – Section 4.3
OpNV4	Operational noise and vibration	Procedural mitigation measures would be implemented to minimize noise emissions from the Sydney Metro Trains Facility South with the aim of meeting the relevant criteria derived from the Industrial Noise Policy (Environment Protection Authority, 2000). This would consider measures such as: Minimizing the number of trains being cleaned simultaneously. Cleaning trains without air conditioning systems in use. Limit cleaning and start-up Operations during the night-time and early morning periods to the trains stabled furthest from the most affected residences. If procedural measures are not sufficient to achieve compliance with the criteria derived from the Industrial Noise Policy, at-property treatments would be offered to affected receivers.	Noise and Vibration Management Plan
OpNV5	Operational noise and vibration	Further detailed investigations would be undertaken into the phased Operations once the details of these changes are determined. This investigation would include determination of the likely change in noise levels at receivers and consideration of the need for any feasible and reasonable mitigation measures taking into consideration the likely duration of the phased Operations.	Noise and Vibration Management Plan
SUS7	Sustainability (Operation)	Sustainability initiatives would be incorporated into the operation of the project to support the achievement of the project sustainability objectives.	OEMP – Section 4.3
SUS9	Sustainability (Operation)	A workforce development and industry participation strategy would be developed and implemented during Operation.	OEMP – Section 4.3
SUS10	Sustainability (Operation)	100 per cent of the greenhouse gas emissions associated with consumption of electricity during Operation would be offset.	OEMP – Section 4.3
WM5	Waste Management (Operation)	Generation of Operation phase waste would be minimized.	OEMP – Section 4.3
OpT2	Operational Traffic & Transport	Access would be maintained to neighbouring properties.	Traffic and Transport Management Plan

CoA #	Condition Class	Description	Compliance
OpT4	Operational Traffic & Transport	Transport for NSW would work with local councils to minimize adverse impacts of Operation on parking and other kerbside use in local streets, such as loading zones, bus zones, taxi zones and coach zones.	Traffic and Transport Management Plan

Note: the NSW Office of Environment and Heritage has been absorbed into the Department of Climate Change, Energy, the Environment and Water (DCCEW). All text referencing OEH has been changed to reference DCCEW for accuracy.

Table 2 Compliance Table for CoA 8256

CoA #	Condition Class	Description	Compliance
A2	General	The CSSI must be carried out in accordance with all procedures, commitments, preventative actions, performance criteria and mitigation measures set out in the documents listed in Condition A1 unless otherwise specified in, or required under, this approval.	OEMP
A4	General	The Proponent must comply with all written requirements or directions of the Planning Secretary, including in relation to: (a) the environmental performance of the CSSI; (b) any document or correspondence in relation to the CSSI; (c) any notification given to the Planning Secretary under the terms of this approval; (d) any audit of the construction or operation of the CSSI; (e) the terms of this approval and compliance with the terms of this approval (including anything required to be done under this approval); and (f) the carrying out of any additional monitoring or mitigation measures.	OEMP
A5	General	Where the terms of this approval require a document or monitoring program to be prepared or a review to be undertaken in consultation with identified parties, evidence of the consultation undertaken must be submitted to the Planning Secretary with the document. The evidence must include: (a) documentation of the engagement with the party(s) identified in the condition of approval that has occurred before submitting the document for approval; (b) log of the points of engagement or attempted engagement with the identified party(s) and a summary of the issues raised by them; (c) documentation of the follow-up with the identified party(s) where feedback has not been provided to confirm that they have none or have failed to provide feedback after repeated requests; (d) outline of the issues raised by the identified party(s) and how they have been addressed; and (e) a description of the outstanding issues raised by the identified party(s) and the reasons why they have not been addressed.	Each OEMP sub plan
A9	General	Any document that must be submitted or action taken within a timeframe specified in or under the conditions of this approval may be submitted or undertaken within a later timeframe agreed with the Planning Secretary. This condition does not apply to the immediate written notification required in respect of an incident under Condition A36.	OEMP
A12	Staging	The CSSI may be constructed and operated in stages. Where staged Construction or Operation is proposed, a Staging Report (for either or both Construction and Operation as the case may be) must be prepared and submitted to the Planning Secretary for information. The Staging Report must be submitted to the Planning Secretary no later than one (1) month before the commencement of Construction of the first of the	OEMP - Confirm only one stage proposed for Operations

CoA #	Condition Class	Description	Compliance
		proposed stages of Construction (or if only staged Operation is proposed, one (1) month before the commencement of Operation of the first of the proposed stages of Operation).	
A13	Staging	The Staging Report must: (a) if staged Construction is proposed, set out how the Construction of the whole of the CSSI will be staged, including details of Work and other activities to be carried out in each stage and the general timing of when Construction of each stage will commence and finish; (b) if staged Operation is proposed, set out how the Operation of the whole of the CSSI will be staged, including details of Work and other activities to be carried out in each stage and the general timing of when Operation of each stage will commence; (c) specify the relevant conditions of approval that apply to each stage and how compliance with conditions will be achieved across and between each of the stages of the CSSI; and (d) set out mechanisms for managing any cumulative impacts arising from the proposed staging.	Not applicable as only one stage proposed
A30	Compliance Monitoring and Reporting Program	Compliance reports of the CSSI must be carried out for the duration of Construction and for a minimum of one (1) year following commencement of Operation. The Department must be notified of the commencement dates of Construction and Operation of the CSSI in the pre-Construction and pre-Operational compliance reports (respectively).	Addressed in Sydney Metro C&SW Compliance Tracking Program / Environmental Audit Program
A32	Compliance Monitoring and Reporting Program	The Compliance Monitoring and Reporting Program in the form required under Condition A29 of this approval must be implemented for the duration of Construction and for a minimum of one (1) year following commencement of Operation, or for a longer period as determined by the Planning Secretary based on the outcomes of independent audits, Environmental Representative Reports and regular compliance reviews submitted through Compliance Reports. If staged Operation is proposed, or Operation is commenced of part of the CSSI, the Compliance Monitoring and Reporting Program must be implemented for the relevant period of each stage or part of the CSSI.	Addressed in Sydney Metro C&SW Compliance Tracking Program / Environmental Audit Program Staged Operation is not proposed
A33	Auditing	No later than one (1) month before the commencement of Construction an Independent Audit Program prepared in accordance with the AS/NZS ISO 19011:2014 – Guidelines for Auditing Management Systems must be submitted to the Planning Secretary.	OEMP – Section 8.2 Sydney Metro's Compliance Monitoring/Tracking and Reporting Program Report-
A34	Auditing	Independent audits of the CSSI must be carried out in accordance with: (a) the Independent Audit Program submitted to the Planning Secretary under Condition A33 of this approval and Independent Audit Reports prepared.	OEMP – Section 8.2
A35	Auditing	The Proponent must: (a) review and respond to each Independent Audit Report prepared under Condition A34 of this approval; and	OEMP – Section 8.2

CoA #	Condition Class	Description	Compliance
		(b) submit the response to the Planning Secretary within six (6) weeks of completing the audit.	
B1	Communication Strategy	A Community Communication Strategy must be prepared to provide mechanisms to facilitate communication between the Proponent, the relevant council(s) and the community (including adjoining affected landowners and businesses, and others directly impacted by the CSSI), during the design and Construction of the CSSI and for a minimum of 12 months following the completion of Construction of the CSSI.	Stakeholder and Community Involvement Plan (SMCSWTS2-MTS-CSW-PM-PLN-002162) Adopted Community Communication Strategy
B5	Complaints Management System	A Complaints Management System must be prepared and implemented before the commencement of Work and maintained for the duration of Construction and for a minimum for 12 months following completion of Construction of the CSSI.	Stakeholder and Community Involvement Plan (SMCSWTS2-MTS-CSW-PM-PLN-002162)
B6	Complaints Management System	The following information must be available to facilitate community enquiries and manage complaints one (1) month before the commencement of Work and for 12 months following the completion of Construction: (a) a 24- hour telephone number for the registration of complaints and enquiries about the CSSI; (b) a postal address to which written complaints and enquires may be sent; (c) an email address to which electronic complaints and enquiries may be transmitted; and (d) a mediation system for complaints unable to be resolved.	Stakeholder and Community Involvement Plan (SMCSWTS2-MTS-CSW-PM-PLN-002162) OEMP - Section 4.6
B7	Complaints Management System	The telephone number, postal address, website URL and email address required under Condition B6 of this approval must be published in a newspaper circulating in the relevant local area and on site hoarding at each Construction site before the commencement of construction and published in the same way again before the commencement of operation. This information must also be provided on the website required under Condition B14 of this approval.	OEMP
B8	Complaints Management System	A Complaints Register must be maintained recording information on all complaints received about the CSSI during the carrying out of any Work and for a minimum of 12 months following the completion of construction. The Complaints Register must record the: (a) number of complaints received; (b) number of people affected in relation to a complaint; and (c) means by which the complaint was addressed and whether resolution was reached, with or without mediation.	OEMP
D1	Operational Environmental Management	An Operational Environmental Management Plan (OEMP) must be prepared to detail how the performance outcomes, commitments and mitigation measures made and identified in the documents listed in Condition A1 will be implemented and achieved during Operation. This condition (Condition D1) does not apply if Condition D2 of this approval applies.	OEMP
D2	Operational Environmental Management	An OEMP is not required for the CSSI if the Proponent has an Environmental Management System (EMS) or equivalent as agreed with the Secretary, and can	OEMP - MTS have developed an OEMP, therefore this condition is not applicable

CoA #	Condition Class	Description	Compliance
		demonstrate, to the written satisfaction of the Secretary, that through the EMS: (a) the performance outcomes, commitments and mitigation measures, made and identified in the EIS as amended by the documents listed in A1, and requirements specified in the conditions of this approval can be achieved; (b) issues identified through ongoing risk analysis can be managed; and (c) procedures are in place for rectifying any non-compliance with this approval identified during compliance auditing, incident management or any other time during operation.	
D3	Operational Environmental Management	The OEMP or EMS or equivalent as agreed with the Planning Secretary, must be submitted to the Planning Secretary for information no later than one (1) month before the commencement of Operation.	OEMP - Section 2.5
D4	Operational Environmental Management	The OEMP or EMS or equivalent as agreed with the Planning Secretary, as submitted to the Planning Secretary and amended from time to time, must be implemented for the duration of Operation and the OEMP or EMS must be made publicly available before the commencement of Operation.	OEMP - Section 2.5
D5	Operational Environmental Management	Within 15 months of the commencement of Operation, or any other timeframe as agreed by the Planning Secretary, the Proponent must commission an independent, qualified person or team to undertake and Operational Performance Audit of the CSSI. The independent person or team must be approved by the Planning Secretary before the commencement of the Audit. The Operational Audit Report must be submitted to the Planning Secretary within one month of the completion of the Audit or other timeframe agreed with the Planning Secretary. The Audit must: (a) assess compliance with the requirements of this approval; (b) assess the environmental performance of the CSSI against the predictions made and conclusions drawn in the documents listed in Condition A1 as amended by this approval; and (c) review the effectiveness of the environmental management of the CSSI, including any environmental impact mitigation.	OEMP- Section 8.2
E1	Suburban and Inter-urban Rail	The Proponent must manage operational and asset interface risks to ensure the successful operational integration of the CSSI and the heavy railway network and protection of physical and operational Sydney Trains assets and services during construction and operation.	OEMP – Section 4.3
E2	Air Quality	In addition to the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1, all reasonably practicable measures must be implemented to minimise the emission of dust and other air pollutants during the Construction and Operation of the CSSI.	OEMP – Section 4.3
E17	Heritage	The Unexpected Heritage Finds and Human Remains Procedure, as submitted to the Planning Secretary, must be implemented for the duration of construction and during operational maintenance works. Note: Human remains that are found unexpectedly during	Heritage Management Plan (SMCSWTS2-MTS-CSW-HE-PLN-002100)

CoA #	Condition Class	Description	Compliance
		Work are under the jurisdiction of the NSW State Coroner and must be reported to the NSW Police immediately.	Sydney Metro's Unexpected Heritage Finds Procedure Sydney Metro's Exhumation Management Procedure
E18	Noise and Vibration	A detailed land use survey must be undertaken to confirm sensitive receivers (including critical working areas such as operating theatres and precision laboratories) potentially exposed to Construction noise and vibration, Construction ground-borne noise and Operational noise. The survey may be undertaken on a progressive basis but must be undertaken in any one area before the commencement of Work which generate Construction or Operational noise, vibration or ground-borne noise in that area. The results of the survey must be included in the Construction Noise and Vibration Impact Statement(s) or Operational Noise and Vibration Review, where relevant.	ONVR
E31	Noise Mitigation – Operational Noise and Vibration Review	The Proponent must prepare an Operational Noise and Vibration Review (ONVR) to confirm noise and vibration control measures that would be implemented for the Operation of the CSSI. The ONVR must be prepared as part of the iterative design development and in consultation with the Planning Secretary, relevant council(s), other relevant stakeholders and must: (a) identify appropriate Operational noise and vibration objectives and levels for surrounding development, including existing sensitive receivers; (b) confirm the Operational noise predictions based on the expected final design. Confirmation must be based on an appropriately calibrated noise model (which has incorporated data obtained from noise monitoring). (c) examine all noise and vibration mitigation measures, with a focus on source control and design; (d) identify specific physical and other mitigation measures for controlling noise and vibration at the source and at the receiver (if relevant) including location, type and timing of mitigation measures; (e) where noise and vibration objectives cannot be achieved, the ONVR must present an analysis of all noise and vibration mitigation measures and the 'best practice' achievable noise and vibration outcome for each activity; (f) fully describe the design, assumptions, calculation process, mitigation strategy, and other relevant factors; and (g) include a consultation strategy to seek feedback from directly affected landowners on the noise and vibration mitigation measures being offered. The ONVR must be verified by a suitably qualified and experienced noise and vibration expert. The ONVR must be undertaken at the Proponent's expense and submitted to the Planning Secretary for approval before the implementation of mitigation measures. The Proponent must implement the identified noise and vibration control measures and make the ONVR publicly available.	ONVR
E34	Noise Mitigation – Operational Noise	Within 12 months of the commencement of Operation of the CSSI, the Proponent must undertake monitoring	ONVR

CoA #	Condition Class	Description	Compliance
	and Vibration Review	of Operational noise to compare actual noise performance of the CSSI against the noise performance predicted in the review of noise mitigation measures required by Condition E31. The Proponent must prepare an Operational Noise Compliance Report to document this monitoring. The Report must include, but not necessarily be limited to: (a) noise monitoring to assess compliance with the Operational noise levels predicted in the review of Operational noise mitigation measures required under Condition E31; (b) a review of the Operational noise levels in terms of criteria and noise goals established in the NSW Rail Infrastructure Noise Guideline 2013; (c) methodology, location and frequency of noise monitoring undertaken, including monitoring sites at which CSSI noise levels are ascertained, with specific reference to locations indicative of impacts on receivers; (d) details of any complaints and enquiries received in relation to Operational noise generated by the CSSI between the date of commencement of Operation and the date the report was prepared; (e) any required recalibrations of the noise model taking into consideration factors such as noise monitoring; (f) an assessment of the performance and effectiveness of applied noise mitigation measures together with a review and if necessary, reassessment of mitigation measures; and (g) identification of additional measures to those identified in the review of noise mitigation measures required by Condition E31, that are to be implemented with the objective of meeting the criteria outlined in the NSW Rail Infrastructure Noise Guideline 2013 and Noise Policy for Industry (EPA, 2017), when these measures are to be implemented and how their effectiveness is to be measured and reported to the Planning Secretary and the EPA. The Operational Noise Compliance Report must be submitted to the Planning Secretary and the EPA within 60 days of completing the Operational noise monitoring and made publicly available.	
E38	Soils	All reasonably practicable erosion and sediment controls must be installed and appropriately maintained to minimise water pollution. When implementing such controls, any relevant guidance in the Managing Urban Stormwater series must be considered.	OEMP
E41	Materials Storage	Dangerous goods, as defined by the Australian Dangerous Goods Code, must be stored and handled strictly in accordance with: (a) All relevant Australian Standards; (b) For liquids, a minimum bund volume requirement of 110% of the volume of the largest single stored volume within the bund; and (c) The Environment Protection Manual for Authorised Officers: Bunding and Spill Management technical bulletin (EPA, 1997). In the event of an inconsistency between the requirements listed from (a) to (c) above,	OEMP

CoA #	Condition Class	Description	Compliance
		the most stringent requirement shall prevail to the extent of the inconsistency.	
E42	Sustainability	The Proponent must seek to achieve a best practice level of performance for the CSSI using market leading sustainability rating tools (including a minimum 'Design' and 'As built' rating score of 65 using the Infrastructure Sustainability Council of Australia infrastructure rating tool [version 1.2], or an equivalent level of performance using a demonstrated equivalent rating tool).	OEMP, ISC Rating
E43	Sustainability	The Proponent must prepare a Sustainability Strategy to be submitted to the Planning Secretary within six (6) months of the date of this approval and must be implemented throughout Construction and Operation.	OEMP – Section 6.1
E44	Sustainability	Opportunities to reduce Operational greenhouse gas emissions must be investigated during detailed design. The sustainability initiatives identified must be regularly reviewed, updated and implemented throughout the design development and construction, and annually during Operation.	OEMP – Section 4.3
E45	Sustainability	The Proponent must fully offset the greenhouse gas emissions associated with consumption of electricity during Operation of the CSSI.	OEMP – Section 4.3
E46	Traffic and Transport	The Proponent must establish a Traffic and Transport Liaison Group(s) (TTLGs) to inform traffic and transport management measures during Construction and Operation of the CSSI. Management measures must be coordinated with the RMS following consultation with the Sydney Coordination Office the Relevant Roads Authority. The TTLG must comprise representatives from the Relevant Road Authority(ies), transport operators (including bus and taxi operators) and emergency services as required. The TTLG must be consulted to inform preparation of the Construction Traffic Management Plan(s).	Traffic and Transport Management Plan
E54	Lighting	The Proponent must construct and operate the CSSI with the objective of minimising light spillage to surrounding properties. All lighting associated with the Construction and Operation of the CSSI must be consistent with the requirements of Australian Standard 4282-1997 Control of the obtrusive effects of outdoor lighting and relevant Australian Standards in the series AS/NZ 1158 – Lighting for Roads and Public Spaces.	OEMP
E67	Urban Design & Visual Amenity	With respect to the Bankstown Station, Dulwich Hill Station and Campsie Station precincts, Construction of permanent built works or landscaping that are the subject of the Station Design and Precinct Plans must not be commenced (in the area to which the relevant Station Design and Precinct Plan applies) until the relevant Station Design and Precinct Plans have been approved by the Planning Secretary, after taking into responding to the outcomes of the Design Review Panel review. Evidence of response to the Design Review Panel's review must be provided to the Planning Secretary. The Station Design and Precinct Plans, as approved by the Planning Secretary, must be implemented as required during Construction and Operation.	MTS is responsible for operational and maintenance phase of all assets and will maintain the assets in accordance with CoA E67.
E68 –	Operational Maintenance	The ongoing maintenance and Operation costs of urban design, open space, landscaping and	OEMP – Section 4.3

CoA #	Condition Class	Description	Compliance
		recreational items and works implemented as part of this approval remain the responsibility of the Proponent until satisfactory arrangements have been put in place for the transfer of the asset to the relevant authority. Before the transfer of assets, the Proponent must maintain items and works to at least the design standards, noting normal wear and tear, established in the Station Design and Precinct Plans, required by Condition E57.	
E74	Waste	The importation of waste and the storage, treatment, processing, reprocessing or disposal of such waste must comply with the Protection of the Environment Operations Act 1997, under the Protection of the Environment Operations (Waste) Regulation 2014, and orders or exemptions made under the regulation.	OEMP & EPL
E75	Waste	Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste.	OEMP & EPL
E76	Waste	All waste must be classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes.	OEMP & EPL
HRS4	Hazards, Risk & Safety (Construction & Operation)	All hazardous substances that may be required for construction and operation would be stored and managed in accordance with the Storage and Handling of Dangerous Goods Code of Practice (WorkCover NSW, 2005) and the Hazardous and Offensive Development Application Guidelines: Applying SEPP 33 (Department of Planning, 2011).	Appendix E
REMM SCC3	Sustainability & Climate Change	A workforce development and industry participation strategy would be developed covering both construction and operation.	Workforce Development and Industry Participation Plan (SMCSWTS2-MTS-CSW-PM-PLN-002173)
REMM SCC12	Sustainability and Climate Change (Operation)	100 per cent of the greenhouse gas emissions associated with consumption of electricity during operation would be offset.	Appendix E
REMM B8	Biodiversity (Operation)	Annual inspections would be undertaken for weed infestations and to assess the need for control measures.	Flora & Fauna Management Plan (SMCSWTS2-MTS-CSW-EM-PLN-005554)
REMM B9	Biodiversity (Operation)	Any outbreak of priority weeds and/or weeds of national environmental significance would be managed in accordance with the relevant guidelines.	Flora & Fauna Management Plan (SMCSWTS2-MTS-CSW-EM-PLN-005554)
REMM B10 –	Biodiversity (Operation)	Sydney Metro would take necessary steps to locate and protect threatened species and habitats where they occur inside the Sydenham to Bankstown rail corridor. Suitable protection measures would include fencing, signage and other measures where this would not impede the safe maintenance and operation of trains and related infrastructure.	Flora & Fauna Management Plan (SMCSWTS2-MTS-CSW-EM-PLN-005554)
REMM FHW11	Operation – Water Quality	Operational water discharges would be managed in accordance with the water quality management requirements specified in the environment protection licence.	EPL & WDIA for each WTP

CoA #	Condition Class	Description	Compliance
REMM SC9	Soils and Contamination (Operation)	During any maintenance work where soils are exposed, sediment and erosion control devices would be installed in accordance with Managing Urban Stormwater: Soils and Construction (Landcom, 2004).	OEMP
REMM SCC10	Operation	The operation workforce development plan would be implemented.	Stakeholder and Community Involvement Plan (SMCSWTS2-MTS-CSW-PM-PLN-002162)
REMM SCC11	Operation – Climate Change Risks	Periodic review of climate change risks would be carried out to ensure ongoing resilience to the impacts of climate change.	OEMP & Climate Change Risk Register
REMM SCC9	Sustainability and Climate Change (Operation)	Prior to operation commencing, sustainability initiatives would be reviewed and updated, and relevant initiatives would be implemented to support the achievement of the project's sustainability objectives.	OEMP
REMM NV01	Operational noise and vibration	An operational noise and vibration review would be undertaken to guide the approach to identifying reasonable and feasible mitigation measures to incorporate in the detailed design. This would include noise modelling to confirm the results of modelling previously undertaken. Where exceedances of the operational noise objectives in the *Rail Infrastructure Noise Guidelines* (EPA, 2013) increases in noise levels and exceedances are identified reasonable and feasible mitigation measures would be reviewed identified.	Noise and Vibration Management Plan
REMM NV02	Operational noise and vibration	The height and extent of noise barriers adjacent to the project would be confirmed during detailed design with the aim of not exceeding trigger levels from the *Rail Infrastructure Noise Guidelines* (EPA, 2013). At-property treatments would be offered either on their own or in combination with a noise barrier where there are residual exceedances of the noise trigger levels. Where practicable, operational stage noise mitigation would be installed early to assist with the management of construction noise.	Noise and Vibration Management Plan
REMM NV03	Operational noise and vibration	Operational noise from substations would be controlled by inclusion of appropriate mitigation, such as shielding or enclosures, and specification of equipment selection, to comply with the *Industrial Noise Policy* (EPA, 2000).	Noise and Vibration Management Plan
REMM NAH 21	Conservation Management	A conservation management plan would be prepared for all State Heritage Register listed stations, in accordance with NSW Heritage Council guidelines. The plan would address any changes to the item, including updated assessment of significance of elements and recommendations on curtilage changes. It would also provide suggested site specific exemptions and management policies.	Southwest station specific Conservation Management Plans
REMM NAH 22	Conservation Management	A conservation management strategy would be prepared for nominated Section 170 register listed stations not listed on the State Heritage Register, in accordance with NSW Heritage Council guidelines.	Southwest station specific Conservation Management Strategy

1. Introduction

1.1. Scope and Objectives

This Operational Environmental Management Plan (OEMP) has been prepared by Metro Trains Sydney Pty Ltd (MTS) to fulfil the requirements of the CSSI7400 and CSSI 8256 D1 Condition of Approval requirement for the Operation and Maintenance (O&M) phase of the M1 Metro line, City and Southwest section from Chatswood to Sydenham and Sydenham to Bankstown (see Figure 1 for the M1 line diagram).

The Project involves the operation of a metro rail line and associated stations between the following.

- Chatswood Station and just north of Sydenham Station. The Project passes through the local government areas (LGAs) of Willoughby, North Sydney, Sydney and Marrickville.

Key operational components of the Project include:

- About 15.5 kilometres of twin rail tunnels (two tunnels located side-by-side) between Mowbray Road, Chatswood and Bedwin Road, Marrickville. The tunnel corridor extends about 30 metres either side of each tunnel centre line and around all stations.
- About 250 metres of above ground metro tracks between Chatswood Station and the northern dive structure.
- A northern dive structure (about 400 metres in length) and tunnel portal south of Chatswood Station and north of Mowbray Road, Chatswood.
- A southern dive structure (about 400 metres in length) and tunnel portal north of Sydenham Station and south of Bedwin Road, Marrickville.
- Metro stations at Crows Nest, Victoria Cross, Barangaroo, Martin Place, Pitt Street (Gadigal) and Waterloo, as well as underground platforms at Central Station and above ground platforms at Sydenham Station.
- Underground pedestrian links and connections to other modes of transport (such as the suburban rail network) and surrounding land uses.
- Services within each of the stations, including mechanical and fresh air ventilation equipment and electrical power substations.
- A permanent power supply from Surry Hills to Gadigal Station.
- A substation (for traction power supply at Artarmon).
- A services facility (for traction power supply and an operational water treatment plant) adjacent to the southern dive structure.
- The Sydenham to Bankstown project includes upgrading the 10 stations from Marrickville to Bankstown as required. The works undertaken at each station include the following.
    - Works to platforms including re-levelling and the provision of emergency access ramps.
    - New lifts to access the station and station platforms, where required.
    - Refurbishment/repurposing of station buildings on platforms or at station entrances.
    - Renewing/revitalising station interiors and exteriors.
    - Track upgrades.
    - Overhead wiring.
    - Upgrades to bridges and other related rail corridor infrastructure.
    - Provision of additional station facilities as required.

In addition to the station upgrades, works undertaken to meet the standards required for metro services include the following:

- Installation of platform screen barriers and a fixed or mechanical solution to ensure that the gap between the platform and the train is minimal.

- Provision of operational facilities, such as station services buildings.

Figure 1 M1 Line

MTS is a consortium comprised of MTR Corporation (UK) NRT Ltd, John Holland Sydney NRT Pty Ltd and UGL Rail Services Pty Ltd. This Plan will be implemented and subject to the MTS process of ongoing review and continuing improvement, through the operational life of the Project (Section 9).

The OEMP satisfies the requirements of the:

- Critical State Significant Infrastructure 7400 Sydney Metro City & Southwest Chatswood to Sydenham Conditions of Approval – Part D
- Critical State Significant Infrastructure 8256 Conditions of Approval for Sydney Metro Sydenham to Bankstown Upgrade – Part D.

Link to the Approval here:

- https://www.planningportal.nsw.gov.au/major-projects/projects/sydney-metro-chatswood-sydenham
- https://www.planningportal.nsw.gov.au/major-projects/projects/sydney-metro-sydenham-bankstown

Objectives of this OEMP are to ensure:

- Environmental and sustainability requirements relevant to Operations and Maintenance are clearly identified.
- Outline systems that will be used to support environmental and sustainability management.
- Operations and Maintenance sustainability objectives and targets have been clearly established.
- Initiatives to achieve these targets have been outlined.
- A management and reporting structure to implement and measure the effectiveness of the initiatives/mitigation measures identified for operations.
- To comply with the relevant requirements of the NSW Government *Environmental Management System Guidelines* (May 2014).

The OEMP will be used alongside the Operations Phase Environment and Sustainability Management Plan (OPESP) that was written to satisfy the requirements of the:

- Sydney Metro City & Southwest OTS2 Project Deed, Exhibit 1 – Scope & Performance Requirements – Appendix 54 – Project Plan Requirements.

- The OEMP and OPESP have been created to satisfy two separate conditions/deeds, however due to the similarity of the requirements, they will share significant amounts of information.

1.2. Sydney Metro Context

Sydney Metro is Australia's biggest public transport project and Australia's first driverless railway and has 31 stations along a 66km rail corridor.

As some background the Metro Northwest Line, opened on 26 May 2019, with 13 stations between Tallawong and Chatswood. This was followed by the second phase from Chatswood to Sydenham (8 additional stations) that opened on 19 August 2024, and the third phase of the M1 Line runs from Sydenham to Bankstown with an additional 10 upgraded stations from late 2026. This plan applies from commencement of SW operations.

Metro currently provides a train service in peak hour, every 4 minutes in each direction under the city, carrying up to 210,000 weekday journeys per day, a level of service never seen in Sydney and in line with other Metro systems worldwide.

The impact of the M1 has been transformational, significantly easing pressure on the road network and commuters using the Sydney Harbour Bridge and reducing congestion into the CBD, and has also helped alleviate pressure at critical Sydney Trains stations.

This extension of the M1 to Bankstown will enable a seamless customer experience on the Metro, with NRT Group and its core contractors, Mass Transit Railway (MTR) Australia as the Integrator and MTS as the Operator & Maintainer Contractor, responsible for delivering an expanded fleet of metro trains and the core rail systems, as well as operations and maintenance.

1.3. The OTS PPP & OTS2

Sydney Metro (the Principal) engaged NRT Pty Ltd (OpCo) and NRT CSW Pty Ltd (OpCo2) to deliver the Sydney Metro Northwest (SMNW) and Sydney Metro City and Southwest (SMCSW) Public Private Partnership (PPP) contracts, respectively.

These two PPP contracts were awarded by government effectively as 'packages', each comprising three separate main entities, OpCo or OpCo2 plus two Core Contractors, each including three distinct roles:

- SMNW PPP (OTS), comprising OpCo (finance), the D&C Contractor (delivery) and the O&M Contractor ('MTS') (operations & maintenance);
- SMCSW PPP (OTS2): OpCo2 (finance), the Integrator (delivery) and MTS (operations & maintenance).

The delivery and the operations & maintenance obligations are 'passed down' virtually in their entirety to the relevant Core Contractor (e.g. to MTS, under the OTS and OTS2 O&M Contracts). SPR obligations of OpCo / OpCo2 are Core Contractor obligations. Accordingly, operation and maintenance obligations of OpCo and OpCo2 for OTS and OTS2 are obligations of MTS.

OTS and OTS2 were two separate and distinct PPP contracts. They have 'merged' together at the Incorporation Date in November 2024 (completion of OTS2 Phase 1, City section), from an operations and maintenance perspective, becoming a single operating railway under a single PPP contract (i.e. OTS2), with MTS responsible for all operations and maintenance obligations.

1.4. Purpose

The OEMP outlines how MTS will detail how the performance outcomes, commitments and mitigation measures made and identified in the CSW EIS (and its amendments) will be implemented and achieved during operation under CSSI7400 Chatswood to Sydenham and CSSI 8256 Sydenham to Bankstown.

1.5. Integrated management system

MTS must maintain an effective Management System which addresses all its obligations under the Deed, in accordance with the OTS Project Deed, Exhibit 1, Scope and Performance Requirements, Section 5.2.

The Integrated Management System (IMS) named Intelex at MTS integrates all MTS's systems and processes, including those related to rail safety and rail accreditation, quality, environment, sustainability, health and safety. They must accommodate, coordinate, and give effect to the Project Plans.

As improvements are made to the processes and systems, these will be reflected in updates to the relevant Project Plans. All elements of the Integrated Management System reside on MTS InEight and/or Teambinder as controlled copies.

1.6. Description of operational activities

The activities that will be undertaken during the operation of the Sydney Metro City & Southwest network have been discussed in detail within the relevant Environmental Impact Statements (EIS's) prepared to gain planning approval for the Project.

The tables below detail the anticipated frequency of each activity, and the general times of day that the operation and maintenance and repair works will be required to be undertaken.

The network will operate 24 hours a day, 7 days per week, 52 weeks in the year.

Table 3 Network Wide – Operational Activities & Indicative Frequencies & Hours of Work

Activity	Indicative Frequency	Typical Working Hours
Emergency Works	As occur.	Immediately after incident. All hours.
Infrastructure Maintenance	Nightly.	All hours.
Infrastructure Repair Works (planned)	3 monthly (6 monthly by section, 2x sections).	48hr shutdown. Last service early Saturday morning (1am) to first service Monday.
Infrastructure Repair Works (unplanned)	As required after passenger services cease.	0100 to 0400.
Fire and Life Safety	Constant monitoring. Address incidents as they occur.	All hours. Immediately after incidents.
Safety and Security	Constant monitoring. Address incidents as they occur.	All hours. Immediately after incidents.
Operation of Stations	Daily.	0400 to 0130 – Open to Commuters. 0130 to 0400 – O&M activities are required.
Operation of Trains	Daily.	0425 to 0100 – Open to Commuters. 0100 to 0425 – O&M activities are required.

Further details of the activities to be undertaken network wide are contained within Chapter 6 of the Chatswood to Sydenham Environmental Impact Statement, the Sydenham to Bankstown EIS and approved under SSI-7400 (2017) and SSI 8256 (2018) documents.

Table 4 SMTF – Operational Activities and Indicative Frequencies and Hours of Work

Activity	Indicative Frequency	Typical Working Hours
Emergency Works	As occur.	Immediately after incident. All hours.
Maintenance of Trains	Daily.	All hours within Maintenance Building at SMTF North and South. Daytime and evening hours for significant works within the Stabling Yard.
Safety Checks on Trains	Daily, multiple times per day.	Continuously, from 30 minutes prior to the departure of first train until 30 minutes after return of last train.
Stabling of Trains	Daily.	All hours, until last passenger service completes service. 0100 to 0400.
Cleaning of Trains	Soft Clean – Daily. Hard Clean – Every 2/3 days.	All hours including after last passenger service of the day. 0100 to 0400.
Maintenance of SMTF Infrastructure	As required.	Day-time hours, unless required at other times due to rail safety reasons.
Operation of Administrative Facilities (including monitoring, etc)	Daily.	All hours.
Education and Training of Staff and Workforce	As required, including train driving competency	All hours.
Parking for Workforce, Staff	Daily.	All hours.
Deliveries	Daily.	All hours.

Activity	Indicative Frequency	Typical Working Hours
Security	Constantly.	24 hrs a day, 7 days per week.

2. Planning and approvals

2.1. Statutory approvals context

As discussed above, the Project has been approved under a series of planning approvals, under various parts of the Environmental Planning and Assessment (EP&A) Act 1979.

Approvals which comprise the Project include:

- CSSI 7400 – Sydney Metro City & Southwest – Chatswood to Sydenham (approved 2017). Also included in CSSI 7400 is MODs 1 to 9 (approved in 2017 & 2018).
- CSSI 8256 – Sydney Metro City & Southwest - Sydenham to Bankstown (approved by DPHI 12 December 2018). Also included in CSSI 8256 is MODs 1 to 3.

This OEMP has been prepared in accordance with the relevant conditions under CSSI7400 Chatswood to Sydenham and CSSI 8256 Sydenham to Bankstown conditions. CSSI 7400 and CSSI 8256 are briefly addressed below.

A Compliance Table contained at the beginning of this document details where the relevant conditions under CSSI 7400 and CSSI 8256 have been addressed in this OEMP.

2.1.1. CSSI 7400 – Sydney Metro City & Southwest – Chatswood to Sydenham

The development of a metro rail network in Sydney is one of the key initiatives in the NSW Government's *Sydney's Rail Future* plan (Transport for NSW, 2012a). With the North West Metro line currently operating, the Chatswood to Sydenham metro line running through the Sydney CBD is the next step to growing the Metro network in order to meet Sydney's growing population and customer demand. The project involves the operation of an underground rail line, about 15.5 kilometres long, and new stations between Chatswood and Sydenham.

2.1.2. CSSI 8256 - Sydney Metro City & Southwest -Sydenham to Bankstown

Connecting with the Northwest Metro line and the Chatswood to Sydenham Metro line, the Sydenham to Bankstown Metro line is another core component of the *Sydney's Rail Future* plan. This has involved upgrading the existing 13.5 kilometre rail line and train stations from Sydenham to Bankstown.

2.2. Legal and other requirements

A register of legal and other requirements for the Project will be contained in the Environmental Management Systems Register as part of the Integrated Management System (IMS). This register will be maintained throughout the Project and updated as required, including to accommodate such this as:

- Changes in scope of the Project (including extension of the network).
- Legislative changes.
- As a result of management reviews or internal / external audits.

Any changes made to the Environmental Management Systems Register would be communicated to the wider team where necessary through awareness training and environmental alerts (Section 5.2), specific training and other methods detailed in Section 5.2 of this OEMP.

The complete list of the relevant planning approvals conditions and environmental management measures are included in the Environmental Management Systems Register within the Integrated Management System (IMS).

Table 5 Key Legislative Requirements

Legislation	Requirement	How this Act relates to the project
National Greenhouse and Energy Reporting (NGER) Act 2007	The Act created a single national reporting framework for the reporting and dissemination of information related to greenhouse gas emissions, greenhouse gas projects, energy consumption and energy production of corporations.	MTS undertakes reporting of greenhouse gas emissions and energy consumption under the NGER Act.
Contaminated Land Management Act, 1997	This Act sets out the roles, responsibilities, and accountabilities for managing contamination of land through the EPA.	All contamination existing or discovered shall be managed in accordance with this Act.
Environmental Planning and Assessment Act, 1979	Approvals granted under this Act.	Approval granted under CSSI 7400 and CSSI 8256.
Heritage Act, 1977	This Act describes the process of discovering, identifying and conserving Heritage artifacts.	All heritage artifacts existing or discovered shall be managed in accordance with this Act.
Protection of the Environment Operations Act, 1997 (POEO Act)	This Act is in place to protect, restore and enhance the quality of the environment in New South Wales, having regard to the need to maintain ecologically sustainable development.	MTS conducts scheduled activities under the Environment Protection Licence (EPL).
Sydney Water Act 1994	This Act outlines the requirements of water management through Sydney Water Corporation.	MTS manages water management throughout the network.
Waste Avoidance and Recovery Act, 2001	The objects of this Act are to encourage the most efficient use of resources and to reduce environmental harm in accordance with the principles of ecologically sustainable development.	MTS manages waste management throughout the network.

2.2.1. Approvals, permits and licensing

MTS will obtain all required licences, permits and approvals as required by law, and these will be maintained throughout operation of the network. No conditions of the applicable planning approvals remove the obligation for MTS to obtain, renew or comply with such necessary licences, permits or approvals, except as provided under Section 115ZG of the EP&A Act.

The Environmental Assessment recognised that the following approvals and licences identified in the planning approval process would be obtained or are required for the operation of the M1 line:

- Project Approval under the EP&A Act and
- Environment Protection Licence (EPL) under the Protection of the Environment Operations Act 1997 (POEA Act) for Rail Systems Activities.

Approvals and licences required for the Project are identified in the table below.

Table 6 Delivery Phase Environmental Approvals, Permits and Licenses

APPROVAL / PERMIT / LICENCE	REGULATOR Y AUTHORITY	RESPONSIBILITY / TIMEFRAME	STATUS
Instrument of Approval under the EP&A Act	Minister for Planning	The Sydney Metro Authority See Section 2.1 Statutory Approvals Context of this OEMP for details.	Approved.
EPL #21247 will be required for activities listed in Schedule 1 of the POEO Act: • **Railway infrastructure operations** • **Rolling Stock**	EPA	MTS / Required by start of Operations.	Approved License Number 21247. Link here: MTS EPL 21247

2.3. Stakeholder consultation

2.3.1. Historic consultation

Stakeholder consultation has been an integral part of the M1 line since its inception. For the City & Southwest Metro line, engagement with the community and stakeholders began in June 2014 with the announcement of the then Sydney Rapid Transit project as an extension of the then Northwest Rail Link (now Sydney Metro Northwest).

Key activities have included:

- Stakeholder consultation following the announcement in June 2014.
- Project scope consultation and engagement following the announcement of Sydney Metro City & Southwest in June 2015.
- Industry consultation in June and December 2015.
- Engagement following the project update announcement in November 2015.
- Engagement following the announcement of the Waterloo Station location in February 2016.
- Engagement regarding the Blues Point temporary site in February 2016.

Key stakeholders for the project have included:

- State agencies (e.g. Department of Planning and Environment, Roads and Maritime Services, Environment Protection Authority, NSW Office of Water, Port Authority of NSW, Sydney Water and Office of Environment and Heritage).
- Relevant local government authorities.
- Public utilities, and business and industry groups near the project.
- Directly impacted communities.
- The broader community.

Note: The names of the above government departments were correct at the time of consultation. The names of the referenced departments have since changed, but for accuracy it is appropriate to maintain the names of these departments as they were previously known, in this section.

2.3.2. OEMP Consultation

- As per Part D of the CSW Conditions of Approval of CSSI 7400, this OEMP and its sub-plans must be consulted with relevant government agencies before final submissions to the Department of Planning, Housing & Infrastructure (DPHI). The table below displays the relevant government agencies each OEMP sub-plan is to be consulted with.

Table 7 OEMP sub-plan and their relevant government agency to be consulted

	Required OEMP sub-plan	Relevant government agencies to be consulted for each OEMP sub-plan
(a)	Noise and vibration	EPA
(b)	Groundwater Management	DPHI Water, EPA
(c)	Traffic and Transport	Sydney Coordination Office, Relevant Road Authority and non-private transport operators
(d)	Flooding and hydrology (including emergency response planning)	Directly affected landowners, DCCEW, DPHI Water, SES, Sydney Water and Relevant Council(s)

After this OEMP had been submitted to the Department of Planning, Housing Infrastructure (DPHI) on June 28, 2024, one month before first passenger services, DPHI provided comments back to MTS in regard to the OEMP and its sub-plans.

The comment DPHI raised regarding the OEMP is listed below:

> "Further clarity is required regarding the commitments to deliver groundwater treatment and disposal outcomes at Barangaroo Station and the Marrickville Dive Site. Please note that we have provided a draft direction under separate cover with proposed arrangements for discussion with Sydney Metro and the EPA. The final outcome of these discussions will need to be captured in the OEMP before first passenger services".

To see the response to this comment, please see Section 6.8.3.3 Water Treatment Plants where more information has been provided surrounding commitments to deliver groundwater treatment and disposal outcomes as per the direction from DPHI to Sydney Metro and the EPA.

Conditions of Approval of CSSI 8256 does not stipulate the requirement for the OEMP and its sub-plans to be consulted with relevant government agencies prior to final submission to the Department of Planning, Housing & Infrastructure (DPHI).

2.4. Changes to the OEMP and associated documents

The OEMP is reviewed annually or as required due to changes to contract/s, legislation and/or business activities. The Environmental and Sustainability Lead Advisor is responsible for ensuring environmental management processes are maintained and reviewed in accordance with business practices and standards to accurately reflect changes to the working environment. The Head of Safety, Quality, Risk & Environment will ensure changes to IMS will be carried out in a planned manner and will consider:

- The purpose of change and its potential consequence.
- The integrity of IMS.
- Availability of resources.
- Allocation of responsibilities and authorities.

MTS will regularly update and develop the OEMP in order to ensure the documents reflect the actions to ensure it remains consistent with Operational priorities, risk management, client requirements and environmental objectives and the following are considered:

- The status and progress of activities.

- Changes in the design, delivery and operations processes and conditions.
- Lessons learnt.
- Changes in other related Project Plans.
- Requirements and matters not covered by the existing Project Plans.
- Changes to Project Plans as directed by Sydney Metro Representative under the Deed.
- Changes as a result of audits or Management Reviews.

2.5. OEMP Submission and publication

- This OEMP for CSSI 7400 Chatswood to Sydenham (and the associated sub plans) and CSSI 8256 Sydenham to Bankstown will be submitted to the DPHI for information no later than one (1) month before the commencement of operation unless another timeframe is agreed with the Secretary.
- The OEMP will also be made publicly available on the MTS website before the commencement of operation and first passenger services in order to satisfy the requirement of Part D of the Conditions of Approval.

3. Environmental commitments

3.1. Environment and sustainability policy

The principles implemented through the MTS Environment and Sustainability Policy are designed to ensure that the environmental and sustainability performance objectives and targets are met. The Policy is included in Appendix D. The Policy is communicated to staff and other interested parties via inductions and ongoing awareness programs.

The Environment and Sustainability Policy reinforces the commitment to developing strategies and implementing processes and procedures to ensure adaptation to climate change, resource management (including energy, water and waste, procurement, workforce development) and environmental management is integrated seamlessly into the operation of the network, establishing MTS as an industry leader in operational sustainability performance.

The Environment and Sustainability Policy has been developed with input from key internal stakeholders to ensure that the policy aligns with MTS's operation and maintenance activities and environmental management and sustainability responsibilities.

3.2. Objectives and targets

This section discusses the objectives and targets MTS seeks to achieve over the operational life of the M1 line regarding environmental and sustainability.

Overarching Environmental and Sustainability targets are outlined in Sections 3.2 and 6.4 respectively.

Annual targets for the environmental management of the operation and maintenance of the M1 line have been outlined in Sydney Metro City & Southwest SPR Appendix 50a section 2.12.2.

These annual targets are the following:

- OpCo2 will use 100% of the renewable energy which is generated from the permanent solar panels and other renewable energy sources which are installed as part of the Foundation Infrastructure Works.
- OpCo2 must not exceed its Operations Phase electricity consumption target as submitted in the Project Plans. These targets are to be updated with actual figures within a year of operating when sufficient data is made available.
- OpCo2 must recycle or beneficially reuse a minimum of 80% of operational waste and 60% of office waste.

- OpCo2 must not exceed its total operational water demand of 49,608.5 kL/yr as submitted in the Project Plans. The target percentage from potable sources and non-potable sources will be outlined within a year of operation once a target has been set.
- OpCo2 must achieve an Operations Phase carbon footprint of less than the targets as submitted in the Project Plans. These targets are to be updated with actual figures within a year of operating when sufficient data is made available.

Objectives for environmental management of the operation and maintenance of the M1 line have been developed by MTS to address the key environmental risks identified in the risk assessment undertaken during the preparation of this OEMP.

Key risks identified include the following:

- Noise and vibration impacts from Operations (trains, PA systems etc.) and Maintenance activities (Engineering works on the network and activities in the STMF South.
- Contamination of land and waterways due to accidental spills or fuels, oils, etc.
- Discharge of untreated waters, due to failure of water treatments plants.
- Air quality, due to dust during surface works, gas releases, or failure of plant on the network or at the SMTF.
- Wrongful disposal of waste.

Environmental Indicators that will be used to measure the performance of the network are contained in the table below. Management of Change processes shall be utilised with relevant approvals in place prior to making any changes to MTS Environmental and Sustainability Targets and KPIs.

Table 8 Environmental Indicators for M1 Line Operation

KEY PERFORMANCE INDICATOR	OBJECTIVE	TARGET	TIMEFRAME	ACTIONS TO BE UNDERTAKEN
Noise and Vibration (surface)	Minimize impact to adjacent community	Zero complaints during from sensitive receivers adjacent to works areas and SMTF.	Always	Implement noise and vibration mitigation measures.
Pollution Control	Manage pollution to ensure no harm to the surrounding environment	Zero contamination of off-site land or waterways due to spills.	Always.	Ensure spill kits are located adjacent to all works locations.
Water Discharge	Ensure water discharge occurs only in a controlled manner.	Zero uncontrolled discharges from site.	Always.	Implement discharge procedure and training.
Air Quality	Minimize impacts on air quality around Project alignment.	Zero complaints from sensitive receivers adjacent to works areas and SMTF South.	During Surface works, gas releases and operation of the SMTF South.	Check weather conditions prior to dust generating works (e.g. tamping). Undertake regular maintenance checks of plant and equipment. Notify Authorities and Community for significant gas releases

KEY PERFORMANCE INDICATOR	OBJECTIVE	TARGET	TIMEFRAME	ACTIONS TO BE UNDERTAKEN
Waste	Ensure all waste is minimized and disposed of accordingly.	All waste is to be disposed of as per its waste classification (e.g. at licensed recycling or waste facilities).	Always.	Implementation of Waste Management Processes through the OEMP and EMS, including waste dockets.
Weeds	Ensure weeds are identified, managed and removed in an appropriate manner.	Weeds are to be managed to avoid spreading and disposed of in an appropriate manner.	Always	Management of weeds is to be undertaken in line with MTS Weeds Management Procedure (SMCSWTS2-MTS-CSW-EM-PRO-005558).

4. Implementation and operations

4.1. Integrated Management System overview

MTS has an Integrated Management System that (IMS) combines multiple management systems, including quality, environmental, and safety, into a single framework to streamline operations and achieve objectives more efficiently. This unified approach reduces redundancy in policies, processes, and documentation, leading to a more efficient and consistent operation.

How it works

- An IMS brings together the requirements of two or more management systems, often incorporating international standards like ISO 9001 (Quality), ISO 14001 (Environmental), and ISO 45001 (Occupational Health and Safety). *Note: MTS operates our IMS in accordance with the provisions of these ISO's, MTS is currently not certified to these ISO's.*
- It creates one consolidated set of policies, procedures, and objectives that all departments follow.
- Common elements like documentation, training, and audits are streamlined into a single, cohesive system, rather than being managed separately for each standard.

Benefits of an IMS

- **Increased efficiency and synergy:** Integrating systems reduces duplication of effort, saving time, resources, and money.
- **Improved consistency:** It ensures a unified approach across all operations, making it easier to maintain compliance and keep everyone on the same page.
- **Reduced bureaucracy:** A single system with unified objectives and a single point of contact for compliance can simplify decision-making and reduce paperwork.
- **Enhanced performance:** It provides a framework for continuous improvement across all areas of the business and can improve overall performance and risk management.

This OEMP and the OPESP forms part of that IMS and provides an overview of the system to manage and control the environmental aspects of the network during operation. It also provides the overall framework for the systems and procedures to ensure environmental impacts are minimised, and legislative and other requirements fulfilled. This OEMP and the OPESP establishes the system for implementation, monitoring, and continuous improvement to minimise impacts from the operation and maintenance of the network on the environment. The IMS complies with the:

- Environmental Documents;

- NSW Government – Environmental Management System Guidelines, May 2014.

The IMS consists of the following key components:

- **Governance documentation**: The Environmental and Sustainability Policy and the OPESP explain the principles we apply in operating to achieve our environmental and sustainability performance objectives and targets.
- **OEMP and sub-plans**: This OEMP describes how MTS complies with the relevant Conditions of Approval of the M1 line. Sub-plans (required by the CoA) identify requirements and processes applicable to specific impacts of the activities. (This OEMP and associated sub-plans.)
- **Procedures and tools**: Procedures and tools provide additional detail to support the OEMP & sub-plans or are used in the implementation of the OEMP. (Section 4.2)
- **Continuous improvement**: Continual improvement is achieved through constant measures and evaluation (including monitoring, inspections), audit and review of the effectiveness of the OEMP and adjustment and improvement of the OEMP, Project environmental outcomes and the IMS. (Section 9).
- **Performance targets**: Objectives and targets have been developed as a means of assessing environmental performance during the operation of the M1 line. (Section 3 and Section 6).

4.1.1. Operational Environmental Management Plan (OEMP)

This OEMP outlines the performance outcomes, commitments and mitigation measures made and identified in the CSW EIS (and its amendments) and under CSSI 7400 and CSSI 8256 that are to be followed during the operation and maintenance of the M1 Line

It provides the overall framework for the system and procedures to ensure environmental impacts are minimised and legislative and other requirements are fulfilled. The implementation of the OEMP is supported by the remainder of the environmental management system, which sits within the Integrated Management System (IMS).

The OEMP has also been prepared to be consistent with Guideline for the Preparation of Environmental Management Plans (DIPNR, 2004).

4.1.2. Operational Sub-Plans

CSSI 7400 Chatswood to Sydenham CoA requires four sub-plans be prepared to accompany the OEMP, these being:

- Noise and Vibration Management Plan (NVMP);
- Groundwater Management Plan (GMP)
- Traffic and Transport Management Plan (TTMP)
- Flooding and Hydrology Management Plan (FHMP)

CSSI 8256 does not stipulate the requirement for four sub-plans to be prepared to accompany the OEMP. However, inline with the requirements of the IMS all related sub-plans and associated documentation undergo scheduled reviews and updates as part of continuous improvements undertaken.

4.1.3. Environmental Aspects Maps

An Environmental Aspect Map (EAM) is a simple map prepared to assist in the raising of awareness of significant aspects found within the M1 Line, including water treatment plants, heritage, waterways, etc, which may be included on an EAM.

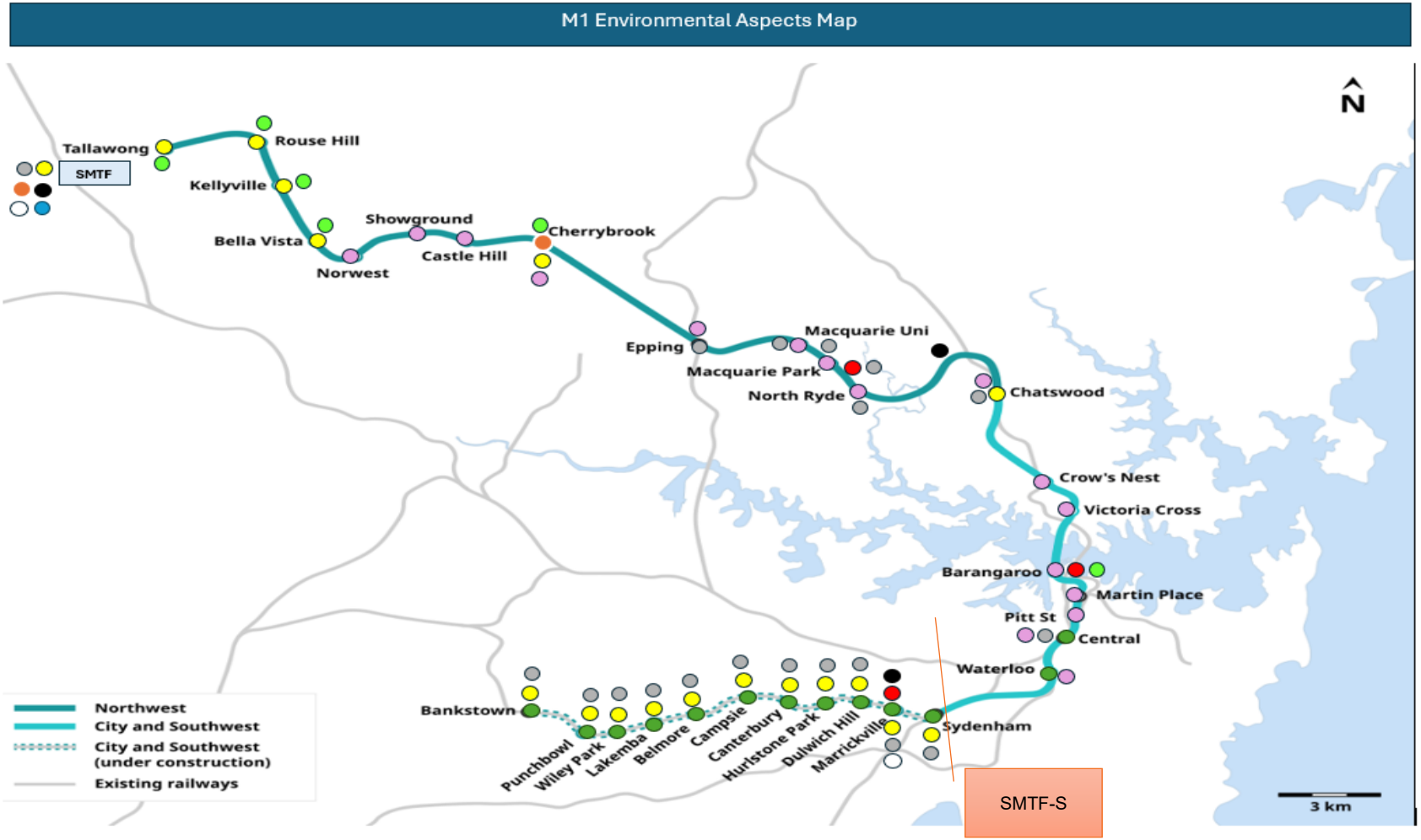
The EAM provides a simple but effective tool to identify key risk areas that are within the M1 Line and or near maintenance and repair works, and to promote ongoing communication to O&M personnel throughout the operational life of the network.

The EAM is to be read in conjunction with the Plans and Procedures that are related to the OEMP (see Appendix C for a full list).

Figure 2 Environmental Aspects Map (EAM) Legend

	Water Treatment Plant
	Heritage
	Train Wash
	Detention Basin
	Maintenance Centre
	Potential Noise & Vibration Sensitive Areas
	Unexpected Finds - i.e heritage/contamination
	Asbestos
	Air Quality
All	Noxious Weeds
All	Waste Management
	Solar PV Array

Figure 3 Environmental Aspect Map



4.1.4. Rail Operating Manuals

MTS utilises Rail Operating Manuals (ROMs) as a means of managing the risks associated with the O&M activities of the M1 line, supplemented by procedures, work instructions and task instructions held in the Ellipse asset management system. The ROMs will include a section addressing the relevant environmental risks associated with the activities being undertaken and will identify where those works are proposed to occur within or near environmentally sensitive areas. This section will include protection measures that minimise the risk of impacting the sensitive areas. The requirement for environmental measures to be included in ROMs would be determined by the Environment & Sustainability Lead for those activities deemed to carry a risk to the environment (e.g. works near waterways).

As a minimum, the environmental management section of each ROM will include:

- Description of the work activity, including any plant and equipment to be used.
- Outline of the sequence of tasks for the activity, including interfaces with other construction activities.
- Identification of any environmental and/or socially sensitive areas, sites or places.
- Identification of potential environmental risks/impacts due to the work activity.
- Mitigation measures to reduce the identified environmental risk, including assigned responsibilities to site management personnel.
- Hold-points requiring sign-off by the Environment & Sustainability Lead (if required).
- Process for assessing the performance of the implemented mitigation measures.

For new or changed activities a Works Approval Form will be undertaken. Any new or changed environmental management conditions identified during the review are incorporated into the ROMs as required.

4.1.5. Hold points

A "Hold Point" is a point beyond which a work process must not proceed without express written authorisation from the Environment & Sustainability Lead.

MTS management systems and processes establish internal hold points for key activities that require environmental management measures to be in place. These hold points are identified in the table below.

MTS will embed these hold-points in the ROMs, ensuring that any activity that requires sign-off by the Environment & Sustainability Lead is picked up and addressed prior to the commencement of the respective activity.

Table 9 MTS Hold Points

Hold Point	Action/ Permit Required	Document Reference
New Maintenance or Repair Work	Prior to commencement of a new activity, not previously undertaken in a particular area need Environment & Sustainability Lead approval.	ROM/procedure/work instruction
Water Discharge	Prior to discharge require Environment & Sustainability Lead approval.	NSW EPA Environmental Protection Licence GMP FHMP
New Waste Stream (or new receiving location)	When a new waste stream is identified, or a change in the existing waste receivers is proposed require Environment & Sustainability Lead approval. All waste contractors engaged by MTS will have to comply with this OEMP and associated requirements for sustainable procurement.	NSW EPA Environmental Protection Licence

Hold Point	Action/ Permit Required	Document Reference
Heritage Fabric	Prior to working on heritage fabric, MTS will comply with procedures outlined in the Heritage Management Plan.	Heritage Management Plan

4.1.6. Subcontractor management

All subcontractors receive and acknowledge in writing that they will adhere to the MTS's environmental & sustainability procedures that are specific to the work that they are undertaking prior to works commencing. These documents are included with contract documentation.

Sub-contractors and their works are to be regularly inspected and observed for environmental and sustainability compliance, as part of an integrated O&M Phase approach, involving regular inspections, monitoring and auditing described in Section 8.

4.2. Environmental aspects, risks and impacts

Environmental aspects and impacts have been identified through review of the EIS, environmental reports, contractual documents, consultation with Sydney Metro Authority and the D&C Contractor / Integrator and MTS experience.

The environmental risk assessment, included in Appendix E, details the environmental aspects identified for the operation and maintenance of the network, reference to the appropriate document detailing proposed management measures and resulting risk category after appropriate management strategies are considered. A summary of key environmental risks for the O&M Phase of the Project is provided in Section 4.3.

MTS applies a risk management approach throughout the operational life of the M1 Line in line with the Risk Management Plan (SMCSWTS2-MTS-CSW-PM-PLN-002158) to identify, assess, control and review environmental risks and harness opportunities.

The objectives of risk assessment are to:

- Identify activities/aspects, events or outcomes that have the potential to adversely affect the local environment and/or human health/property.
- Qualitatively evaluate and categorise each risk item.
- Assess whether risk issues can be managed by environmental protection measures.
- Qualitatively evaluate residual risk with implementation of measures.

Risk assessments for the Project consider:

- AS/NZS ISO 31000:2018: Risk management – Principles and guidelines. Environmental risks and opportunities will be integrated into the day to day functions and activities of MTS, through the implementation of Rail Operating Manuals (ROMs). ROMs utilised by MTS manage all repair, maintenance and operation activities undertaken during the O&M Phase of the Project.
- They also include details of the processes, procedures and hold points that apply to each activity.

The ROMs include a section on the relevant environment and sustainability requirements for each activity, effectively building Environmental Work Method Statements (EWMS) and other environmental controls into the project-wide system, creating a one-stop-shop for activities. This approach ensures that environment and sustainability is fully integrated into the O&M Phase as business as usual.

Environmental risks, controls and responsibilities are communicated through the preparation and implementation of ROMs and awareness training.

The Environment & Sustainability Lead (or delegate) participates in, and holds approval authority, for most risk assessment types listed in Section 4.3 to ensure environmental risks and opportunities are adequately raised and addressed. Section 4.3 of this OEMP contains a brief discussion on each of the environmental risks associated with the operation and maintenance of the network. It also lists all the relevant management plans, processes and procedures that will be implemented by MTS to mitigate each of the identified environmental aspects.

4.3. Environmental management and monitoring

The table below contains a description of each of the environmental aspects that will need to be managed through the operational life of the M1 Line, including how each of these are managed along with a risk assessment. The Risk Assessment Scoring Matrix is located in Appendix E. Note all the plans, processes and procedures discussed below will be maintained separate from this OEMP through the MTS IMS, which will be subject to the ongoing and continual improvement processes for the whole of MTS, the environmental component of which is discussed below in Section 9 of this Plan.

Table 10 Environmental Management and Monitoring

		Risk Rating					Revised Risk Rating		
	Description of Potential Risks / Impacts	**Consequence**	**Likelihood**	**Risk Rating**	**Mitigation**	**Implementation Strategy/ Plan / Process / Procedure**	**Consequence**	**Likelihood**	**Risk Rating**
Surface Water, Groundwater, and Discharge	Potential impacts include: Discharge of untreated water from stations and railways to surrounding waterways. Uncontrolled discharge of water from stations and railways. Failure of water treatment plants leading to discharge of untreated water. Flooding due to significant rainfall (over the 100yr PMF). Changes to groundwater levels. Effects of stormwater and wastewater on natural hydrological attributes (such as volumes, flow rates, management methods, and re-use options) and on the conveyance capacity of existing stormwater systems where discharges are proposed through such systems. Groundwater inflow into tunnels. **Location specific risk – SMTF-S SMTF-N Train wash, Lady Game Drive WTP and Barangaroo WTP contain Water Treatment Plant**	C3	L3	B – High	Environment & Sustainability Lead monitors the basins and drainage lines downstream of the alignment if required after notification of any risks. Groundwater quality is subject to testing, and where required treatment prior to discharge (SSI-5414 REMM Op SG3 & SSI-5414 REMM Op SW3). Captured groundwater is treated at the existing WTP at Lady Game Drive, Lindfield and Marrickville WTP (SSI-5414 REMM Op SG4). All feasible and reasonable opportunities are identified for the reuse of captured surface water and groundwater (SSI-5414 REMM Op SG5 and SSI-5414 REMM Op SW2). A Pollution Incident Response Management Plan has been developed and implemented (SMCSWTS2-MTS-CSW-EM-PLN-002731). Treatment measures are applied to water collected on-site (SSI-5414 REMM Op SW4 & SSI-5931 REMM Op SW4).	OPESP. Risk Assessment Process. Environmental Aspects Maps. Environment Protection Licence. Trade Waste Licence. WAR Process. Incident Management Framework (refer to Emergency Management Plan SMCSWTS2-MTS-CSW-FL-PLN-002650). Prior to the discharge of water from the detention basins or water treatment plant(s), these will require Environment & Sustainability Lead or Head of Response & Engineering Monitoring. Check approval in accordance with MTS's EPA EPL. Pollution Incident Response Management Plan	C4	L4	C – Medium

	Station specific risk – Barangaroo station – cooling water discharge				Spill Management Procedure (SMCSWTS2-MTS-CSW-EM-PRO-005548). Barangaroo station – cooling water discharge into Sydney Harbour Barangaroo WTP Groundwater quality is subject to testing, and treatment prior to discharge in accordance with the OEMP.	(SMCSWTS2-MTS-CSW-EM-PLN-002731). Groundwater Management Plan (OEMP subplan, SMCSWTS2-MTS-1NL-EM-PLN-002712). Flooding and Hydrology Plan (OEMP Sub-Plan, SMCSWTS2-MTS-1NL-EM-PLN-002711). NSW Aquifer Interference Policy (NSW Office of Water, 2012). Water Sharing Plan for the Greater Metropolitan Region Groundwater Sources 2011. Water Discharge Impact Assessment for BGWTP. *(Note: This WTP is not currently in the EPL & the WDIA is being used to determine the suitability of it to be included in the revised EPL)*			
Traffic and Transport	Potential impacts include reduced local parking due to workforce and personnel parking on local streets during maintenance and possession works.	C4	L4	D - Low	Safe commuter facilities for active transport (e.g. cycling and walking). Undertaking of significant maintenance and repair works during night and weekend possessions and overnight between passenger services, to reduce impact on available commuter parking.	Risk Assessment Process. Provision of adequate parking at SMTF– N & SMTF-S (office and maintenance sites). Provision of significant parking facilities at stations.	C5	L5	D - Low

						Traffic and Transport Management Plan (OEMP Sub-Plan).			
	Nuisance caused by workforce and personnel parking adjacent residents and businesses during maintenance and possession works.	C4	L4	C - Medium			C5	L5	D - Low
	Increased local traffic due to increased workforce and personnel travelling to / from work around SMTF's.	C4	L4	C - Medium	Maximising pedestrian accessibility to the stations. Provision of cycle storage facilities at stations. Provision of commuter car parking at selected stations. Consideration of peak period movements in assigning shift hours and changeover patterns for maintenance staff at the SMTF's. Preparation of workplace travel plans for SMTF entities that would provide alternative modes for journeys to/from work.		C5	L5	D - Low
Noise and Vibration	Potential impacts include: Ground borne (regenerated) noise from operation of trains within the tunnels. Airborne noise from train operating along viaduct and at-grade areas of track. Airborne noise around Station Precincts, due to fixed facilities, include carparks, substations, and public announcement system (PAS). Noise and vibration from maintenance and repair works undertaken overnight (between passenger services) and during night and weekend possessions. Airborne noise from O&M activities.	C4	L3	C - Medium	Identify actual noise and vibration levels (in accordance with NVMP). Adjust management measures identified in NVMP in accordance with the findings of the operational assessment where required. Undertake monitoring in response to receiver complaints where considered necessary by Environment & Sustainability Lead. Environment & Sustainability Lead may attend possession works to undertake general surveillance of works and may undertake spot checks of noise and vibration levels to better understand the acoustic profile of the works, where required i.e., ongoing complaints or to monitor and assess the impacts of specific works.	Operational Noise and Vibration Management Plan (OPESP Sub-Plan and OEMP Sub-Plan) and Operational Noise Monitoring Program Risk Assessment Process. Environment Protection Licence.	C4	L4	C - Medium

					Ensure that when rail components (e.g. rail dampeners) are replaced during maintenance they are replaced with components with the same or improved acoustic properties. Standard, high, and very high track attenuation provided through tunnels. Investigate the option to incorporate silencers in the compressed air lines of the rolling stock. Investigate methods to minimise rolling stock auxiliary noise levels during procurement. Noise sources at stations such as PA systems, air conditioners, substations, and mechanical plant would be designed to meet the INP noise criteria.				
Visual Amenity and Landscaping (including in relation to Heritage)	Potential impacts include: Light intrusion from permanent facilities at stations. Light intrusion from temporary works (maintenance and repair). Poor maintenance of landscaping within LMAs. Poor maintenance of urban design elements within Licenced Maintenance Areas (LMAs), including station finishes, graffiti, etc. Damage to identified Heritage items. Disrupted operations between Sydney Metro and Sydney Trains causing damage and/or delays.	C4	L5	D - Low	Ensure that lighting maintains its orientation to ensure it is directed away from sensitive receivers. Undertake regular inspections of the public areas, rail corridor for cleanliness, condition, and graffiti to identify where remedial actions are required. Ensure MTS employees are trained on Heritage Management. CSSI 7400 CoA D10 & CSSI 8256 E68– MTS will manage the ongoing maintenance and operation costs of the urban design and landscaping items and works implemented by Sydney Metro. MTS will maintain items and works to the design standards established in the Station Design and Precinct Plan, in accordance with MTS contractual obligations.	Weekly and Monthly Environmental Inspections via Intelex regarding the public area and rail corridor cleanliness, condition, and graffiti, under the Asset Information System and Station Operations Manual (ROM). Heritage Management Plan. Weed Management Procedure (SMCSWTS2-MTS-CSW-EM-PRO-005558). Risk Assessment Process.	C5	L5	D - Low

					CSSI 7400 & CSSI 8256 CoA E1 – MTS will manage the operational and asset interface risks to ensure successful operational integration of the CSSI and the heavy railway network and the protection of physical and operational Sydney Trains' assets and services during operation, in accordance with MTS contractual obligations. EIS ID: LV10 – Cut off and direct light fittings (or similar technologies) would be used to minimise glare and light spill onto private property. EIS ID: LV11 – Where feasible and reasonable, vegetation would be provided to screen and visually integrate sites with the surrounding area. EIS ID: LV12 – Identify and implement appropriate landscape treatments for Frank Channon Walk. EIS ID: LV13 – The architectural treatment of Artarmon substation would minimise visual amenity and landscape character impacts. EIS ID: LV14 – The Harbour cycles sculpture at North Sydney would be reinstated at a location determined in consultation with North Sydney Council.				

Ecology	Potential impacts include fauna struck by trains and maintenance / repair vehicles. Weed proliferation by repair and maintenance vehicles. Poor vegetation management of landscaped areas (within LMAs).	C4	L5	D - Low	Surveillance and inspections of all landscaped areas of the LMAs and ballasted at-grade track areas at regular Flora intervals to ensure weeds are identified managed / removed in an appropriate manner. Include regular watering and vegetation management to ensure vegetated areas within LMAs are maintained.	OPESP. Risk Assessment Process. Flora and Fauna Management Plan (SMCSWTS2-MTS-CSW-EM-PLN-005554). Railway Operating Manuals. Weed Management Procedure (SMCSWTS2-MTS-CSW-EM-PRO-005558). Weekly and Monthly Environmental Inspections via Intelex	C5	L5	D - Low
Heritage	Potential impacts include: Damage to previously unknown heritage items during intrusive maintenance works. Poor maintenance of vegetative screening planted by the Project to protect the significance of adjacent heritage items. **Station specific risks –** **Barangaroo to Bankstown station heritage assets**	C3	L5	C - Medium	Ensure MTS employees are trained on Heritage Management.	Heritage Management Plan (SMCSWTS2-MTS-CSW-HE-PLN-002100). Risk Assessment Process.	C4	L5	D - Low
Soil and Contamination	Potential impacts include: • Spills of contaminated and / or hazardous materials (e.g. fuel; oil).	C5	L5	D - Low	Ensure all sites identified and remediated / managed during the D&C Phase (as per Contamination Environmental Management Plans), and any sites containing a residual risk, are identified and captured in the Environmental Aspect Maps.	OPESP. Risk Assessment Process. Environmental Aspects Maps.	C4	L5	D - Low

	• Importation of contaminated materials to site. • Removal and disposal of contaminated material. • Contaminated soils. • Acid sulphate soils. **Station specific risks – SMTF South – Sydney Steel Road capped asbestos.**				Identify any known contaminated sites near to the Project alignment (but not within the Project footprint) are identified in the Environmental Aspect Maps. Implement the Unexpected Contaminated Finds Procedure (SMCSWTS2-MTS-CSW-EM-PRO-005556) to ensure that of contamination (solid or liquid) is discovered during the O&M Phase so it gets managed appropriately. In addition to the above, MTS will comply with the REMMs addressed in Appendix C to this OPESP: *Spill management procedure will be implemented.* Station specific risks – SMTF South – Sydney Steel Road capped asbestos: • Managed by Environmental Management Plan (EMP)	Info Docs, including Contamination Reports from D&C Phase, including clearance certificates and EMP's DSI Report Site Auditors Report EMP for ongoing site management			
Air Quality	Potential impacts include: Dust from maintenance works and /or operation. Minor quantities of Particulate Matter 10 (PM10) generated in tunnels due to wear of train brake pads, vaporisation of metals due to sparking, wear of steel due to friction between wheels and rail, and recirculation of particulates from tunnel walls.	C5	L5	D - Low	Visual surveillance of areas where surface works (viaduct and at-grade areas) are being undertaken for O&M activities, at times of hot weather / high winds. The engines of all on-site vehicles and plant would be switched off when not in use for an extended period. Plant would be well maintained and serviced to minimise emissions. Emissions from plant would be considered as part of pre-acceptance checks. In addition to the above, MTS will comply with the REMMs addressed in Appendix C to this OPESP.	OPESP. Risk Assessment Process. Railway Operating Manuals. Weekly and Monthly Environmental Inspections via Intelex Scheduled maintenance works undertaken EPL #21247	C4	L5	D - Low

					For the purposes of air quality monitoring, CO2 and H2 sensors are in place within the City section of the metro. These sensors are calibrated on a yearly basis and post-handover of the City section of the Metro, there has been one scheduled maintenance record to date. The Southwest section of the M1 line is located above ground. MTS is legally obliged to manage air quality emissions from operational activities in accordance with the provisions of the EPL All maintenance activities, that are likely to generate dust and other air emissions are undertaken in accordance with the requirements of the EPL.				
Waste and Resource Management	Potential impacts include: Contamination of land due to improper disposal of waste. Excessive volumes of waste going to landfill. Waste streams not properly separated causing improper disposal of waste offsite.	C4	L2	B - High	Provision of individual recycling bins for different waste streams, adjacent to general waste bins where required in stations, offices, and maintenance building(s). Separation of waste streams for maintenance and repair work wastes. Specialist wastes must be recycled where practicable. Separation, categorisation of hazardous and contaminated materials from general solid waste, for disposal at appropriately licenced facilities. All waste contractors engaged by MTS will have to comply with this OPESP and associated requirements for sustainable procurement. Use of waste dockets as a means of tracking waste from O&M activities, to ensure appropriate disposal.	OPESP. Risk Assessment Process. Waste and Resource Management Procedure (SMCSWTS2-MTS-CSW-EM-PRO-005542) Waste Dockets. Railway Operating Manuals (Hazardous Goods).	C5	L3	C - Medium

					In addition to the above, MTS will comply with the REMMs addressed in Appendix C to the OPESP.				
GHG, Climate Change and Energy Use	Potential impacts include: Excessive use of non- renewable energy sources, causing an increased carbon footprint. Inadequate water reuse and recycling. Various plant and equipment unable to meet their operational performance due to rising temperatures, rainfall events, severity of storms, and bushfires. Climate Change projections	C4	L4	C - Medium	Implementation of the initiatives and strategies identified in Section 6 of this OPESP. In addition to the above, MTS will comply with the REMMs addressed in Appendix C to the OPESP. Minimise GHG emissions through energy reduction and avoidance, energy efficiency and onsite and offsite renewable or low carbon energy. When plant and equipment (i.e. HVAC systems, rail lines, access roads, substations, tunnel ventilation systems and various other types of equipment) are replaced at the end of their design life, a review of observed and expected increase in the effects of climate change are to be undertaken to determine the new design parameters for future plant and equipment. Reviewing and updating management procedures as per updated Climate Change advice	Carbon and Energy Management Plan. TSOM Risk Register. Sustainability Ratings (ISC, Green Building, TfNSW Sustainable Design Guidelines). Climate Change Risk Register(s) (recorded within Intelex)	C5	L4	D - Low
	Excessive use of potable water.	C4	L4	C - Medium	Minimise use of potable water by use of non-potable water sources (rainwater harvesting, and Sydney water recycled water network) for appropriate end uses such as train washing and irrigation of landscaped areas		C5	L4	D - Low

4.4. Maintenance Activities on the SW Corridor

MTS's Operations & Maintenance Division have identified the potential for an increased requirement for after-hours maintenance activities within the SW corridor. These activities include potentially noisy activities such as:

- Track tamping and ballast regulating
- Transporting of materials to site
- Vegetation control, including use of leaf blowers/whipper snippers and sit on lawn mowers
- Support of weld crews
- Tamper support
- Diesel powered hand tamping
- Track patrols
- Civil and overhead wiring (OHW) inspections.

4.5. Railway maintenance hours

4.5.1. Proposed engineering and maintenance hours

The typical engineering and maintenance hours are summarised below, which are outside the normal train operating period:

- 1:00 am to 4:00 pm Monday to Thursday; and
- 2:00 am to 4:00 am Friday, Saturday and during weekend possessions.

4.5.2. Standard hours

Standard railway maintenance hours are outlined in EPL Condition O9.1 as:

- 7:00 am to 6:00 pm Monday to Friday;
- 8:00 am to 1:00 pm Saturday; and
- Not on Sunday or public holidays.

4.5.3. Exemptions to standard maintenance hours (OOH works)

Exemptions to the standard maintenance hours (out of hours works – OOH) are outlined in EPL Condition O9.2 (refer Section 2). Importantly, this condition permits maintenance activities outside of the standard hours in Section 3.2.2 "to provide safe and reliable train services or a safe working environment".

The proposed engineering and maintenance works that form part of the NVIA are necessary to provide safe and reliable train services and to maintain the safety of workers within the railway corridor. The proposed works need to be undertaken during the night period when trains are not operating. This is typically, between 1:00 am and 4:00 am.

EPL Condition O9.3 (refer Section 2) notes that maintenance can be undertaken outside standard hours if the activities are classified as "low noise impact generating works" [i.e. if the LAeq(15minute) noise levels are less than 5 dB(A) above the rating background level and the LAmax noise levels are less than 15 dB(A) above the rating background level]. Based on noise predicted noise levels in Section 6, it is likely that the engineering and maintenance works assessed in the NVIA will be above these "low noise impact generating works" levels.

Where maintenance activities are required outside standard maintenance hours, EPL Condition O9.4 (refer Section 2) notes that noise impacts must be managed in accordance with the recommendations in the Interim Construction Noise Guideline (DECCW, 2009), as updated from time to time. The relevant criteria are summarised in Section 5.

4.6. Community response

MTS will respond to community inquiries and complaints received during the operation and maintenance of the network relating to environmental aspects, including such things as:

- Noise and vibration.
- Water quality.
- Water management (e.g. flooding).
- Air quality (dust).

This Community Response Process is integrated into the MTS Stakeholder and Community Involvement Plan (SCIP, reference SMCSWTS2-MTS-CSW-PM-PLN-002162). The table below covers CoA B10.

Table 11 Community Response Process

An environmental enquiry or complaint is received via TfNSW's Customer Information service on 131 500 and online at www.transport.info .			
Step	**Action**	**Timeframe**	
		Operational hours	**Engineering hours**
1	**Initial contact** • TfNSW notifies MTS of enquiry or complaint (operational hours). • MTS receives complaints where 131 500 is diverted (engineering hours). • SMA/TfNSW-related online enquiry or complaint is received by MTS via Salesforce.	• Immediately. • 131 500 phone calls are entered into Salesforce and responsibility assigned to MTS. • Web-based enquiry or complaint is entered into Salesforce and responsibility assigned to MTS.	• Immediately. • 131 500 passed off to MTS-designated number between 12am – 6am. • Web-based form entries are provided to MTS the next business day by TfNSW.
2	**Investigation** For complaints, MTS Customer Information Delivery Partner (ISC) investigates and contacts complainant to seek any additional information.	Within 24 hours when only trains are operating.	• Within two hours or as agreed with complainant when maintenance and repair works are occurring in Environmental Protection Licence licenced premise. • Within 24 hours when only trains are operating or not within EPL licenced premise.
3	**Escalation** (Beyond a usual operational issue) Where it cannot be resolved by the MTS SMCIC, DCRC or GMOCE, for dissemination, coordination of Subject Matter Expert or SMA/TfNSW involvement (as required) and response.	Within two business days.	

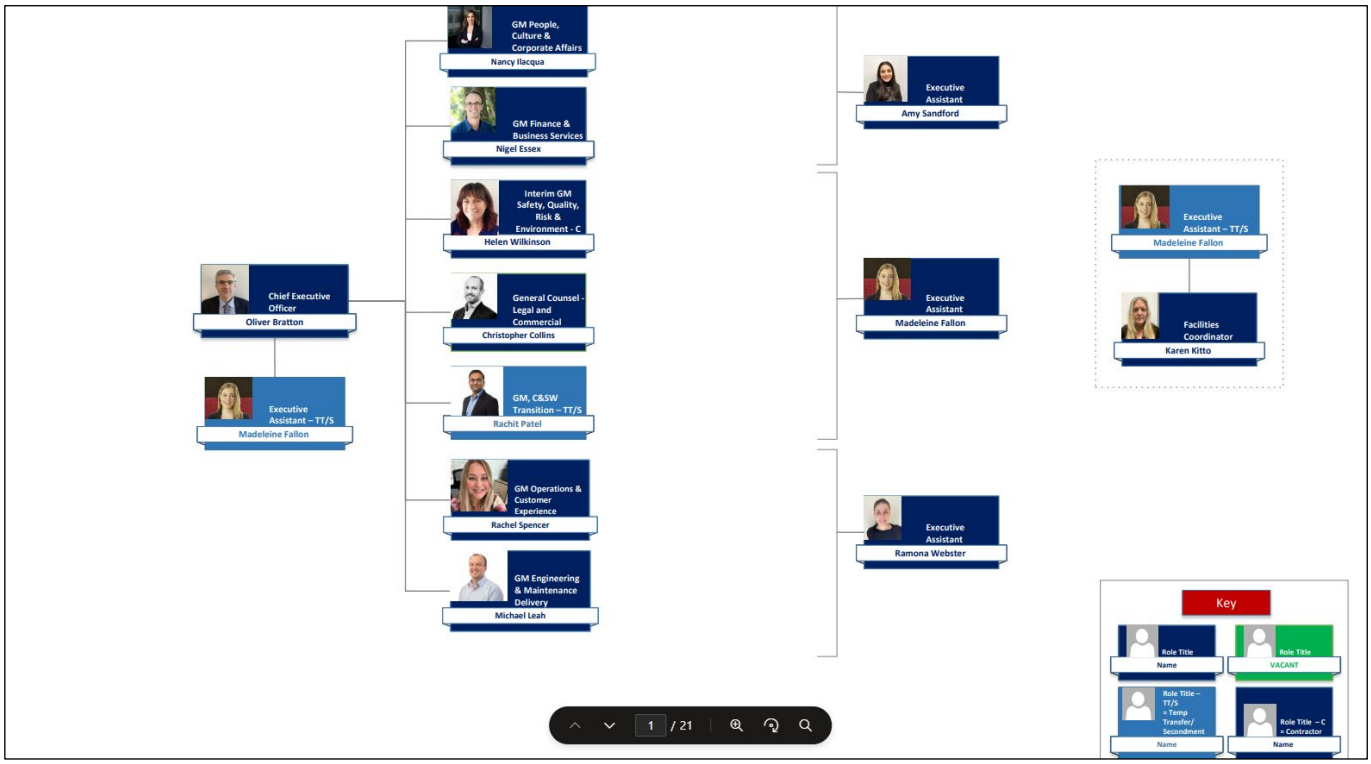
4	**Review** SME involvement, review of complaint, investigate work practices and mitigations. Develop response including proposed monitoring and any proposed additional mitigation measures.	Within five business days.
5	**Resolve** MTS CRO communicates the resolution with complainant.	Target five business days. Where a complaint requires a detailed investigation, may require significant mitigation* and may take longer than 20 days, the complainant will be kept informed of progress on a regular basis until the matter is resolved.
* Significant mitigation is defined by MTS to be mitigation that: a. has a cost of more than $10,000; or b. will require further noise modelling to determine the scope of reasonable and feasible mitigation measures (e.g., height and size of noise barriers, or specifications for at-property treatments).		

5. Roles and responsibilities

5.1. Roles and responsibilities

Environmental and Sustainability Performance is the responsibility of all members of the MTS team. The figure below shows the organisational structure of the key environmental and sustainability management roles and responsibilities.

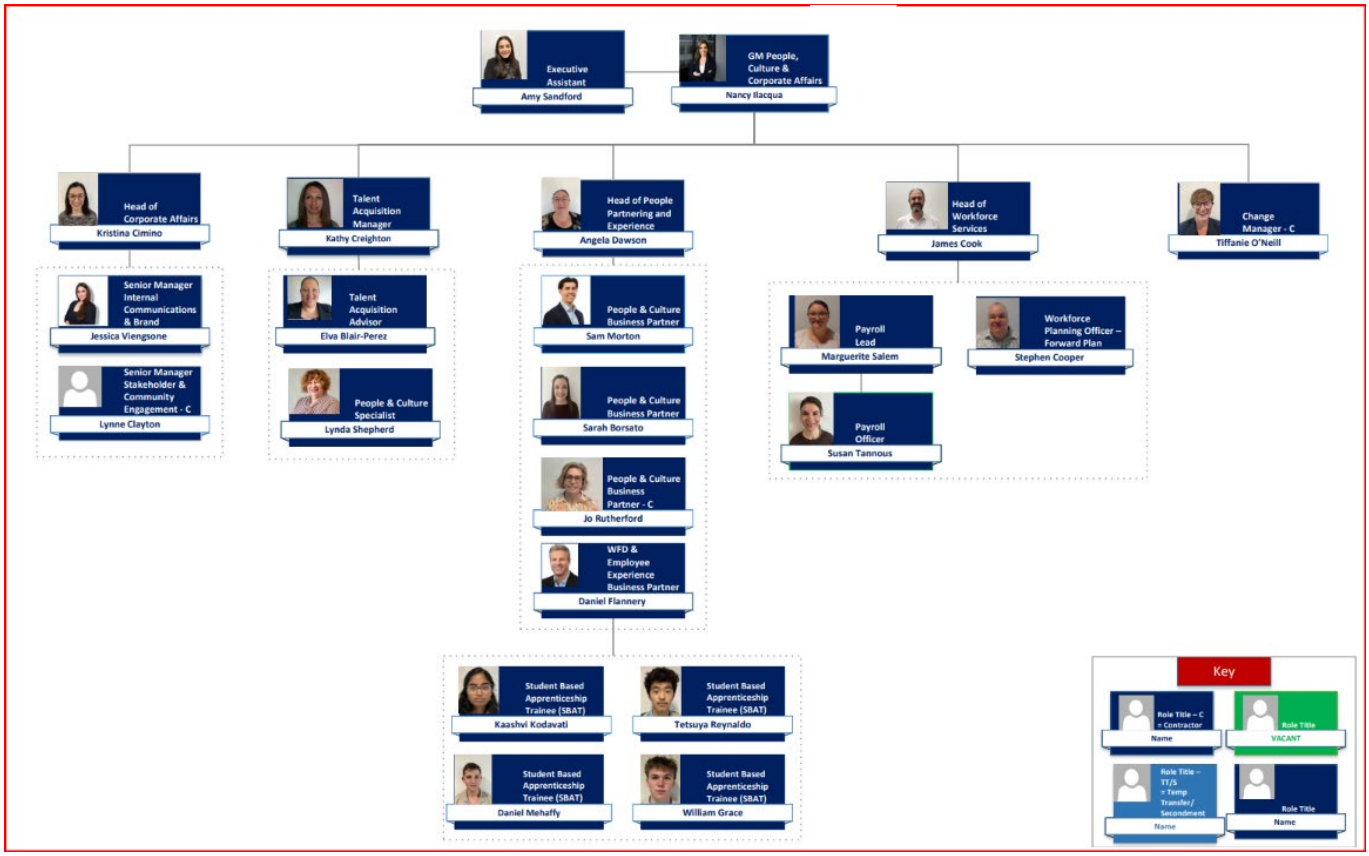
Figure 4 MTS Organisational Chart – Executive Team



The below figures display the hierarchies which contain key personnel directly responsible for all environment & sustainability management functions.

Figure 5 MTS Organisational Chart – Safety, Quality, Risk, Environment and People

Figure 6 MTS Organisational Chart - People and Culture



The Head of Safety, Quality, Risk & Environment has the final authority in matters relating to the IMS. The Environment & Sustainability Lead has the responsibility for the IMS documentation content in compliance with the requirements of AS/NZS ISO 14001.

The table below outlines the responsibilities of key members of staff to ensure that the environmental and sustainability obligations of the Project are met, and that all members of staff and workforce are aware to their obligations and the project-wide targets for the M1 Line.

Table 12 MTS Roles and Responsibilities

Role	Responsibilities
Chief Executive Officer (CEO)	The responsibilities of this role include, but are not limited to: • Provision of O&M input and approves the design of the railway system, and facilities in the mobilisation period. • Ensure the readiness of all systems and facilities for the operation of the M1 Line • Development, implementation and continual review of all the management system and related documents, necessary to provide a safe, reliable and efficient operation of the M1 Line, including the IMS. • Responsible for the management of environmental and sustainability issues through compliance with the Environmental and Sustainability Policy and implementation of relevant requirements of MTS environmental management systems. • To make decisions on the day-to-day business of MTS and O&M requirements for the M1 Line. Minimum skill level: • University degree holder in Business Management, Engineering or equivalent. • Appropriate level of experience in operating a railway with solid experience in managing multi-discipline organisations and a driverless railway system
Manager People, Culture & Corporate Affairs	The environmental responsibilities include, but are not limited to: • Establish and maintain operational training processes and procedures. • Responsible for ensuring sustainability targets regarding workforce diversity are met (section 6). Minimum skill level: • Minimum bachelor's degree or qualification deemed to be equivalent in HR or, equivalent professional experience.
Learning & Development Manager	The environmental responsibilities include, but are not limited to: • Establish and maintain operational training processes and procedures. • Review and validate training course materials. • Manage the planning and delivery of efficient training, competence assurance and administrative functions. • Maintaining and monitoring competency records. • Work with Environment & Sustainability Advisor to develop training packages addressing environmental risks. • Work with Environment & Sustainability Lead to develop training packages addressing sustainability initiatives. • Develop and implement the training delivery schedule for the O&M Phase, including environmental and sustainability aspects. • Operate reasonably independently, in accordance with MTS's policies; quality, safety and environmental management systems; processes and relevant legislation. • Responsible for ensuring sustainability targets regarding workforce legacy are met. • Implement sustainability initiatives for workforce training and diversity. Minimum skill level: • Minimum bachelor's degree or qualification deemed to be equivalent in professional education and training or a HR-related field, or equivalent professional experience.

Role	Responsibilities
	• Certificate IV Training and Assessment.
Head of Safety, Quality, Risk & Environment	The environmental responsibilities include, but are not limited to: • Be an emergency contact and available to be contacted by EPA, DPHI and The Sydney Metro Authority Representatives. • Endorse and support the MTS Environment and Sustainability Policy and this OEMP. • Provide environmental leadership and ensure adequate resources are provided to effectively implement this OEMP. • Provide sustainability leadership ensuring adequate resourcing to ensure targets are met and sustainability ratings are achieved and maintained. • Provide environmental oversight, direction and leadership regarding the environmental and sustainability management of the Project. • Provide sustainability oversight project-wide to ensure initiatives permeate all disciplines (e.g. procurement, training and workforce). • Establishing the IMS in accordance with all legislative and other requirements, including the OEMP. • Assist in establishing ISC rating for the operational network. • To support the CEO-MTS on MTS operations and the management of stakeholders including, The Sydney Metro Authority, EPA and other State and Federal government bodies and other government agencies. • Undertake regular formal reviews of the MTS IMS and update the IMS accordingly. • Review the Project's management systems and key management plans to ensure and maintain compliance with the requirements of the MTS IMS, CoA and EPL. • Ensure environmental incidents are managed and reported (to DPHI, EPA and Parent Companies) in accordance with the planning approval and EPL requirements. • Ensure sustainability initiatives are implemented and targets met. • Foster and maintain a positive environment and sustainability culture. Minimum skill level: • Preferably University degree or tertiary education or equivalent. • Appropriate level of experience in railway operations with solid experience in railway safety.
Environment & Sustainability Lead	The environmental responsibilities include, but are not limited to: • Obtain all required approvals to facilitate O&M of the M1 Line, including but not limited to the EPL. • The revision and updates of the OEMP as required. • Manage the ISC rating for the O&M Phase of the Project. • Develop the O&M Phase IMS for the Project. • Implement the sustainability initiatives required to obtain sustainability ratings (e.g. ISC and Green Star). • Monitor implementation of sustainability initiatives and undertake actions of continual improvement where necessary. • Monitor carbon, energy and potable water use to ensure compliance with sustainability targets. • Undertake environmental risk assessment and revisit this through the life of the project through continual review and improvement processes within the IMS. • Key point of contact for environmental and planning approvals and sustainability stakeholders, including but not limited to DPHI, EPA; ISC. • Be an emergency contact and available to be contacted by EPA, DPHI and The Sydney Metro Authority Representatives. • Notify MTS, OpCo2 and agencies as required in response to environmental incidents and potential incidents. • Act as the main point of contact for the Sydney Metro Authority environmental and sustainability teams and approval authorities.

Role	Responsibilities
	• Identify and maintain a register of relevant legal, MTS IMS requirements, contractual and other requirements. • Obtain all necessary approvals prior to commencing relevant works. • Ensure the project induction includes appropriate training regarding the requirements of this OEMP, the EPL and any other key obligations. • Ensure identified risks are analysed and evaluated according to agreed criteria. Regularly review identified risks and controls and maintain a risk register. • Ensure regular inspections, observations, monitoring and audits are conducted to check the effectiveness of controls and that compliance is maintained. • Identify, assess and leverage opportunities to achieve sustainability outcomes. • Review subcontractors' performance and compliance with MTS environmental and sustainability requirements. • Enter and close out all environmental incidents in the O&M Phase Reporting System. • Identify and implement corrective and preventative actions after incidents and share lessons learned within the MTS team or other projects, as applicable. • Provide input to the monthly, quarterly and annual project progress report (as required). Minimum skill level: • Tertiary qualifications in Environmental Science, Environmental Engineering or related discipline. • Appropriate level of industry experience in environmental management , regulation and / or operational management.
GM Safety, Quality, Risk & Environment	The environmental responsibilities include, but are not limited to: • O&M related investigations, compliance inspections, and data and trend analysis to mitigate safety and environmental risks. • Maintain MTS compliance with relevant environmental standards, and legal and regulatory requirements. • Support the Head of Safety, Quality, Risk & Environment • with the delivery of key O&M milestones in alignment with MTS legal and regulatory requirements, business objectives and key performance indicators. • Ensure preventative and corrective actions requested are completed within appropriate timeframes through efficient monitoring. • Manage continuous improvement of the risk management process. • Develop, maintain and continually improve the MTS IMS. • Expected to operate reasonably independently, in accordance with MTS's policies; quality, safety and environmental management systems; processes and relevant legislation. Minimum skill level: • Tertiary qualifications in Business Management, Engineering, Science or relevant discipline.
GM Engineering & Maintenance Delivery	The responsibilities of this role include, but are not limited to: • Responsible for establishing and executing O&M asset management strategy and asset management plan in adherence to the OEMP. Minimum skill level: • University degree or tertiary qualification in Electrical/Electronic and/or Mechanical/ Mechatronics Engineering or equivalent appropriate for admission to the Institute of Engineers Australia.
Head of Response & Engineering Monitoring	The responsibilities of this role include, but are not limited to: • Develop and maintain, in conjunction with Maintenance Centre Manager, Infrastructure Engineer, Infrastructure Delivery and Rolling Stock & Signalling Manager(s), the Asset Replacement Programme and the Asset Obsolescence Plan to drive maximisation of safety, reliability and availability of the asset in accordance with sustainability targets.

Role	Responsibilities
	• Explore the use of new technologies to improve the effectiveness of asset maintenance technique, upgrade existing assets, to reduce asset maintenance costs, enhance customer experience and improve sustainability outcomes. • Expected to operate reasonably independently in accordance with MTS's policies. SQRE management system, processes, and relevant legislations. Minimum skill level: • University degree or tertiary qualification in Civil and/or Electrical and/or Mechanical Engineering appropriate for admission to the Institute of Engineers Australia. • Post-Graduate qualifications in maintenance or management studies are desirable.
Head of Asset Management	The environmental responsibilities include, but are not limited to: • Develop and implement efficient planning for the Depot and Rolling Stock asset maintenance activities. • Manage consumables, spares, materials, and tools inventory control as well as budget. and resources controls for rolling stock to meet MTS's sustainability objectives. • Manage compliance of depot assets and equipment condition with MTS asset performance standards, including sustainability requirements. • Expected to operate reasonably independently in accordance with MTS's policies, Integrated Management System, processes, Safety Management System and relevant legislation. Minimum skill level: • Preferably University degree or tertiary education in Electrical/Electronic and/or Mechanical/ Mechatronics Engineering or equivalent; and • Post-Graduate qualifications in maintenance or management studies are desirable.
Head of Infrastructure Engineering	The responsibilities of this role include, but are not limited to: • Develop and maintain, in conjunction with Maintenance Centre Manager, Infrastructure Delivery and Rolling Stock & Signalling Manager(s), the infrastructure engineering Programme and to drive maximisation of safety, reliability and availability of the network in accordance with sustainability targets. • Explore the use of new technologies to improve the effectiveness of infrastructure engineering to reduce costs, enhance customer experience and improve sustainability outcomes. • Expected to operate reasonably independently in accordance with MTS's policies. SQRE management system, processes, and relevant legislations. Minimum skill level: • University degree or tertiary qualification in Civil and/or Electrical and/or Mechanical Engineering appropriate for admission to the Institute of Engineers Australia. • Post-Graduate qualifications in maintenance or management studies are desirable.
Head of Infrastructure Delivery	The environmental responsibilities include, but are not limited to: • Expected to operate reasonably independently in accordance with MTS's policies. SQRE management system, processes, and relevant legislations. • Manage consumables, spares, materials, and tools inventory control as well as budget and resources control for all infrastructure assets to meet MTS's business objectives and operational KPI's, including sustainability obligations. Minimum skill level: • University degree or tertiary qualification in related area.
Head of Corporate Affairs **and** **Manager Stakeholder**	The environmental responsibilities include, but are not limited to: • Providing the delivery of internal and external communication (media, government and stakeholder relations). • Corporate social responsibility; and • Customer and community events. Minimum skill level:

Role	Responsibilities
and Community Engagement	• Tertiary qualifications in communications, marketing, media relations, journalism or related business discipline.

5.2. Training and competency

The Training Management Plan (SMCSWTS2-MTS-CSW-PM-PLN-002136) sets out the framework and processes for delivering nationally recognised accredited training, ensuring workforce competence, and maintaining compliance through structured development and monitoring mechanisms. The Workforce Training & Industry Participation Plan (SMCSWTS2-MTS-CSW-PM-PLN-002173) outlines strategies and actions to build a skilled, diverse workforce and foster industry engagement through accredited training, partnerships, and inclusive participation initiatives.

To ensure that this OEMP is effectively implemented, each level of management is responsible for ensuring that all personnel reporting to them are aware of their obligations under this Plan. The Environment & Sustainability Lead will assist in the development of environmental training in conjunction with other training and development activities in the wider Training Management Plan. A training schedule will be developed by the Learning & Development Manager, with input from other disciplines, including Environment and Sustainability, and will be updated/amended throughout the life of the Project as training needs are identified.

5.3. Project awareness information

All personnel, subcontractors and visitors will undergo an induction before commencing work on the network. Included in this induction will be a section on environmental and sustainability obligations. This is done to ensure all personnel involved in the operation and maintenance of the network are aware of the requirements of the OEMP and to ensure the universal understanding of relevant environmental risks & controls and management requirements.

Where a formal induction is required, it is to address project-specific environmental and sustainability issues, including, but not limited to:

- MTS Environment and Sustainability Policy.
- Environmental Protection License (NSW EPA)
- Purpose and objectives of the OEMP.
- How the OEMP is implemented.
- Requirements of due diligence and duty of care.
- The conditions of environmental licences, permits and approvals.
- High-risk environmental activities on the Project and their controls.
- What to do when working in or near environmentally sensitive areas.
- Sustainability objectives and requirements.
- What to do in the event of an environmental incident or emergency.

Reporting and notification requirements for pollution and other environmental incidents, including the existence of the Pollution Incident Response Management Plan (PIRMP) and staff responsibilities regarding the PIRMP.

5.3.1. Training and awareness

Toolbox talks would be one method of raising awareness and educating personnel on issues related to all aspects of maintenance and repair activities in an operational rail environment, including environmental issues. The toolbox talks are used to ensure environmental awareness continues throughout the operational life of the network.

Training talks will be tailored to specific environmental issues relevant to upcoming works and will address environmental management measures and obligations for relevant personnel. Relevant environmental issues may include, but are not limited to:

- Noise minimisation measures.
- Emergency and spill response.
- Green Travel Plan and active transport initiatives.
- Water and pollution control (e.g. discharge management).
- Weed management (e.g. at surface sites and landscaped areas).
- Dust control (e.g. in ballasted areas).
- Unexpected Finds Procedures, for unknown heritage
- . Unexpected Contaminated Finds Procedure (SMCSWTS2-MTS-CSW-EM-PRO-005556) for contamination
- Sustainability measures, including supply chain initiatives, water and energy conservation.

Targeted environmental awareness training would be provided to individuals or groups of workers with a specific authority or responsibility for environmental management, or those undertaking an activity with a high risk of environmental impact.

To promote environmental awareness across MTS, environmental alerts or HSE communications would be issued as required. EAMs would be made available or displayed, as appropriate, to promote awareness of environmental constraints affecting maintenance, repair and possession works.

5.3.2. Safety, health and environment alerts

Safety, Health and Environment (SH&E) Alerts are prepared as required for distribution within the MTS network, where appropriate. SH&E Alerts will be raised at the discretion of the Environment & Sustainability Lead.

The SH&E Alerts include updates specifically related to environmental and sustainability matters, including but not limited to, such things as:

- Sydney Metro environmental incident updates.
- Changes to licencing conditions.
- Changes to statutory requirements.
- Lessons learnt from incidents on other projects/ networks, updates from parent companies or wider industry.

6. Sustainability

6.1. Introduction

MTS is committed to achieving the operation phase objectives outlined in the MTS Environment and Sustainability Policy and Sydney Metro's Sustainability Strategy.

Key initiatives to achieve the objectives include:

- Integrated environment and sustainability management through operation and maintenance activities.
- On-site renewable energy generation.
- Water resource (potable / non-potable) efficiency.
- Community benefit.
- Waste and materials efficiency.
- Sustainable procurement and supply chain management.

This section of the OEMP addresses environmental and social responsibilities as provided in the Sydney Metro Sustainability Strategy, and other requirements of the Deed, in particular:

- Appendix 23a – Sydney Metro Trains Facility:
- Appendix 50a – Sustainability;
- Appendix 53b – Reporting Requirements; and
- Appendix 54 – Project Plan Requirements.

6.2. Sustainability policy

The Environment and Sustainability Policy has been developed to ensure MTS' operational activities, are integrated into all aspects of the operational life of the network.

The Environment and Sustainability Policy is provided in Appendix D of this OEMP.

The Policy provides a statement of commitment to promote key sustainability themes of:

- Reducing carbon emissions;
- Resource management (including water, waste and recycling);
- Procurement;
- Environmental management;
- Climate Change Adaptation.
- The commitments within this Policy are integrated in the MTS approach to environmental management & sustainability and underpin MTS's Integrated Management System.

6.3. Sustainability governance

During operation of the network responsibility for sustainability performance will sit with the Environment & Sustainability Lead, who provides guidance and input into O&M activities to the wider team. The MTS CEO and GM Safety, Quality, Risk & Environment promote integration of sustainability aspects across all other functional areas. Sustainability responsibilities by role are further documented in Section 5 of this Plan.

The Environment & Sustainability Lead will facilitate the implementation of the sustainability governance through:

- Development and review of the OEMP and OPESP;
- Consultation and management to attain an ISC Operations Rating;
- Incorporation of sustainability aspects into O&M activities through such things as contract specifications, procurement and training;
- Monitoring performance, address issues, refine systems and drive continual improvement; and
- Provide training and awareness to internal staff / subcontractors.

6.3.1. Assurance

MTS's Environment & Sustainability Lead works with members of the Environment & Sustainability Working Group (ESWG) (comprised of specialists from Sydney Metro Authority/Transport for NSW, MTR, OpCo2 and MTS) and have developed an assurance framework, referred to as a Sustainability Requirements Compliance Matrix and Sustainability Requirements Compliance Action Plan.

The Sustainability Requirements Compliance Matrix addresses the outstanding SPR requirements, and the Sustainability Requirements Compliance Action Plan identifies key tasks that are considered as being able to be achieved within a calendar year.

Each year the Sustainability Requirements Compliance Action Plan will be revised to address the next series of targeted projects to ensure that they are achieved in a timely manner.

Processes and procedures will be incorporated in the existing procedures of Section 8 Inspection, Auditing and Reporting Framework, as required.

MTS will also work with SM to develop, implement, and maintain a sustainability assurance framework to identify and track compliance with sustainability targets as per SPR 50A 2.1(I).

6.4. Sustainability objectives and targets

MTS has identified Sustainability Objectives and has assigned the targets contained in Appendix 50a of the SPR that are allocated to the O&M Phase to address MTS's Corporate Environment & Sustainability Policy principles. The intent is to ensure that the principles outlined in the policy are embedded in the day-to-day activities of the Project. The table below identifies each of the proposed MTS Targets against the relevant SPR KPI's.

Table 13 Sustainability Objectives and Targets

Sustainability Objectives	MTS Target
Energy Minimise operational energy consumption and carbon emissions.	• OpCo2 will use 100% of the renewable energy which is generated from the permanent solar panels and other renewable energy sources which are installed as part of the Foundation Infrastructure Works. • A minimum of 5.1% of low voltage energy demand for NW station buildings will be sourced from low carbon or renewable sources located at stations and precincts and/or the SMTF-N. • A minimum of 10% of low voltage energy demand for the SMTF-N will be sourced from on-site low carbon or renewable sources. • 10.2% of low voltage energy demand for precincts will be sourced from low carbon or renewable sources located at stations, precincts and/ or the SMTF-N (on applies to the NW section of the M1 line).
Waste Minimise materials use and minimise waste generation.	80% of operational waste (stations) and 60% of office (administration centres) waste to be recycled or beneficially reused.
Water Minimise potable water consumption.	**City-Southwest** OpCo2 must not exceed a total operational water demand of 49608.5 kL/yr as submitted in the Project Plans. The target percentage from potable sources and non-potable sources will be outlined within a year of operation once a target has been set. Station water demand targets are shown below: Barangaroo Station – 1117.5 kL/yr (100% potable) Crows Nest Station – 4358 kL/yr (53.3% potable) Central Metro Station – N/A Martin Place Station – 7970.7 kL/yr (100% potable) Gadigal Station – 14,258 kL/yr* (100% potable) Sydenham Metro Station – 270 kL/yr (100% potable) Victoria Cross Station – 15,447.3 kL/yr (97.4% potable) Waterloo Station – 6187 kL/yr (100% potable) Gadigal Station Metro Sustainability Design Report (SMCSWSPS-CUN-STA-SU-REP-000001) states the established target is not deemed achievable due to the major water demand caused by heat rejection system, limiting opportunities to reduce water demand. **Northwest** • Total operational water demand of 16,023kL/yr., consisting of 21% potable (3,424kL/yr) and 79% non-potable (12,599kL/yr) water.

Sustainability Objectives	MTS Target
	• Source 100% of non-potable water from non-potable sources during the Operations Phase for sites with recycled water mains access and 60% for all other sites. Reuse 80-85% of train wash water at the SMTF-N. Refer NRT 0356 RTRF Train Wash Design Package (NWRLOTS-NRT-RTF-DM-DPK-000356).
Procurement Encourage engagement of SMEs in the supply chain for operation.	Engage 10 Australian and New Zealand Small and Medium Enterprises (ANZSME) in the Operations Phase Supply Chain. Engage three Recognised Aboriginal Businesses in the Operations Phase Supply Chain. Participate in Sydney Metro Aboriginal business forums.
Employment Prioritised local employment. Build workforce diversity.	Jobs: 240 new Sustainable Jobs (equivalent full-time employees). 80% of the total project Workforce to consist of new Sustainable Job. 40% of the new Sustainable Jobs Workforce to be from Greater Western Sydney. Operations Phase Workforce: 51 personnel from Greater Western Sydney (equivalent full-time employees); and 20% of the total Operations Phase Workforce from Greater Western Sydney (% of total Workforce). Workforce Diversity: 60 Workforce Diversity positions (number of equivalent full-time employees). 24 (40%) Workforce Diversity positions for Greater Western Sydney (number of equivalent full-time employees); and 20% total Operations Phase workforce Diversity positions. Operations Phase Workforce Disadvantaged Group: 9 Operations Phase Workforce Disadvantaged positions (number of equivalent full-time employees). 5 (50%) Operations Phase Workforce Disadvantaged positions from Greater Western Sydney (number of equivalent full-time employees). 3% total Operations Phase workforce disadvantaged positions.
Workforce Development Workforce skills an employment legacy for **North West Sydney.** **Prioritisation of procurement from local businesses**	20% of the Operations Phase Workforce completed relevant Workforce Skills Development training, of which: • 10% of the Operations Phase Workforce must participate in nationally accredited training. This training is in addition to training otherwise required by legislation, associated regulations, standards and accreditations or in the various approvals, licenses, and permits that may be necessary for the OpCo2's Operations Activities. • 10% of the Operations Phase Workforce must participate in organisational skills development training, subject to item.
Climate Change Resilience Manage climate change adaptation factors to manage changes around the network.	Review the climate change projections as they become available. Review climate change projections every second year (if not required at more frequent intervals, and update climate change risk assessment as required).

Sustainability Objectives	MTS Target
Community Benefit Deliver passenger comfort and customer focused service. Enhance community benefits through transport amenity and reliability, healthy living, and community safety.	Ensure damage to public amenities associated with the network, within LMAs is rectified within timeframes required by the Deed. Undertake annual reviews of active transport connections and supporting facilities (e.g. bike storage) to determine usage and performance of initiatives promoting use.
Environmental Management Minimise pollution and environmental harm. Minimise impacts of surrounding communities.	Zero major pollution events. Zero community complaints relating to maintenance and repair works. Provide notification to impacted receivers a minimum of 7 days prior to commencement of maintenance works.

6.5. Sustainability initiative implementation processes and methodologies

MTS has developed an integrated approach to implementation of sustainability across the operation of the network. To ensure the sustainability targets identified in Appendix 50A SPR by Sydney Metro are met. MTS will investigate initiatives for operating and maintaining the network.

MTS have developed procedures to be used for the operation and maintenance of the network. These procedures are owned by the relevant discipline manager, thereby ensuring interdisciplinary “buy-in” across MTS to ensure our environmental and sustainability obligations are met.

As the network matures and grows, sustainability data will be gathered from our operations and interaction with our customers. Opportunities for improvement will be explored in areas such as energy generation and consumption, water management, waste, recycling, and asset management.

An Environment & Sustainability Working Group (ESWG) with members from MTS, Sydney Metro Authority, OpCo2 and MTR currently meets each month. The ESWG is chaired by MTS and ensures MTS collaborates with our key stakeholders to ensure sustainability issues or ideas can be discussed reviewed and where appropriate implemented. This group is whole of line scope.

MTS also participates and engages with the Sydney Metro City and related working groups as any concerns or issues arise can be easily communicated to stakeholder parties, including the Southwest working group that meets every fortnight.

The table below identifies the initiatives which are in line with the Exhibit 1 Scope and Performance Requirements Appendix 50A. The table also outlines what procedures govern the implementation of the initiatives (associated with the sustainability targets) and identifies the discipline responsible for the ownership and implementation of each.

Table 14 Sustainability Initiatives and Implementation Methodologies

MTS Target	Initiative to be Implemented	Responsible Discipline
Energy		
OpCo2 will use 100% of the renewable energy which is generated from the permanent solar panels and other renewable energy sources which are installed as part of the Foundation Infrastructure Works. [SM-CSW-TSOM-SPR-A50A-305]	A solar panel installation has been constructed on the roof of the Maintenance Building of the SMTF North, SMTF South and Sydenham Station. Solar panel installations are in place for all SW stations. MTS will monitor the energy generated at the solar panel locations and compare to the total energy consumed by the operation of the Project to ensure that this target is met. Data will be captured and analysed by the Environment & Sustainability Lead and reported quarterly. The Environment & Sustainability Lead will identify changes in consumption patterns and discuss options for management (including potential augmentation) with Sydney Metro Authority as required. The MTS Carbon and Energy Management Plan at Section 9 outlines the management of energy consumption, including auditing and review.	Environment & Sustainability Lead
Waste		
80% of operational waste and 60% of office waste to be recycled or beneficially reused.	<u>Waste Management</u> Waste management will be undertaken through implementation of the OEMP and supporting Waste Procedure. Where performance does not meet waste targets, MTS will review all waste procedures. Station staff and contractors are to receive waste separation training as part of the compulsory induction process. Comingled recycling bins are to be provided adjacent to all general waste bins within all areas accessible by customers, and back of house. Separate bins will be provided for office waste including, putrescible, co-mingled recyclables, food (compostable) waste, as well as printer cartridges, batteries, electronic waste, etc. The condition of all bins is to be monitored using the Bin Register located at each station, with bins inspected on a weekly basis by MTS COL's Any bin maintenance issues are to be documented and rectified within 21 days. Ensure waste signage (on general waste and comingled recycling bins) and public education messaging (to better inform the public regarding what can be recycled) align with current best practice and are clearly legible (i.e. damaged, missing sections, defaced, etc.). The existing station cleaning contract to be updated to include on site sorting of cross contamination between general waste and comingled recycling. Conduct annual reviews of operational waste diversion rates and report results to Sydney Metro. <u>Waste Collection</u>	Environment & Sustainability Lead Station staff and waste contractors . Environment & Sustainability Lead Sydney Metro Environment & Sustainability Lead Waste contractors

MTS Target	Initiative to be Implemented	Responsible Discipline
	Cleaning staff are to sort bin contents while emptying station and back of house bins to prevent waste stream cross contamination and increase diversion rate. . Bin rooms must have separate comingled and general waste bins, to be collected by a waste contractor on a daily basis. Specialist waste streams are stored in receptacles / dedicated areas (as applicable) and collection is organised by staff as needed.	
Water		
OpCo2 must not exceed a total operational water demand of 49608.5 kL/yr for the City section of the M1 line, as submitted in the Project Plans. The target percentage from potable sources and non-potable sources will be outlined within a year of operation once a target has been set.	Total water consumption will be tracked through: Sydney water metering (potable and recycled water sources). Bills from the procurement teams. Water tracking will identify potable and non-potable use and demand. The Environment & Sustainability Lead will work with the Procurement team to manage monitoring of water consumption.	Environment & Sustainability Lead Procurement Team

6.6. Sustainable procurement

The Safety Management System (SMS) Element 17: Procurement and Contract Management document provides the overview and approach to procurement within MTS.

The MTS Environment and Sustainability and Procurement Teams have worked collaboratively to ensure that sustainable procurement requirements and initiatives are built into the MTS Procurement Policy (SMCSWTS2-MTS-1NL-PR-PLN-005495), Sourcing Procedures, Tenders and associated tools.

As discussed above, MTS has taken the approach that in order to get the best outcome for sustainability for the asset, sustainability initiatives need to be owned by the various disciplines, not just the Environment and Sustainability Team. As such, sustainable procurement provisions have been built into the Procurement Policy and supporting processes and procedures, to ensure that sustainability is embedded in the business-as-usual activities of MTS Procurement Team.

The Project Procurement Policy includes a commitment to ensure:

"All contractors and suppliers compliant with the MTS Sustainable Procurement Targets provided in the Operational Environmental Management Plan."

Documents include requirements to:

- Consider the Environmental and Sustainability Targets in this OEMP in the procurement process.
- Utilise the Sustainability Targets as a tool in assessing contracts, including in the supplier risk assessment and scoring matrix.
- Include environmental and sustainability obligations in supplier contracts.
- Include an environmental and sustainability performance assessment for suppliers.
- A line item for environmental and sustainability in the contractor evaluation.
- Procurement processes consider the type of materials proposed to be procured, ensuring:

- Replacement products are like-for-like with those originally installed/constructed to support the M1 environmental and sustainability objectives (e.g. noise control equipment incorporated as part of design is not replaced with product which don't provide similar noise attenuation, water efficient fixtures / fittings are replaced for product of equivalent performance, etc).
- Procurement of materials and products with low life cycle environmental and social impacts.
- Investigate alternative products to ensure targets can be met.
- The Procurement processes and procedures include a rating system for contractors and supply chain providers employed by MTS, which includes environmental, social and sustainability criteria. The targets outlined in Table 13 Sustainability Objectives and Targets above are included in the contactor selection criteria.
- Further details of how these targets will be met and methodologies / initiatives to be implemented by all related stakeholders are contained in the following documents:
- Procurement Policy (SMCSWTS2-MTS-1NL-PR-PLN-005495).
- SMS Element 17: Procurement and Contract Management (SMCSWTS2-MTS-1NL-SA-REC-005478).
- All Procurement documentation will be stored and maintained in the Management System where they will be subject to the MTS review and continual improvement processes (Section 9 of this OEMP).
- Environmental and social criteria that have been built into the procurement selection criteria for contractors includes the following. Also refer to Contractor Form - Safety and Environment (SMCSWTS2-MTS-1NL-EM-REP-005576).
- All contractors and suppliers must be compliant with the MTS Sustainable Procurement Targets provided in the Operations Phase Environment and Sustainability Plan (OPESP) and Operational Environmental Management Plan (OEMP).
- All stakeholders are aware of their environmental legislative obligations, and sustainability commitments through the Procurement Strategy.
- Procurement Selection Process will consider the targets related to the following environmental and sustainability criteria when weighing up preferred contractors:
    - Indigenous representation in the workforce.
    - Ongoing training provided to staff / workforce.
    - Percentage of the workforce residing in Western Sydney.
    - Number of diversity and disadvantaged positions employed.
    - Number of apprentices and trainees employed.
    - Past Environmental performance (e.g. number of PINS / incidents / community complaints).

The Procurement sustainability targets/commitments utilised in all tender processes are listed below:

- Requirement to have Certified Systems such as ISO 14001:2015 certification. This is treated as strong evidence of an established Environmental Management System.
- If certified systems are not in place, tenderers must still demonstrate a suitable Environmental Management System (procedures, controls, training, and past performance) sufficient to meet MTS OPESP obligations, and this is evaluated as part of capability and risk.
- Requirement to submit a monthly Environmental Report with all environmental impacts and aspects included.
- Environmental incidents and observations are to be recorded and reported in a timely manner to MTS.
- Statement of requirements list the compliance requirements. This includes compliance with the relevant environmental legislation, Modern Slavery Act 2018, relevant SPR requirements and MTS Environmental Management Plans as specified in the contract clauses.
- Strict adherence to MTS's Environment Protection License as issued by the NSW EPA (Lic No.21247)

6.7. Sustainability rating tools

MTS must obtain various ratings under a suite of sustainability rating tools throughout the operational life of the M1 Line. These ratings include:

- ISC Operations Rating (not ongoing once achieved).
- National Australian Built Environment Rating System (NABERS, annual).

MTS will ensure that the ratings obtained are maintained through the operation and maintenance of the project by implementing initiatives such as:

- Selecting materials and replacement products that have the same or better embodied carbon. Ensure they
  - do not increase the energy consumption of the built asset and buildings;
  - do not increase the demand for potable water.
- Ensuring all systems and processes in the O&M Phase meet the requirements of the originally built asset as identified in Appendix 50A of the SPR (SM-CSW-TSOM-SPR-A50A-4).
- In addition to ensuring that the already established ratings are maintained MTS is in the research phase to obtain an Operations Rating from Infrastructure Sustainability Council (ISC) for the combined network, comprising of the Northwest and City Southwest sections of the network, as discussed in Section 6.7.1.

6.7.1. Operational ISC rating

The ISC Rating Scheme is a comprehensive rating system for evaluating sustainability across the planning, design, construction and operational phases of infrastructure programs, projects, networks and assets. ISC evaluates the sustainability performance of the quadruple bottom line (Governance, Economic, Environmental and Social) of infrastructure development/projects.

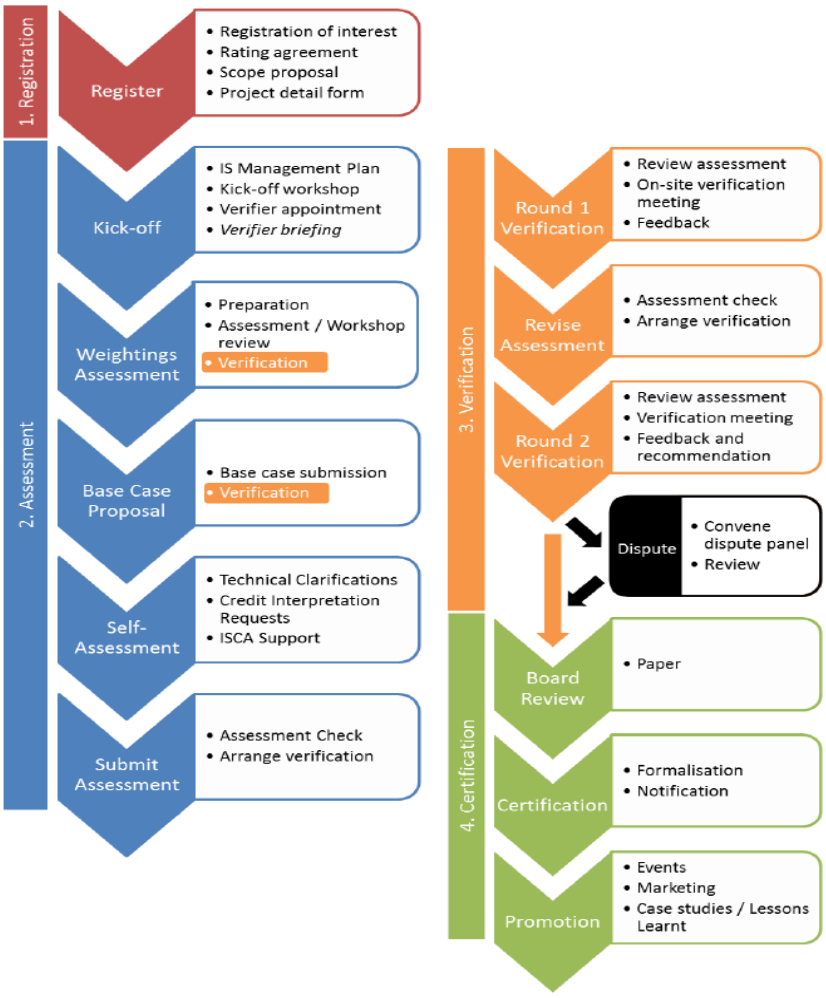
The Infrastructure Sustainability Council and Sydney Metro have been consulted with regarding the process of obtaining an ISC rating for the whole of the M1, as opposed to obtaining a separate rating for the NW/ City and a separate rating for the SW, ISC have agreed to and this, and information has been conveyed to Sydney Metro.

The Environment & Sustainability Lead is responsible for establishing and documenting the combined operation rating approach (Metro Northwest Line and City & Metro Southwest Line) as well as coordinating with ISC to ensure the approach is accepted.

In the interim, the figure below outlines the overarching steps to be followed to achieve an IS Operations rating.

There are four main stages in the IS rating process, and these are outlined in the figure below.

Figure 5 ISC Rating Process Overview



The five yearly IS review and validation of the Operation Rating will be managed by the Environment & Sustainability Advisor, who with coordinate with ISC representatives to ensure that the review is undertaken, and rating validated, in accordance with the current IS processes and procedures.

6.7.2. NABERS

SPR App 23a Clause 2.14 (b and c) requires the NABERS ratings to be maintained for the SMTF accommodation building and administration building respectively. NABERS is a performance-based rating system that measures a building's environmental performance during operation, primarily in the areas of energy efficiency, water usage, waste management, and indoor environment quality.

Below shows the steps MTS will take to obtain and maintain a NABERS rating for both the SMTF-N and SMTF -S Administration Building's.

1. **Data Collection**: Collect 12 months of consecutive energy and water consumption data.
2. **Engage an NABERS-accredited assessor** (https://www.nabers.gov.au/ratings/find-accredited-assessor) – to conduct the assessment(s) and submission(s) to NABERS for certification.
3. **Lodgement and certification** – a NABERS lodgement fee (https://www.nabers.gov.au/sites/default/files/2023-07/nabers_administration_fees_current.pdf) is payable to certify the rating and the certified rating is valid for one year.

4. **Continuous Monitoring**: The Server Payment Monitoring System (SPMS) should be used to continuously monitor energy and water consumption to identify any anomalies and understanding usage patterns to ensure the minimum ratings can be maintained and improved.
5. **Re-certification** – the certified NABERS ratings are to be re-submitted / certified every 12 Months (Steps 1 – 3 above) to ensure the required NABERS ratings are maintained.

6.8. Review and monitoring

6.8.1. Climate change risk

A Climate Change Risk Register (CCRR) has been prepared and transferred to MTS from FIW contractors, including MTR..

It is worth noting in the process of developing the risk register by each FIW contractor MTS is consulted as a key stakeholder. Once the CCRA is finalised by each FIW contractor addressing their respective scope of work, the outcomes of the risk assessment identifying residual risk for the operations phase, is incorporated into a consolidated CCRA prepared by MTR and handed over to MTS.

As part of this process MTS reviews the impacts of climate change (increased temperature, increased frequency of storm/flooding events etc) and evaluates these impacts in the context of our operations and maintenance functions.

Before being finalised MTS provides comments before formal acceptance of the CCRR. Formal acceptance is done through the Control Transfer form, that is forwarded to SMA and the other FIW contractors, upon being endorsed by MTS.

MTS has incorporated the CCRR into MTS's Intelex system and is currently being finalised

Note: *These were the most complete and regionally specific climate change projections available at the time of preparation. MTS has received CCRR's from FIW contractors that have used either NARCLiM 1.5 or NARCLiM 2.0. MTS will use the revised NARCLiM 2.0 as per https://www.climatechange.environment.nsw.gov.au/narclim as part of our ongoing modelling.*

As part of the consultation process, the CCRR is submitted to MTS for its review and approval.

The ongoing approach to the management of climate change related risks, includes a requirement for MTS to review climate change projections and risk assessments every two years and implement measures to mitigate all extreme and high climate change risks and a minimum of 25% of medium climate change risks as per SM-CSW-TSOM-SPR-A50A-54 (SPR 50a,2.2(g))

This information guided the design and construction of the M1, by identifying risks as a consequence of the projected climate data, including such things as future probable maximum flood levels around the asset, enabling adaptation measures to be integrated in the network during design and construction such that M1 will be resilient to the known effects of climate change (at the time) in operation.

It is intended that during operations, MTS will continue to monitor and review the currency of the climate change projections and risk assessment as well as associated documents to ensure M1 Line continues to be resilient to the known effects of climate change. The MTS Environment & Sustainability Lead will be primarily responsible for coordinating and the review of this risk and how it impacts operations and maintenance of the M1 Line.

Any updates and actions undertaken by MTS to improve the resilience of the M1 Line will be communicated to Sydney Metro Authority via the quarterly or annual report as appropriate. All reviews of the climate change risk register will be conducted in accordance with current climate projections and with the guidance and requirements included in the Australian Green Infrastructure Council Guideline for Climate Change Adaptation (AGIC Revision 2.1: October 2011), the Australian Green Infrastructure Council IS Rating Tool Technical Manual – Climate Change Adaptation chapter and the Department of the Environment and Heritage Australian Greenhouse Office Climate Change Impacts and Risk Management (A Guide for Business and Government 2006).

Frequency of trigger for review

- As updated region-specific climate change projections become available, the current applicable projection data sources are:

- NARCliM (NSW / ACT Regional Climate modelling); https://www.climatechange.environment.nsw.gov.au/other-climate-projections-available-nsw
- CSIRO https://www.climatechangeinaustralia.gov.au/en/

- Post significant service disruptions to the M1Line due to a climate event (e.g. service suspension due to flooding of tunnels).

Gap analysis (climate change projection update triggered review)

- As new climate change projections become available, a gap analysis (existing projections versus the new projections) will be created to identify if there are any significant variations in key climate variable(s) e.g. maximum daily temperature.
- If significant variation in climate variable(s) is identified, then all related risks in the climate change risk register should be reviewed to ensure the risk rating (likelihood and impact) and mitigation measures continue to be appropriate.
- MTS Environment & Sustainability Lead to coordinate relevant internal stakeholder (i.e., Assets and Safety, engineering, maintenance, etc) workshop to discuss updates to the risk rating and mitigation measures as required.
- Update risk rating and/or mitigation measures as appropriate to ensure the M1 Line remains resilient to the known effects of climate change.
- All supporting documentations should also be reviewed and updated as appropriate.

Review of existing documents and procedures (climate event driven review)

- Review incident report(s) / review(s) to identify the root cause(s) and impact(s) of the incident.
- If no incident report / review is available, engage with engineering / maintenance teams and undertake desktop analysis and document findings.
- All related risks in the climate change risk register should be reviewed to ensure the risk rating (likelihood and impact) and mitigation measures continue to be appropriate.
- MTS Environment & Sustainability Lead to coordinate relevant internal stakeholder (i.e. Assets and Safety, engineering, maintenance, etc) workshop to discuss the event, updates to the risk rating and mitigation measures as required.
- Update risk rating and/or mitigation measures as appropriate to ensure M1 Line remains resilient to the known effects of climate change.
- All supporting documentations should also be reviewed and updated as appropriate.

6.8.2. Carbon Footprint

The M1 line uses two bulk supply points at NW and 3 bulk supply points at City SW for electricity to power the network. Sydney Metro are responsible for the management of the energy contract with the utility and provide MTS with annual data to assist with the submission of the National Greenhouse and Energy Reporting Scheme (NGERS).

A combined Carbon Footprint for the M1 line has been undertaken, and the specific details are included in Appendix G.

The Carbon Footprint has been completed within the following parameters, requirements, and limitations:

- Compliant with ISO14064-2 and ISO14040
- Incorporated direct and indirect emissions associated with:
  - electricity and fuel consumption.
  - on-site process emissions; and
  - embodied emissions for all concrete and steel used.

The information below describes the Scope 1 and Scope 2 emissions that MTS has utilised to create the Carbon footprint. Note: Scope 3 emissions were not included in this calculation but will be added in the future as data becomes available.

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Scope 1, 2 and 3 emissions

Greenhouse Gases

The greenhouse gases that are reported under the NGER Scheme include carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), sulphur hexafluoride (SF6) and specified kinds of hydro fluorocarbons and perfluorocarbons.

When reporting emissions, energy production and energy consumption data, only those activities, fuels and energy commodities for which there are applicable methods under the NGER Scheme are reported.

Greenhouse gas emissions are measured as kilotonnes of carbon dioxide equivalence (CO2-e). This means that the amount of a greenhouse gas that a business emits is measured as an equivalent amount of carbon dioxide which has a global warming potential of one. For example, in 2015–16, one tonne of methane released into the atmosphere will cause the same amount of global warming as 25 tonnes of carbon dioxide. So, the one tonne of methane is expressed as 25 tonnes of carbon dioxide equivalence, or 25 t CO2-e.

Scope 1 Emissions

Scope 1 greenhouse gas emissions are the emissions released to the atmosphere as a direct result of an activity, or series of activities at a facility level. Scope 1 emissions are sometimes referred to as direct emissions. Examples are:

- emissions produced from manufacturing processes, such as from the manufacture of cement;
- emissions from the burning of diesel fuel in trucks;
- fugitive emissions, such as methane emissions from coal mines; or
- production of electricity by burning coal.

Scope 1 emissions are specified under the NGER legislation and must be reported.

Scope 2 Emissions

Scope 2 greenhouse gas emissions are the emissions released to the atmosphere from the indirect consumption of an energy commodity. For example, 'indirect emissions' come from the use of electricity produced by the burning of coal in another facility. Scope 2 emissions from one facility are part of the scope 1 emissions from another facility.

For example, a power station burns coal to power its generators and in turn creates electricity. Burning the coal causes greenhouse emissions to be emitted. These gases are attributed to the power station as scope 1 emissions. If the electricity is then transmitted to a car factory and used there to power its machinery and lighting, the gases emitted as a result of generating the electricity are then attributed to the factory as scope 2 emissions.

Scope 2 emissions are specified under the NGER legislation and must be reported.

Scope 3 Emissions

Scope 3 greenhouse gas emissions are not reported under the NGER Scheme but can be used under Australia's National Greenhouse Accounts.

Scope 3 emissions are a classification of indirect emissions that occur in MTS' value chain. They are categorised as follows:

1. **Purchased Goods and Services**: Emissions from the production of goods and services bought by MTS.
2. **Capital Goods**: Emissions from the production of capital goods used by MTS.
3. **Fuel and Energy-Related Activities**: Emissions related to the production of energy that is not directly used by MTS but is related to our value chain.
4. **Upstream Transportation and Distribution**: Emissions from the transportation and distribution of products in the supply chain before they reach MTS.

5. **Waste Generated in Operations**: Emissions from the waste generated by MTS' operations.
6. **Business Travel**: Emissions from the travel of MTS employees for business-related activities.
7. **Employee Commuting:** Emissions from the transportation of employees between their homes and their MTS workplace.
8. **Upstream Leased Assets**: Emissions from the operation of assets not owned by MTS but leased for upstream operations.
9. **Downstream Transportation and Distribution**: Emissions from the transportation and distribution of products after they are sold MTS.
10. **Processing of Sold Products**: Emissions from the processing of products sold by MTS in the value chain.
11. **Use of Sold Products**: Emissions from the end use of goods and services sold by MTS.
12. **End-of-Life Treatment of Sold Products**: Emissions from the disposal of products at the end of their life.
13. **Downstream Leased Assets**: Emissions from the operation of assets not owned by MTS but leased for downstream operations.
14. **Franchises**: Emissions from the operation of franchises.
15. **Investments**: Emissions related to the investments made MTS.

These categories encompass a wide range of indirect emissions that are not produced by MTS directly but are part of their broader ecological footprint. Companies often assess Scope 3 emissions to understand the full impact of their operations and to identify opportunities for reducing their carbon footprint.

It must be noted that not all Scope 3 categories need to be applicable to the operation of the M1 Line. The following table is an overview of the methodology (s) to capture Scope 3 emissions data as it currently applies to MTS.

Table 15 Scope 3 emissions summary for MTS

Category #	Category	Applicable to CSW Ops	Method for calculating emissions	Activity data needed	Emission factors needed
1	Purchased goods and services	Yes	Spend-based method – estimates emissions for goods and services by collecting data on the economic value of goods and services purchased and multiplying it by relevant secondary (e.g. industry average) emission factors (e.g. average emissions per monetary value of goods).	Amount spent on purchased goods or services, by product type, using market values (e.g. dollars). Where applicable, inflation data to convert market values between the year of the EEIO emissions factors and the year of the activity data.	Cradle-to-gate emission factors of the purchased goods or services per unit of economic value (e.g. kg CO2e/$).
2	Capital goods	Yes	Spend-based method – estimates emissions for plant equipment by collecting data on the economic value of plant equipment purchased and multiplying it by relevant secondary (e.g. industry average) emission factors (e.g. average emissions per monetary value of goods).	Amount spent on purchased plant equipment, by product type, using market values (e.g. dollars). Where applicable, inflation data to convert market values between the year of the EEIO emissions factors and the year of the activity data.	Cradle-to-gate emission factors of the purchased goods or services per unit of economic value (e.g. kg CO2e/$).

Category #	Category	Applicable to CSW Ops	Method for calculating emissions	Activity data needed	Emission factors needed
3	Fuel- and energy-related activities (not included in scope 1 or scope 2)	Yes	Average-data method, which involves estimating emissions by using secondary (e.g. industry average) emission factors for upstream emissions per unit of consumption (e.g. kg CO2e/kWh).	Quantities and types of fuel consumed. Quantity of electricity consumed from the grid.	Australian National Greenhouse Accounts Factors.
4	Upstream transportation and distribution	No			
5	Waste generated in operations	Yes	Average-data method, which involves estimating emissions based on total waste going to each disposal method (e.g. landfill) and average emission factors for each disposal method.	Total mass of waste generated in operations. Proportion of this waste being treated by different methods (e.g. percent landfilled, incinerated, recycled).	Average waste treatment specific emission factors based on all waste disposal types. The emission factors should include end-of-life processes only.
6	Business travel	Yes	Distance-based method, which involves determining the distance and mode of business trips, then applying the appropriate emission factor for the mode used.	Total distance travelled by each mode of transport (air, train, bus, car, etc.) for employees in the reporting year. Where possible, companies should also collect data on: • Countries of travel (since transportation emission factors vary by country). • Specific types of vehicles used for travel (since transportation emission factors vary by vehicle types) from transport providers. • The specific passenger vehicle type and the relevant emission factor.	Emission factors for each mode of transport (e.g. aircraft, rail, metro, bus, taxi, bus), expressed in units of greenhouse gas (CO2, CH4, N2O, HFC, or CO2e) emitted per kilometre or per passenger-kilometre travelled.
7	Employee commuting	Yes	Distance-based method, which involves collecting data from employees on commuting patterns (e.g. distance travelled, and mode used for	Total distance travelled by employees over the reporting period (e.g. passenger-kilometres travelled).	Emission factors for each mode of transport (usually expressed in units of greenhouse gas (CO2, CH4, N2O, or

Category #	Category	Applicable to CSW Ops	Method for calculating emissions	Activity data needed	Emission factors needed
			commuting) and applying appropriate emission factors for the modes used.	Mode of transport used for commuting (e.g. train, subway, bus, car, bicycle).	CO2e) emitted per passenger-kilometres travelled).
8	Upstream leased assets	No			
9	Downstream transportation and distribution	No			
10	Processing of sold products	No			
11	Use of sold products	No			
12	End-of-life treatment of sold products	No			
13	Downstream leased assets	No			
14	Franchises	No			
15	Investments	No			

6.8.3. Water Management

6.8.3.1. Water Monitoring

MTS will monitor potable and non-potable water consumed by mains water supply via the following process:

1. **Billing and Meter Reading:**

- Billing Data: Regularly check Sydney Water bills. It provides a comprehensive breakdown of the amount of water consumed during the billing period.
- Regular Meter Readings: For a more granular understanding. Confirm metering schematics and relevant meter numbers to confirm all data is captured.

2. **Install Sub-Meters:**

- MTS may consider installing sub-meters. This helps identify which areas or processes consume the most water, aiding in pinpointing areas of inefficiency.

3. **Water Management Software:**

- MTS may consider using software solutions specifically designed to help track and manage water consumption. Integration with water meters to automatically pull in data, provide reports, and even give insights on how to reduce consumption.

4. **Regular Maintenance Checks:**

- Weekly inspection of water fixtures (faucets, toilets, showers), appliances (dishwashers, washing machines), and processes that use water. Leaks or malfunctions can lead to unnecessary water consumption. Regular maintenance ensures that MTS is only using, and being billed for, the water required.

5. **Educate and Engage Employees:**

- Ensure that all MTS employees understand the importance of water conservation. MTS will consider running periodic training sessions or workshops.

6. **Analyse Consumption Data:**

- Review the collected data on a monthly, quarterly and annually in line with contractual reporting requirements. This will help identify trends, anomalies, or spikes in water usage.

7. **Compare with Targets and Benchmarks:**

- Based on the analysis, periodically compare to targets set. This will be in the form of a percentage reduction/increase month-over-month.

In order to calculate water consumption from onsite rainwater tanks, MTS will use the following approach:

1. **Determine Tank Capacity at all locations.**
2. **Install Water Level Sensors:**

- These devices can give MTS real-time data on how much water is present in the tank.

3. **Manual Measurements:**

- If MTS do not obtain sensors, manual readings will be taken using a dipstick or a marked pole to measure the water level.
- **Use Flow Meters:**
- Flow meters may also be attached to the outlet of the tanks. They measure the quantity of water that flows through them. This provides an accurate reading of how much water is being consumed directly from the tank.

4. **Record Consumption Data:**

- At quarterly intervals, MTS will record the volume of water in the tank, then subtract the current reading from the previous one to determine the consumption during that interval. Adjust this figure by adding any rainwater collected during the interval.

5. **Maintain Records:**

- MTS will establish a system for recording all water-related data, whether manual readings or data from sensors/water bills. This will help track patterns over time and make more informed decisions about water use.

6. **Analyse & Optimise:**

- MTS will periodically review the water consumption data on a monthly, quarterly and annually in line with contractual reporting requirements. Look for patterns, like increased consumption on certain days or during certain seasons. This analysis can help in identifying any inefficiencies or leaks, guide future business decisions, like the need for additional tanks or water-saving measures and help track Water use targets.

7. **Regular Maintenance:**

- Ensure that the tanks, sensors, flow meters, and other related systems are regularly checked and maintained. This ensures the accuracy of your readings and the longevity of your equipment.

6.8.3.2. Water consumption, management, and monitoring

MTS is committed to managing water consumption efficiently across the M1 network to support sustainable operations, minimise resource use, and reduce pressure on potable water supplies. Water is used across the network for a range of operational and facility purposes, including staff amenities, station and depot operations, cleaning activities, landscape irrigation, and maintenance functions. MTS will adopt a structured approach to monitor, manage and continually improve water performance across all relevant operational sites.

MTS will manage water consumption by considering the different water sources available across the network, including potable water, recycled water, and rainwater. Potable water will be used where drinking-quality water is required, such as for staff amenities and other essential services. MTS will seek to minimise potable water consumption by improving efficiency, identifying opportunities for substitution, and promoting responsible water use practices. Where available and operationally appropriate, recycled water will be used for non-potable purposes such as cleaning, irrigation, toilet flushing, and other suitable maintenance activities. Rainwater harvesting

opportunities will also be utilised where infrastructure is available, particularly for landscape irrigation and other non-potable uses.

To support effective management, MTS will monitor water consumption through utility bills, meter readings and site-based performance reviews. Where feasible, MTS will use sub-metering or site-level metering data to improve visibility of water use patterns across stations, depots, maintenance facilities, and other operational areas. Consumption data will be reviewed regularly to identify trends, abnormal usage, leaks, or inefficiencies requiring corrective action. This monitoring will support timely investigation of high consumption areas and enable targeted water saving initiatives.

MTS will implement practical measures to reduce water use across the M1 network. These measures may include the installation and maintenance of water-efficient fixtures and fittings, prompt repair of leaks, optimisation of irrigation practices, review of cleaning methods, and awareness initiatives for staff and contractors. Water efficiency considerations will also be incorporated into maintenance planning, asset replacement, and future operational improvement initiatives were reasonably practicable and economically feasible.

Performance will be tracked over time to support internal reporting, sustainability objectives, and continual improvement. MTS will use available data to establish baselines, assess changes in consumption, and identify opportunities to improve the use of alternative water sources. Through this approach, MTS aims to strengthen water stewardship across the M1 network and contribute to broader environmental sustainability outcomes.

6.8.3.3. Water Treatment Plants

MTS will also operate the Barangaroo and Marrickville Water Treatment plants that were designed and constructed to manage all water that enters the metro network to comply with the relevant planning approvals.

E107 states *"The CSSI must be constructed and operated so as to maintain the NSW Water Quality Objectives where they are being achieved as at the date of this approval, and contribute towards achievement of the NSW Water Quality Objectives over time where they are not being achieved as at the date of this approval, unless an EPL in force in respect of the CSSI contains different requirements in relation to the NSW Water Quality Objectives, in which case those requirements must be complied with."*

The NSW Water Quality Objectives (WQO) are the agreed environmental values and long-term goals for NSW's surface water (DCCEEW, 2006). The WQO describe:

- community values and uses for rivers, creeks, estuaries and lakes (for example healthy aquatic ecosystem, water suitable for recreation or drinking water) for NSW waterways;
- a range of water quality indicators to assess whether the current condition of the waterway supports these values and uses; and
- recommended guideline levels determined by environmental values.

MTS also commits to deliver long term groundwater treatment and disposal outcomes at the Marrickville Dive Site and short-medium term groundwater treatment and disposal outcomes at Barangaroo Station to a standard approved by the NSW EPA by 1 July 2025. This commitment complies with the direction given by DPHI to Sydney Metro Authority.

Marrickville

The Marrickville WTP is the main water management source for Sydney Metro CSW handling all water entering the network from the Chatswood Dive site to Sydenham Station and the adjacent Marrickville WTP. Water management at the WTP is governed by MTS' EPL (not the NSW WQO) and the Discharge Criteria is listed in the table below.

Table 16 Discharge Criteria

Analyte Group / Analyte	Units	Discharge limit	Source and Comment
Physiochemical			
pH	pH units	7.0 – 8.5	Maintain neutral to slightly basic pH to minimise potential to dissolve minerals within material that comprise drainage or

			potential suspended sediments. Aligns with WQO (Cooks River estuary).
Turbidity	NTU	25[2]	Discharges should not be visibly turbid, Correlation between total suspended salts (TSS) and turbidity could be determined to allow laboratory assessment of TSS in place of turbidity measures.
Dissolved heavy metals/metalloids			
Copper	µg/L	3	90% SPL (ANZG, 2018)
Zinc	µg/L	12	90% SPL (ANZG, 2018)
Nickel	µg/L	7	90% SPL (ANZG, 2018)
Iron	µg/L	300	Recreational / aesthetics (ANZECC / ARMCANZ, 2000)
Nutrients			
Ammonia-N	µg/L	910	95% SPL (ANZECC / ARMCANZ, 2000)
Nitrate-N	µg/L	10600[2]	95% SPL (Hickey, 2018)

MTS utilises an external operator to manage the WTP as a full-time operator is required to operate it. All water quality reports will be sent to MTS' Environment and Sustainability Lead who will manage any communications/escalations if required, such as water quality outside the above EPL parameters.

Barangaroo

The Barangaroo Water Treatment Plant is required in the short to medium term to treat subsurface water ingress at Barangaroo Station until construction of the southern entrance, as part of the future adjacent Central Barangaroo development, commences and replaces the existing conditions, thereby resolving the water ingress issue. The treated water will be discharged adjacent to Sydney Harbour.

BESIX Watpac, the construction contractor, commissioned WSP to prepare a Water Discharge Impact Assessment (WDIA) and Water Quality Monitoring Program (WQMP) for the construction phase of the Sydney Metro CSW project. The input sources to the water treatment plant and concentrations of analytes have changed since the construction completion, with treatment of surface construction water and the tunnels access shaft water ingress no longer required.

MTS has applied to the EPA, to add the Barangaroo WTP to its EPL #21247, until that time the WTP will continue to be operated in accordance with CoA E107.

To ensure compliance with CoA E107 as part of the operational phase of the CSSI, MTS has commissioned an operational WDIA and WQMP.

The WDIA, prepared by ERM dated 19 December 2024 provides the WTP Management Measures and the recommendations will be implemented as part of MTS operations of the WTP. All risks and mitigation measures outlined in those documents have been added to this OEMP.

The WQMP sets out a program of monitoring to be undertaken to check the quality of water being discharged from the WTP and the quality of water within the receiving water of Sydney Harbour so as to meet the recommendations of the WDIA and maintain the WQO in accordance with CoA E107. The WQMP will be implemented for the life of the operation of the WTP.

Based on the WDIA, MTS will continue to operate the WTP in its current configuration and monitor its operation and efficiency in accordance with the WQMP. The monitoring records will be issued in a Water Quality Monitoring Report which will be issued on a quarterly basis.

If exceedances occur an investigation will be undertaken to confirm the cause and address any issues.

MTS has engaged Aquatic Engineering Australia (**AEA**) for the ongoing maintenance of the WTP. AEA undertook the initial installation of the WTP and has been responsible for its ongoing maintenance to date.

6.8.4. Energy consumption

Metro Trains Sydney will monitor energy consumption across the M1 network through the systematic collection, review and analysis of electricity usage data obtained from network metering, utility accounts, and relevant operational systems. This process will support the identification of energy consumption trends, significant energy-using assets and operational activities, and opportunities to improve energy performance across the network. Energy monitoring outcomes will be used to inform performance assessment against the objectives of the Carbon and Energy Plan, support internal and external reporting requirements, and guide the prioritisation, implementation, and review of energy efficiency initiatives.

Electricity Consumption Software Models (ECSMs) were produced during project design to be used in forecasting electricity usage on the M1 Line as per the requirements in SPR Appendix 50A. One ECSM was formulated for Northwest section of the line, and a separate one was formulated for City and Southwest. Along with that, MTS developed consumption tracking and forecasts using real data taken from electricity meters and has named that system as the Electricity Consumption Model (ECM). Dashboards have been developed as part of the Service Payment Monitoring System (SPMS).

North West: investigations revealed defects with meter data leading to a program of defect rectification. As at early 2026, this is substantially complete. With greater confidence, MTS is now able to construct Efficient Baseline Consumption using real time data from North West.

For the City section of the M1 line, there is considerable rectification work to be completed before accurate electricity consumption data can be used in tracking and modelling. MTS is working with Sydney Metro on resolving this matter.

For the South West section of the M1 line: the assets have been handed over to MTS (conditionally handed over, subject to defect resolution). First passenger service is expected to start late 2026.

This topic is detailed further in Carbon and Energy Management Plan.

The Efficient Baseline Consumption is produced in daily, monthly, and weekly calculations, following the seasonal and weekday variation of loading profile.

The table below identifies the monitoring that is undertaken for electricity consumption and generation for the operation of the network, including frequency of monitoring and form of data collection. The results of monitoring will inform future energy use initiatives.

Table 17 Energy Monitoring

	Method / Source of Data Collected	Monitor Frequency	Responsible Party	Reporting / Initiatives / Continuous Improvement
Solar Generation	SPMS	Real time	Environmental & Sustainability Lead will coordinate with maintenance building managers to collect monthly meter readings.	Reporting is provided from the SPMS to key stakeholders including the SMA and OPCO2. SPMS data is reported in monthly, quarterly, and annual reports.
Electricity Consumption	SPMS	Real time	Manager Network Performance will ensure SPMS captures data from the network meters.	Reporting is provided from the SPMS to key stakeholders including the SMA and OPCO2. SPMS data is reported in monthly, quarterly, and annual reports.
Fuel Consumption	Fuel invoices (including diesel; petrol; biodiesel; LPG).	Monthly	Environmental & Sustainability Lead will: • consult with maintenance facility to capture fuel consumption ;	

			• and consult with procurement and accounting teams to collect consumption information from invoicing & contractors.	
Data Collection from Sub-Contractors	Fuel invoices (including diesel; petrol; biodiesel; LPG). Power bills (gas and electricity as applicable). Details of the source of power used (e.g. % renewables, etc).	Monthly and quarterly as power bills arrive	Environmental & Sustainability Lead will consult with procurement and accounting teams to collect consumption information from subcontractors.	

7. Incident and emergency response

7.1. Overview

The Pollution Incident Response Management Plan (PIRMP) provides the overview of how Incidents are managed within MTS. The immediate response to all incidents is to make the area safe and undertake measures to prevent further harm to persons, property and the environment. The Environment & Sustainability Lead, as well as the Head of Safety, Quality, Risk & Environment, should be notified immediately in the event of an environmental incident.

Any environmental incident that might occur will be managed within the MTS Incident Management Framework (IMF). The IMF provides the guidelines and procedures for MTS' response to incidents occurring on its network or in response to incidents as part of a larger multi-agency coordinated response.

The IMF provides details of the types of incidents, including environmental, that could potentially occur and describes the principles behind how MTS will respond to these. Types of environmental incidents applicable to the operation of the network include, but are not limited to:

- Spills of fuels, oils, chemicals and other hazardous materials.
- Unauthorised discharge from detention basins or other containment devices.
- Unauthorised clearing beyond the extent of the Project boundary or premises.
- Unauthorised damage or interference to threatened species, endangered ecological communities or critical habitat (only occurring beyond Project boundaries).
- Unauthorised harm or desecration to unknown Aboriginal objects and Aboriginal places.
- Unauthorised damage or destruction to any State or locally significant relic or heritage item (beyond Project boundaries).
- Potential contamination of waterways or land.
- Any potential breach of legislation, including a potential breach of a condition of an EPL; CoA; or any agency permit condition.
- Works undertaken without appropriate approval or assessment under the EP&A Act 1979.

- Works undertaken that are not in accordance with a Project assessment.
- Unauthorised dumping of waste.

The IMF shows the different management structures for incident response, including four (4) incident severity levels, and criteria for classifying environmental incidents. The Framework includes references to legislation and regulatory requirements and links MTS's incident response documentation to other Rail Agencies' plans and procedures, as well as to other internal documents.

The IMF has been prepared to be consistent with the legislative requirements for environmental incident reporting under the Protection of the Environment Operations (POEO) Act 1997, including the preparation of the Pollution Incident Response Management Plan (PIRMP) (SMCSWTS2-MTS-CSW-EM-PLN-002731).

A Severe Weather Conditions Response Plan (SMCSWTS2-MTS-1NL-EM-PLN-005496) has been developed and implemented and outlines the seasonal checks and various responses to be implemented to minimise the impacts resulting from severe weather conditions.

MTS are also subscribing to an Environmental Alert Service to cover all of MTS operations to aid the Environment and Sustainability Lead in notifying MTS operations of any environmental incidents that may affect the M1 Line.

7.2. Incident notification

Environmental incidents shall be notified:

- Verbally immediately and in writing within 24 hours of an incident occurring to Sydney Metro Authority and to the DPHI by the Environment & Sustainability Lead or Head of Safety, Security, Quality, Risk & Environment (or delegate); and to the relevant authorities and parent companies of the PPP as required.
- Must include the time and date of the incident, details of the incident and must identify any non-compliance with the relevant planning approvals;
- Any requirements of the Secretary or Relevant Public Authority (as determined by the Secretary) to address the cause or impact of an incident reported in accordance with the relevant planning approval, must be met within the timeframe determined by the Secretary or relevant public authority.
- If statutory notification is given to the EPA as required under the POEO Act in relation to the CSSI, such notification must also be provided to the Secretary for information within 24 hours after the notification was given to the EPA.

7.2.1. Notification to EPA and other agencies

Where required in accordance with the MTS environment protection licence (EPL) and the Protection of the Environment Operations Act 1997 (POEO Act), notification to Environment Protection Authority (EPA) will be undertaken for any non-conformances with the conditions of the EPL and for notifiable pollution incidents. The Secretary shall be provided with a detailed written record of any incident with significance off-site impacts on people or the environment in accordance with CoA in S CoA D7 of SSI-5931, SI-7400 (2017), and SSI 8256 (2018)

MTS has prepared a Pollution Incident Response Management Plan (PIRMP) to comply with requirements set out in part 5.7A of the POEO Act and the Protection of the Environment Operations (General) Regulation 2022, which state that holders of an EPL must prepare, implement and test a PIRMP in relation to the activity to which that licence relates. The PIRMP shall be implemented immediately if an incident occurs that threatens or causes material harm to the environment.

If the Environment & Sustainability Lead (or delegate) determines that an incident causes actual or potential harm to the health or safety of human beings, or to ecosystems that is not minor; or if actual or potential loss or property damage (including costs to prevent, mitigate or make good harm to the environment) associated with a pollution incident exceeds $10,000, then the relevant agencies and authorities will be notified immediately. Notifications will be undertaken in accordance with the PIRMP.

7.2.2. Notification to parent companies

The MTS CEO (or delegate) will notify the parent companies that comprise MTS Pty Ltd being, the MTR, John Holland and UGL, as appropriate, in accordance with the severity and status of the incident.

7.3. Incident Reporting and Investigation

7.3.1. Reporting

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All Environmental incidents will be managed as per the requirements of MTS's Environmental Protection License (as issued by the NSW EPA), relevant planning consents and the Pollution Incident Response Management Plan (PIRMP) which has been updated as per the M1 Line operations.

This system includes any external communication required as per the PIRMP with key stakeholders. All incidents will also be recorded in MTS's safety software system (Intelex). Details of environmental incidents and resulting corrective or preventative actions will be included in internal monthly environmental reports.

The Environment & Sustainability Lead will identify trends in incidents and trends in root causes to suggest the nature of preventative actions which are warranted.

Incidents will also be included in quarterly compliance reports as discussed in Section 8 of this OEMP.

7.3.2. Incident investigations

Depending on the severity of the event, the location of the incident, as well as any associated plant and equipment, is to be preserved until relevant data and evidence is collected. Environmental incidents, including planning consent related incidents and community complaints, will be entered into and closed out in the incident management system (Intelex).

Incident investigations will be undertaken for all incidents. The level of investigation will be dependent on the classification of the incident. The incident investigation team will be comprised of staff selected by the GM Safety, Quality, Risk and Environment based on the severity of the incident and the availability of experienced personnel.

As part of the incident investigation, corrective and preventative actions will be identified, assigned to the appropriate person and closed out according to set timeframes. Corrective actions will be assigned, tracked and closed out in Intelex. All corrective actions will include reference to the relevant incident record for ease of tracking.

Safety, Health and Environment (SH&E) Alerts will be prepared as required for distribution within the relevant parts of the business, where appropriate. SH&E Alerts may also be raised at the discretion of the Environment & Sustainability Lead.

Any requirements of the Secretary or relevant public authorities to address the cause or impact of any incident at the SMTF will be undertaken in accordance with the relevant planning approvals.

8. Inspections, auditing and reporting

8.1. Environmental inspections

8.1.1. MTS environment and sustainability team

Regular environmental inspections of the M1 Line (including the work of sub-contractors) are undertaken as a form of surveillance conducted by station staff and may involve members of the SQRE Team to evaluate the effectiveness of environmental controls. Inspections will be undertaken for high-risk activities and processes, repair and maintenance work in environmentally sensitive areas and site preparedness for adverse weather conditions in active work areas (i.e. during possessions) or as deemed necessary. Any remedial actions identified during the inspections are recorded on the checklist in the incident management system (Intelex). The form will include a checklist of environmental aspects as prompts to ensure that the inspection considered all aspects. It will also include the responsible party and an appropriate timeframe to close out any remedial actions.

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8.1.2. Sydney Metro Authority

The Sydney Metro Authority may undertake inspections of works sites (including the work of subcontractors) to evaluate the implementation, effectiveness, and level of compliance of operation with this OEMP. Inspections by other agencies may occur periodically at the request of the agency/authority.

A member of the MTS SQRE Team may be required to participate in environmental inspections. Deficiencies and remedial actions would be analysed and prioritised at the completion of the inspection. Timeframes for implementation of remedial / corrective actions would be agreed.

8.1.3. Targeted inspections

In addition to the regularly programmed inspections MTS proposes to undertake targeted inspections for areas or activities that are considered to pose higher risks to the environment. These will be identified on a case-by-case basis by the Environment and Sustainability Advisor. An example of such targeted inspections would include the Marrickville Water Treatment Plant to ensure that the water being discharged meets the treatment and discharge specifications and EPL conditions.

Other targeted inspections will be determined through the operational life of the network based on potential risks and impacts on the environment and community.

The Environment and Sustainability Lead will record these inspections in Intelex, and any environmental hazards/risks will be documented in the system and the system's action close out process will be followed, if required. This also includes informing the review of performance of environmental controls to the relevant MTS stakeholders (i.e. Engineering team) and the Sydney Metro Authority.

8.2. Auditing

The Quality Management Plan (SMCSWTS2-MTS-CSW-PM-PLN-002156) defines the overview and approach to Auditing within MTS.

Environmental audits would take a risk-based approach and would be conducted at regular intervals during operation of the network to ensure compliance. Audits will include works undertaken by sub-contractors. Internal and external environmental audits would be undertaken in accordance with AS/NZS ISO 19011:2014 Guidelines for Auditing Management Systems as well as the ISC Operations Rating System. The Environment & Sustainability Lead will ensure that auditing is undertaken in accordance with this OEMP and the MTS Intelex system, under which the IMS sits. An auditing program would be prepared. An indicative audit schedule for environmental and sustainability Aspects is included in the table below.

The environmental auditing outcomes, including corrective actions will be actioned as per the Quality Management Plan and would be reported on to the Sydney Metro Authority quarterly and annually as per SSI 7400 D2 (c), MCoA from SSI-5414, MCoA from SSI-593.

Table 18 Indicative Audit Program

Audit	Details	Timing	Responsibility	Recipient Of Audit Report
Environmental audit	Compliance with approval and legal requirements, Sydney Metro Authority specifications, OPESP and OEMP.	One annually. At least one external audit every 2 years.	Environment & Sustainability Lead	Sydney Metro Authority MTS Parent Companies
Sustainability audit	Compliance with the OPESP in accordance with OTS2 Deed and the OEMP	One annually. At least one external audit every 2 years.	Environment & Sustainability Lead	Sydney Metro Authority MTS Parent Companies

Audit	Details	Timing	Responsibility	Recipient Of Audit Report
Operation Performance Audit	Compliance with SSI 7400 CoA D11.	Within 15 months of operation.	Environment & Sustainability Lead	Sydney Metro Authority MTS Parent Companies
	Compliance with SSI 8256 CoA D5	Within 15 months of operation.	Environment & Sustainability Lead	Sydney Metro Authority MTS Parent Companies

8.3. Compliance review

The OEMP outlines all the environmental and sustainability requirements and where they have been addressed, including:

OTS2 Project Deed In addition to the planning approvals conditions SSI-8256 (SMCSWTS2-MTS-CSW-EM-CON-006096) and SSI-15_7400 (SMCSWTS2-MTS-CSW-EM-CON-006095), MTS will track changes to relevant legislation, as listed below, through the MTS IMS, which forms part of the Sydney Metro PMS (Refer to Section 4) Key legislation that will be monitored includes relevant sections of the:

- Protection of the Environment Operations Act 1997.
- Protection of the Environment (General) Regulation 2022.
- Protection of the Environment (Clean Air) Regulation 2022.
- Protection of the Environment (Waste) Regulation 2014.
- Sydney Water Act 1994.
- Environment Protection and Biodiversity Conservation Act 1999
- Biosecurity Act 2015
- National Greenhouse and Energy Reporting Act 2007
- Biodiversity Conservation Act 2016
- Contaminated Land Management Act 1997
- Dangerous Goods (Road and Rail Transport) Act 2008
- Environmental Planning and Assessment Act 1979
- Fisheries Management Act 1994
- Heritage Act 1977
- National Parks and Wildlife Act 1974
- Protection of the Environment and Operations Act 1997
- Roads Act 1993
- Waste Avoidance and Resource Recovery Act 2001
- Water Management Act 2000
- Water Act 1912

Legislation will be reviewed on an annual basis, or as any key changes of legislation and made public. Any changes impacting the operation and maintenance of the Sydney Metro Network will be identified and discussed with Sydney Metro Authority.

Where changes to legislation require changes to processes and / or procedures, MTS documentation will be updated in accordance with the continual improvement and review processes discussed in Section 9.

Furthermore, MTS in the process of developing a compliance management module within Intelex (MTS's online service request tracking system). The compliance management module will consist of a suite of safety and environmental legislative and contractual requirements that MTS needs to comply with. From an environmental perspective, the compliance management module will consist of the planning consents conditions, environmental protection licence and relevant contractual requirements which will be reviewed and managed in accordance with Monthly, Quarterly and Annual Reporting requirements.

8.4. Non-conformance, corrective and preventative actions

The Quality Management Plan defines the overview and approach to the management of environmental incidents within MTS O&M functions. A failure to comply with a requirement, standard or procedure, such as the CoA, this OEMP or associated documents and is recorded in the safety management software (Intelex). Environmental incidents are identified through regular environmental inspections, monitoring, internal or external audits, response to complaints, community consultation, and responses to incidents (refer to Sections 7 and 8). A Sydney Metro Authority Representative and/or a public authority may also raise a non-conformance or issue an improvement notice.

Sustainability non-conformances are identified through regular inspections, monitoring of reportable sustainability data, internal or external audits, community consultation or complaints. A Sydney Metro Authority Representative and/or a public authority may also raise a non-conformance.

All notifiable environmental incidents (a breach of EPL conditions or planning approval conditions) are to be reported to the EPA and SMA within one (1) day of the incident and reported as incidents in the IMS and any corrective actions embedded within the MTS Intelex system and related operating procedures and Management Plans.

As per the following OTS2 Clause 11.5 (e) notification of the following environmental incidents are to be reported to SMA immediately in writing as soon as practicable:

(i) becomes aware of any non-compliance with the requirements of any law or Approval regarding the Environment, or any Environmental Document, in the performing of OpCo2's Activities;

(ii) becomes aware of any information, fact or circumstance where, if the Principal were to be aware of such information, fact or circumstance, the Principal would be required to notify any Authority of that information, fact or circumstance pursuant to any law relating to the Environment (without limiting any other obligation of OpCo2 in relation to the information, fact or circumstances); or

(iii) notifies any Authority of any matter pursuant to any law relating to the Environment, in which case OpCo2 must provide to the Principal a copy of such notification and of any subsequent correspondence with the Authority in relation to the subject of the notification.

Sustainability non-conformances are to be reported to the Sydney Metro Authority within one (1) day of the non-conformance being observed and reported as incidents in the IMS and any corrective actions embedded within the MTS Intelex system and related operating procedures and Management Plans. Sustainability non-conformances are also to be reported within the Quarterly and Annual Reports.

Following the identification of a non-conformance or an environmental incident, corrective and/or preventative actions are identified and assigned to the appropriate person with set timeframes. Timeframes would be set to ensure any chance of recurrence is eliminated as soon as practicable.

Intelex is reviewed regularly to ensure actions are being actioned and closed out in a timely manner. The status of corrective actions is reported for review at the monthly management meeting and reported in the Quarterly and Annual Performance Reports.

Note: Records for environmental & sustainability related functions, including monitoring, inspections, audits and rectification works will be collated in the Intelex system.

8.5. Internal reporting

Additional reporting requirements identified in the Project documents are included in the table below. Further reporting may be necessary as works progress. In such circumstances, the table would be amended to reflect those changes in accordance with Section 9 for the revision of the OEMP.

Table 19 MTS Environmental and Sustainability Reporting Schedule

Report Name	Frequency	Detail	Responsibility	Report Recipients
Working Group Meetings	Monthly	Stakeholder meetings with SMA, MTR, MTS & OPCO2, Environmental & Sustainability representatives. Purpose to discuss/update progress of compliance with SPR requirements and matters arising from the operations of the network and initiatives that can be collaborated on.	Environmental & Sustainability Lead	Sydney Metro Authority
Quarterly Performance Report	Quarterly	The quarterly performance reports must include reports on environmental and sustainability matters, and include as a minimum: • Metro City & Southwest Line's performance against the environmental management requirements of the Operations Phase Environmental and Sustainability Plan. • Management strategies for environmental compliance. • The status of environmental obligations including those identified in MTS's compliance tracking program. • The status of and performance against environmental licences held for MTS's Activities. • MTS's performance against environmental key performance indicators. • Graphical representation of the monthly frequency of environmental issues and incidents each month for the previous 12 months, including an analysis of trends, and what actions are being taken to improve performance. • Details of, environmental incidents or emergencies. • Environmental inspection reports. • The results, findings and any environmentally relevant actions of any internal or external audits carried out. • Reports that include the number of Staff that have received environmental training and what type of training they received. • The sustainability performance of Metro Northwest Line against all sustainability targets specified in Appendix 50. • Data and an analysis of trends including actions to be undertaken to improve performance, for the following: – electrical energy consumption and generation, including any on-site renewable energy generation and any renewable energy sourced for the Operations Activities; – carbon emissions;	Environment & Sustainability Lead	Sydney Metro Authority

Report Name	Frequency	Detail	Responsibility	Report Recipients
		– energy use; – fuel consumption; – volume of potable and non-potable water consumed including details of the sources of potable and non-potable water consumed and harvested and performance against water consumption reduction and water consumption and harvesting targets; – quantities of waste recycled, beneficially re-used or disposed of and performance against waste targets.		
Annual performance reports	Annually	The annual performance reports must contain a separate section or sub-report on Metro City & Southwest Line's performance against OEMP, and must include as a minimum: • Be suitable for publication on the Sydney Metro Authority's website. • Detail the overall performance against all sustainability targets relating to the Operation Activities set out in Appendix 50 of the SPR. • Demonstrate continuous improvement of environment and sustainability performance. • Detail the performance against environmental compliance key performance indicators. • Provide Global Reporting Initiatives reporting against the latest Global Reporting Initiatives frameworks available, and evidence that the principles of AA1000 have been applied to sustainability reporting. • Provide any outcomes from independent assurance reports undertaken. • Include environmental compliance reporting including in relation to, but not limited to: – reporting under the National Greenhouse Gas and Energy Legislation; – Environment Protection License requirements; – Planning Approval requirements; – Specify the energy intensity per passenger kilometre (kWh per passenger km, and kJ per passenger km).	Environment & Sustainability Lead	Sydney Metro Authority

8.6. National greenhouse energy reporting (NGER's)

MTS submits an NGER's report based on data collected from the operation of the network as well as from SMA and the operations of sub-contractors. The report on emissions and energy data is required under the National Greenhouse and Energy Reporting (NGER) Legislation and submitted between July and October each year. Annually NGER's report is submitted to the relevant regulatory authority, and a copy of this report is published on the MTS external website. A copy of the NGER's report is provided to Sydney Metro Authority and OpCo2 once submitted to the Commonwealth Government.

The processes for the collection and collation of emissions and energy data have been developed with processes integrated with contractors for the collection of monthly data. One such example of data collection form for NGER's reporting is included as Appendix F.

MTS retains records of its activities that are the basis of OpCo2's Emissions and Energy Data for any budget year, for a period of not less than 7 years from the end of the year in which the relevant activities take place. Records may be reviewed, audited and verified by any persons appointed or authorised for that purpose by Sydney Metro Authority or relevant Authority.

8.7. Global Reporting Initiative framework

The Environment & Sustainability section of the Annual Performance Report is prepared such that it is suitable for publication on the MTS website and publicly available. It is prepared in accordance with SPR clause 50a (2.1), which states the following.

(j) OpCo2 must develop, implement, and maintain governance structures, processes and systems that ensure integration of all sustainability considerations, initiatives, and reporting during OpCo2's Activities. [SM-CSW-TSOM-SPR-A50A-39

(l) OpCo2 must collaborate with the Principal to develop, implement, and maintain a sustainability assurance framework to identify and track compliance with sustainability targets. [SM-CSW-TSOM-SPR-A50A-45]

(m) OpCo2 must demonstrate that its annual sustainability reporting includes economic, social, environmental and governance performance, and measures the impact of OpCo2's Activities in these dimensions.

This report will be prepared using the Global Reporting Initiative (GRI) Framework, incorporating Standard Disclosures from the GRI Sustainability Reporting Guidelines for environmental, social, and economic categories including:

- Environmental performance.
- Sustainability performance.
- Labour practices.
- Social inclusion.
- Procurement practices.
- Product responsibility.

The principles for designing report content will be adopted in the preparation of the Environment & Sustainability section or sub-report of the Annual Performance Report. These include:

- **Stakeholder Inclusiveness** - identify the organisation's stakeholders and explain how it has responded to their reasonable expectations and interests.
- **Sustainability Context** - present the organisation's performance in the wider context of sustainability.
- **Materiality** - reflect the organisation's significant economic, environmental and social impacts or substantively influence the assessments and decisions of stakeholders.

- **Completeness** – coverage of material aspects and their boundaries, sufficient to reflect significant economic, environmental and social impacts, and to enable stakeholders to assess the organisation's performance in the reporting period.

Reporting of Sustainability responsibilities outlines in this OEMP will be undertaken in accordance with the governance structure outlined in GRI 102: GENERAL DISCLOSURES 2016, disclosures 102-18 through 102-39, inclusive.

As illustrated in Figure 2, implementation of sustainability on the M1 Line will be led by the MTS CEO, who will ensure that sustainability processes and procedures are given their due attention and respect by the entire MTS organisation. Figure 2 illustrates the reporting lines, including for the supporting disciplines, necessary to ensure all sustainability responsibilities are reported to the MTS CEO.

The MTS CEO and GM's; Head of Safety, Quality, Risk and Environment; Environment & Sustainability Lead; Manager People & Culture; Learning & Development Manager and Procurement Manager will be responsible for ensure that the required information reported and documented in the quarterly and annual reports (see Section 9), is then disseminated to:

- OpCo2;
- Parent Companies;
- Sydney Metro Authority; and
- Any other relevant organisation as requested.

Below shows the step-by-step process to guide MTS in implementing the GRI framework for sustainability reporting:

1. **Identify and Engage Stakeholders:**

- Determine who MTS' stakeholders are, including employees, Sydney Metro, EPA, NGOs, customers, local communities, and suppliers.
- Engage with them to understand their concerns and priorities related to MTS' economic, environmental, and social impacts.

2. **Determine Report Content:**

- Use the principle of 'Materiality' to identify what topics are most important to MTS' stakeholders.
- Prioritise topics based on their relevance and significance.

3. **Choose the Reporting Boundaries:**

- The reporting boundaries of the framework is the M1line.

4. **Collect Data:**

- Ensure the data is accurate, consistent, and comparable year-on-year.

5. **Select Appropriate GRI Standards:**

- These standards provide guidelines on how to disclose information on different topics.

6. **Draft the Report**
7. **Third-Party Verification**
8. **Publish and Disseminate:**

- Make the report publicly available, ideally on MTS' website.
- Promote the report through various channels like press releases, social media, webinars, or stakeholder meetings.

9. **Feedback and Continuous Improvement:**

- Gather feedback from stakeholders on the report.
- Use feedback for continuous improvement in both your sustainability practices and future reports.

8.8. Agency reporting

Additional reporting requirements identified in the Project documents are included in the table below. Further reporting may be necessary through the operational life of the network. In such circumstances, the table would be amended to reflect those changes in accordance with Section 9 for the revision of the OEMP.

Table 20 External (Agency Reporting)

Report Name	Frequency	Detail	Responsibility	Report Recipients
EPL Annual Return	Annually	Report on compliance with EPL Compliance.	Environment & Sustainability Lead	EPA
Material harm report	Within seven days of incident causing or threatening material harm	Written details of notification of incidents causing or threatening material harm to the environment (refer also to Section 7 for initial notification).	Environment & Sustainability Lead	EPA SM DPHI
EPA Requested Report	As requested,	As requested by EPA.	Environment & Sustainability Lead	EPA
EPL Daily Complaints Report	EPL related complaints	Rolling Daily Complaints Report (excel file) updated for complaints received prior to 12noon business days, report sent by 2pm.	Environment & Sustainability Lead, with assistance from Senior Communications Manager	EPA

9. Continuous improvement and review

The Quality Management Plan defines the overview and approach to management review and continuous improvement within MTS.

This section discusses the process for continuous improvement that MTS will follow to ensure adequate review of this OEMP, and relevant supporting documentation, is undertaken through the operational life of the M1 Line. It also discusses the processes that will be followed to provide for the revision of the OEMP to reflect any changes resulting from the reviews.

9.1. Management reviews

Management reviews will be undertaken annually or as required as part of the MTS continual improvement process. Reviews will consider the suitability and effectiveness of the environmental management system and effectiveness and proper implementation of this OEMP. This may include the wider management team and a review of systems from other functional areas.

The review will consider:

- opportunities to improve efficiencies of environmental management processes and practices;
- client and agency feedback;
- consideration of non-conformances and deficiencies;
- consideration of effectiveness of corrective and preventative actions; and
- changes or developments in the MTS IMS.

The outcomes of the reviews may result in the amendment of this OEMP or related documents, revision to the IMS, risk assessment review, re-evaluation of the Project's objectives and targets as well as feed-in into other Project

documents. Necessary system improvements would be identified and raised as corrective actions. Any changes to this OEMP would be managed in accordance with Section 9.2.

9.2. Revision of this plan

Continual improvement is achieved through constant measurement and evaluation, audit and review of the effectiveness of the Plan, and adjustment and improvement of the OEMP, Project environmental outcomes and the MTS IMS. Annual management reviews provide specific opportunities to identify improvements in the IMS and/or this OEMP. This OEMP will be updated as required:

- To consider changes to the environment or generally accepted environmental management practices, new risks to the environment, any hazardous substances, contamination, or changes in law.
- Where requested or required by the DPHI or any other Authority.
- In response to internal or external audits or quarterly management reviews.
- The updated plan will be endorsed by the Environment & Sustainability Lead and approved internally by the MTS CEO.
- Minor changes may be approved by the Head of Safety, Quality, Risk and Environment, as follows.
- Minor changes would typically include those that:
- Are editorial in nature (e.g. staff and Agency/Authority name changes).
- Do not increase the magnitude of impacts on the environment when considered individually or cumulatively.
- Are in response to audit findings or periodic reviews.
- Do not compromise the ability of the Project to meet approval or legislative requirements.

A

APPENDIX

Appendix A. Document control

Appendix A1. Document information

Document Number:	SMCSWTS2-MTS-CSW-EM-PLN-002697
Version:	07
Issue Date:	18/09/2026
Network	City and Southwest Line

Appendix A2. Approval record

Function	Position	Name	Signature	Date
Prepared by:	Environment & Sustainability Advisor	Deepa Punnoose	Deepa Punnoose (18/09/2026 14:02:44 GMT+10)	18/09/2026
Reviewed by:	Environment & Sustainability Lead	David Wilson		18/09/2026
Reviewed and Endorsed by:	Acting Head of, Quality, Risk and Environment	Vishal Singh	Vishal Singh (21/09/2026 13:33:15 GMT+10)	21/09/2026
Endorsed by:	Interim General Manager, Quality, Risk and Environment	Helen Wilkinson	H Wilkinson (21/09/2026 13:57:54 GMT+10)	21/09/2026
Endorsed by:	General Manager, Engineering & Maintenance Delivery	Michael Leah	Michael Leah (21/09/2026 17:03:45 GMT+10)	21/09/2026
Approved by:	MTS Chief Executive Officer	Oliver Bratton	Oliver Bratton (21/09/2026 18:56:44 GMT+10)	21/09/2026
Authorised by:	Technical and Delivery Director	Rob Welby	Robert Welby (23/09/2026 09:17:02 GMT+10)	23/09/2026
Approved by:	NRT Chief Executive Officer	Phil Dark		23/09/2026

Appendix A3. Amendment record

Date	Rev	Amendment description	By
22/04/2024	01	Initial draft. Formatting as per MTS branding standards for plans.	Peter Scioscia / Peter Simcic
24/05/2024	01	Final check and release for signature.	Peter Simcic
28/06/2024	02	Updated plan as per SMA's Environmental Representative comments	Peter Scioscia
28/07/2024	03	Updated plan as per DPHI's comments	Peter Scioscia
12/09/2024	04	Updated plan as per recent changes to subplans and final check and release for resubmission back to DPHI.	Peter Scioscia
18/12/2024	05	Updated with content regarding the handover of the Barangaroo WTP and WDIA.	David Wilson
19/08/2026	06	Inclusion of Southwest aspects of the M1 Line, signatories updated, updates to the OEMP to address comments raised by SM and Independent Environmental Representative (DPHI), minor formatting	Deepa Punnoose / David Wilson

Date	Rev	Amendment description	By
		updates and final check for submission to DPHI. Traffic and Transport Management Plan reference updated. Updated relevant date references in plan to reflect scheduled 2026 opening for SW. Some updated references to NSW government departments. Typos fixed and some minor wording changes. Update to table 2 CoA A33. Added references to MTS community communication strategy, SM Exhumation Management Procedure. Section 2.1 added reference to CSSI 7400 and 8256. Section 4.3 table EPL added. Removed NW reference to soil and contamination and also removed NW specific planning approvals. Reference to BGWTP WDIA included. Correction applied to represent quarterly water billing.	
16/09/2026	07	OEMP updated to address comments raised by SM and Independent Environmental Representative (DPHI). Administrative fixes and additional conditions added in compliance table. Update figure 1 map for the line provided by SM. Wording update in section 4.5.3. NARCLiM update in section 6.8.1. Update to table 10. Restored information to section 4.3 on CoA E1. Rectified table references. Updated CoA B1 from rev 7 to rev 11 in table 2. Updated text for CoA 67. Other minor text updates and language corrections. Added reference to Environmental Management Plan at 1C Sydney Steel Rd, Marrickville. Clarification added on change from DPE to DPHI.	Deepa Punnoose / Peter Simcic

B

APPENDIX

Appendix B. List of terms

Acronym	Definition
AEA	Aquatic Engineering Australia
ANZ SMEs	Australian & New Zealand Small & Medium Enterprises
ARI	Average Recurrence Interval
AS	Australian Standard
CBD	Central Business District (of Sydney)
CCRA	Climate Change Risk Assessment
CCRAAS	Climate Change Risk Assessment & Adaptation Study
CEO	Chief Executive Officer
CEP	Carbon & Energy Management Plan
CLIP	Community Liaison Implementation Plan
CoA	Conditions of Approval
CSSI	Critical State Significant Infrastructure
CSW	City and Southwest
CTP	Compliance Tracking Program
D&C	Design & Construction
D&D	Design & Delivery
D&DJV	Design & Delivery Joint Venture
DCCEW	Department of Climate Change, Energy, the Environment and Water
DPHI	NSW Department of Planning, Housing & Infrastructure
DPI	NSW Department of Primary Industries
DPSP	Delivery Phase Sustainability Plan
DSI	Detailed Site Investigation
E&S	Environmental & Sustainability
EAM	Environmental Aspect Map
ECRL	Epping to Chatswood Rail Line
ECSM	Electricity Consumption Software Model
EEC	Endangered Ecological Community
EIS	Environmental Impact Statement
EMP	Emergency Management Plan
EMS	Environmental Management System
EP&A	Environmental Planning & Assessment
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence
EWMS	Environmental Work Method Statements
FTE	Full Time Equivalent
GBCA	Green Building Council of Australia
GM	General Manager

Acronym	Definition
GRI	Global Reporting Initiative
HR	Human Resources
HSE	Health, Safety, Environment
HVAC&R	Heating, Ventilation, Air Conditioning & Refrigeration
ICN	Industry Capability Network
IEQ	Indoor Environment Quality
IMF	Incident Management Framework
IMS	Integrated Management System
IR	Industrial Relations
IS Rating Tool	Infrastructure Sustainability Rating Tool
ISC	Infrastructure Sustainability Council
ISO	International Standards Organisation
kL	Kilolitre
KPIs	Key Performance Indicators
kVa	Kilovolt-ampere
LCA	Life Cycle Assessment
LCC	Life Cycle Cost
LMA	Licenced Maintenance Areas
MCoA	Ministerial Conditions of Approval
MTS	Metro Trains Sydney Pty Ltd
NABERS	National Australian Built Environment Rating System
NCIE	National Centre for Indigenous Excellence
NGERS	National Greenhouse and Energy Reporting Scheme
NOW	NSW Office of Water
NRT	Northwest Rapid Transit
NVIA	Noise Vibration Impact Assessment
NVMP	Operational Noise & Vibration Management Plan
NW	Northwest
NWRL	Northwest Rail Link
O&M	Operation & Maintenance
OEMP	Operational Environmental Management Plan
OPESP	Operations Phase Environment and Sustainability Management Plan
ONVR	Operational Noise and Vibration Review
OpCo / OpCo2	NRT Group
OTS	Operations, Trains & Systems
PAS	Public Announcement System
PIMS	Project Integrated Management System
PIRMP	Pollution Incident Response Management Plan
PMS	Project Management System

Acronym	Definition
POEA Act	Protection of the Environment Operations Act 1997
PPP	Public Private Partnership
PRL	Parramatta Rail Link
PV	Photo Voltaic
RECS	Renewable Energy Certificates
REF	Review of Environmental Factor
REMMs	Revised Environmental Mitigation Measures
ROMs	Rail Operating Manuals
RTRF	Rapid Transit Rail Facility
SCLP	Stakeholder & Community Liaison Plan
SDG	Sustainable Design Guidelines
SEAG	Skills & Employment Advisory Group
SES	State Emergency Service
SH&E	Safety, Health & Environment
SQRE	Safety, Quality, Risk and Environment
SJV	Service Joint Venture
SMA	Sydney Metro Authority (an independent agency of TfNSW)
SMTF	Sydney Metro Train Facility
SMS	Safety Management System
SPMS	Server Payment Monitoring System
SQE	Safety, Quality & Environment
SROI	Social Return on Investment
SSI	State Significant Infrastructure
TAFE	Technical & Further Education
TBA	To Be Advised
TfNSW	Transport for NSW
TNA	Training Needs Analysis
TSS	Total Suspended Salts
VOC	Volatile Organic Compound
WAP	Works Approval Protocol
WTP	Water Treatment Plant

C

APPENDIX

Appendix C. Related documents

Note: some documents will be closely interconnected and will need to be reviewed when this one is changed. Those will be marked yes in the review column below. Others are simply related content that supplement the material in this document.

Document Number	Document Title	Review
SMCSWTS2-MTS-CSW-EM-PLN-002107	Carbon and Energy Management Plan	Yes
MTS-ECP-PO-021	Environment and Sustainability Policy	No
SMCSWLWC-SYC-DSY-EM-REP-022425	EPL 21423 Condition E4 Marrickville Water Treatment Plant Proof of Performance Monitoring Sydney Metro City & Southwest – Line-wide Works	No
SMCSWTS2-MTS-CSW-EM-PRO-005553	Fauna Handling Procedure	Yes
SMCSWTS2-MTS-1NL-EM-PLN-002711	Flooding and Hydrology Plan	Yes
SMCSWTS2-MTS-CSW-EM-PLN-005554	Flora & Fauna Management Plan	Yes
SMCSWTS2-MTS-1NL-EM-PLN-002712	Groundwater Management Plan	Yes
SMCSWTS2-MTS-CSW-HE-PLN-002100	Heritage Management Plan	No
SMCSWTS2-MTS-CSW-PM-PLN-002143	Human Resource Plan	No
SMCSWTS2-MTS-CSW-PM-PLN-002145	Incident Management Plan	No
SMCSWTS2-MTS-1NL-EM-PRO-005432	Noise & Vibration Monitoring Procedure	No
SMCSWTS2-MTS-CSW-EM-PLN-002106	Noise and Vibration Management Plan	Yes
SMCSWTS2-MTS-CSW-EM-PLN-002105	Operations Phase Environment and Sustainability Plan	Yes
SMCSWTS2-MTS-CSW-EM-PLN-002731	Pollution Incident Response Management Plan	Yes
SMCSWTS2-MTS-1NL-PR-PLN-005495	Procurement Policy	No
SMCSWTS2-MTS-CSW-PM-PLN-002156	Quality Management Plan	No
SMCSWTS2-MTS-CSW-PM-PLN-002158	Risk Management Plan	No
SMCSWTS2-MTS-1NL-EM-PLN-005496	Severe Weather Conditions Response Plan	No
SMCSWTS2-MTS-1NL-SA-REC-005478	SMS Element 17: Procurement and Contract Management	No
SMCSWTS2-MTS-CSW-EM-PRO-005548	Spill Management Procedure	Yes
SMCSWTS2-MTS-CSW-PM-PLN-002162	Stakeholder and Community Involvement Plan	No
SMCSWTS2-MTS-WEC-NA-REP-006669	Sydney Metro Sydenham to Bankstown - OOH Engineering and Maintenance Works- Noise and Vibration Impact Statement.	No
SMCSWTS2-MTS-CSW-TF-PLN-002803	Traffic and Transport Management Plan	Yes
SMCSWTS2-MTS-CSW-PM-PLN-002136	Training Management Plan	No
SMCSWTS2-MTS-CSW-EM-PRO-005556	Unexpected Contaminated Finds Procedure	Yes
SMCSWTS2-MTS-CSW-HE-PRO-005555	Unexpected Heritage Finds Procedure	No
SMCSWTS2-MTS-CSW-EM-PRO-005542	Waste Resource Management Procedure	Yes
SMCSWTS2-MTS-SBR-EM-PLN-004532	Water Discharge Impact Assessment – Barangaroo Station	Yes
SMCSWTS2-MTS-CSW-EM-PRO-005558	Weed Management Procedure	Yes

D

APPENDIX

Appendix D. Environment & Sustainability Policy

Metro Trains Sydney

REDEFINING RAIL

Environment and Sustainability Policy

Information

Issue Date:	Next Review Date:	Network:	Version:
01/12/2025	01/12/2026	Overall	03

Document Number:	Alternative Number:
MTS-ECP-PO-021	n/a

An MTR, John Holland and UGL Rail Company

Environment and Sustainability Policy
MTS-ECP-PO-021 | version 03
This document is uncontrolled when printed.

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1. Our Commitment

Metro Trains Sydney (MTS) is committed to seamlessly connecting our customers through a safe and sustainable railway, with a positive and personal experience satisfying their expectations for service delivery, improved liveability and accessibility. We intend to integrate asset and people safety, governance, environmental, social and economic sustainability consideration in all we do.

2. Environment & Sustainability Objectives

We will ensure that the following objectives are met in relation to our Environmental & Sustainability obligations:

- Our statutory and regulatory requirements will be continually identified, understood and consistently met;
- We will comply with the Project Deed requirements and continually improve our performance in relation to our environment and sustainability aspects;
- We will influence contractors, subcontractors and suppliers to adopt sustainable practices; and
- We will work proactively with key Government regulatory agencies, Sydney Metro Authority, Transport for New South Wales (NSW), business leaders and community stakeholders to identify environmental & sustainability issues and opportunities for improvement

3. Policy Statement

This policy aims to minimise MTS's impact on the environment and ensure we operate in a sustainable way, in line with industry best practices and legislative requirements. Through this policy, we seek to ensure the provision of adequate environmental & sustainable resources, trained personnel, and appropriate response measures across all operations to support our workforce and operations of the M1 Metro network.

4. Integrated Management System

To support the implementation of this policy, MTS have established an Integrated Management System (IMS) in line with the requirements of ISO14001 (Environmental Management Systems), and are dedicated to the continual improvement of the IMS by:

- Providing a clear focus on priorities by establishing environmental & sustainability objectives, which are reviewed periodically through the management review process; and

- Implementation of a good governance practices through independent audits to ensure the ongoing internal and contractor suitability and conformity with the IMS.

5. Achievement of Commitments

MTS will undertake the following with the intent to achieving our commitments:

- Minimise the impact of our operations and maintenance to the surrounding environment;
- Prevent pollution and ensure zero harm to the surrounding environment;
- Ensure water discharge occurs only in a controlled & approved manner;
- Minimise impacts to air quality;
- Ensure waste to landfill is minimised and recycling opportunities are maximised;
- Identify opportunities to reduce operational energy consumption and carbon emissions;
- Minimise water consumption;
- Build workforce diversity;
- Prioritise local employment;
- Encourage engagement of Subject Matter Experts (SMEs) in the supply chain for operation;
- Prioritisation of procurement from local businesses;
- Consider climate change adaptation factors to provide a resilient network;
- Deliver passenger comfort and customer focused safety, security and service; and
- Enhance community benefits through transport amenity and reliability, healthy living, and community safety.

6. Endorsement

This policy is formally endorsed by the Chief Executive Officer , demonstrating our top-level commitment to minimising our impact on the environment and a continued focus on sustainable operations. All members of the leadership team are dedicated to upholding and promoting this policy.

This policy will be reviewed and updated regularly to ensure its effectiveness and relevance to our operations and the regulatory environment.

Oliver Bratton

Oliver Bratton (02/12/2025 11:45:20 GMT+11)

Oliver Bratton I Chief Executive Officer
Metro Trains Sydney

An MTR, John Holland and UGL Rail Company

APPENDIX A: Version history

Approval Record

Function	Position	Name	Signature	Date
Updated by	Environment & Sustainability Lead Advisor	David Wilson	David Wilson (01/12/2025 12:37:41 GMT+11)	01/12/2025
Reviewed by	Head of Safety Quality and Risk and Environment	Melissa Northey	M C Northey	01/12/2025
Endorsed by	GM Safety Quality, Risk and Environment	Amanda Calvez		01/12/2025
Approved by	MTS Chief Executive Officer	Oliver Bratton	Oliver Bratton (02/12/2025 11:48:30 GMT+11)	02/12/2025

Amendment Record

Date	Rev	Amendment description	By
01/04/2021	01	First issue	Tajwar Dar
20/09/2024	02	Template changes and policy wording updated	David Wilson
01/12/2025	03	Content update to comply with MTS branding and new CEO signature added.	David Wilson

APPENDIX B: Glossary

Acronym	Explanation
IMS	Integrated Management System
MTS	Metro Trains Sydney
NSW	New South Wales
SMEs	Subject Matter Experts (SMEs)

E

APPENDIX

Appendix E. Risk assessment

Table 21 Risk assessment matrix

RISK NUMBER	RISK EVENT	CATEGORY	CAUSES	CONSEQUENCES	CONTROLS/TREATMENTS	CONSEQUENCE LEVEL	LIKELIHOOD	RISK RATING
	Noise and Vibration							
1	Excessive noise from surface repair or maintenance works.	Surface Works	Repair and maintenance works (including tamping, ballast cleaning, etc) are undertaken without:	- Public complaint;	- Modelling to be conducted to identify possible sensitive receivers, measures to be put in place to mitigate.	C3	L5	Medium
			- proper notification to the community;	- Infringement notice from regulators;	- Community notification of maintenance and repair works to be undertaken in accordance with EPL provisions and Deed requirements;			
			- implementation of mitigation measures.	- Loss of reputation;	- Mitigation measures to be implemented, including respite, as determined through noise assessment.			
				- EPA applies stricter requirements to Maintenance & Repair works through the EPL (potentially restricting operating hours).	Noise and Vibration Management Plan EIS ID: OpNV1 - The height and extent of noise barriers adjacent to the northern surface track works would be confirmed during detailed design with the aim of not exceeding trigger levels from the Rail Infrastructure Noise Guidelines (Environment Protection Authority, 2013).			

					At property treatments would be offered where there are residual exceedances of the trigger levels. EIS OpNV2 – Track form would be confirmed during the detailed design process in order to meet the relevant ground-borne noise and vibration criteria from the Rail Infrastructure Noise Guidelines (EPA, 2013) and the Interim Guideline for the Assessment of Noise from Rail Infrastructure Projects (DECC, 2007a). EIS OpNV3 – Stations and ancillary facilities including train breakout noise from draught relief shafts would be designed to meet the applicable noise criteria derived from the Industrial Noise Policy (EPA, 2000).			
2	Vibration from maintenance works within proximity to receivers.	Surface Works	Repair and maintenance works (including tamping, ballast cleaning, etc) are undertaken without:	- Public complaint;	- Modelling to be conducted to identify possible sensitive receivers, measures to be put in place to mitigate.	C4	L5	Low
			- proper notification to the community;	- Cosmetic damage;	- Community notification of repair and maintenance works to be undertaken in accordance with EPL provisions and Deed requirements;			
			- implementation of mitigation measures.	- Structural damage;	Mitigation measures to be implemented, including respite, as determined by Vibration assessment			

				- Infringement notice from regulators;	- Greater separation of vibratory works were possible			
				- EPA applies stricter requirements to Maintenance & Repair works through the EPL (potentially restricting operating hours).	Noise and Vibration Management Plan			
3	Ground borne Noise is greater than the Operational Noise and Vibration models predicted in Noise and Vibration Management Plan	Tunnel Operation	- Modelling used during D&C Phase had incorrect inputs;	- Public complaint;	-Performance criteria established in ROMs	C4	L5	Low
			- The "as built" Project did not meet the design requirements for regenerated noise	- Infringement notice from regulators;	-Operations undertaken in compliance with ROMs			
			- The operation of the railway systems are not as envisaged during design development	- Breach of the MCoA leading to fines or stop works order from DPHI;	Noise and Vibration Management Plan			
				- Loss of reputation;				
				- EPA applies stricter requirements to the operation of the Project;				
				- Requirement to undertake major works to reconstruct the Project to the required standards.				
	Soil and Water							
4	Contamination of water through spills of fuels or chemicals.	All Works.	-Plant & equipment failure	- Pollution of watercourse and stormwater;	OPESP and OEMP	C4	L5	Low
			-Accidental spill	- Infringement notice;	- Refuelling Procedures;			
			-Inappropriate storage	- Reputational damage;	- Spill Management Procedure;			

	Station specific risk – SMTF South contains a Water Treatment Plant **Station specific risk – Barangaroo contains a Water Treatment Plant** **Station specific risk – Barangaroo station – cooling water discharge**		-Unapproved release of impacted water	- Clean-up costs.	Provision of Spill Kits at set locations, and mobile Spill Kits for stations			
			-Refuelling not appropriately controlled		- Training of all staff and workforce;			
			-Spill kit not available		- Incident Response Procedures;			
					- Detention Basin Management Procedure; and			
				Station specific risks – Barangaroo WTP:- Higher levels of cyanide now being tested on site.	- Water quality and watercourse monitoring. Station specific risks – SMTF South – Sydney Steel Road: Managed by Environmental Management Plan at 1C Sydney Steel Road Marrickville. Station specific risks – Barangaroo WTP: WDIA and WQMP to manage this risk EIS ID: SCW7 - Discharges from the tunnel water treatment plant would be monitored to ensure compliance with the discharge criteria determined in consultation with the NSW Environment Protection Authority.			
5	Utility strike (water or sewer) during repair or maintenance works causes a	Surface Works	- Accidental strike of service as located on plan;	- Pollution of watercourse and stormwater;	OPESP and OEMP	C4	L5	Low
			- Utility is marked on plans in the wrong location; or	- Disruption to service provision;	- Excavation permit system to be implemented			

	release of water to the surrounding environment.		- Service not formerly identified by any means of investigation discovered and damaged.	- Infringement notice;	- Spill Management Procedure;			
				- Reputational damage;	- Provision of Spill Kits at set locations, and mobile spill kits for sites outside of the SMTF's;			
				- Clean-up costs.	- Training of all staff and workforce;			
					- Incident Response Procedures.			
6	Unforeseen water inflows into the tunnel require additional discharge	Environment and Sustainability	- Settlement and/or damage to tunnel causing additional groundwater inflow	- Delay as WTP operation is amended to allow for increased discharge	- Settlement monitoring previously undertaken	C4	L5	Low
			- Damaged water service draining to tunnel	- Infringement notice from EPA for discharge of water(s) in contravention of the EPL	Work method planning takes into consideration existing services			
				- Stop train operations (depending on volume entering tunnel).	- CCS monitoring performance of pumps and WTP			
7	Impacts to water quality from discharge of untreated groundwater.	Environment and Sustainability	- WTP failure	- Pollution of watercourse and stormwater;	OPESP and OEMP	C4	L5	Low
			- CCS monitoring not identifying water quality impact	- Impacts to aquatic flora and fauna;	- Refuelling Procedures;			
			- Unauthorised discharge	- Infringement notice;	- Spill Management Procedure;			
				- Reputational damage;	- Provision of Spill Kits at set locations, and mobile spill kits for sites outside of the RTRF;			
				- Clean-up costs.	- Training of all staff and workforce;			
					- Incident Response Procedures;			

					- Detention Basin Management Procedure; and			
					- Water quality and watercourse monitoring.			
8	Pollution of watercourses from discharge of sediment laden or otherwise contaminated stormwater runoff.	Environment and Sustainability	Rainfall event larger than the design capacity of the permanent built drainage facilities.	- Impacts to aquatic flora and fauna;	- Refuelling Procedures;	C4	L5	Low
				- Infringement notice;	- Spill Management Procedure;			
				- Reputational damage;	- Provision of Spill Kits			
				- Clean-up costs	- Training of relevant staff and workforce;			
					- Incident Response Procedures;			
					- Detention Basin Management Procedure; and			
					- Water quality and watercourse monitoring.			
9	Ongoing water table drawdown, settlement / ground movement, bed cracking / surface flow loss from previous tunnelling activities & excavations.	Tunnel	- Ongoing settlement of ground and inflows around the project infrastructure	- Flooding of infrastructure assets	- Previous settlement monitoring	C4	L5	Low
				- Impact to natural flow and GDEs	- Site inspection			
					- Watercourse inspections			

10	Impacts from flood risk to stations and other rail infrastructure.	Environment and Sustainability	- Rainfall events beyond the design capacity of the final built infrastructure.	- Flooding of stations and other assets;	- Previous flood assessments	C4	L5	Low
				- Damage to infrastructure;	- Prevent impacts on drainage systems and watercourses through work planning			
				- Impacts on operations;	- Temporary flooding controls./ diversions			
				- Risk to human safety and life;				
11	Uncontrolled water discharge from Operational Water Treatment Plant at SMTF-S.	Environment and Sustainability	Rainfall event larger than the design capacity of the permanent built treatment facilities.	- Damage to infrastructure; - Impacts to operations; - Infringement Notice or other enforcement action from EPA	OPESP OEMP EMP	C3	L5	Medium
	Heritage							
12	Identification of unidentified indigenous or non-indigenous objects and places during repair and maintenance works.	Environment and Sustainability	- Previously unidentified heritage item discovered during works	- Damage to heritage item.	Heritage Management Plan	C4	L6	Low
				- Delay to works while item is investigated and properly archived.	- Unexpected Heritage Finds Procedure (including hold point to cease works where archaeological finds are encountered).			
				- Infringement notice.				
				- Reputational damage.				
	Traffic and Transport							
13	Potential impacts on the		- Poorly designed precinct roads		Traffic and Transport Management Plan	C4	L4	Medium

	local and regional road network during operation	Traffic & Transport	- Traffic volumes during peak periods	Complaints	- Traffic monitoring (by Sydney Metro TfNSW)			
			- Commuter reliance on car use to get to stations	-Accidents and injuries	- Encourage alternative modes of transport for commuters and staff			
14	Safety of pedestrians and cyclists within and around the station precincts	Traffic & Transport	- Footpaths and corridors access is impacted	- Complaints	- Clear footpaths and corridors for active modes of transport	C4	L5	Low
			- Poor connections and signage	- accidents and injuries	Maintain design and Provision of facilities for cyclists			
			- Staff not providing access to cyclists	- reputational damage	- Lighting and security provisions around stations and managed precinct areas - Maximising pedestrian accessibility to the stations. (EIS ID: OpT1) - Access would be maintained to neighbouring properties (EIS ID: OptT2)			
				- Greater reliance on vehicles and further traffic generation				
	Air Quality							
15	Dust emissions from repair or maintenance works, in particular those involving the moving of ballast	Surface Works	- Improper execution of surface works without appropriate mitigation.	- Community complaints;	OPESP and OEMP	C4	L5	Low
			- Failure to implement dust suppression during works.	- Visual haze;	Dust Management practices			
			- Excessive dry / windy weather rendering the ground and ballast dry and dusty.	- Respiratory complaints;				
				- Infringement notice;	EWMS to include dust mitigation methods, including such things as:			
				- Reputational damage.	- inspection and observation for dust during work			

					- Dust suppression to be fitted to equipment as required;			
					- Wash-down of plant and services;			
					- Education program for personnel to instruct on correct mitigation measures;			
					- Street sweepers and water carts to be used to clean hard surfaces where required			
16	Capped asbestos at SMTF-S failure	Surface Works	Improper management of the hazard.	Accidents and Injuries Infringement notice	OEMP EMP (Appendix F)	C4	L5	Low
17	1m x 1m asbestos impacts requiring isolation or removal at SMTF-N	Surface Works	Improper management of the hazard.	Accidents and Injuries Infringement notice	OEMP	C4	L5	Low

	Ecology							
18	Impacts to threatened flora species during surface repair and maintenance works.	Surface Works	- Accidental clearing of threatened species;	- Infringement notice;	OPESP and OEMP	C4	L6	Low
			- Damage to root/ drip zone, of threatened tree species.	- Reputational damage.	- Vegetation Management Procedure.			
19	Impacts to threatened fauna species from noise, light spill and collision.	Surface Works	- Impact with maintenance and repair vehicles;	- Impact to health and life of fauna species increasing the chance of extinction.	OPESP and OEMP	C4	L6	Low
			- Impact with trains;	- Infringement notice;	- Fauna Handling Procedure			
			- Light spill affecting the habits of nocturnal species.	- Reputational damage.				
20	Weed invasion .	Surface Works	- Failure to manage weed proliferation within the Operational Project boundaries	Spread of weeds leading to increased maintenance costs.	OPESP and OEMP	C4	L6	Low
					- Weed Management Procedure.			
					- Vegetation Management Procedure			
21	Impacts to aquatic ecosystems from water discharge at SMTF-S Water Treatment Plant	Surface Works	- Release of water that is polluted (highly turbid or containing other pollutants) into natural watercourses.	- Pollution of waterways;	OPESP and OEMP	C4	L5	Low
			- WTP monitoring not identifying pollutants	- Failure to comply with S.120 of the POEO Act;	- WTP processes			
			- WTP failure	- Damage to health/ life of aquatic flora and fauna;				
			- Unauthorised discharge	- Infringement notice;	- EPL			
				- Reputational damage;	- Waste tracking and disposal			
				- Clean-up costs.				

				- Failure to comply with condition D1 and E107 of CSSI 7400				

	Waste and Resource Management							
22	Excessive waste directed to landfill.	Governance	- Unforeseen major repair or maintenance works requiring substantial demolition of NRT infrastructure.	- Failure to meet Deed requirements;	Compliance with:	C4	L4	Medium
			- Failure to follow waste management protocols for waste management from: offices; maintenance facilities; etc.	- Failure to meet ISC requirements;	OPESP and OEMP			
				- Failure to meet MCoA requirements, resulting in infringement notice;	- Waste and Resource Management Procedure. EIS ID: WM5 – Generation of operation phase waste would be minimised. In addition to the above, MTS will comply with the REMMs addressed in Appendix C to this OEMP.			
				- Reputational damage;				
				- Increased cost associated with purchasing extra water.				
23	Mismanagement of waste materials.	Environment and Sustainability	- Failure to follow waste management protocols for waste management from: offices; maintenance facilities; etc.	- Infringement notice for improper disposal of waste.	Compliance with: - CEMP; - Waste and Resource Management Procedure, including: * Waste classification sampling; * Waste tracking dockets.	C4	L4	Medium

					EIS ID: HR5 – All hazardous substances that may be required for operation would be stored and managed in accordance with the Storage and Handling of Dangerous Goods Code of Practice (Workcover NSW, 2005) and Hazardous and Offensive Development Application Guidelines: Applying SEPP 33 (Department of Planning, 2011).			
	Greenhouse Gas and Climate Change Adaptation							
24	Emissions of greenhouse gases during operation contributing to climate change.		- Increased use of electricity during operation; - Failure to source adequate volumes of green power.	- Contributing to climate change impacts due to increased emissions.	Compliance with: OPESP and OEMP - Procurement Procedures; - Sustainability initiatives for water reuse and energy use (reduce/offset); Carbon & Energy Management Plan	C4	L5	Low
25	Impact of climate change on rail operations and infrastructure.		-Heat sensitive components impacted by increase in hot days - Increase storm events and rainfall intensity		OPESP and OEMP Emergency Management Plan Flooding & Hydrology Plan Groundwater Management Plan PRIMP - Procurement Procedures; - Sustainability initiatives for water reuse and energy use (reduce/offset)	C4	L5	Low

					- Severe Weather Response Management Plan -Climate Change Risk Register			
					Carbon & Energy Management Plan EIS ID: SUS 7 – Sustainability initiatives would be incorporated into the operation of the project to support the achievement of the project sustainability objectives. EIS ID: SUS 8– Periodic review of climate change risks would be carried out to ensure ongoing resilience to the impacts of climate change. EIS ID: SUS 9 – A workforce development and industry participation strategy would be developed and implemented during operation. EIS ID: SUS 10 – 100 per cent of the greenhouse gas emissions associated with consumption of electricity during operation would be offset.			

Figure 7 Risk matrix

Likelihood

SCORING SCHEME	Qualitative	Quantitative
L1 | **Almost Certain**	Expected to occur frequently during the life of the Project	>12 times annually
L2 | **Very Likely**	Expected to occur occasionally during the life of the Project	1-12 times annually or expect this risk to occur monthly
L3 | **Likely**	More likely to occur during the life of the Project than not	1 time per year of Contract
L4 | **Possible**	More likely not to occur during the life of the Project than occur	5 times during the life of the Contract | Once every three years
L5 | **Very Unlikely**	Not expected to occur during the life of the Project	3 times during the life of the Contract | Once every five years
L6 | **Almost Unprecedented**	No expectation that this risk will occur during the life of the Project	1 time during the life of the Contract | Once every 15 years

Scoring Scheme (Matrix)

MATRIX	C6 | Insignificant	C5 | Minor	C4 | Moderate	C3 | Major	C2 | Severe	C1 | Catastrophic
L1 | **Almost Certain**	C	B	B	A	A	A
L2 | **Very Likely**	C	C	B	B	A	A
L3 | **Likely**	D	C	C	B	B	A
L4 | **Possible**	D	D	C	C	B	B
L5 | **Very Unlikely**	D	D	D	C	C	B
L6 | **Almost Unprecedented**	D	D	D	D	C	C

Risk Response

RATING	MTS Response	Sign-Off
A | Very High – Generally Intolerable	Should be avoided except in extraordinary circumstances. All A risks should be escalated to the ERR and all available and necessary steps should be taken to reduce the level of these risks. Very High risks should only be accepted in consultation with the CEO who will evidence their understanding of the residual exposure.	Chief Executive Officer
B | High - Undesirable	These risks can only be tolerated if it is not reasonably practicable to reduce the level of this risk further and that a SFAIRP argument is evidenced. High risks are to be on the verge of being unacceptable to the business. High risks should only be accepted in consultation with the relevant LT Member who will evidence their understanding of the residual exposure.	Leadership Team Member
C | Medium - Tolerable	Medium risks can only be tolerated if it is not reasonably practicable to reduce the level of this risk further and that all WHS and Environmental considerations have been considered. Medium risks should only be accepted in consultation with the relevant Manager or Risk Owner who will evidence their understanding of the residual exposure.	Manager
D | Low – Broadly Acceptable	Low risks are expected but MTS remain vigilant in reducing our exposure and that all WHS and Environmental considerations have been considered. The Supervisor / Team Leader will be able to evidence their understanding of the residual exposure.	Supervisor / Team Leader

F

APPENDIX

Appendix F. NGERS – Data collection

Figure 8 NGER data collection form

Company Name:				
Name:				
Position:				
Works performed:				
Data capture period:				
		Quantity	**Unit of Measure**	**Data source (invoices, metering, estimation etc.)**
Electricity consumption and production				
Electricity consumption (purchased from the grid)				
Electricity production – e.g. diesel generators (if above reporting threshold: 0.5 or more megawatts capacity per generation unit and generates more than 100,000 kWh per unit per reporting year.)				
Natural gas consumption				
Combusted Fuels – Transport				
Registered motor vehicles	Diesel			
	Gasoline / petrol			
	Liquefied Petroleum Gas (LPG)			
	Biodiesel (B20)			
	Ethanol (E10)			
	Liquefied Natural Gas (LNG)			
Combusted Fuels - Stationary				
Fuels used in plant and equipment: Stationary	Diesel			
	Gasoline / petrol			
	Liquefied Petroleum Gas (LPG)			
	Biodiesel (B20)			
	Other (please state): Ethanol (E10)			
	Liquefied Natural Gas (LNG)			
	Acetylene			
	Solvents (mineral turpentine or white spirit)			
	Petroleum based oils – combusted			
	Petroleum based greases – combusted			
	Petroleum based oils – not combusted			
	Petroleum based greases – not combusted			
Other (please provide details of any other potential emissions sources)				

G

APPENDIX

Appendix G. Operational Carbon Footprint – 2024 -25

Appendix G1. Purpose of Reporting

This section presents the operational greenhouse gas (GHG) emissions of Metro Trains Sydney (MTS) for the 2024–25 reporting period, submitted to the Sydney Metro in accordance with contractual reporting requirements and consistent with National Greenhouse and Energy Reporting (NGERS) principles.

Appendix G2. Reporting Boundary and Methodology

- **Organisational boundary:**
  - Emissions from all Metro Trains Sydney operations under operational control for the reporting period.
- **Emissions scopes included:**
  - **Scope 1:** Direct emissions from fuel combustion (e.g. backup generators) and refrigerant losses.
  - **Scope 2:** Indirect emissions from purchased electricity consumed for:
    - Traction power
    - Stations
    - Depots
    - Control systems and operational facilities
- **Methodology:**
  Emissions have been calculated in accordance with the **National Greenhouse and Energy Reporting (NGER) Act 2007** and associated Determination. Emission factors applied are those relevant for the Australian electricity grid for the reporting year.
- **Exclusions:**
  - Scope 3 emissions (including electricity transmission and distribution losses) are not included, consistent with NGERS mandatory reporting requirements.

Appendix G3. Summary of Emissions

Table 22 Summary of Emissions

Emissions Category	Emissions (tCO_2-e)
Scope 1	337
Scope 2	106,280
Total Scope 1 & 2	**106,617**
Total operational carbon footprint (2024–25):	**106,617 tonnes CO_2-e**

The emissions profile is dominated by Scope 2 electricity consumption, reflecting the electrically powered nature of Sydney Metro operations.

Appendix G4. Operational Intensity Metrics

To provide additional context for performance assessment, emissions have been normalised against key operational indicators.

Inputs used:

- Total electricity consumption: 162,690,000 kWh
- Total service hours: 8,395 hours

Appendix G5. Electricity Emissions Intensity

- **Scope 2 emissions intensity: 0.653 kg CO_2-e per kWh consumed**

This metric provides a consistent basis for tracking changes in emissions intensity over time and assessing the impact of electricity decarbonisation initiatives.

Appendix G6. Emissions per Service Hour

- **Total operational emissions per service hour: 12.7 tCO_2-e per service hour**

This intensity metric supports operational benchmarking and year-on-year performance comparison independent of service volume changes.

Appendix G7. Interpretation and Key Observations

- Electricity consumption accounts for **more than 99%** of total reported emissions, highlighting that:
  - Network decarbonisation outcomes are strongly linked to grid emission factors, and
  - renewable electricity procurement represents the most material emissions reduction lever available to MTS.
- Scope 1 emissions are minor and primarily related to non-routine activities (e.g. backup generation and refrigerant leakage).

Appendix G8. Use of Data

The emissions data presented in this section is suitable for:

- Sydney Metro contractual reporting.
- Internal sustainability and emissions performance tracking.
- Alignment with NGERS submissions for the same reporting period.

SMCSWTS2-MTS-CSW-EM-PLN-002697 - Operational Environmental Management Plan rev.07

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