

Appendix B10

Climate Change Monitoring and Adaptive Management Framework

M12 Motorway – East Package

July 2023

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Glossary/abbreviations

Abbreviations	Expanded text
AR	Amendment Report
AR5	IPCC 5th Assessment Report
AR6	IPPC 6th Assessment Report
ARSR	Amendment Report to the Submissions Report
BoM	Bureau of Meteorology
CA	Consistency Assessment
CCMAMF	Climate Change Monitoring and Adaptive Management Framework
CCRA	Climate Change Risk Assessment
CCS	Community Communication Strategy
CEMP	Construction Environmental Management Plan
CO ₂	Carbon dioxide
CoA	Conditions of Approval
Commonwealth CoA	Federal Conditions of Approval under the EPBC Act
Construction	Includes all activities required to construct the CSSI as described in the documents listed in Condition A1, including commissioning trials of equipment and temporary use of any part of the CSSI, but excluding Low Impact Work which is carried out to complete prior to the approval of the CEMP, works approved under a Site Establishment Management Plan, demolition of acquired residential houses, structures and sheds, and works specified in Appendix B of the Infrastructure Approval and approved under an environmental management plan(s) in accordance with Condition A24.
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CSSI	Critical State Significant Infrastructure
DPE	NSW Department of Planning and Environment
DPIE	Former Department of Planning, Industry and Environment (now Department of Planning and Environment)
EAD	Environmental Assessment Documentation
EDC	Elizabeth Drive Connection
EES	Former Environment, Energy and Science
EHG	Environment and Heritage Group (a part of NSW DPE)
EIS	Environmental Impact Statement
EMS	Environmental Management System
Environmental Assessment Documentation	The set of documents that comprise the Division 5.2 Approval: • Roads and Maritime Services (October, 2019) M12 Motorway, Environmental Impact Statement (EIS) • Transport for NSW (October, 2020) M12 Motorway, Submissions Report (the Submissions Report) • Transport for NSW (October, 2020) M12 Motorway, Amendment Report (AR) • Transport for NSW (December, 2020) M12 Motorway, Amendment Report submissions report (ARSR)

Abbreviations	Expanded text
	• Transport for NSW (March, 2021) The M12 Motorway Amendment Report Submissions Report – Amendment (ARSR amendment) • WSP (October, 2021) M12 Motorway – West Package Detailed Design Consistency Assessment • GHD (October, 2021) M12 Motorway – Central Package Detailed Design Consistency Assessment • Arcadis (June, 2022) M12 Motorway – Sydney Water Crossings Consistency Assessment • Arcadis (July, 2022) M12 Motorway – Design Boundary Changes Consistency Assessment • Arcadis (August, 2022) M12 Motorway – Minor Change Consistency Assessment. The documents that comprise the EPBC referral: • Submission #3486 – The M12 Motorway Project between the M7 Motorway, Cecil Hills and The Northern Road, Luddenham, NSW Notification of referral decision and designated proponent - controlled action; date of decision 19 October 2018; ID: 2018-8286.
Environmental Representative	A suitably qualified and experienced person independent of project design and construction personnel employed for the duration of construction. The principal point of advice in relation to all questions and complaints concerning environmental performance.
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
EPL	Environmental Protection License
ER	Environmental Representative
ESM	Transport for New South Wales Environment and Sustainability Manager
ESR	John Holland Environmental Site Representative
Extreme event	Referred to as extreme heat, extreme precipitation, severe storm or wind event and/or bushfire
Federal Approval	Approval (EPBC 2018/8286) for carrying out the M12 Project under Part 8 of the Environmental Protection and Biodiversity Conservation Act 1999 subject to specific CoA as detailed in Annexure A of the approval.
Final construction footprint	The area shown in the map(s) submitted under Commonwealth CoA 2, determined by TfNSW in accordance with a consistency assessment(s) or a modification assessment under the NSW Environmental Planning and Assessment Act 1979 where no new significant impacts to protected matters are identified.
Framework	All activities related to this CCMAMF
GHG	Greenhouse gas
Infrastructure Approval	Approval (SSI 9364) for carrying out of the M12 Project under Section 5.19 of the Environmental Planning and Assessment Act 1979 subject to specific CoA as detailed in Schedule 2 of the approval.
IPCC	Intergovernmental Panel on Climate Change
IS	Infrastructure Sustainability
ISCA	Infrastructure Sustainability Council of Australia
NSW CoA	NSW Conditions of Approval
OCCMAMF	Overarching Climate Change Monitoring and Adaptive Management Framework

Abbreviations	Expanded text
OCEMP	Overarching Construction Environmental Management Plan
OCS	Overarching Communication Strategy
OEMP	Operational Environmental Management Plan
Planning Secretary	Secretary of the NSW Department of Planning and Environment, or delegate
Ppm	Parts per million
Primary CoA/REMM	CoA/REMM that are specific to the development of this Framework
Project CCRAs	Collective term for Climate Change Risk Assessments and climate change monitoring and adaptive management frameworks from M12 West, Central and East Detailed Design packages
QA	Quality Assurance
RCP	Representative Concentration Pathway
REMM	Revised Environmental Management Measure
RMS	Formerly Roads & Maritime Services (now Transport for NSW)
Secondary CoA/REMM	CoA/REMM that are related to, but not specific to, the development of this Framework
SMP	Sustainability Management Plan
SWTC	Scope of Work and Technical Criteria
TfNSW	Transport for New South Wales
WHS	Workplace Health and Safety
Work	Any physical work to build or facilitate the building of the CSSI, including low impact work, environmental management measures and utility works. However, it does not include activities that inform or enable detailed design of the CSSI and generate noise that is no more than 5 dB(A) above the rating background level at any sensitive receiver.
WSO Co	Western Sydney Orbital Company, a consortium between Transurban Group, Queensland Investment Corporation and Canada Pension Plan Investment Board
WSIA	Western Sydney International Airport.

1. Introduction

1.1. Planning Context

1.1.1. M12 East package

This Climate Change Monitoring and Adaptive Management Framework (CCMAMF or Framework) forms part of the Construction Environmental Management Plan (CEMP) for the M12 Motorway East package (M12 East package) and complements the project Sustainability Management Plan (SMP).

This CCMAMF has been prepared to address the requirements of the Revised Environmental Management Measures (REMMs) listed in the M12 Motorway Environmental Assessment Documentation, listed in the M12 Motorway Environmental Impact Statement (EIS), Amendment Report, and Amendment Report Submissions report (ARSR), relevant consistency assessments (referred to collectively as Environmental Assessment Documentation (EAD), refer Section 1.2.1 for further detail) and all applicable legislation and Transport for New South Wales (TfNSW) specifications.

1.1.2. M7-M12 Integration project

The M12 Motorway Project (SSI 9364) will be delivered with the M7 Motorway (Modification 6 Widening; SSI-663-Mod-6) (M7 Widening) scope of work under what is referred to as the M7-M12 Integration project. The M7 Widening involves widening of approximately 26 kilometres of the M7 Motorway between Prestons and Oakhurst/Glendenning. The M7-M12 Integration project is being delivered by WSO Co and John Holland.

The M12 East package and M7 Widening have a complex interface in the vicinity of Cecil Hills and Cecil Park where the M7-M12 interchange is proposed.

Due to construction programming and development of the OCEMP, the CEMP and sub-plans will be prepared in a two-step process:

- M12 East package CEMP and sub-plans (including this CCMAMF)
- M7-M12 Integration project CEMP and sub-plans

This CCMAMF focusses on the requirements of the M12 East package as there is no requirement for a CCMAMF under the M7 Widening approval. It is noted however that the CCMAMF supports the Sustainability Management Plan which is an M7-M12 Integration document and covers both the M7 Widening and M12 East package.

1.2. Background

1.2.1. M7-M12 Integration project

Transport for New South Wales (TfNSW) is constructing and will operate the M12 Motorway to provide direct access between the Western Sydney International Airport (WSIA) at Badgerys Creek and Sydney's motorway network. The M12 Motorway will run between the M7 Motorway at Cecil Hills and The Northern Road at Luddenham for about 16 kilometres (km) and is expected to be opened to traffic prior to opening of the WSIA.

A detailed M12 Motorway Project description is provided in Section 5.1 of the CEMP.

1.2.2. Statutory Context

The M12 Motorway Project is subject to an approval under Division 5.2 of the Environmental Planning and Assessment Act 1979 (EP&A Act) as Critical State Significant Infrastructure (CSSI). The M12 Motorway Project is also a controlled action under Section 75 of the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), requiring a separate approval from the Australian Minister for the Environment.

The M12 Motorway Project was assessed as part of an EIS, Submission Report, Amendment Report, ARSR and ARSR Biodiversity Amendment, and subsequent consistency assessments (CAs):

- WSP (October, 2021) M12 Motorway – West Package Detailed Design: Proposed changes between east of Badgerys Creek and The Northern Road Consistency Assessment
- GHD (October, 2021) M12 Motorway – Central Package Detailed Design: Design and boundary changes between Cecil Park and east of Badgerys Creek Consistency Assessment
- Arcadis (June, 2022) M12 Motorway – West and Central Package Sydney Water Pipeline Crossings: Proposed Sydney Water pipelines crossings for M12 West and Central Consistency Assessment
- Arcadis (July, 2022) M12 Motorway – Design Boundary Changes: Proposed construction and operational design boundary changes for the M12 Project Consistency Assessment
- Arcadis (August, 2022) M12 Central Boundary Changes: Proposed construction design boundary changes for M12 Central – Minor Change Consistency Assessment
- WSP (in preparation) Proposed construction and operational design boundary changes for the M12 Project (East) Consistency Assessment.

These documents are collectively referred to as the Environmental Assessment Documentation (EAD). The CSSI must also be carried out in accordance with all procedures, commitments, preventative actions, performance outcomes and mitigation measures set out in the EAD as required by NSW CoA A2.

Approval for the M12 Motorway Project under the EP&A Act was granted by the Minister for Planning on 23 April 2021 (CSSI 9364). Approval for the M12 Motorway Project under the EPBC Act was granted by the Australian Minister for the Environment on 3 June 2021 (EPBC 2018/8286).

1.2.3. M12 Motorway Delivery Strategy

The M12 Motorway Project will be constructed in separate stages or work packages:

- M12 West – between The Northern Road, Luddenham and about 250 metres east of Badgerys Creek
- M12 Central – between about 500 metres west of South Creek and the Western Sydney Parklands at Duff Road, Cecil Park
- M12 Central temporary roundabout installation
- M12 East (the subject of this Plan) as part of the M7-M12 Integration project:
 - Elizabeth Drive connections (EDC) – connections between the M12 Motorway and Elizabeth Drive at Cecil Park
 - the M7/M12 interchange – a grade-separated motorway-to-motorway connection between the M7 and M12 Motorways.

Each M12 Motorway package of works is being delivered under separate contracts on behalf of the proponent, TfNSW. There will be periods during which the works associated with the M12 Central and M12 East packages will overlap. Coordination between the contractors will be required to manage cumulative impacts.

1.2.4. Elizabeth Drive connections

Construction of the M12 East package involves connecting Elizabeth Drive to the M12 Motorway and the upgrade of approximately two kilometres of Elizabeth Drive from east of Duff Road to 300 metres east of the M7 Motorway.

Wallgrove Road will be realigned as part of the construction of the Elizabeth Drive connection (EDC). This will also require decommissioning a section of the existing Wallgrove Road approximately 500 metres from where it currently intersects with Elizabeth Drive. The new Wallgrove Road will connect to and replace the existing Cecil Road and Elizabeth Drive intersection and Cecil Road will be realigned to connect back into the realigned Wallgrove Road.

1.3. Scope of this Plan

The Overarching Climate Change Monitoring and Adaptive Management Framework (OCCMAMF) provides an overarching and adaptive management framework to enable TfNSW, WSO Co and John Holland to

establish and maintain best practice controls in the interest of managing potential climate change impacts during construction. The OCCMAMF forms part of the Overarching Construction Environmental Management Plan (OCEMP) for the M12 Motorway. The strategies defined in this CCMAMF have been developed to address REMM CC02 and are based on the structure and layout of the OCCMAMF to ensure consistency and reflection of the overarching approvals and management structure. Like the overarching CCMAMF, this document includes requirements for implementation, monitoring and auditing during construction of the M12 East package. SMART (Specific, Measurable, Achievable, Realistic and Timely) principles are to be considered and applied during the preparation and ongoing implementation of this Plan. Implementing this CCMAMF effectively will enable John Holland to meet regulatory and policy requirements in a systematic manner and continually improve climate change performance, as well as ensure consistency and best practice adaptive management in the context of climate impacts.

This CCMAMF consists of:

- An overview of the M12 East package's existing climate and relevant climate change projections based on up-to-date and program-accepted forecast and scenarios.
- Expected climate change impacts related to construction phase of the M12 East package
- Climate change control measures during construction
- Monitoring procedures and criteria to evaluate effectiveness of climate change control measures during construction
- Procedures for periodic review and continual improvement of the Climate Change Risk Assessment (CCRA) and CCMAMF

This CCMAMF will be available to all site personnel and sub-contractors onsite and via the Project document control management system. This document will also be used to complement the evidence package provided for the ISC submission, namely Cli-1 and Cli-2.

A copy of this CCMAMF will be kept on the premises for the duration of construction.

Like the Overarching Climate Change Monitoring and Adaptive Management Framework, this plan does not consider climate change monitoring and adaptive management measures for design and operation.

1.4. Environmental Management Systems Overview

The Environmental Management System (EMS) for the M12 East package is described in Section 3 of the CEMP. The EMS is consistent with the overarching EMS described in Section 3 of the OCEMP.

To achieve the intended environmental performance outcomes, John Holland have established, implemented, maintained and continually improved an EMS in accordance with the requirements of ISO14001:2015. The John Holland EMS will be adopted as the guiding environmental management framework for the M12 East package.

The EMS consists of governance documentation, incorporating environmental management plans, policies, procedures and tools including:

- **John Holland Environment Policy.** Outlines the commitments and intentions established by John Holland as a business to ensure environmental performance and targets are achieved. The John Holland Environment Policy applies to the M12 East package. (Appendix A3 of the CEMP)
- **M12 East package CEMP.** Details the processes and procedures to be implemented during construction to comply with applicable CoA, REMMs, Environment Protection Licence (EPL), legislative obligations and contractual requirements. The relevant compliance obligations are detailed in CEMP Appendix A1, with a cross reference to where they are met in this Plan
- **M12 East package Environmental Management Sub-plans.** These documents describe procedures and controls for specific environmental aspects requiring more rigorous management strategies

- **M12 East package Monitoring Programs.** Details the monitoring regime to be implemented during construction to compare the actual performance of construction against the objectives outlined in the relevant Plan, including setting specific triggers and associated responses
- **Sensitive Area Plans (SAPs).** A series of maps providing key features of the alignment and relevant environmental constraints. Features include waterways, heritage, biodiversity contamination and sensitive receivers amongst other site relevant features
- **Environmental Work Method Statements.** Management measures identified in this Plan may also be incorporated into site or activity specific Environmental Work Method Statements (EWMS) for activities assessed as having high environmental risk or other activities as required in TfNSW Specification G36. EWMS incorporate appropriate mitigation measures and controls and identify key procedures to be used concurrently with this Plan. Construction personnel undertaking a task governed by an EWMS must undertake the activity in accordance with the mitigation and management measures identified in the EWMS. EWMS will be reviewed by WSO Co/TfNSW Environment and Sustainability Manager (ESM) (or delegate) and independent Environmental Representative (ER) before the commencement of the construction activities to which they apply. See Section 3.3.3 of the CEMP for details of the EWMS preparation and approval requirements
- **M7-M12 Integration Energy and Greenhouse Gas Emissions Strategy and Management Sub-plan.** A sub-plan of the Sustainability Management Plan that defines the processes and methods to improve energy efficiency and identifies greenhouse gas reduction initiatives for construction
- **Procedures, strategies and protocols.** Detailed procedures for inclusion in work packs. Detailed procedures, strategies and protocols have been/will be developed as required. Procedures, strategies and protocols relevant to this Plan include:
 - Erosion and Sediment Control Procedure (Construction Soil and Water Management Plan, Appendix D)
 - Concept Erosion and Sediment Control Plan (Construction Soil and Water Management Plan, Appendix E)
 - Stockpile Management Procedure (Construction Soil and Water Management Plan, Appendix G)
 - Site Stabilisation Sub-plan (Construction Soil and Water Management Plan, Appendix H)

1.4.1. CCMAMF preparation and review

This CCMAMF has been prepared to satisfy REMM CC02 which requires that *“a climate change monitoring and adaptive management framework will be prepared and implemented for the project. The framework will incorporate performance monitoring criteria and measures, and the requirement for periodic review of the climate change risk assessment and framework against updated climate data to ensure currency”*.

The CCMAMF will be reviewed by the TfNSW ESM.

1.4.2. Interactions with other management plans

This CCMAMF has the following interrelationships with other management plans and documents:

- M12 Motorway Sustainability Strategy (TfNSW, 2021) which outlines M12 Project wide sustainability objectives and targets and Infrastructure Sustainability Council of Australia (ISCA) rating tool credit requirements in response to NSW CoA E91 and E92. REMM SU01 requires the development of a Sustainability Management Plan (SMP) to be implemented during detailed design and construction to give effect to the sustainability strategy for the project. For the purposes of the M12 CoA, the M7 M12 Integration Project SMP serves as the SMP to give effect to the M12 Motorway Sustainability Strategy, which has already been submitted to the Planning Secretary for information prior to construction of previous stages of the M12. Targets to reduce greenhouse gas emissions during construction are detailed in the SMP and subplans including the Energy Efficiency and Greenhouse Gas Emissions Strategy Management Sub Plan.

- The Overarching Construction Environmental Management Plan (OCEMP) specifically relating to management measures and monitoring requirements during construction
- The M12 East package Construction Environmental Management Plan (CEMP)
- The M12 East package Construction Flora and Fauna Management Plan (CFFMP) including the minimisation of vegetation removal
- The M12 East package Construction Soil and Water Management Plan (CSWMP) including site inspection prior, during and following storm events
- The M12 East package Construction Waste and Resources Management Plan (CWRMP) specifically addressing greenhouse gas emissions and resource and energy use
- M12 East package Construction Air Quality Management Plan (CAQMP) specifically monitoring vehicle and plant emissions during construction.
- M12 East package Construction Flood Management Plan (CFMP) addresses flood management protocols and response
- M7-M12 Integration Site Establishment Management Plan (SEMP) addresses the construction of ancillary facilities away from high-risk areas
- The Workplace Health and Safety Management Plan will apply an adaptive management approach to workplace health and safety during construction
- Sustainability Management Plan which outlines the project pathway to achieving its sustainability goals and targets with the ISC framework.

2. Purpose and Objectives

2.1. Purpose

The purpose of this CCMAMF is to describe how John Holland will effectively manage the M12 East package to meet regulatory and policy requirements in a systematic manner and continually improve climate change performance, as well as ensure consistency and best practice adaptive management in the context of climate impacts.

2.2. Objectives

The key objective of this CCMAMF is to ensure that all relevant requirements related to climate change mitigation and adaptive management are described, scheduled and assigned responsibility.

2.3. Targets

Targets for climate change mitigation and adaptive management during construction of the M12 East package have been established to enable compliance with M12 East package requirements and include:

- Ensure M12 East package personnel are informed via toolbox talks and the Project induction of this framework
- Manage extreme events during the construction of the M12 East package through the implementation of feasible and reasonable management measures, such as those detailed in Section 4.

3. Environmental Requirements

3.1. Relevant legislation and guidelines

Legislation, guidelines and policies relevant to the development of this Framework include:

- Environmental Planning and Assessment Act, 1979
- United Nations Sustainable Development Goals
- Transport Environment and Sustainability Policy Framework and Statement (TfNSW)
- TfNSW Sustainable Design Guidelines Version 4.0
- Infrastructure Sustainability rating tool Version 1.2 (Infrastructure Sustainability Council of Australia)
- Commonwealth Direct Action Plan including the Emissions Reduction Fund and Safeguard Mechanism
- National Climate Resilience and Adaptation Strategy
- NSW Climate Change Policy Framework
- Climate Change Fund Strategic Plan 2017-2022
- NSW Future Transport Strategy 2056
- A Metropolis of Three Cities – the Greater Sydney Region Plan (Greater Sydney Commission)
- Western City District Plan (Greater Sydney Commission)
- NSW Government Resource Efficiency Policy
- NSW Waste Avoidance and Resource Recovery Strategy 2014-21
- Technical Guide for Climate Change Adaptation for the State Road Network
- Australian Standard AS 5334-2013 *Climate change adaptation for settlements and infrastructure – A risk-based approach*
- Australian and New Zealand Standard AS/NZ ISO 31000:2018 Risk Management – Guidelines
- Infrastructure Sustainability Council of Australia Technical Manual (ISCA, 2016).

3.2. NSW and Federal Conditions of Approval

There are no requirements under the NSW or Federal Conditions of Approval (CoA) to prepare and implement a specific Climate Change Monitoring and Adaptive Management Framework.

3.3. Revised Environmental Management Measures

The primary REMM relevant to the development of this Framework is listed in Table 3-1. Secondary REMMs relevant to this Framework have been listed in Appendix A. A cross reference is also included to indicate where the REMM is addressed in this document or other Project management documents.

Table 3-1: Primary REMMS relevant to this Framework

REMM No.	Requirement	Document Reference
CC02	A climate change monitoring and adaptive management framework will be prepared and implemented for the Project.	This CCMAMF
	The framework will incorporate performance monitoring criteria and measures	Section 4.3 Section 5
	The framework will incorporate the requirement for periodic review of the climate change risk assessment and framework against updated climate data to ensure currency.	Section 4.2 Section 7.2

3.4. Design documentation

Design documentation as relevant to this package of works will be cross referenced and included in this CCMAMF as project planning develops and periodic review of the of the climate change risk assessment and framework against updated climate data to ensure currency as required by M12 Motorway REMM

CC02. Existing design documentation include the existing Climate Change Risk Assessment undertaken by WSP as part of the design process for the Elizabeth Drive Connection package of works, as listed below:

- Climate Change Assessment, Monitoring and Adaptive Framework (WSP, 2022)

3.5. Infrastructure Sustainability Council of Australia

The Project is required to achieve a minimum 'Excellent' rating under the Infrastructure Sustainability (IS) Rating Scheme under the v1.2 Technical Manual for the M12 East package (refer M12 CoA E91). John Holland has further nominated a requirement to 'Leading' rating (a score of 75) under the IS Rating Scheme for both the Design and As-Built ratings. The credits relevant to this document are Cli-1 and Cli-2, the key requirements of which are shown in Table 3-2. The measures outlined in this document for construction will be included in the package of evidence (relating to construction) for these two credits.

Table 3-2: IS Rating climate change risk assessment credit criteria

IS credit	Level	Criteria
Cli-1 Climate change risk assessment	Level 1	A readily available climate change projection is identified and adopted for the asset region over the forecast useful life of the asset. AND Direct climate change risks to the asset over the forecast useful life are identified and assessed.
Cli-1	Level 2	The requirements of Level 1 are achieved. AND A number of readily available climate change projections are identified and adopted for the asset region over the forecast useful life of the asset. AND The climate change risk assessment also considered indirect climate change risks to the asset. AND A multi-disciplinary team participated in identifying climate change risks and issues.
Cli-1	Level 3	The requirements of Level 2 are achieved. AND Modelling is undertaken to characterise the likely impacts of the projected climate change for all High and Extreme priority climate change risks. AND A comprehensive set of affected external stakeholders participated in identifying climate change risks and issues.
Cli-2 Adaption measures	Level 1	Adaptation options to treat all extreme and high priority climate change risks are identified, assessed and appropriate measures implemented. AND After treatment there are no extreme priority residual climate change risks.
Cli-2	Level 2	The requirements of Level 1 are achieved. AND Adaptation options to treat 25-50% of all medium priority climate change risks are identified, assessed and appropriate measures implemented.

IS credit	Level	Criteria
Cli-2	Level 3	The requirements of Level 2 are achieved. AND The optimal scale and timing of options is addressed (which may be triggered by when a specific climate threshold is likely to be achieved). AND Adaptation options to treat at least 50% of all medium priority climate change risks are identified, assessed and appropriate measures implemented. AND After treatment there are no high priority residual climate change risks.

3.6. Scope of Works and Technical Criteria

Under the M12 East package's Scope of Works and Technical Criteria (SWTC), there are two requirements relating to Climate Change. These are covered in Appendix D.5 Sustainability Requirements 2.4 Climate Change, and include the requirements:

- a) The Companies must undertake climate change risk assessments for the construction and operational stage of EDC and M7-M12 Interchange and of M7 Widening in accordance with the standard AS 5334-2013 (Climate change adaptation for settlements and infrastructure – A risk-based approach). TfNSW Climate Risk Assessment Guideline SD-081 should also be considered.
- b) The Companies must identify and implement adaptation measures to comprehensively address all 'extreme' and 'high' rated risks and a minimum of 25% of all 'medium' risks identified in the climate change risk assessment.

4. Existing Environment

Greenhouse gases (GHG) are gases that when released into the atmosphere effectively trap heat influencing global temperatures. The release of GHGs into the atmosphere is caused by both natural processes (such as bushfires) and human activities (e.g. burning fossil fuels and land clearing).

GHG (measured in parts per million (ppm)) have been rapidly increasing since the industrial revolution leading to an increase in the earth's average surface temperature and has contributed to the phenomenon of 'climate change'.

The term 'climate' refers to the typical weather conditions for a specific geographical area, usually averaged over at least 30 years. Climate variability represents the 'normal' day to day seasonal and year to year variability in the components of climate (e.g. temperature, rainfall). However, climate variability may also generate extreme conditions such as flooding, heatwaves and hail which require management.

Climate change is likely to bring about changes in both average climate conditions and the frequency and severity of extreme events. This progressive change has implications for sea levels, ocean temperatures and the functionality of natural ecosystems. Climate change also means that asset owners and managers can no longer rely on prevailing assumptions that climate will be more or less the same as it was over the past 50 or 100 years.

The outcomes of the latest IPCC AR6 Synthesis report and conduct an additional climate change risk assessment are currently being assessed to cover the entirety of the wider M7 M12 Integration Project's scope of work, which will consider the outcomes of the AR6 Report. Findings and any required changes will form part of the next revision of this document. In the interim, the EIS summarised the key findings on climate change as outlined in the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5). The findings include:

- Warming of the climate is unequivocal; the atmosphere and oceans have warmed, the amounts of snow and ice have diminished and sea level has risen.
- Surface temperature is projected to rise over the 21st century. It is very likely that heat waves will occur more often and last longer, and that extreme precipitation events will become more intense and frequent. The ocean will continue to warm and acidify, and global mean sea level will rise.
- In urban areas, climate change is projected to increase risks for people, economies and ecosystems, including risks from heat stress, storms, extreme rainfall, flooding, water scarcity, sea level rise, and storm surges.
- Australia is currently experiencing the effects of climate change, including extreme temperatures, changes to rainfall, frequency and intensity of storm events, increases in bushfire weather, ocean warming and acidification, and sea level rise.
- Building adaptive capacity is crucial for effective selection and implementation of adaptation options.

The update and amendment of this Framework is further detailed in Section 7.2.

4.1. Climate change projections

As per AS 5334:2013, *Climate change adaptation for settlements and infrastructure – A risk-based approach*, the climate change projections selected for existing M12 projects (for context) include a medium-term moderate emissions scenario and a long-term high emissions scenario. They include a 2050 projection under Representative Concentration Pathway (RCP) 4.5 and a 2090 projection under a more extreme RCP 8.5. AS 5334 states, this is preferable to provide a range in the data to guide the risk assessment. For comparison, all climate risks were also assessed using the climate baseline data collected from Prospect Reservoir Weather Station which is also in the general region of M12 east.

The RCPs are described according to atmospheric CO₂ concentration levels (in ppm) and may also be described by anomalies in global mean surface air temperatures for the period 2081-2100 relative to the

average period 1986-2005 (refer Table 4-1). A summary of historical annual trends and projected changes to climate variables for each scenario is provided in Appendix B.

Table 4-1: Climate change projection scenarios

Global climate response	RCP scenario	Project increase in global surface temperature by 2081-2100
Slower response, emissions peak around 2040, then decline.	RCP 4.5, atmospheric concentration of CO ₂ projected at approx. 540 ppm by 2100.	Mean projected increase 1.8 °C Anomaly range +1.1 – 2.6 °C
Little curbing of emissions, continuing rapid rise throughout the 21st century.	RCP 8.5, atmospheric concentration of CO ₂ projected at approx. 940 ppm by 2100 and continuing to increase.	Mean projected increase 3.7 °C Anomaly range +2.6 – 4.8 °C

4.2. Climate Change Risk Assessment

Climate Change Risk Assessments (CCRA) have been developed for a number of existing detailed design packages within the program. These CCRA's built upon the EIS and updates were made to the selection of climate variables, as well as baseline and projection data and climate change scenarios for each detailed design package; these are collectively referred to as the M12 Motorway CCRA and incorporate the M12 West (WSP, 2021a) and M12 Central CCRA's (GHD, 2021a). The outcomes of the additional M12 East package CCRA will be included within this Framework once completed. An additional workshop to facilitate the full M7 M12 scope CCRA will be undertaken within 1 month following commencement of construction for the M12 East, with the interim Climate Change Risk Assessment report following within 2 weeks. This workshop is currently scheduled for mid-August 2023. If the nature of climate risks or adaptations need to be updated, they will be reviewed and incorporated into this framework.

A CCRA for the Elizabeth Drive Connection (EDC) Package of works was conducted by WSP during the design phase of the project and was provided as part of the deed documentation. A multidisciplinary team including representatives from TfNSW were involved in the development of the CCRA. The project has reviewed the risks identified during that process and will ensure adaptation measures are implemented.

The existing CCRA's have taken into consideration the requirements of AS 5334:2013, *Climate change adaptation for settlements and infrastructure – A risk-based approach* (which follows the risk principles and guidelines of AS 31000:2009, *Risk Management – Principles and guidelines*) and the RMS Technical Guide on *Climate Change Adaptation for the Road Network*. This will also be the case for future CCRA's which take place for the M7-M12 Interchange and other related scope of works.

For the nearest existing data for other works within the program, the Prospect Reservoir Weather Station was used for the WSP EDC CCRA and M12 Central CCRA as the station contained significant climate baseline data and was proximal to both works. M12 West CCRA utilised Orchard Hill Treatment Works weather station (067084). The CCRA for the later M7 M12 Interchange package of works will incorporate the most accurate and relevant data which is proximal to where the works are located. Climate projections for this scope of works will be considerate of both near term and far term climate projections.

For context, a total of 32 risks were identified following the CCRA completed for the EDC portion of works.

For M12 East, RCP8.5 will be used as this is the most appropriate and widely accepted scenario.

Three main risks were identified for EDC construction works with a **medium** risk rating. The risks are outlined in Table 4-2. Adaptation and mitigation measures associated with the identified risks are detailed in Section 5.

Table 4-2: Climate change risks during construction flagged for projects within the M12 program

Risk scenario	Likelihood	Consequence	Risk rating 2030 (WSP, 2022)
Extreme temperature			
Increased frequency, severity, and duration of extreme temperatures (days exceeding 35°C) leading to adverse health impacts for construction workers and potential health and safety incidents.	Unlikely	Serious	Medium
Extreme rainfall			
Increased frequency, severity and duration of extreme precipitation events leading to unsuitable and unsafe conditions for construction to proceed, resulting in an increase in 'stop work' days and subsequent delays to the construction program.	Unlikely	Serious	Medium
Bushfire risk			
Increased frequency and severity of bushfires leading to smoke generation, resulting in potential health effects for construction workers and health and safety incidents, potential increase in 'stop work' days, and subsequent delays to construction program.	Unlikely	Major	Medium

It is noted that an additional CCRA will be prepared to include the M7 M12 Interchange to ensure currency and appropriateness based on the latest scientific evidence and research, such as that which is covered in the latest IPCC Report (AR6).

4.3. Performance monitoring criteria

Monitoring of climate change adaptation measures is required to ensure the M12 East package maintains resilience to climate change impacts to minimise adverse impacts on personnel's health during construction and operation, the public's health during operation and delays to construction program.

A list of monitoring activities and evaluation criteria are specified in Table 4-3. These activities and criteria will be supplemented during construction by the measures outlined in the CEMP and relevant Sub-plans, as well as the Sustainability Management Plan.

Table 4-3: Climate change performance monitoring criteria and measures

Performance monitoring criteria	Monitoring measures	Timing	Responsibility
Evaluate effectiveness of communicating upcoming extreme climate to personnel and planning for delays to program	Monitor weather forecast to check for upcoming days with predicted extreme heat, extreme precipitation, and bushfire warnings to enable wet weather procedures or stop works to be enacted	Daily	John Holland ESR Site Superintendent
If construction ancillary facilities have been affected by severe storms, consider relocation or additional weather protection	Site inspection to be undertaken before, during and after rainfall events as detailed in the Soil & Water Management Plan	Before, during and after rainfall	John Holland ESR Site Superintendents

Performance monitoring criteria	Monitoring measures	Timing	Responsibility
Determine if the WHS practices are effective in preventing personnel health impacts, if not, implement improved protocols	Monitor effectiveness of workplace health and safety practices, including stop work protocols, to be reviewed after the event of extreme heat days	After days exceeding 35°C	Safety Manager
Evaluate health and wellbeing of personnel on extreme heat days and determine if additional protocols shall be implemented to minimise health risk	Monitor the health and wellbeing of personnel on high heat days and determine whether stop work protocols should be implemented	Days exceeding 30°C but under 35°C	Safety Manager

5. Climate Change Adaption and Mitigation Measures

The adaptation and mitigation measures have been designed to minimise the immediate impacts of climate change during construction. These options are based on the relevant construction risk scenarios detailed in identified in the Environmental Assessment Documentation, M12 Motorway CCRA from other nearby packages of work, and the WSP CCRA for the EDC package of works, the details of which will be updated and cross-checked via an additional CCRA to include the M7 M12 Interchange works using the latest data. The construction risk scenarios highlighted in existing CCRA include:

- Extreme temperature: Increased frequency, severity, and duration of extreme temperatures (days exceeding 35°C) leading to adverse health impacts for construction workers and potential health and safety incidents.
- Extreme rainfall: Increased frequency, severity and duration of extreme precipitation events leading to unsuitable and unsafe conditions for construction to proceed, resulting in an increase in 'stop work' days and subsequent delays to the construction program.
- Bushfire risk: Increased frequency and severity of bushfires leading to smoke generation, resulting in potential health effects for construction workers and health and safety incidents, potential increase in 'stop work' days, and subsequent delays to construction program.

Table 5-1 details the adaptive management options for workplace health and safety and environmental planning during construction that will be implemented by John Holland and be adopted in stage-specific documentation.

Whilst climate change monitoring and adaptive management measures for design and operation are outside the scope of both the Overarching Climate Change Monitoring and Adaptive Management Framework (OCCMAMF) and this M12 East package specific-plan, some management options may be adopted during construction, and these have also been included below. Additional mitigation measures for operation of the project can be found in the operators' documentation, e.g. Westlink Services protocols.

Table 5-1: Climate Change adaptation and mitigation measures during construction

ID	Management Measure	When to implement	Responsibility	Applicability M12 East	Reference of source	Proposed Evidence of implementation
CC01	In locating ancillary facilities, John Holland will consider the risk of flood, strong winds, severe storm events and/or bushfires and consider the requirements detailed in NSW CoA A15-A20	Prior to main construction	John Holland ESR Safety Manager	✓	Section 5 Existing program CCRAs WHS Protocol	Site Establishment Management Plan
CC02	Prior to attending site, all personnel will undergo induction training detailing the procedures to be undertaken during extreme weather events ¹	Prior to construction and during construction	John Holland ESR Safety Manager	✓	Section 5 Existing program CCRAs WHS Protocol	Induction material Induction records
CC03	Weather conditions will be monitored, and the construction program will be adapted wherever feasible during extreme events	During construction	John Holland ESR Safety Manager	✓	Section 5 Existing program CCRAs WHS Protocol	Pre-start records Site inspection records Air Quality Management Sub- plan Construction Flood Management Sub- plan
CC04	Stop work protocols will be incorporated into the CEMP documentation for extreme events and implemented during construction	During construction	John Holland ESR Safety Manager	✓	Section 5 Existing CCRAs WHS Protocol	CEMP and Sub-plans
CC05	John Holland supplied plant materials will be grown by a nursery in a local area of similar climate to Works	During Construction	John Holland ESR Landscaping subcontractor	✓	Section 5 Existing program CCRAs	Procurement Records Landscaping Inspection Test Plans

¹ An extreme event can be referred to as extreme heat, extreme precipitation, severe storm or wind event and/or bushfire.

6. Compliance Management

6.1. Roles and responsibilities

The roles and responsibilities with respect to construction adaptive management measures are outlined in Table 5-1 of this document. Overall responsibilities for sustainability and climate aspects will be further detailed in the SMP.

6.2. Training

To ensure that this Framework is effectively implemented, all site personnel (including sub-contractors) will undergo site induction training that includes aspects described in this document, such as extreme heat and flooding, as relevant to the works being undertaken.

6.3. Communication

As required by the overarching CCMAMF, climate change adaptive management information will be communicated to the community and stakeholders where relevant to the M12 East package or as per further discussions with the communications and stakeholder team.

This CCMAMF will be available to all site personnel and sub-contractors via the M12 East package SharePoint and/or document control management system, as well as on site.

6.4. Monitoring and inspections

The monitoring of climate change adaptation measures is required to ensure the M12 East package maintains resilience to climate change impacts to minimise adverse impacts on the health of personnel during construction and delays to the construction program.

Monitoring performance criteria and measures are addressed in Section 4.3. Environmental inspections are detailed in Section 7.1 of the CEMP. Inspections are also covered in detail in the M12 East package-level CEMP. Significant weather and climate events will be monitored by the ESR as described in CC-01 of Table 5-1.

6.5. Auditing

Audits (both internal and external) will be undertaken to assess the effectiveness of environmental controls, compliance with this CCMAMF, CoA and other relevant approvals, licenses and guidelines. These will also take place under the IS framework, where both internal and external audits will be carried out by a Suitably Qualified Professional in line with the requirements of Man-4. It will be ensured that climate risk and adaptation processes are a key aspect of the audits.

Overarching audit requirements are further detailed in Section 6.2.1 of the OCEMP and will also be detailed in the M12 East package CEMP (Section 7.4). The frequency of inspections and audits will be planned and tracked using the M12 East audit and inspection schedule.

6.6. Reporting and identified records.

Reporting requirements and responsibilities are documented in Section 7.5 of the CEMP. M12 East package records of inspections, audits, reports and all documentation relating to climate and sustainability, including this framework, will be tracked, recorded and filed closely using the systems and processes outlined in the SMP and under the management of the sustainability lead. Adaptations which are further developed and agreed to (following the CCRA which is to be carried out) will be recorded and evidenced as part of Cli-1 and Cli-2.

7. Review and improvement

7.1. Continuous improvement

Continuous improvement of this Framework will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement. The continuous improvement process will be designed to:

- Identify areas of opportunity for improvement of environmental management and performance
- Identify environmental risks not already included in the risk register
- Determine the cause or causes of non-conformances and deficiencies
- Develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies
- Verify the effectiveness of the corrective and preventative actions
- Document any changes in procedures resulting from process improvement
- Make comparisons with objectives and targets.

John Holland will be responsible for ensuring M12 East package environmental risks are identified and included in the risk register and appropriate mitigation measures implemented throughout the construction of the M12 East package as part of the continuous improvement process. The process for ongoing risk identification and management during construction is outlined in Section 4.1.2 of the CEMP.

7.2. Update and amendment

Periodic reviews will be undertaken and implemented for improvements to this Framework during construction and will be part of a continual improvement process which is managed by the sustainability lead. It is noted that the latest IPCC AR6 Synthesis Report has recently been released (report can be found <https://www.ipcc.ch/report/sixth-assessment-report-cycle/>). This report will be reviewed further during M12 East package planning and any other climate risk assessment processes which will take place. Should there be any noteworthy or relevant changes to the nature of climate risk to construction (above and beyond what has been captured already) they will be updated and flagged during development of this CCMAFM. This framework may also be updated in the event that there are considerable changes to detailed design or construction methodology that may impact the risks or adaptation measures identified and/or generate new risks to the M12 East package.

Appendix A. Secondary CoAs and REMMs

CoA

CoA	Requirement	Reference
E91	A Sustainability Strategy must be prepared to achieve a minimum excellent 'Design' and 'As built' rating under the Infrastructure Sustainability Council of Australia infrastructure rating tool.	Section 1.4.2 Sustainability Strategy
E92	The Sustainability Strategy must be submitted to the Planning Secretary before the commencement of construction and must be implemented throughout construction and operation.	Section 1.4.2 Sustainability Strategy

REMM

REMM No.	Requirement	Document Reference
CC03	An adaptive management approach will be applied to workplace health and safety planning during construction and operation in line with the WHSMP. This will include use of TfNSW Work Health and Safety Procedures.	Section 5 WHS Protocol
SU01	A sustainability management plan for the project will be developed and implemented during detailed design, to give effect to the sustainability strategy for the project. The management plan will detail measures to meet the sustainability objectives and targets and Infrastructure Sustainability rating tool credit requirements.	Sustainability Strategy

Appendix B. Climate Baseline and projection data

The table below has been sourced from the WSP Climate Change Risk Assessment, Monitoring and Adaptive Framework (WSP, 2022) for the EDC Package of Works. During further planning and following the CCRA for the wider M7 M12 Project, this will be cross checked and updated where necessary in line with the latest IPCC publications such as AR6.

Data is mostly sourced from the *Climate Change in Australia Website – Summary Data Explorer* for the East Coast Cluster South (CSIRO, BOM and Department of Environment, 2020) and the *CSIRO East Coast Cluster Report* (CSIRO, BOM & Department of Environment, 2015). 50th percentile figures from the model simulations are shown in bold, with 10th and 90th percentile in brackets to demonstrate the range of results from different models. These projects align with those adopted by the M12 West Project.

CLIMATE VARIABLE	BASELINE DATA*	2030 (RCP8.5)	2070 (RPC8.5)	2090 (RCP8.5)
Temperature				
Mean Max Temperature (°C) – Annual	23.4	+1.1 (0.7 to 1.4)	+2.8 (2.2 to 3.6)	+3.8 (3 to 4.9)
Mean Max Temperature (°C) – Summer	28.2	+1.0 (0.6 to 1.5)	+2.7 (2.1 to 3.5)	+3.7 (2.8 to 4.5)
Mean Minimum Temperature (°C) – Winter	6	+1.0 (0.5 to 1.1)	+2.5 (2.0 to 3.0)	+3.5 (2.8 to 4.4)
Days over 35°C	12.1	+4.3 (4 to 5)	Unavailable	+11 (8.2 to 15)
Hottest recorded temperature °C	42.5			
Rainfall				
Mean Precipitation Change (%) – Annual	829.5mm	-0.9 (-10.8 to 6.2)	-3.1 (-16.4 to 13.9)	-3.2 (-20.2 to 16.1)
Mean Precipitation Change (%) – Summer	277mm	+1.9 (-13.1 to 13.6)	+3.7 (-13 to 24.6)	+11.1 (-11.6 to 27.1)
Mean Precipitation Change (%) – Winter	136.7mm	-7.9 (-20.1 to 11.6)	-14.5 (-30.5 to 9.4)	-17.0 (-31.4 to 0.5)
Extreme Rainfall Events				Maximum 1-day rainfall event – Projected to increase: 2 – 22%
Fire				
Cumulative McArthur Forest Fire Danger Index (ΣFFDI) (%)	2029 ²	+9% (+5 to 15)	Unavailable	+32% (5% to 51%)
Extreme Weather				
Maximum Daily Wind Speed (%)	n/a	n/a	n/a	-2 (-6.5 to 2.5)
Extreme Storms	Fewer East Coast Lows; however, an increase in the proportion of these being considered extreme storms			

*Baseline data taken from Orchard Hill Treatment Works weather station (067084) Period 1971 - 2000 – Bureau of Meteorology,

http://www.bom.gov.au/climate/averages/tables/cw_067084.shtml.

*Last available temperature record for this weather station was in 1989.

Appendix C. M12 East Compliance Table

Requirement Reference	Requirement	Details on compliance
Compliance Document - CCMAMF		
Section 1.4 Environmental Management Systems overview - 1st para	The Construction Contractor delivering the Project will have an EMS consistent with the overarching EMS described in the OCEMP and will develop stage specific CCMAMFs in accordance with the OCEMP, the Environmental Protection Licence (EPL) and their EMS.	The CCMAF has been structured and modelled based on the overarching document structure to ensure consistency. Section 1.4 details the overarching EMS, with the CCMAMF being focussed on the M12 East Package, with future updates as required as per Section 1.1.2
Section 1.4 Environmental Management Systems overview - 3rd para	The Construction Contractor will be required to develop, as part of their stage specific CCMAMFs, detailed procedures and plans to address specific requirements of the REMMs identified in this overarching CCMAMF.	Specific requirements of the REMMS identified in this CCMAMF are detailed in Section 3.3, and mainly cover performance monitoring criteria and measures, as well as periodic review of the CCRA against updated climate data, which are detailed in Section 4.3, and Section 7 respectively.
Section 1.4 Environmental Management Systems overview - 4th para	EWMS will be prepared by the Construction Contractor's Environmental Site Representative (ESR) and reviewed by the TfNSW Environment and Sustainability Manager (ESM) (or delegate) and independent Environmental Representative (ER) prior to the commencement of the construction activities to which they apply. Construction personnel undertaking a task governed by an EWMS will undertake the activity in accordance with the mitigation and management measures identified in the EWMS.	As mentioned in Section 1.4, EWMS will be prepared and approved as per Section 3.3.3 of the CEMP, with aspects from the CCMAMF incorporated as required.
Section 2.1 Purpose - 3rd para	This CCMAMF and stage-specific Construction Contractors' CCMAMFs will be available to all site personnel and sub-contractors via the Project document control management system and onsite.	As detailed in Section 6.3, the CCMAMF will be available to all site personnel and subcontractors via the M12 East SharePoint and/or document control system, as well as onsite
Section 4 Existing environment - 6th para	In August 2021, the first part to the IPCC Sixth Assessment Report (AR6) was released in August 2021 (IPCC, 2021). The outcomes of the first part of the AR6 report contained similar climate change outcomes as AR5. The AR6 Synthesis Report is due to be released in 2022 and this Framework will be updated thereafter. The Construction Contractor will update their stage specific CCMAMFs based on this on Framework. The update and amendment of this Framework is further detailed in Section 7.2.	Covered and detailed in Section 4.2 and 7.2 of the CCMAMF. As project planning progresses the CCMAMF and associated documents will be further developed, to include findings from the M12 East CCRA as well as the latest IPCC findings (AR6)
Section 4.3 Performance monitoring criteria - 3rd para and Table 4-3	The Construction Contractor will supplement the monitoring measures to manage and evaluate the effectiveness of adaptation measures, implement changes and revise any of the performance monitoring criteria where required.	Section 6.4 and 6.5 detail monitoring and inspection, as well as audit processes related to the CCMAMF. Section 7 details measures for continuous improvement, as well as any updates or amendments required.
Section 5 Climate Change and Adaption and Mitigation Measures - 2nd para and Table 5-1	Table 5-1 details the adaptive management options for workplace health and safety and environmental planning during construction that will be implemented by Construction Contractor and be adopted in stage-specific documentation.	Covered in table 5-1 in consistency with the overarching CCMAMF
Section 5 Climate Change and Adaption and Mitigation Measures Table 5-1: CC01	In locating ancillary facilities, the Construction Contractor will consider the risk of flood, strong winds, severe storm events and/or bushfires and consider the requirements detailed in NSW CoA A15-A20.	Covered in CCO1, Table 5-1
Section 5 Climate Change and Adaption and Mitigation Measures Table 5-1: CC02	Prior to attending site, all personnel will undergo induction training detailing the procedures to be undertaken during extreme weather events.	Refer Section 6.2 for coverage of training and site inductions for all site personnel, as well as table 5-1 for related climate change management measures
Section 5 Climate Change and Adaption and Mitigation Measures Table 5-1: CC03	Weather conditions will be monitored, and the construction program will be adapted wherever feasible during extreme events.	Refer Section 6.4 for monitoring and inspection activities, and Table 5-1 CC03 for further details
Section 5 Climate Change and Adaption and Mitigation Measures Table 5-1: CC04	Stop work protocols will be incorporated into the Construction Contractor stage specific documentation for extreme events and implemented during construction.	Table 4-3 incorporates various monitoring measures relating to extreme events during construction with Table 5-1 (CC-04) detailing management measures.
Section 6.2 Training - 1st para	To ensure that this Framework is effectively implemented, all site personnel (including sub-contractors) will undergo site induction training that includes climate adaptation and mitigation management.	Site induction training is covered by CC04 in Table 5-1 as well as Section 6.2
Section 6.3 Communication - 1st para	The Construction Contractor will adhere to the requirements as outlined in the OCS. The OCS identifies opportunities and tools for providing information and consulting with the community and stakeholders during the construction of the Project.	Refer Section 6.3 (communication). Communication of climate change adaptive management information will be communicated in discussion with the communications and stakeholder team and their Communication Management Plan
Section 6.6 Reporting and identified records - 2nd para	This Framework forms part of the OCEMP, as such the Construction Contractors will be required to maintain accurate records substantiating all construction activities associated with the Project, including measures taken to implement this Framework.	Reporting and identified records are detailed in Section 6.6

Requirement Reference	Requirement	Details on compliance
Section 7.1 Continuous improvement - 2nd para	The Construction Contractor will be responsible for ensuring Project environmental risks are identified and included in the risk register and appropriate mitigation measures implemented throughout the construction of the Project as part of the continuous improvement process. The process for ongoing risk identification and management during construction is outlined in Section 4.1 of the OCEMP.	Continuous improvement of the framework is covered in Section 7.1. Project environmental risks will be further identified in the project CCRA to be conducted, and which will also provide for identification of required adaptation measures. Climate Change risks are incorporated into the Workplace Risk Assessment through the Environmental Risk Assessment and Initial Risk Register (Appendix A2 to the CEMP) under Item 55
Section 7.2 Update and amendment - 2nd para	A copy of the updated Project CCRAs identifying changes to the Project's climate change risks and adaptations shall be distributed to all relevant stakeholders. The Construction Contractor will update their stage specific CCMAMFs based on updates of this Framework.	Refer Section 6.3 (communication): climate change adaptive management information will be communicated with relevant stakeholders, with updates to the CCMAMF undertaken as per Section 7.2 The existing EDC CCRA is already available to project stakeholders as part of the deed documentation. Further updates to the project CCRA will be distributed.