

# Construction Environmental Management Plan

TAXIWAY ZULU 2.0 PROJECT

FH-PM-PLN-0001

**CP14038.01 – Taxiway Zulu 2.0 Project**

**EPBC Number:** 2016/7837

**Project Name:** Taxiway Zulu 2.0 Project

**Proponent:** Australian Pacific Airports (Melbourne) Pty Ltd | ABN 62 076 999 114

**Location:** Melbourne Airport

**Project No:** CP14038.01

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APPROVAL	NAME	ROLE	SIGNATURE
Document Author	Tirrell Slaney	Environmental and Sustainability Advisor	
Document Reviewer	Adrian Barbagallo	Delivery Manager	
Document Owner	Nick Hrysomallis	Project Director	

# Construction Environmental Management Plan (CEMP)

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## 1. Introduction

### 1.1. Purpose

This Construction Environmental Management Plan (CEMP) outlines how Fulton Hogan will manage the environmental requirements to ensure a positive environmental performance for the Zulu 2.0 Project at Melbourne Airport (the Project). This document will ensure that all activities are undertaken consistently in accordance with regulatory and approval requirements and with minimal impact to the environment.

This CEMP is founded upon Fulton Hogan's environmental and sustainability policies and processes. It is supported by the dedicated and qualified resources of Fulton Hogan.

Protection of the environment is integral to the philosophy of Fulton Hogan's ISO 14001:2015 accredited management systems. As such, Fulton Hogan's environment management system, defined in this Plan, is consistent with the ISO 14001 requirements and is independently certified as such.

The management framework outlined in this CEMP provides clear guidelines for avoiding, reducing and managing environmental risks. It defines:

- Environment and Sustainability Policies,
- Objectives and Targets,
- Responsibilities,
- Environmental processes,
- Incident and emergency procedures,
- Monitoring, inspection and auditing regimes,
- Reporting processes,
- Rectification/improvement processes and
- Processes for the dissemination of information
- Environmental controls specific to the activities undertaken by the Project

All Project personnel will be familiar with the environmental requirements and their responsibilities. This ensures that all activities are undertaken in accordance with this CEMP.

### 1.2. Scope

This CEMP applies to all Project personnel and all activities undertaken by the Project, including the operation of the mobile concrete batching plant.

The scope of the Project involves Australia Pacific Airports (Melbourne) Pty Ltd (Melbourne Airport) constructing the Taxiway Zulu 2.0 Program.

The Project will enable the future extension to Terminal 2 to create additional aircraft contact gate capacity and upgrades to the existing taxiway pavement. It also supports future runway operations and improves aircraft traffic movements in the airport's northern precinct.

The CEMP is to be supported by scope specific Environmental Control Plans (ECPs) which are to be developed for to address the environmental management of the concreting batching plant and all other elements of the overall scope of works.

The key features of the Project are:

- New taxiway network in the Northern Precinct;
- Replacement of aircraft pavement at the end of its serviceable life;
- Associated services and utilities necessary to support development (including lighting, drainage and power); and

- Installing and operating an onsite concrete batching plant for the duration of the project (to be retained on site after the project for future APAM projects).

The proposed works schedule is included in Appendix A.

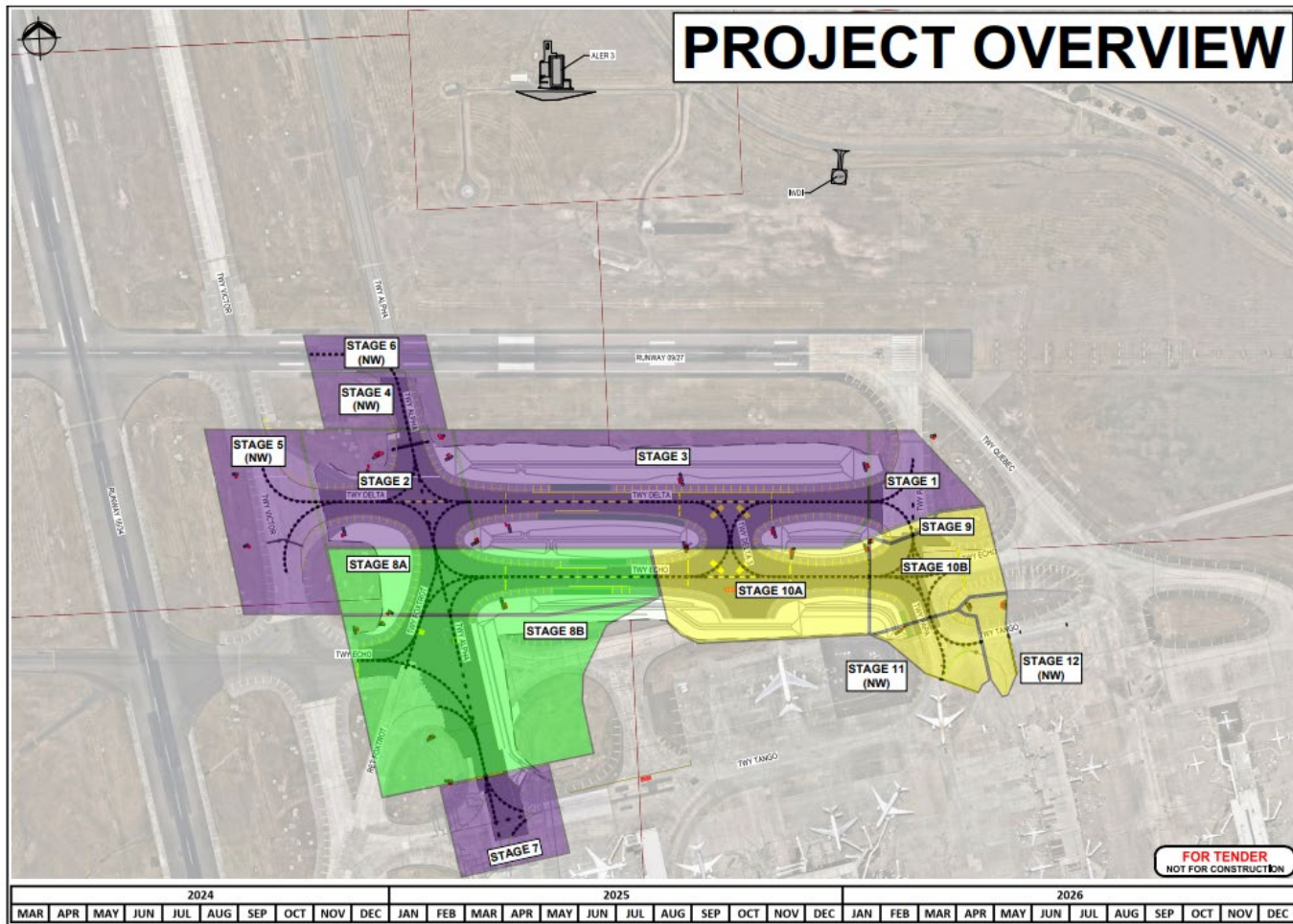


Figure 1 - Site layout showing main work stages

### 1.3. Approval and compliance requirements

Fulton Hogan’s CEMP has been prepared to fulfil the specific approval conditions defined in the Approval Notice 2016/7837, issued under sections 130(1) and 133 of the Environment Protection and Biodiversity Act 1999 (EPBC Act), signed on the 9 January 2018.

*Fulton Hogan note that APAM is seeking to amend this Approval to allow for the ALER works that form part of the Project. This section will be amended to reflect any changes to the approval conditions once finalised.*

The proposed action to which this approval applies is “to expand airside infrastructure including taxiways, taxi lanes and aprons, and construct a northern construction-site compound and associated infrastructure at Melbourne Airport, approximately 20 km north-west of Melbourne”.

The Project area contains native vegetation that corresponds to the EPBC Act listed Natural Temperate Grassland of the Victorian Volcanic Plan ecological community. In addition, the Project area is located upstream and adjacent to waterways supporting known habitat of the EPBC Act listed Growling Grass Frog (*Litoria Raniformis*), including Moonee Ponds Creek to the east and Arundel Creek to the west.

Specific contractor conditions are required to be addressed as part of the Approval notice 2016/7837, which are outlined below. Compliance with conditions which are relevant to the preparation of this CEMP is addressed in **Appendix B**.

**Condition 1:** The approval holder must not clear more than 18.913 ha of natural temperate grassland of the Victorian volcanic plain ecological community from the site.

*Fulton Hogan note that only 9.4ha of this permitted disturbance allowance relates to the Zulu 2.0 works.*

**Condition 4:** To mitigate impacts on the growling grass frog the approval holder (APAM) must submit a Construction Environment Management Plan (CEMP) for the Minister's approval prior to the commencement of the action. The approved plan must be implemented. The CEMP must include but not be limited to:

- a) Runoff controls to ensure that the quality of the adjacent waterways is maintained or improved.
- b) Best practice sediment control to be implemented during construction.
- c) Detailed measures to avoid spills of fuels and management of accidental spills to avoid the introduction of pollutants and biocides during construction.
- d) Cleaning construction vehicles prior to entering the site to avoid the introduction and spread of weeds and pathogens. Cleaning of trucks leaving the site to prevent impacts from construction sediments to nearby growling grass frog populations.
- e) Routine management procedures to prevent local air and water quality impacts, such as daily inspections, dust suppression and storage and handling of chemicals.
- f) Monitoring and relevant remediation measures in the event of adverse monitoring results.

*Fulton Hogan note that the previously approved Zulu 1.0 CEMP requirements have been adopted in the development of the Zulu 2.0 CEMP.*

**Condition 6:** Relates to the PFAS Management Plan which Jacobs have developed. Fulton Hogan will adopt and implement the PFAS Management Plan as part of this CEMP. Where the PFAS Management Plan refers to the CEMP for additional detail on environmental management measures, these are outlined in the relevant sections of the CEMP.

Condition 6 States that "The PFAS Management Plan, along with the sections of the Construction Environment Management Plan (CEMP) and Operational Environment Management Plan (OEMP) for the proposed action relating to contamination and soils, must be prepared by a suitably qualified expert and must, in relation to management of PFAS:

- a) be consistent with:
  - i. The National Environment Protection Council's National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013), and
  - ii. The Department of the Environment and Energy's National Water Quality Management Strategy, including the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000), noting that the draft default guideline values for PFOS and PFOA in freshwater, as applied by the Victorian state government, are to be used until the default guideline values are finalised, and
- b) detail implementation and operational procedures that are appropriate to the risk posed by any contamination, noting the persistence, mobility and/or bioaccumulation potential of PFOS, PFHxS and PFOA, including:
  - i. roles and responsibilities; and
  - ii. management of PFAS contamination within the project area, including strategies to reduce runoff and migration of contamination across and off the proposed site; and



- iii. a contingency action plan for unexpected PFAS contaminant discoveries, including coordination, communication and engagement requirements, and
- c) detail soil and water monitoring requirements and testing and disposal procedures within the project area that are appropriate to the risk posed by any contamination, including references to relevant provisions of airport environmental management plan/s including on-site and, where relevant, off-site, PFAS contamination monitoring arrangements, and
- d) detail review procedures that are appropriate to the risk posed by any PFAS contamination, and
- e) impose the following performance measures for managing earthworks and storage of spoil to minimise the release of PFAS, due to disturbance of PFAS contaminated soils or sediments within the project area:
  - i. contaminated waste material (including excavated soil or sediment, and any leachate from soil or sediment, or water arising from de-watering of sediment or soil) to be handled appropriately to the risk posed by the contamination and disposed of in an environmentally sound manner such that potential for the PFAS content to enter the environment is minimised; and
  - ii. contaminated waste material, including excavated soil or sediment, with a PFOS+ PFHxS or PFOA content above 50 milligrams per kilogram (mg / kg) to be stored or disposed of in an environmentally sound manner, to achieve nil environmental release of PFOS, PFHxS and PFOA content. The PFAS Management Plan will need to detail how materials at these concentrations, if encountered, would be handled to achieve nil environmental release; and
  - iii. all soil remaining at the site of the action to be suitable for purpose.”

*Fulton Hogan Note that APAM is responsible for satisfying OEMP requirements.*

**1.4. DCCEEW Environmental Management Plan Guidelines**

The content of Fulton Hogan’s CEMP has been prepared to accommodate the Department of Climate Change, Energy, the Environment and Water (DCCEEW) requirements in accordance with the Environmental Management Plan Guidelines, 2014. **Table 1** below provides a summary of the content requirements as per the Guidelines, along with the relevant sections of the report in which the requirements are addressed.

This CEMP will be used to inform the Project team the specific environmental requirements that need to be addressed as part of the Approval requirements.

► Table 1: DCCEEW *Environmental Plan Guidelines, 2014* requirements.

GUIDELINE REQUIREMENT	CEMP SECTION
Cover Page and declaration of accuracy	Front page and second page
Document version control	Front page and footer throughout
Table of Contents	Pages 2-4
Introduction	Section 1, Page 5
Conditions of approval reference table	Appendix 1
Project description	Section 1.2, Page 5
Objectives and targets	Section 3.2, Page 15

GUIDELINE REQUIREMENT	CEMP SECTION
Roles and responsibilities	Section 2.1 & 2.2, Page 10-11
Reporting	Section 10, Page 53
Environmental training	Section 7.5, Page 49
Emergency contacts	Table 4, Page 13
Emergency procedures	Section 9, Page 51-53
Potential environmental impacts and risks	Appendix B
Environmental management measures	Sections 5, 6 and 7, Page 24-49
Audit and review	Section 8.5, Page 51

**1.5. Major Development Plan Approval (Feb 08, 2019) – Amended Plans**

The Project is a Major Development under Section 89(m) of the Airports Act 1996, as it is ‘development of a kind that is likely to have significant environmental or ecological impact’. The delegate of the Minister for the Environment and Energy determined the Project as a controlled action under Section 75 of the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). It is therefore a requirement of the Airports Act 1996, that a Major Development Plan be prepared and submitted to the Minister for Infrastructure and Transport for approval. The Major Development Plan for this project was granted approval on 8 February 2019.

The project will provide a copy of amended plans to the department when final design of the project's footprint is complete. Any amendments to the footprint will not have a greater impact on MNES than has been approved in EPBC 2016/7837.

**1.6. Definitions**

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

► Table 2: Terms, abbreviations and definitions used in this plan

TERM	EXPLANATION
<b>APAM</b>	Asia Pacific Airports (Melbourne)
<b>CAMS</b>	Case Action Management System
<b>CEMP</b>	Construction Environmental Management Plan
<b>ECP</b>	Environmental Control Plan – A document that supports the EMP with site specific controls, locations of controls and site plan.
<b>EMP</b>	Environmental Management Plan – A detailed plan that provides framework for minimising environmental harm

TERM	EXPLANATION
<b>Environment</b>	Surroundings in which an organisation operates, including air, water, land, natural resources, flora, fauna, humans and their interrelation.
<b>Environmental Aspect</b>	Elements of organisations: activities, products or services that could interact with the environment.
<b>Environmental Impact</b>	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization’s activities, products or services.
<b>EPA</b>	Environmental Protection Authority – environmental regulator in Victoria
<b>ERA</b>	Environmental Risk Assessment – Document that analyses activities being undertaken by the business, their likely risk based on likelihood and consequence, controls to be implemented to mitigate risk and the residual risk.
<b>ERS</b>	Environmental Reference Standard, supporting the Environmental Protection Act 2017 and Environmental Protection Regulations 2021
<b>EWMS</b>	Environmental Work Method Statement – a site and activity specific environmental risk management document that complements the EMP but also provide extra details on mitigations where high-risk activities exist
<b>FH</b>	Fulton Hogan Construction
<b>GED</b>	General Environmental Duty – Principle of minimising risks of harm to the environment under the Environmental Protection Act 2017.
<b>ISO14001</b>	An international voluntary standard for environmental management systems, this is one standard in the ISO 14000 series of International Standards on environmental management.
<b>NEPM</b>	National Environmental Protection Measures - a special set of national objectives designed to assist in protecting or managing particular aspects of the environment.
<b>Sustainable</b>	Characteristic of a process or state, that can be maintained at a certain level indefinitely.
<b>SWMS</b>	Safe Work Method Statement is a systematic approach to the identification of work task related hazards and controls.

## 2. Resources, roles and responsibilities

### 2.1. Management leadership, commitment and responsibilities

The Fulton Hogan management team displays its leadership and commitment to the development and implementation of the management system and continually improving its effectiveness by:

- Taking accountability of the effectiveness of the management system;
- Ensuring the environment and sustainability policies, objectives and targets are established for the management system and are compatible with the strategic direction and the context of the organisation;

- Ensuring the environment and sustainability policies are communicated, understood and applied within the organisation;
- Promoting awareness of the process approach;
- Ensuring the resources needed for the management system are available;
- Communicating the importance of effective environment and sustainability management and of conforming to the management system requirements;
- Ensuring that the management system achieves its intended results;
- Engaging, directing and supporting persons to contribute to the effectiveness of the management system; and
- Supporting other relevant management roles to demonstrate their leadership as it applies to their areas of responsibility.

Management responsibilities are defined in the [Health Safety Environment and Quality National RACI](#).

The acronym RACI stands for:

<b>R</b>	Responsible	does the work
<b>A</b>	Accountable	has ultimate responsibility, signs off R's work
<b>C</b>	Consulted	has information/perspective/capability used to complete the work
<b>I</b>	Informed	should be notified of outcomes but need not be consulted.

## 2.2. Operational responsibilities

The Operational RACI identifies the operational responsibilities for each position involved in the implementation of environmental management for the Project. This has been developed in accordance with the Fulton Hogan [Manage Roles and Responsibilities \(RACI's\) Process](#).

► Table 3: Operational responsibilities

RESPONSIBILITY	OPERATIONS MANAGER	PROJECT DIRECTOR	DELIVERY MANAGER / ENGINEER	SUPERINTENDANT/ SITE MANAGER /FOREMAN	PROJECT ENVIRONMENTAL REPRESENTATIVE	REGIONAL ENVIRONMENT MANAGER
Development of the EMP/ECP's	I	A	R	C	C	C
Reviewing and approving EMP/ECP's	I	R	I	I	R	R
Reviewing Subcontractor EMP's, Work procedures and SWMS for appropriate environmental content			AR	R	R	
Annual review of EMP, ECP/s and objectives and targets	I	A	C	R	I	I

RESPONSIBILITY	OPERATIONS MANAGER	PROJECT DIRECTOR	DELIVERY MANAGER / ENGINEER	SUPERINTENDANT/ SITE MANAGER /FOREMAN	PROJECT ENVIRONMENTAL REPRESENTATIVE	REGIONAL ENVIRONMENT MANAGER
Communicating and training staff on the EMP and ECP/s	I	A	A	R	C	C
Ensuring communication of relevant site environmental risks and controls as part of Site Inductions		A	R	R	R	
Implementing the EMP/ECP/s/SWMS/EWMS and managing sites to comply with legal and other requirements	I	A	R	R	R	C
Maintaining necessary environmental management records for activities under area of responsibility		A	R	R		
Inspecting sites against the requirements of the EMP and ensuring legal compliance monitoring is undertaken	I	A	S	R	I	I
Undertaking Monthly Environmental Reporting (Fulton Hogan and Client), including monthly assessment of performance against Objectives and Targets		A			R	
Reporting and investigating incidents and non-conformances and ensuring corrective and preventive action is taken and is effective	I	A	R	R	R	C
Auditing sites against the requirements of the EMP	I	C	C	C	C	AR

The organisation chart for the Project can be found in the Project Management Plan and identifies the personnel fulfilling each of the roles identified.

### 2.3. Emergency Contacts

The key environmental emergency contacts for the Project are provide in **Table 4** below.

The Incident and Emergency Response Contact List will be displayed within the site sheds as a part of the Incident and Emergency Response Plan.

► Table 4: Key emergency contacts

EMERGENCY CONTACT	CONTACT PERSON	CONTACT NUMBER
APAM Integrated Operations Centre (IOC)	NA	03 9297 1601
APAM Head of Environment and Sustainability	Nick Walker	0473 300 570
Airfield Interface Manager	Peter Gaukrodger	0499 789 977
APAM Project Manager	Ben Torwick	0425 785 256
Contract Administrator (DCWC)	Wen Li	0423 044 470
FH Project Director	Nick Hrysomallis	0402 479 640
FH Project Manager	Adrian Barbagallo	0417 072 562
FH Superintendent (24/7)	Vince Cicitta	0407 858 831
FH Foreman	Jamie Hollingsworth	0437 334 560
FH Environmental Representative	Tirrell Slaney	0499 088 165
FH Senior Safety Advisor	Stuart Moody	0499 700 588

## 2.4. Sub-contractors

All subcontractors shall be engaged as per [Set up a Subcontract, Purchasing or Hiring Agreement – Process - FHC/U](#). This procedure requires that all Subcontractors and Suppliers have a signed Subcontract Agreement and produce required documentation. The ongoing management of the Subcontractor is then to be managed in accordance with [Subcontract Management and Administration – Process – FHC/U](#).

In line with the conditions of our contracts, approvals and/or sites, Sub-contractors shall comply with all statutory and Fulton Hogan Environmental Management System requirements. Sub-contractors will be required to operate in a manner that is in line with the requirements of this EMP and any relevant ECP or EWMS/SWMS.

Fulton Hogan may request that Subcontractors provide an EMP or SWMS for their work activity, should their work activity provide a risk to the environment. NGER data may also be requested.

Subcontractors are required to report all incidents to their Fulton Hogan Supervisor as soon as practicable and safe to do so.

### 2.4.1. Sub-Contractor Contact List

SUB-CONTRACTOR	FUNCTION
TBC	ALER Building & Site Works
ADB Safegate	AGL Supply and Install
TBC	Earthworks and Demolition

SUB-CONTRACTOR	FUNCTION
Holcim	Select and General Fill supply
Gate 11/Soilworx	Topsoil supply
RCC - Stirling CTB/FCR/A3 Filter - Holcim	Crushed Rock and CTCR Supply
Holcim Australia Pty Ltd.	PCC & Leanmix concrete supply
Oak Park Tullamarine Pty Ltd	PCC Install - FRP Package (inc. Subsoil Risers)
Wire Industries Pty Ltd.	Reinforcing Supply (Dowell & Reinforcing Mesh)
Cut and Core Pty Ltd.	Joint Sealing & Sawcutting
Fulton Hogan Industries Pty Ltd.	Asphalt
Humes Pty Ltd.	RCP Supply
Bidd Construction Group Pty Ltd.	Drainage & Subsoil Install
TBC	Conduit Supply PVC Slotter Drain and Flushout Riser Fittings
Aus Pits Pty Ltd.	Precast Pit Supply
TBC	HV & LV Electrical Installation
Statewide River and Stream Pty Ltd.	Hydromulch
Roadline Removal Group Pty Ltd.	Linemarking (Removal)
IDig Developments Pty Ltd.	Surveyor
MVR Surveys Pty Ltd	NDD/Service Proving
TBC	Labour Hire
TBC	Temporary Light Supply
TBC	Pavement Placement
TBC	Lime Stabilisation

## 2.5. Authorities

In undertaking environmental works, persons may only undertake actions allowed under their Delegations and Limits of Authority. The ‘Delegations and Limits of Authority’ for roles in the organisation and information on how they are managed can be found in [Authority to Make Decisions \(DLoAs and CLoLs\) - Process – Au.](#)

## 3. Environmental and sustainability commitments

### 3.1. Organisational policy

Organisational commitments to the environment and sustainability are detailed within the [Environmental Policy](#) and the [Sustainability Policy](#) (refer **Appendix C**).

All operations shall be undertaken in a manner consistent with the Policies.

The Policies shall be taken into account during the setting of Civil Department Objectives and Targets.

### 3.2. Objectives and targets

#### 3.2.1. Objectives and targets

The environmental objectives and targets of Project are:

► Table 5: Objectives and Targets

OBJECTIVE	KPI	TARGET
<b>Southern Construction Targets</b>	Verify compliance through the completion of environmental inspection checklists	95% Environmental inspection completion rate
	Foreman/leading hands/ supervisors to undertake Green Card course to develop environmental site-based skills	80% of identified staff to complete Green Card
	Key front line staff including subcontractors to undertake inhouse delivered spill response training	Deliver a minimum of 1 spill response training sessions per project/department
	Foreman/Leading Hands/Supervisors to undertake specific dewatering and water management training	80% of identified staff to complete dewatering training

#### 3.2.2. Measurement of objectives and targets

Ongoing tracking of performance against the objectives and targets shall be undertaken on a monthly basis as part of monthly internal reporting, as detailed later in this plan.

A more detailed assessment of the operations performance against the objectives and targets shall be undertaken on an annual basis as part of Management Reviews. Required improvements, in order to achieve the objectives and targets, should be identified as part of this review. Further information of management reviews is detailed later in this plan.



## 4. Planning and risk management

Environmental planning for the Project has been undertaken utilising relevant documentation from Fulton Hogan’s Environmental Management System, legislation, environmental guidelines and our industry experience.

### 4.1. Environmental legal and other requirements

Adherence to compliance obligations is essential to the success of the Project. Personnel will undertake measures to manage all environmental impacts, in compliance with all relevant environmental legislative requirements. On airport land, Commonwealth environmental legislation takes precedence over state environmental legislation, with the exception where Commonwealth legislation does not cover a specific aspect.

#### 4.1.1. Legal, standards and guidelines register

A general overview of legislative requirements can be found in the [National Legal Register – Au](#). The key pieces of environmental legislation, standards, guidelines and project specific approvals for the Project are identified in the table below:

► Table 6: Legal, Standards and Guidelines Register

ENVIRONMENTAL ELEMENT	REQUIREMENT
Airport Specific	Airports Act 1996
	Airport (Environmental Protection) Regulations 1997, including: <ul style="list-style-type: none"> <li>■ 4.01 General duty to avoid polluting</li> <li>■ 4.02 Assumed compliance with general duty</li> <li>■ 4.03 Duty – pollution control equipment</li> <li>■ 6.07 Duty to assess soil condition</li> </ul>
	Melbourne Airport PFAS Management Framework, March 2022
	Melbourne Airport Environmental Management Plan, Rev 2, 14 September 2021
Noise	Project’s approval conditions (applicable to major infrastructure projects)
	Airports (Environment Protection) Regulations 1997 - Reg 2.04 Offensive Noise
	Airports (Environment Protection) Regulations 1997 – Division 3 – Offensive Noise
	Environment Protection Act 2017
	Environment Protection Regulations 2021
	Environment Reference Standard (ERS)
	<a href="#">1826.4: Noise limit and assessment protocol for the control of noise from commercial, industrial and trade premises and entertainment venues</a>
EPA Publication <a href="#">1820: Construction - guide to preventing harm to people and the environment</a>	

ENVIRONMENTAL ELEMENT	REQUIREMENT
	<p>EPA Publication <a href="#">1834: Civil construction, building and demolition guide</a></p> <hr/> <p>EPA Publication <a href="#">1890: Managing noise from reversing alarms</a></p> <hr/> <p>EPA Publication <a href="#">1891: Managing truck noise</a></p> <p>Additional information can be found in the following guidelines:</p> <ul style="list-style-type: none"> <li>▪ <a href="#">1891: Managing truck noise</a></li> <li>▪ <a href="#">1892: Noise: vibration isolation</a></li> </ul>
<b>Vibration</b>	<p>Environment Protection Act 2017</p> <hr/> <p>EPA Publication <a href="#">1834: Civil construction, building and demolition guide</a></p> <hr/> <p>EPA Publication <a href="#">1892: Noise: vibration isolation</a></p> <hr/> <p>AS 2436 - Guide to noise and vibration control on construction, demolition and maintenance site</p> <hr/> <p>German Standard DIN 4150, part 3 - 1999 (Effects of Vibration on Structures)</p>
<b>Air Quality</b>	<p>Airports (Environment Protection) Regulations 1997 - Reg 2.01 Air Pollution</p> <hr/> <p>Environment Protection Act 2017</p> <hr/> <p>Environment Protection Regulations 2021</p> <hr/> <p>National Greenhouse and Energy Reporting Act (2007)</p> <hr/> <p>Environment Reference Standard (ERS)</p> <hr/> <p>EPA Publication <a href="#">1834: Civil construction, building and demolition guide</a></p> <hr/> <p>EPA Publication <a href="#">1806: Reducing risk in the premixed concrete industry</a></p> <hr/> <p>EPA Publication <a href="#">1820: Construction - guide to preventing harm to people and the environment</a></p> <hr/> <p>EPA Publication <a href="#">1834: Civil construction, building and demolition guide</a> (Section 5.3.3 for controls to prevent dust generation and transport of dust)</p> <hr/> <p>EPA Publication <a href="#">1897: Managing truck and other vehicle movement</a></p>
<b>Erosion, Sedimentation and Water Quality</b>	<p>Airports (Environment Protection) Regulations 1997 - Reg 2.02 Water Pollution</p> <hr/> <p>Environment Protection Act 2017 as amended by the Environment Protection Amendment Act 2018</p> <hr/> <p>Environment Protection Regulations 2021</p>

ENVIRONMENTAL ELEMENT	REQUIREMENT
	<p>Environment Reference Standard (ERS)</p> <hr/> <p>EPA Publication <a href="#">1820: Construction - guide to preventing harm to people and the environment</a></p> <hr/> <p>EPA Publication <a href="#">1834: Civil construction, building and demolition guide</a></p> <hr/> <p>EPA Publication <a href="#">1896: Working within or adjacent to waterways</a></p> <hr/> <p>EPA Publication <a href="#">1910.2: Victorian guideline for water recycling</a></p> <hr/> <p>EPA Publication <a href="#">275: Construction techniques for sediment pollution control</a></p> <hr/> <p>EPA Publication <a href="#">1894: Managing soil disturbance</a></p> <hr/> <p>EPA Publication <a href="#">1895: Managing stockpiles</a></p>
<b>Heritage</b>	<p>Airports (Environment Protection) Regulations 1997 - Reg 4.05 Duty to give notice of cultural, etc discovery</p> <hr/> <p>CHMP #12774</p> <hr/> <p>Melbourne Airport M3R CHMP</p> <hr/> <p>Heritage Act 2017</p> <hr/> <p>Heritage Regulations 2017</p> <hr/> <p>Aboriginal Heritage Act 2006 (2016 Amendments)</p> <hr/> <p>Aboriginal Heritage Regulations 2018</p>
<b>Waste Management</b>	<p>Environment Protection Act 2017</p> <hr/> <p>Environmental Protection Regulations 2021</p> <hr/> <p>EPA Publication <a href="#">1820: Construction - guide to preventing harm to people and the environment</a></p> <hr/> <p>EPA Publication <a href="#">1834: Civil construction, building and demolition guide</a></p> <hr/> <p>EPA Publication <a href="#">1968: Guide to classifying industrial waste</a></p> <hr/> <p>EPA Publication <a href="#">1827.2: Waste classification assessment protocol</a></p> <hr/> <p>EPA Publication <a href="#">1828.2: Waste disposal categories – characteristics and thresholds</a></p> <hr/> <p>EPA Publication <a href="#">1894: Managing soil disturbance</a></p>

ENVIRONMENTAL ELEMENT	REQUIREMENT
	EPA Publication <a href="#">1895: Managing stockpiles</a>
<b>Chemical Storage</b>	Environment Protection Act 2017
	Environment Protection Regulations 2021
	EPA Publication <a href="#">1820: Construction - guide to preventing harm to people and the environment</a>
	EPA Publication <a href="#">1834: Civil construction, building and demolition guide</a>
	EPA Publication <a href="#">1698: Liquid storage and handling guidelines</a>
	EPA Publication <a href="#">1730: Solid storage and handling guidelines</a>
<b>Flora and Flora (including weeds)</b>	Airports (Environment Protection) Regulations 1997 – Division 2 – Preservation of Habitat
	Environmental Protection and Biodiversity Act (1999)
	Flora and Fauna Guarantee Act (1988)
	Planning and Environment Act (1987) (Planning Provision 52.17)
	Wildlife Act 1975
	Planning and Environment Act 1987
	Catchment and Land Protection Act 1994
	<b>Soil Management</b>
Airports (Environment Protection) Regulations 1997 - Reg 2.03 Soil Pollution	
Melbourne Airport PFAS Management Framework, March 2022	
EPA Publication <a href="#">1828.2: Waste disposal categories – characteristics and thresholds</a>	
EPA Publication <a href="#">1968: Guide to classifying industrial waste</a>	
<b>Project Environmental licences and Approvals</b>	PERCOW and additional EPBC approval to be issued – CEMP to be updated

**4.1.2. Legislative updates**

Fulton Hogan subscribes to Environmental Essentials legal update service for the monitoring of all Commonwealth, State and Local Government legislation.

In accordance with [Compliance with Legislative & Other Requirements – Process - Au](#), when relevant changes to legislation occur, the Southern Region Construction Environmental Manager, will distribute the information to the Project. The Project will then facilitate the incorporation of any required changes into the operations management system. Any changes to legislation that have an impact on operations will be communicated via Toolbox, Green Alert and team meetings where applicable, to ensure operational changes are implemented.

**4.1.3. Licences and approvals**

The following licences and approvals apply to the Project:

- EPBC 2016/7837, approved 9 January 2018 (as detailed in Section 1.3)
- Major Development Plan, approved 8 February 2019 (as detailed in Section 1.5)
- PERCOW to be issued by APAM prior to works starting.

**4.2. Stakeholders and Other Interested Parties**

The following table details the sustainability and environmental needs of key stakeholders and interested parties to Project.

► Table 7: Project Stakeholders

STAKEHOLDER / INTERESTED PARTY	NEEDS
<b>EPA Victoria</b>	Potentially notifiable contamination or pollution incidents where impacts leave the airport boundary
<b>Australian Government - DCCEEW</b>	Adhere to federal government environmental management requirements
<b>APAM (client)</b>	Ensure the project meets APAM’s PERCOW requirements, Melbourne Airports Environment Policy, Melbourne Airport’s Environment Strategy and Melbourne Airports Environmental Management Plan.
<b>Department of Infrastructure, Transport, Regional Development and Communications and the Arts (DITRDCA) and Airport Environmental Officer (AEO)</b>	Airport regulator.
<b>Beca</b>	To meet the design requirements during construction.
<b>DCWC</b>	To meet external Project Management requirements during construction.
<b>First Peoples – State Relations</b>	Liaise with First Peoples – State Relations on matters related to the management and protection of aboriginal cultural heritage if required. All liaison with Wurundjeri Woi Wurrung RAP will be conducted via APAM.

The practices to satisfy the identified needs shall be detailed in this CEMP, Fulton Hogan's Environmental processes, and any relevant Environmental Control Plans or EWMS/SWMS.

### 4.3. Environmental Risk Assessments (ERAs)

#### 4.3.1. Significant environmental aspects

Significant environmental aspects of the Project have been identified through use of [Develop Environmental Risk Assessment \(ERA\) - Process - Au](#) and contained within the sites Environmental Risk assessment (ERA).

Aspects are deemed significant if they have a pre-controls risk rating of 7 (Med) or higher.

The key significant environmental aspects of the Project are as follows:

- Flora and Fauna Management – protect the nationally significant Natural Temperate Grassland of the Victorian Volcanic Plain (NTGVVP) native grasses with barriers and signage to ensure that no additional native grasses are removed or damaged. Implement stormwater and sediment control measures to protect the Growling Grass Frog habitat.
- Soil and Material Management – contaminated soil management, PFAS contamination management, stockpiling and disposal or excess spoil, slurry management and disposal during boring.
- Water Quality – including stormwater diversions around the construction zone, surface water management, contaminated water (surface and perched groundwater) management and water main dewatering from the pits.
- Air Quality – including dust management during existing pavement demolition, earthworks and loading out stockpiles. Emissions from the mobile asphalt plant.
- Storage and Handling of Hazardous and Flammable materials - including the effective, banded storage and management of fuels, oils, bitumen, toluene, chemicals, powders, sealants, lubricants and paints associated with the Project and operation if the mobile asphalt plant.
- Noise and Vibration –concrete break, profiling, grooving, operation of the asphalt plant and general construction works.

#### 4.3.2. Sensitive Receptors

An indication of potential receptors that might be impacted by the Project has been determined by first reviewing the potential beneficial uses of the site.

“Beneficial use” is defined in Section 2.03 of the Airports (Environment Protection) Regulations 1997 as a use of the environment or any element or segment of the environment, which is:

- Conducive to public benefit, welfare, safety, health or aesthetic enjoyment, and which requires protection from the effects of waste discharges, emissions or deposits, or of the emission of noise.
- An element of the environment is any of the principal constituent parts of the environment including land, water, atmosphere, vegetation, climate, sound, odour, aesthetics, fish and wildlife.

The following on and off-site receptors have been identified:

##### Human Health

- Construction workers related to the Project and reuse of the soils and materials.
- Maintenance and contract workers at Melbourne Airport.
- General public on and off-site.
- Recreational users of Moonee Ponds Creek and Arundel Creek.

##### Ecological Health

- Aquatic and terrestrial ecosystems within Moonee Ponds Creek and Arundel Creek.

- The Growling Grass Frog and Australian Grayling (both EPBCA listed threatened species) are identified as relevant to the aquatic and terrestrial ecosystems outline above. The Growling Grass Frog and/or their likely habitat have been verified to be present in Moonee Ponds Creek and Arundel Creek.

**4.3.3. Risk assessment**

Risk assessment and management shall be undertaken in accordance with [Management of Risk and Opportunity – Process – Au](#) and [Develop Environmental Risk Assessment \(ERA\) - Process - Au](#). Outcomes of the risk assessment are documented on the Environmental Risk Assessment, with the [template](#) available on the Hub.

The Fulton Hogan [HSEQ Operational Risk Matrix](#) available on theHub will be used for the risk assessment process, the consequence table shown below in **Figure 2** and matrix shown in **Figure 3**.

		Potential Consequence				
		Insignificant	Minor	Significant	Major	Catastrophic
Risk Type	Health and Safety	No treatment required	First Aid Treatment Injury	Medical Treatment Injury (MTI) OR Restricted Work Injury OR Lost Time Injury (LTI) 3 days or less	Lost Time Injury (LTI) 4 days or more OR Hospitalisation	Fatality OR Permanent disability
	Environment	No impact on or off site	On-site impact requiring routine internal remediation	Off-site impact requiring internal remediation OR on-site impact requiring substantial internal remediation	Impact on- or off-site requiring specialist external remediation	Impact on- or off-site with long term effect OR requiring immediate external response
	Quality	Accept as is OR Audit Recommendation	Minor Audit Finding (NCR)	Major Audit Finding (NCR)	Critical Audit Finding (NCR) OR Accreditation warning	Loss of accreditation
	Cost (Remedials, Plant or Property)	Less than \$1000	\$1,000 to \$10,000	\$10,000 to \$25,000	\$25,000 to \$100,000	Greater than \$100,000
	Community & Reputation	No community complaints	Isolated community complaint	Repeat community complaints OR negative local media	Frequent community complaints OR negative regional media OR Negative Social Media	Organized community opposition OR negative national media OR Viral Negative Social Media
	Regulatory	Notified / no response or Verbal directive	Verbal Warning / No Response Required	Written Warning / Cost Recovery / Response Required / Improvement Notice	Abatement Notice / Infringement Notice / Prohibition Notice	Prosecution / Enforcement Order
	Business Interruption	No interruption to work	Work interrupted	Temporary site closure (less than a day)	Temporary site closure (more than a day)	Permanent site closure or eviction

Figure 2 – Risk Assessment Matrix

		Potential Consequence Level				
		Insignificant	Minor	Significant	Major	Catastrophic
Potential Likelihood Level	<b>Almost Certain</b> <i>The potential consequence is expected to occur in most circumstances</i>	Med 11	High 16	High 20	Ext 23	Ext 25
	<b>Likely</b> <i>The potential consequence will probably occur in most circumstances</i>	Med 7	Med 12	High 17	High 21	Ext 24
	<b>Possible</b> <i>The potential consequence is expected to occur at some time</i>	Low 4	Med 8	Med 13	High 18	High 22
	<b>Unlikely</b> <i>The potential consequence could occur at some time</i>	Low 2	Low 5	Med 9	Med 14	High 19
	<b>Rare</b> <i>The potential consequence may occur in exceptional circumstances</i>	Low 1	Low 3	Low 6	Med 10	Med 15

Figure 3 – Risk Assessment Matrix

The Project ERA (refer **Appendix D**) as a supporting document to this EMP, provides specific detail on the project activities and likely environmental impacts.

Risk assessments shall be reviewed on an annual basis or if the scope/activities change significantly.

In the event of a high-risk activity, where the Project level risk assessment is not deemed to have appropriate coverage, a specific risk assessment shall be conducted for that activity. Dependant on the risk or activity, a standalone EMP, ECP, ERA, Safe Work Method Statement (SWMS) or Environmental Work Method Statement (EWMS) may be used – refer to the [Environmental Risk Opportunity and Planning processes](#) for further information.

#### 4.4. Environmental Control Plans (ECPs)

Environmental Control Plans (ECPs) will be used to provide additional site-specific controls based on the requirement for site specific controls being required where the CEMP does not provide adequate detail. ECPs will be developed for key elements of the project including concreting works and concrete batching plant establishment and operation. Additional, ECPs may be developed where a high-risk activity will be undertaken as identified in the ERA.

Environmental Control Plans shall be prepared in accordance with the [Develop and Maintain Environmental Management Plans and Environmental Control Plans – Process – Au](#).

##### 4.4.1. National environmental processes

[National Fulton Hogan Environmental Protection processes](#) are managed as part of 'Environment and Sustainability' in Fulton Hogan's management system (Our System).

These are managed using Promapp process mapping software and are made available through theHub, ensuring personnel always have access to the up-to-date version of the best practice environmental practices.

These processes detail the best practice organisational approach to managing these aspects and avoiding associated impacts. The following are key processes for managing environmental aspects and impacts on the project:

- [Assess and Manage Contaminated Soil](#)
- [Discharging Water](#)
- [Manage Acid Sulfate Soils](#)



- [Manage Environmental Air Quality](#)
- [Manage Environmental Noise](#)
- [Manage Erosion & Sedimentation](#)
- [Manage Flora & Fauna](#)
- [Manage Heritage](#)
- [Manage Per- and Poly- fluoroalkyl Substances \(PFAS\)](#)
- [Manage Vibration](#)
- [Manage Waste](#)
- [Manage Weeds and Pests](#)
- [Managing Hazardous Chemicals and Dangerous Goods](#)
- [Sustainable Use of Resources](#)

## 5. Environmental protection processes

This section of the CEMP aims to provide general environmental controls and management principles that will be employed across all aspects of the operation of the Project.

As detailed in Section 4.4, the CEMP will be supported by area specific ECP's to show locations of controls and project specific environmental elements, with the ECP updated as required to reflect site specific risks. The ECP's will be on display in the site compound, site sheds and at the Concrete Batching Plant.

### 5.1. Noise and Vibration

The objective of managing noise and vibration is to undertake all works associated with this CEMP without causing noise or vibration nuisance or damage to the airport and neighbouring stakeholders. The targets are no high risk rated incidents or stakeholder complaints regarding noise or vibration.

Project works undertaken will be conducted to minimise the environmental impacts associated with noise and vibration, specifically causing nuisance to stakeholders including residents in proximity to project works and damage to buildings and structures from vibration impacts. The processes [Manage Environmental Noise - Process - Au](#) and [Manage Vibration - Process - Au](#) are available on theHub and will be used to guide the development of the project specific EMP or ECP as required.

Given the location of the works are airside, surrounded by existing runways, taxiways and aprons, the risk of noise and vibration impacting stakeholders as a result of the works are considered to be low. As such, no project specific noise and vibration management measures are proposed, however, the following noise and vibration management measures and principles will be implemented on the project:

- Working hours will be as per **Table 7** below:

▶ Table 7: Project working hours

DAYS	WORKING HOURS	COMMENT
Monday - Friday	7:00am to 6:00pm	Main construction works
Monday - Friday	4:00am to 6:00pm	If early concrete pours are required
Saturday	7:00am to 5:00pm	Main construction works

**Monday - Sunday**

6:00pm to  
6:00am

Some 36-hour occupations will be necessary where operational constraints prevent works from being conducted during normal work hours.

- Where there is a risk of damage to a building or structure or disruption to the community identified, mitigation measures will be implemented. These will include assessing construction methodology to minimise vibration levels or conducting vibration assessments using a specialist consultant. Some examples of methodologies for minimising vibration are detailed below.
  - A high vibration energy might be able to be substituted for an alternative, lower energy source or less intrusive method.
  - Source control - either treatment of the source to reduce vibration levels, by methods such as increasing the distance between source and receiver, vibration isolation systems and effective maintenance, or changing the schedule or sequence to the time of operation of the source if the vibration is likely to cause only annoyance (i.e. operating high risk activities after 9am Monday to Friday).
  - Locate the vibration or noise source as far as possible from the receiver locations is a method of propagation control, depending on topography and local geology, while some sites may allow for the use of a trench between the source and receiver to cut the propagation path.
- To mitigate noise issues, the following methodologies can be used:
  - The project works will be conducted during the hours as per EPA Publication [1834: Civil construction, building and demolition guide](#), with the exception of the abovementioned 36-hour occupations.
  - Specific controls to minimise noise generated, including:
    - Undertaking daily pre-start checklists on all plant and equipment.
    - Ensuring all machinery is well maintained.
    - Selection of machinery or works practices which produces less noise.
    - Scheduling of noisy activities to the less sensitive periods of the day.
    - Location of noisy activities away from neighbours and other sensitive areas.
    - Raw materials to be delivered during daylight hours.
    - Placement of sound walls or noise attenuating blankets around sources of noise such as generators and air compressor to enclose noise or between sources of noise and receptors.
    - Avoid causing peak noise events e.g. by dropping equipment/materials from a height or into trucks.
    - A formal assessment of noise and vibration impacts will be conducted weekly during the environmental inspection.

**5.1.1. Monitoring and contingencies**

General noise and vibration monitoring will consist of assessing the noise and vibration levels during weekly environmental inspections. Inspections will be conducted using the Salesforce inspection tool.

Formal noise and vibration monitoring may be conducted based on possible complaints, client requirements or where project specific environmental risk assessments indicate significant risk of noise or vibration impacts. Where required, advice can be sought from the Southern Region Construction Environmental Manager.

If we receive a noise complaint, the process to follow is:

- Identify the area where the complaint was registered
- Raise an incident in CAMs
- If the complaint relates to noise impacting on amenity, corrective actions such as the substituting machinery and equipment for less noisy equipment will be considered and implemented, where practicable

If we receive a vibration complaint, the process to follow is:

- Identify the area where the complaint was registered
- Raise an incident on CAMs
- Assess the equipment being used and determine if alternative lower noise generating equipment can be utilised.
- Look to conduct an assessment on the impact of ground vibration from the activities if working beside existing buildings or significant assets.

As per the Environmental Protection Regulations (Regulation 113), prediction, measurement, assessment and analysis of noise must be in accordance with EPA Publication [1826.4: Noise limit and assessment protocol for the control of noise from commercial, industrial and trade premises and entertainment venues](#) (Noise Protocol). The Noise Protocol sets out how to conduct the following noise related assessments:

(a) noise limits

(b) background levels

(c) alternative assessment criterion at an alternative assessment location, including when the Live music entertainment venues provisions (which include reference to agent of change) set out in the VPPs apply

(d) effective noise levels

## 5.2. Air quality

The objective of managing air quality is to undertake all works associated with this CEMP to ensure the generation of dust, emissions and odour does not cause nuisance to airport operations and other sensitive receptors and complies with all legislative requirements. The target is to have no high risk rated incidents relating to air quality. Further details can be found in the [Manage Environmental Air Quality - Process - Au](#) process on the Hub, with specific protocols contained in either a project specific EMP or ECP, depending on the risk or requirements.

EPA Guideline [440.1: A guide to the sampling and analysis of air emissions and air quality](#) (Dec 2002) and EPA Publication [1961: Guideline for assessing and minimising air pollution](#) can also be referred to for additional detail.

No formal dust monitoring is proposed for the project, given the distance to stakeholders and likely risk as per the ERA. The following protocols will be put in place to minimise the risk of causing offsite impacts:

- Daily weather reports from the nearest meteorological station shall be sought and used to direct the day's activities. Where hot, dry, windy conditions are forecast scheduling of works is to focus on activities that will not create uncontrollable dust. This will be communicated during daily prestart meetings.
- Identify site specific sources of dust. These can include access tracks/roads, vehicle/plant movements, material stockpiles and exposed ground.
- Limit vehicle speed on access tracks to minimise dust generation. Where applicable, consider placing materials such as crushed rock on the access tracks to minimise soil disturbance.
- Water carts to spray down access tracks, work areas or stockpiles to minimise dust generation. Where applicable, consider polymers or other soil binders to stabilise soil and minimise dust generation if the area will be exposed for a longer period of time. Due to the presence of PFAS contaminated soils, there will be an extra vigilance using water carts or a furphy to control dust, to minimise the risk of exposure to workers and the potential for PFAS to contaminate other areas.
- Areas prone to jet blast – Topsoil to be reinstated at completion of works. Stabilisation treatment will be applied e.g. Flexterra / Stonewall as agreed with Car 2. Bitumen emulsion may need to be utilised if directed by Car 2.
- All other disturbed areas – Topsoil to be reinstated at completion of works. Grass seed to be applied via hydroseed/mulch or direct seeding. If direct seeding is the preferred option, a soil binder will be applied.

- Where dust suppressants such as polymer-based soil binders are used, this must be reviewed and approved by APAM prior to use. These products can be utilised for the haul roads, open swales, and hydro-seeding areas to minimise dust generation during construction when required.
- Minimise the area cleared at any one time. Disturbed areas must be reinstated as soon as practicable with ground cover/surfacing suitable for the site conditions (e.g. size of area to be stabilised; topography; soil type; and duration of work). At least 70% ground cover (combined plant and mulch) is considered necessary to provide satisfactory erosion control.
- Disturbed soil will be appropriately stabilised to minimise the generation of dust. Dependant on the circumstances of the disturbed soil, including the size, duration the soil is to be exposed and type of soil, a suitable methodology will be employed to minimise dust generation. This may include the use of soil binders such as hydroseeding, mulching, application of jute matting/geotextiles, direct seeding or the use of sprayed polymer binders. This will be assessed on a case-by-case basis, with the best solution chosen based on the circumstances following discussion with the project team. This also to be covered by the ECP.
- If exposed areas cannot be reinstated within 7 days, appropriate soil stabilisation measures must be implemented as per Section 5.3 of the APAM EMP and Section 5.3 of this CEMP.
- Water used for dust suppression must adhere to Melbourne Airport's EMP requirements for suitable water quality action trigger levels for on-site reuse – as per APAM EMP Section 4.1.4, Control ID A26. Treated water sourced from the Water Treatment Plant may also be used for dust suppression. However, this will only occur after requesting testing results from the APAM Environment and Sustainability Team to confirm suitability. Alternatively, when of a suitable quality, wastewater may be reused on site for applications such as dust suppression. Prior to any planned reuse, relevant water quality parameters must be measured and provided to the APAM Environment and Sustainability Team for approval.
- Limit the height of soil stockpiles to minimise the exposure to wind. Where stockpiles are to be left for a long period (over one month during dry periods) or where there is visible dust being generated, other stabilisation techniques will be considered e.g., sterile rye grass, polymer sprays or other applied soil binders.
- Daily pre-start inspections of machinery and equipment to review if any odour or emissions are evident.
- Minimise idling of vehicles and plant to prevent unnecessary emissions.
- Defective machinery or machinery that creates significant emissions and/or odour to be decommissioned and removed.
- Truck tarpaulins are used to cover the aggregate loads during cartage.

### 5.2.1. Monitoring and Contingencies

Informal monitoring of dust will be incorporated into the weekly environmental inspection. Where there are concerns about significant dust, the [Incident and Emergency Response Flowchart – Extreme Dust](#) will be referred to, including the following protocol:

- In the event of hot, dry, windy conditions where dust generation can't be suitable controlled, works will be reallocated to non-dust generating activities.
- Where uncontrolled dust or emissions are observed and the source cannot be immediately rectified, advise the Project Environmental Representative. This shall be recorded in CAMs and the source shall be identified and remedied.
- Vehicles or plant shall be stood down until repaired if excessive smoke is seen emitting from the vehicle/plant.

### 5.3. Erosion, sediment and water management

Section 4 of the EPBC Act Approval (2016/7837) conditions specifically states the CEMP must include but not be limited to the following (in relation to sediment and erosion control);

- a) Runoff controls to ensure that the quality of the adjacent waterways is maintained or improved.

- b) Best practice sediment control to be implemented during construction.
- c) Cleaning of trucks leaving the site to prevent impacts from construction sediments to nearby growing grass frog populations.

Therefore, the primary objective of managing erosion, sedimentation and water is to prevent pollution of waterways (Moonee Ponds Creek and Arundel Creek) and offsite discharge of water and operate in accordance with legislative obligations. The target for erosion, sediment and water management is for all water that is discharged from the site to comply with the Airports (Environment Protection) Regulations 1997. Regular maintenance of sediment controls and basins will be undertaken to minimise sediment laden water leaving the site.

All project works that involve excavation, soil disturbance or dewatering pose a risk of causing environmental harm from scouring, erosion or other construction activities leading to turbid water discharge from site. As such, all works will assess the risks of sediment, erosion and water management in accordance with the processes [Manage Erosion and Sediment - Process - Au](#) and [Discharging Water - Process - Au](#) available on theHub and EPA [Publication 1834](#),

A purpose build Water Treatment Facility, operated by Enviropacific, has been established in proximity to Gate 11. This facility will be utilised to treat water that has been dewatered from the Project area and to dispose of NDD and sweeper slurry. Use of the facility will only occur after APAM has endorsed a scope specific 'Use of Gate 11 WTP Approval Form'.

Fulton Hogan intends to manage ponded water on-site using the following dewatering management options (these are also summarised in, **Appendix E**, the drainage staging plans):

1. For small volumes on non-turbid water: these may be dewatered to grass following the "FH Dewatering Permit" process. Under this process, all water must be discharged to a grassed area where water where there is no risk of this water entering stormwater. Additionally, this permit provides the acceptable water quality parameters for discharge and requires APAM approval prior to each dewatering event occurring. Where water parameters and/or APAM do not permit dewatering to grass, this water will be dewatered via vac truck and taken to the Gate 11 Water Treatment Plant.
2. For large volumes of turbid and non-turbid water:
  - a. Water will be taken to the Gate 11 Water Treatment Plant
  - b. Water will be taken to an on-site Water Treatment Plant (this option will only be implemented after further discussion with APAM).
3. If the abovementioned dewatering management options are not available Fulton Hogan propose to dispose of water at an appropriately licenced offsite facility. This will only be undertaken following APAM consultation and approval of the proposed disposal facility. Any associated waste dockets will be provided to APAM following offsite disposal.

As part of Fulton Hogan's investigation of an on-site water treatment plant (management option 2b) a risk assessment will be undertaken and submitted for APAM review and approval. If the risk assessment, APAM or AEO determine that an on-site water treatment plant is not an appropriate dewatering management strategy this will not proceed and management option 2a will be followed.

The abovementioned risk assessment will consider:

- PFASs in solution (either dissolved in water or as the leachable component of soils) as a primary driver of risk to sensitive receptors.
- PFASs sorbed to soil / sediment.
- A baseline assessment of groundwater and surface water in the vicinity of the project area, with a focus on indirect and direct runoff and groundwater discharge to adjacent creeks (Moonee Ponds Creek and Arundel Creek).

Risk categories will be based on acceptance criteria for discharge to grassed areas, on-site management at the proposed Water Treatment Plant or off-site disposal. A risk-based approach to determining criteria will be adopted based on potential maximum concentrations (of relevant contaminant(s) at the receptor).

The following risks cannot be excluded:

- Concentrations are such that, direct discharge to Moonee Ponds Creek or Arundel Creek may result in unacceptable impacts; however on-site management is appropriate and feasible.
- Concentrations are such that direct discharge Moonee Ponds Creek or Arundel Creek may result in unacceptable impacts; on-site management is not feasible and off-site disposal / treatment is required.

The following protocols are key for management principles for erosion, sedimentation and water discharge:

- All water discharged from the site to comply with the Airports (Environment Protection) Regulations 1997
- Where works are being conducted in an area of contaminated soil, the management of water runoff will be managed as per EPA Publication 1834, Section 6.4 – Managing potentially contaminated stormwater
- Earthworks will be staged, so there will be less exposed areas to manage in terms of sediment and erosion control
- Retain existing ground cover (concrete slabs) for as long as possible to minimise the amount of construction water to take to the Water Treatment Plant
- Areas susceptible to erosion and generating sediment-laden flows have previously been identified during the Zulu 1.0 works in consultation with IECA registered consultants TOPO. The localised controls to be detailed in an Erosion and Sediment Control Plan (prepared by TOPO) which will be issued to APAM and included in relevant ECPs. Measures to be used to minimise erosion/scoring include:
  - Minimising exposed areas of soil
  - Progressive rehabilitation of works to minimise areas of disturbed soil left exposed. Use of polymers/dust suppressants (following approval from APAM prior to use)
  - Use of cutoff drains, rock logs/sandbags/coir logs and check dams to divert stormwater around the works or to slow velocity of stormwater to minimise scouring
  - Protection of drains, side entry pits, culverts, swales to prevent turbid water ingress. Several products are available including drain wardens, geofabrics and silt fencing (refer **Figure 4** for examples)
  - Stabilise swales and clean water flow paths immediately after construction to maintain clean water flow through the site. These areas will be topsoiled and hydroseeded as soon as reasonably practicable
  - Weather forecasts will be reviewed when planning earthworks and ground disturbing activities. Where practicable, earthworks and ground disturbing activities will be avoided during periods of heavy rainfall or high winds
  - Mud shall be kept off roads for both safety and environmental purposes. Mud that is tracked onto roads is washed into the drainage network, which flows into natural waterways

Regular maintenance of sediment controls and basins will be undertaken to minimise sediment laden water leaving the site.

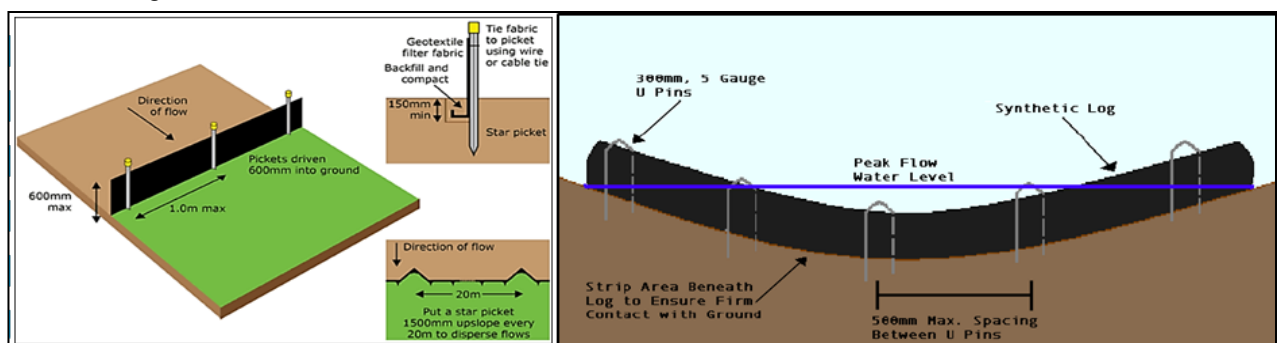


Figure 4 -Standard sediment fence installation

- Sediment laden water will typically be temporarily captured and stored in check dams or sediment basins within the project area before being pumped or trucked to the Gate 11 Water Treatment Plant (due to potential PFAS contamination). A site-based water treatment plant is being investigated to minimise truck movements.
- Non-sediment laden perched groundwater or water pooled inside excavations will be tested using a calibrated water quality meter. If water quality monitoring levels show that water is within the acceptable levels for dewatering to grass this may be undertaken following completion of a dewatering permit and obtaining written approval from APAM. Where there are environmental risks, a dewatering assessment checklist will be used as per [Discharging Water - Process - Au](#) requirements. Also refer to EPA Publication 1834, Chapter 5 and Guidance Sheet 11: Wastewater. The volume and location of any dewatering will be captured in Fulton Hogans Contaminated Material and Water Tracking Register.
- During NDD and HDD works sandbags will be placed around work areas to contain any slurry that is generated. NDD trucks will dispose of slurry in the designated bays at the Gate 11 Water Treatment Plant.
- Concrete wastewater will be contained within bunded concrete washout areas. Surplus water will be taken to the Gate 11 Water Treatment Plant.
- Use street sweepers on pavement areas to maintain a clean site and minimise any sediment flowing into nearby stormwater drains. Street sweepers will utilise the Gate 11 Water Treatment Plant to tip off slurry.
- During wet weather events, vehicle movements shall be restricted to those necessary.

The abovementioned risk assessment will be completed at the start of the Project, once there has been a rain event where surface water captured from within the Project area can be sampled and tested.

### 5.3.1. Monitoring and contingencies

Where required based on location of works near waterways, risk of sediment discharge offsite or client requirements, formal water quality monitoring should be undertaken using a calibrated water quality meter, with the information captured on the [Environmental Monitoring Register](#) template. During weekly Environmental Inspections, water quality and signs of scouring/erosion shall be visually checked to ensure water quality is not being affected by work activities. Water quality protection controls shall also be checked at these inspections if being utilised.

When a site inspection detects a notable failure in the adopted erosion and sediment control measures, then the source of this failure must be reported in CAMs, investigated and appropriate amendments made to the site and the erosion and sediment control plan.

Any defects and/or deficiencies in control measures identified by monitoring shall be rectified immediately and these control measures shall be cleaned, repaired and augmented as required to ensure effective control thereafter.

#### Contingencies

- If the sediment control devices specified by TOPO, do not appear sufficient in reducing the turbidity of sediment laden water prior to leaving the site, then additional measures will be implemented such as;
  - Installing a treatment system at the end of the catchment to treat water prior to discharging to stormwater;
  - Construct a sediment basin to treat large volumes of construction stormwater; or
  - Installing additional sediment control devices such as sandbags and silt socks along the catchment to further treat the water and drop out sediment.
- Prior to significant rain events inspections will be undertaken of all sediment and erosion controls and additional controls will be implemented if required.
- During rainfall events, daily sight inspections will be undertaken to ensure:
  - All drainage, erosion and sediment control measures are operating as intended

- No occurrences of excessive sediment deposition (whether on-site or off-site)
- All site discharge points are protected and implemented controls are sufficient.
- If the on-site water treatment plant and Gate 11 Water Treatment Plant is unavailable, the existing ponds at Gate 9 will be used as a contingency to store water. This will then be taken to a water treatment plant as soon as available.
- If unknown contaminants are encountered (typically highlighted by unusual materials, colours or odour within waters), environmental controls will be established to contain the material and generated water to a confined area, or dewatering will be undertaken to relocate water to a suitable containment area. An assessment of the material and resultant generated water on the works will be undertaken by Fulton Hogan and a suitably qualified consultant. This assessment will identify an approach for testing the material and the generated water for potential contamination. Once the material and generated water is classified, Fulton Hogan will review the management requirements to the satisfaction of APAM and the environmental regulators.
- Any non-compliant discharge to waters shall be recorded in CAMs and the source of the non-compliance shall be identified and remedied to prevent re-occurrence. The entry or likely entry of a contaminant into surface water is a prescribed notifiable contamination, if the concentration of the contaminant in the surface water:
  - Is, or is likely to be, above the default guideline value for that contaminant specified in the Australian and New Zealand Guidelines for Fresh & Marine Water Quality (ANZG) or the guideline value for that contaminant specified in the Australian Drinking Water Guidelines (ADWG) and is likely to remain above that specified concentration.
  - Is not in accordance with Airports (Environment Protection) Regulations 1997 – Schedule 2 Water Pollution – accepted limits.

In addition to the above, airport-wide water monitoring will be conducted by APAM during construction and operation of the Project is outlined in Section 7.1 of the Jacobs PFAS Management Plan (Revision 5, dated 18 July 2019). This is summarised in **Table 8** below.

► Table 8: APAM water quality monitoring requirements

MONITORING TYPE	DETAILS	FREQUENCY OF MONITORING	TIMING
Surface Water Monitoring	Monitoring for PFAS extended suite (28 compounds), in line with APAM’s airport-wide ongoing monitoring program	Annual	During construction and operation
	Stream health monitoring in Arundel Creek, Deep Creek and Moonee Ponds Creek	Annual	During construction and operation
Groundwater Monitoring	Monitoring for PFAS extended suite (28 compounds), in line with APAM’s airport-wide ongoing monitoring program	Annual	During construction and operation



#### 5.4. Waste management and resource use

The objective of managing wastes and resource use by the Project is to minimise waste to landfill, prevent pollution, to comply with relevant company, client and legislative requirements and to minimise the resources required to deliver projects. Refer to the [Manage Waste - Process - Au](#) and [Sustainable Use of Resources - Process - Au](#) processes on the Hub for further details. The targets for waste management are:

- recycle at least 40% of office derived wastes;
- recycle at least 50% of construction waste; and
- no incidents relating to Foreign Objects and Debris (FOD) airside.

There are numerous duties under the Environmental Protection Act 2018 and are summarised in Publication 1756.2. Determinations should also be understood, especially for [fill material](#) and [recycled aggregates](#). Both are considered waste if surplus to site requirements and will be taken offsite if APAM cannot reuse them on future projects.

The following protocols are key management principles for waste and resource use to be employed on the Project:

- Implement the waste hierarchy as per [Manage Waste - Process - Au](#) (see **Figure 5**) to minimise waste to landfill, with a target of 50% of construction waste to be diverted from landfill.
- Ensure all waste being taken off site (includes all materials that are surplus to site requirements, including soil, aggregates etc.) are taken to a lawful place.
- PFAS contaminated material (excluding concrete) must be taken to the Gate 11 PFAS Storage Facility. Concrete must be taken to Vic Civil crushing plant (pending their agreement). No PFAS material may be sent offsite without obtaining applicable EPA Designations and APAM approval.
- Provide staff with an increased level of understanding and awareness of waste and resource use management issues. This includes posters, induction, signage on the bins and toolbox presentations.
- Identify and classify industrial waste in accordance with the EPA Publication [1968: Guide to classifying industrial waste](#) to determine the waste code and waste type (industrial waste, priority waste or reportable priority waste) so that it is clear what duties apply. All associated records will be maintained for at least two years.
- If priority waste is disposed offsite via an EPA licenced transporter to an EPA licensed facility, all associated EPA Waste Portal dockets generated during construction will be submitted to APAM.
- Have appropriate waste receptacles to encourage waste segregation, including metal and concrete skips for construction wastes and comingled, paper/cardboard, glass and general waste bins for office wastes. Ensure there are enough bins and skips for the scope and needs of the project.
- Storage of wastes will be conducted in a manner to prevent pollution, including using a location away from sensitive receptors, appropriate bunds/waste receptacles specific for the waste where required and appropriate segregation of wastes to prevent contaminated material going to landfill.
- Concrete slurry generated during concrete pouring and cutting will be removed and discharged into the concrete washout bins within a designated, bunded, concrete washout bay area located >20m from active stormwater drains. Fulton Hogan is currently assessing the viability of using an engineered concrete washout system that removes particular matter and doses wastewater to neutralise pH and allow reuse for future washout or dust suppression activities. A proposal to utilise this system will be submitted to the Contract Administrator and APAM for consideration.
- Street sweepers, NDD and HDD trucks dispose of slurry at the Gate 11 Water Treatment Plant due to the potential for PFAS contamination within slurry material.
- Reduce energy use by using plant and vehicles with better fuel efficiency where there are options available, limiting idling of plant and operating plant at peak efficiency levels.
- Turning off heating, cooling and lighting at site amenities when not in use.

- The Project will provide monthly report to APAM on volumes of waste generated using the APAM construction waste template.



Figure 5 - Waste hierarchy

**5.4.1. Monitoring and Contingencies**

During Environmental Inspections, areas where waste is stored and areas where people are generating waste shall be checked to ensure waste is not creating a hazard, pollution to the environment or nuisance to the public or other receivers. Opportunities for waste reduction should also be assessed during the inspections and project operations. In the event that uncontained waste is observed, this shall be cleaned up and the source of the inappropriate waste handling shall be identified and remedied. Where applicable, this should be raised in CAMs.

To comply with applicable waste duties, the Project must undertake sufficient checks to ensure:

- Vehicles collecting and transporting reportable priority waste (transport) hold the permission to transport such waste. This can be confirmed using the EPA Waste Tracker;
- Every time a reportable priority waste (transaction) exchanges hand, it is recorded on the EPA Waste Tracker (it is noted that a waste contractor may raise a certificate on their Waste Tracker portal on behalf of Fulton Hogan);
- The waste facility where the industrial waste is delivered is authorised to receive such waste. This will be confirmed using the EPA Waste Tracker; and
- Fulton Hogan will maintain a Contaminated Material and Water Tracking Register to track any contaminated wastes disposed of or treated offsite.

**5.5. Hazardous materials management**

The objective of hazardous materials management to comply with Section 4c of the EPBC Act Approval (2016/7837) to incorporate detailed measures to avoid spills of fuels and management of accident spills to avoid the introduction of pollutants and biocides during construction.

To achieve this Fulton Hogan will store and use all chemicals and other hazardous materials in a manner that prevents pollution of the environment and harm to human health and to be compliant with all legislative conditions. The Project target is to have no high risk rated incidents relating to hazardous materials.

Specific controls, locations of chemical storage areas and spill response equipment may be detailed in the project specific ECPs developed for a project. The [Managing Hazardous Chemicals and Dangerous Goods](#)

– [Process – Au](#) process on theHub can be consulted for further details, however the following principles will be employed during project works:

- In order to prevent spills, all chemicals will be stored in a manner that any leaks, drips and spills will be contained to prevent harm to the environment, including appropriate chemical storage bunds, trays or specialist chemical storage devices.
- Chemical storage on site will be in accordance with EPA guideline [1698 – Liquid storage and Handling Guidelines](#) with adequate bunding used that is fit for purpose for the volume and type of chemicals being stored.
- Storage and refuelling to also be in accordance with specific APAM EMP requirements (Section 5.1) including:
  - hazardous substances must not be located within 20m of any drainage inlets, open drains, water courses or areas of native vegetation, unless otherwise approved in writing by the APAM Environment and Sustainability Team.
  - Storage areas for hazardous substances must include secondary containment controls such as permanent or portable bunding. Storage areas for hazardous substances must be bunded so that the capacity of the bund is sufficient to contain at least 110% of the volume stored.
  - Where hazardous substances are frequently used and handled, this must be located on impervious hardstand with appropriate bunding so any spills can be confined and cleaned up.
  - Daily start up checks must be undertaken on all plant, equipment and vehicles (including leaks/spill checks).
- Subcontractors are to store their hazardous and flammable materials either in bunded containers (for small quantities), chemical storage cabinets or designated chemical storage areas.
- All generators and diesel tanks will be self-bunded and stored within plastic lined bunded areas.
- Where refuelling or decanting of chemicals is required, this will be conducted in manner to prevent spills and drips, with appropriate spill equipment on hand. Refuelling must occur >30m away from waterways or drainage lines.
- A register for dangerous goods stored and handled on site will be maintained. It will record the volume and type of hazardous materials stored, and the current version of the Safety Data Sheets (SDS). This register will be updated when a new material is introduced to site, or when the use of an existing material is discontinued.
- All hazardous and flammable materials will have clear labels or contain an ID tag identifying the substance (diesel, unleaded, petrol or 2-stroke).
- Adequate training will be provided to site staff, so that there is an understanding of chemical storage and spill response protocols. This can be in the form of site inductions, toolboxes or internal/external training.
- Spill kits will be fit for purpose and capable of responding to the types of chemicals being used on site (i.e. hydrocarbon specific spill kits). The spill kits will be available in areas where there is a risk of a chemical spill, including chemical storage areas and work areas where hydraulic equipment is being used or refuelling being undertaken.
- Where spills have occurred, these will be controlled, contained and cleaned up as per the 'Duty to respond to a pollution event'. The used spill response equipment and impacted soils will be managed as a reportable priority waste as per EPA guidelines and taken to lawful place by a permissioned vehicle.
- Any soil contaminated with hydrocarbons from large fuel or oil spills on site, will be classified in accordance with EPA Publication 1968: Guide to classifying industrial waste prior to disposal for large spill events. Classification of soil contaminated with hydrocarbons must also consider PFAS contamination prior to disposal.
- Small spills can be captured, bagged and stored prior to disposal to a lawful place where volumes of contaminant are under 50L.

- Fulton Hogan will ensure that any hazardous substances sent for disposal offsite, including used spill kit contents, be transported in accordance with Victoria's Dangerous Goods (Transport by Road or Rail) Regulations by the use of specialist licenced contractors for all transporting of hazardous substances.
- Plant and machinery shall be serviced and inspected regularly for oil and fuel leaks. Any leaks detected shall be rectified immediately.
- If asbestos is suspected or identified, FH will barricade off the area and notify the Site Manager and the APAM Project Manager. The following actions will then be taken:
  - Specialist hygienist contractors will be brought in to test the material and classify the type of asbestos. They will remove and dispose of the asbestos to the appropriate EPA licensed landfill and be required to provide a clearance certificate and EPA documentation to confirm that the asbestos was disposed of to a suitable landfill.
  - Hygienist consultants will conduct air quality monitoring during the asbestos removal if deemed to be required.
  - If asbestos is identified, a Workplace Asbestos Register will be set up to track the asbestos location and removal.
  - The asbestos removal contractors will be required to provide EPA documentation to confirm that the asbestos was disposed of to a suitable landfill.

## 5.5.1. Monitoring and contingencies

During Environmental Inspections, areas where chemicals are used and stored should be checked, to ensure chemicals are not creating a hazard and that no spills have occurred. Spill kits should also be assessed to ensure they are appropriately located in areas where they may be required (i.e. chemical storage areas) and are adequately stocked.

In the event of a chemical spill, this should be responded to in accordance with the [Incident and Emergency Response Flowchart, Chemical Oil and Fuel Spills](#), which will form part of the Emergency Response Plan.

- Take immediate action to control the spill, contain the area, report the incident to the Foreman and Environmental Representative, so they can assist with the clean-up, reporting and correct disposal of waste material.
- Following a spill a CAMs investigation will be raised to review why the spill occurred and what management measures are required to minimise a reoccurrence (machinery maintenance records, refuelling location, poor bunding etc.)
- Small spills - place absorbent material over the spill; dispose the material into the contaminated waste bags and store within the black 240L contaminated waste bins.
- Large spills - use an appropriate machine (bobcat or excavator) to contain the spill, place the material onto black plastic. Test the material for contamination including PFAS and dispose the contaminated material as required by APAM and the legislative requirements.
- Report any spills greater than 5L or where any material enters the stormwater drainage system immediately to Superintendent and the Melbourne Airport Coordination Centre (03 9297 1601), followed by a CAMs incident report and SIMS incident report within 48 hours to the Melbourne Airport Environmental Team.

Significant spills should be reported to Fulton Hogan's Regional Environmental Manager. Where a regulator requires notification following a spill or environmental incident, APAM will conduct the notification.

## 5.6. Flora and flora

The construction works are within the Environmental Protection and Biodiversity Conservation (EPBC) Act listed Natural Temperate Grassland of Victoria Volcanic Plain (NTGVVP), which are listed as "Critically endangered", refer to **Figure 6** for their distribution. Under the EPBC Act approval, APAM must not clear

more than 9.4ha during Zulu 2.0 works. Fulton Hogan will ensure only the permitted areas of NTGVVP are disturbed.

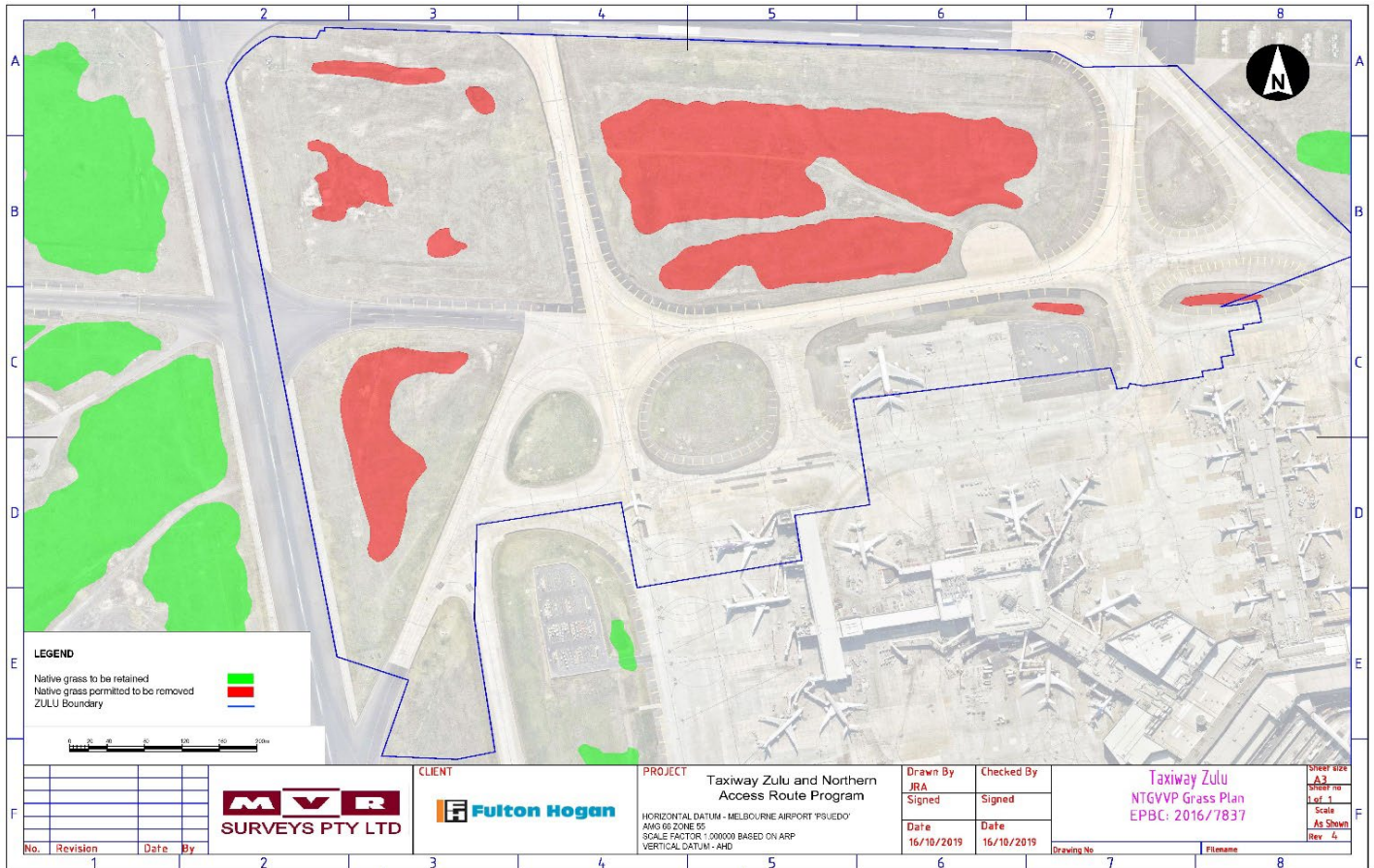


Figure 6 – Significant native grasses permitted to be removed within the Project boundary

The construction zone is located in proximity to Moonee Ponds Creek and Arundel Creek, known habitats that support important breeding populations of the EPBC Act listed Growling Grass Frog (GGF) - *Litoria raniformis*. The disturbance history across most of the construction area includes intensive management (e.g. frequent mowing) and previous construction projects for the existing infrastructure. Therefore, it is considered unlikely that GGF will be present within the work area. The erosion sediment and water management controls detailed in Section 5.3 will be implemented to reduce the risk of impact to downstream receivers of site derived stormwater.

Additionally, The EPBC Act Approval (2016/7837) conditions, specify the weed and pathogen management required to mitigate any impacts to Growling Grass Frog which include plant hygiene requirements. Section 4 of the EPBC Act Approval, specifically states that the CEMP must include;

(d) Cleaning construction vehicles prior to entering site to avoid the introduction and spread of weeds and pathogens. Cleaning of trucks leaving the site to prevent impacts from construction sediments to nearby growling grass frog populations.

As a supporting document for this approval, *Taxiway Zulu and Northern Compound Project - Additional information for assessment by Preliminary Documentation (EPBC 2016/7837) July 2017* which details the weed and plant hygiene requirements for this Project. The report states:

- The risk of introducing or spreading potentially invasive species will be mitigated by implementing a site hygiene protocol, which will require all machinery, equipment and vehicles to be clean of plant propagules prior to first entering the site.

- Retained vegetation will be monitored for novel weeds during and immediately following construction, with the aim of detecting and controlling any new weed introductions.

Therefore, to prevent the spread of weeds and pathogens, all plant and equipment that is brought onto site will be decontaminated or free from mud, debris and vegetation prior to arrival. Subcontractors and suppliers will be advised of this hygiene requirement within their subcontractor agreement and during the site induction. Cleanliness of plant will be verified by Fulton Hogan personnel during plant site inductions.

Eleven migratory bird species are predicted to occur within the Project area. However, the area does not provide important habitat for an ecologically significant proportion of any of these species.

Fulton Hogan's objective is to conduct all works to adequately manage flora and fauna risks, comply with relevant approvals, project contractual conditions and to prevent the spread of weeds and pathogens. Project targets are to ensure that native grass boundary signage and barriers are maintained along the edges of the native grass boundaries (where grass is to be retained) and not moved by project staff or subcontractors and to install and maintain stormwater runoff controls to ensure the quality of the adjacent waterways (Moonee Ponds Creek and Arundel Creek) is maintained or improved.

The Project will be conducted in accordance with the [Manage Flora and Fauna - Process - Au](#) and [Manage Weeds & Pests - Process - Au](#) processes available on theHub and with specific management practices included in the ECP documents as required. The following management principles will be implemented across the Project:

- Specific toolbox meetings will provide details about EPBC Act listed NTGVVP and GGF and environmental requirements to mitigate impacts.
- Prior to works, a surveyor will be engaged to assist in marking out the construction boundary and the areas of vegetation encroaching into the work boundary.
- Vegetation to be protected will be delineated using purple-coloured bollards placed at 3-4m intervals along the work boundary. The barriers will be clearly signed with "No Go Zone – Native Grasses". Fulton Hogan will work with a surveyor to ensure the delineation is set up accurately. Where possible a 1m buffer will be added
- Works must not commence within/adjacent to areas of NTGVVP until APAM or Contract Administrators (DCWC) have endorsed a Native Grass ITP confirming native grass no-go zone delineation has been established correctly.
- NTGVVP disturbance will be tracked using GIS as works progress. The GIS data will be used to demonstrate compliance with EPBC Act approvals for the project.
- Vegetation Protection – No Go Zone areas and the native grasses within the vicinity of the construction works will be assessed during the weekly environmental inspections and daily during works within the vicinity of the area. If the vegetation protection bollards are found to be damaged or misaligned, they will be fixed immediately.
- If NTGVVP is disturbed/stripped beyond the permitted area, APAM will be notified immediately, and a CAMs case raised. APAM will manage any DCCEEW formal notification requirements.
- If suspected Growling Grass Frog or other fauna are found during construction, work in that area will immediately cease and the APAM Environment Team should be notified immediately. APAM will then advise on the next steps.
- A formal assessment of weeds will be conducted on a weekly basis during the weekly environmental inspection.

- Weed spraying within the construction boundary is the responsibility of Fulton Hogan. Weeds in hardstand areas will be spot sprayed by Fulton Hogan. However, specialist contractors will be used to spray the weeds in all other construction areas, at the correct time of the year, when the weeds are growing strongly but before seed set. Only APAM approved, frog-sensitive herbicides will be utilised, a list of these can be found in Appendix D of the APAM EMP. The use of herbicides should be avoided during the part of the breeding season when eggs and tadpoles of Growling Grass Frogs are most likely to be present (i.e. September to December).
- The intended herbicide Safety Data Sheet (SDS) will be submitted to APAMs Environmental Team for review prior to using the product airside.
- A specific toolbox meeting will be dedicated to snake awareness and the requirements for relocation.
- Any artificial lighting required during construction will only be directed over construction areas.

### 5.6.1. Monitoring and contingencies

Site personnel shall undertake monitoring of the condition of flora and fauna, habitat sites and protective measures as a part of Environmental Inspections. The airport specific inspection on Salesforce includes the following checks:

- Review whether the vegetation protection boundary signage and bollards are correctly set up and/or require maintenance;
- Are the stormwater controls being maintained or do they require maintenance;
- Has any additional native grass been removed during construction works; and
- Are any weeds growing within our construction boundary.

Any works that cause disturbance to grassed areas that are protected will be notified to APAM and an incident report will be raised in CAMs and SIMS.

All plant and machinery that comes onto site should be visually assessed for presence of mud/debris or vegetation, together with any weeds identified on site. This should also be captured on the weekly environmental inspection. In the event that unexpected fauna or flora is encountered refer to the sites Emergency Response Plan and the [Incident and Emergency Response Flowchart – Encountering Wildlife \(including snakes\)](#), with APAM notified in the first instance.

### 5.7. Soil and material management

The major chemical of potential concern present in soils at Melbourne Airport is per- and poly-fluoroalkyl substances (PFAS), with the APAM PFAS Management Framework document providing specialist detail on how to manage PFAS contaminated materials on site, including the temporary soil storage facility at Gate 11. Additionally, the Jacob's PFAS Management Plan (Revision 5, dated 18 July 2019) details the soil (topsoil and subsoil) categorisation for each area, contaminant distribution and the management measures for movement and temporary storage of the soil.

The objective of this soil and material management section is to mitigate risks associated with soil and material management including importing soil and on-site handling and management of soils, crushed rock, asphalt, concrete and other materials generated on site.

Where works are being conducted in an area at risk of encountering contaminated soils, the project should assess the risks in accordance with the process [Assess and Manage Contaminated Soil - Process - Au](#) available on theHub. This process includes a link to the [Site Assessment Checklist for Identifying Potentially Contaminated Soil](#) that should be used to determine if the site is at risk of encountering contaminated soil. Where known soil contamination is expected based on client provided information, specific controls and management measures should be implemented into a site specific ECP or EMP dependant on the scope of the works.

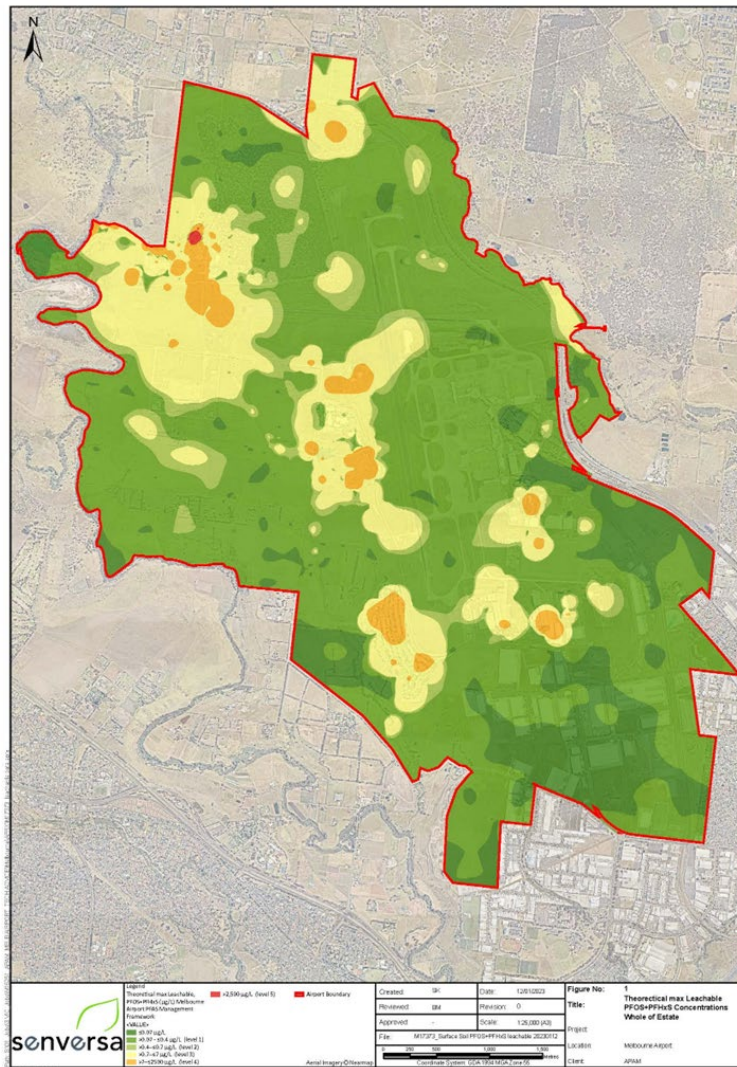
A purpose built PFAS Storage Facility, operated by Negri, has been established near Gate 11. All Level 1-3 PFAS soils and asphalt will be taken to this facility as soon as reasonably practicable. Use of the facility will

only occur after APAM has endorsed a scope specific 'Use of Gate 11 Temporary PFAS Storage Facility Approval Form.

**5.7.1. Management of contaminated soil**

- PFAS concentrations and subsequent classification of soil as per APAM PFAS Management Plan will be based on Jacob's PFAS Management Plan (Revision 5, dated 18 July 2019) and the PFAS leachability hotspot map provided by APAM (refer Figure 8). Additional PFAS verification sampling will be undertaken by a suitable consultant to satisfy health and safety requirements of Fulton Hogan. The locations and classification of soil will be communicated to the project team by incorporating the hotspot map into engineering drawings and activity ECPs. Additionally, the PFAS leachability hotspot map will be available on ArcGIS Field Maps to allow all Engineers to access this information from their mobile devices. This will ensure that it is clear what classification of soil is being disturbed, with the appropriate management measures implemented. The PFAS leachability heat map is shown below in **Figure 8**.

Figure 8 – PFAS leachability heat map





- Where small (less than 10m<sup>3</sup>) temporary excavations are excavated and replaced within 48hrs, they may be exempt from the PFAS Management Framework requirements (as per Section 5.7.3). If required, an exemption will be sought, to demonstrate:
  - Works will be completed within the 48-hour timeframe
  - Excavation depths will not intersect groundwater
  - Works are not being completed where runoff or saturated soil may be present (e.g. due to a leaking service or known ground conditions)
  - All material will be replaced into the excavation and appropriately compacted to minimise potential increased mobilisation
  - Any surface coverings will be replaced within a 48-hour timeframe (i.e. concrete, crushed rock, topsoil with adequate stabilisation etc)
  - Works will be undertaken in favourable weather conditions (no heavy rain events or high winds)
  - Works will not be undertaken within 50 m of a drainage inlet or open drain
  - Works will not be undertaken within 200 m of a natural surface water body, watercourse or wetland area.
- Any soil or material contaminated from an oil or fuel spill will be tested prior to disposal against the EPA Publication [1986.1: Guide to classifying industrial waste](#) and the PFAS NEMP 2.0.
- Where there is uncertainty on the contamination status of surplus soil, testing should be conducted by a suitable specialist consultant to determine the PFAS and other contaminant status of the soil and determine the appropriate management option.
- No soil is anticipated to be taken off site, however if contaminated soil is being taken off site, approval must be sought from the APAM Environmental and Sustainability Team. The soil should also be classified as per priority waste categories (as set out in Schedule 6 of the Regulations). If soil is contaminated with PFAS levels above the Fill Material criteria outlined in EPA's [PFAS General Designation](#), a Project specific Designation must be approved by the EPA prior to offsite disposal. Once classified, material must be taken off site as soon as practicable, transported by an appropriately EPA licenced vehicle, and reported via EPA [Waste Tracker](#). The soil must be deposited at a place that is lawfully able to receive it, through a permission, Declaration of Use (DoU), Determination or is authorised (under Regulation 63 of the Regulations). Records of all soil movements offsite will be maintained.
- All existing concrete and asphalt material to be demolished from existing taxiways will be tested in accordance with APAMs PFAS Management Framework. From Fulton Hogan's previous experience on projects at Melbourne Airport it is likely that these materials will be Level 1 PFAS, with PFAS levels of less than or equal to 0.01mg/kg of PFAS and a leachable component of less than or equal to 0.4µg/L. Therefore, following testing, asphalt material will be taken to the Gate 11 PFAS Storage Facility and concrete will be taken to Vic Civil's Gate 8 facility for crushing and eventual reuse. APAM will be consulted before any materials are taken to the Gate 11 PFAS Storage Facility, Vic Civil or an offsite disposal facility.

### 5.7.2. NDD slurry management

- Non-Destructive Digging (NDD) slurry will be generated during service proving, and connection works. All slurry is to be taken to Gate 11 Water Treatment Plant. This detail will be included in ECPs and shown on ECP maps. If the Water Treatment Plant is unavailable slurry material will be taken to a pond at Gate 9, allowed to dry, and then carted to the PFAS Storage Facility at Gate 11.

### 5.7.3. Stockpiling

- Where possible, any PFAS impacted material should be stockpiled on impermeable hardstand such as concrete or asphalt to minimise potential for leaching of contaminants into underlying soils. Stockpiling areas for > Level 1 PFAS impacted material may require lining, this will be discussed with APAM on a case by case basis. If lining is required, a minimum 0.25 mm linear low-density polyethylene (LLDPE) sheet with a minimum 300 mm overlap between sheets must be placed between the hardstand and stockpile to prevent PFAS contamination of underlying hardstand. PFAS impacted LLDPE will be

temporarily stored onsite in a lidded bin or encapsulated in clean LLDPE (and weighed down by sandbags) to mitigate the risk of spreading PFAS contamination. APAM will be consulted prior to offsite disposal on any PFAS impacted LLDPE to an EPA licenced facility.

- Where hardstand areas are not available or practical for stockpiling for Level 1 to 2 PFAS impacted material, it must be stockpiled within the project boundary where surface soils have a similar or higher PFAS Management Level. If this is not possible, a base liner will be required as per the point below.
- The following requirements apply for the covering of temporary stockpiles:
  - For stockpiling of PFAS impacted material less than 48 hours with forecast rain or high winds, cover stockpiles with geotextile covering and appropriate anchoring.
  - For stockpiling Level 1 PFAS impacted material for greater than 48 hours the above cover option can be maintained, alternatively a stabiliser can be used.
  - For stockpiling Level 2, 3 and 4 PFAS impacted material greater than 48 hours to 12 months, more stringent levels are required. Refer to the APAM PFAS Management Framework for additional detail if level 2 or above materials are to be stockpiled.

#### 5.7.4. Importing soil onto site

- Where soil is being imported onto site, ensure adequate assessment of the soil has been conducted including being assessed as per Fill Material Determination (Gazette No. S301) which allows Fill Material to be deposited and received without the need for a written declaration to show that it is fill, or a laboratory/consultant report that shows the soil has been validated as fill material suitable for fill. The material classification report including all test results must be provided to the APAM Environment and Sustainability Team for approval prior to any fill material being delivered to site.
- Any fill material brought to site (including landscaping topsoil) must be free from contamination. If fill material is sourced from a licensed quarry, a letter from the quarry on letterhead stating the material is from a virgin source and free from contamination must be provided to the APAM Environment and Sustainability Team for approval prior to any fill material being delivered to site, as per APAM EMP Section 5.4.

#### 5.7.5. General soil management principles

- Where asbestos is found or suspected, stop works and seek advice. [Handling and Removing Asbestos - Process - Au](#) should be followed in the event of finding or suspecting asbestos, including ensuring the material is taken to a lawful place.
- If contaminated soil is created as a result of a chemical release, the soil should be cleaned up and managed as an EPA [Publication 1968: Guide to classifying industrial waste](#). Under Regulation 71(2)(b), a net load less than 50 litres does not require transportation by a licenced vehicle.
- Where a chemical spill has occurred on site and dependant on the nature of the chemical spill, the site may require remediation or cleaning up with confirmation soil samples taken to assess residual contamination. Where required, a specialist consultant will be engaged for this process, with the Regional Environmental Manager to be involved with the process.
- All industrial waste shall be classified and disposed to a lawful place. Priority waste consigned for disposal to landfill or soil that is priority waste must be classified as a category of priority waste before relinquishing management or control of the industrial waste to another person for transporting the waste. As per Section 140 of the EP Act, the project should also take all reasonable steps to assess alternatives to waste disposal.
- An informal assessment of potentially contaminated soil will be made during the weekly environmental inspection.
- If contaminated soil is unexpectedly encountered during earthworks, typically identified by odorous soil and changes in colour or texture – works should be stopped, and the Regional Environmental Manager informed. Where required, a specialist environmental consultant will be engaged to provide specialist advice.

- Any trucks transporting contaminated material must have their loads covered.
- The Gate 11 Water Treatment Plant washout bays will be utilised to wash down any trucks that have transported contaminated material to the Gate 11 PFAS Storage Facility prior to them leaving site for the day.

## 5.7.6. Monitoring and Contingencies

Visual inspection shall be undertaken throughout the course of works, to ensure that the soil is not causing pollution or a risk of harm to human health and the environment, this shall be documented in site diary notes or environmental inspections captured on Salesforce. Additional soil or water monitoring may be undertaken as required, and in particular if there is a risk that pollution is or may have left the site. Visual records (photographs) of material being excavated and stockpiled will be maintained.

Where bulk soil is being taken off site, the project will utilise EPA's Waste Tracker portal to validate the soil is being taken to a lawful place (when being taken off site). Testing results will be requested from suppliers (and issued to APAM) prior to importing soil to site. Tracking of soil and material movements to and from site will be captured in a register.

In the event that unexpected contaminated soils are encountered or suspected, stop works and refer to the sites Emergency Response Plan and [Incident and Emergency Response Flowchart - Encountering Contaminated Soil](#), and contact the Southern Regional Environmental Manager.

## 5.8. Heritage

The objective of managing heritage is to conduct all works with no detrimental impact on cultural heritage and comply with relevant legislation. The target of the project is to notify and manage any identified Aboriginal or European heritage as required by the regulators.

The Cultural Heritage Management Plan (CHMP) relevant to the Project are CHMP #12774 and the Melbourne Airport M3R CHMP. Additionally, a '*Taxiway Zulu, Melbourne Airport, Victoria: Due Diligence Assessment (2014)*' was prepared by Biosis prior to the original Taxiway Zulu Project. This report identifies no known heritage sites within the work area of the Project; and low archaeological potential (refer **Figure 9 and 10**)

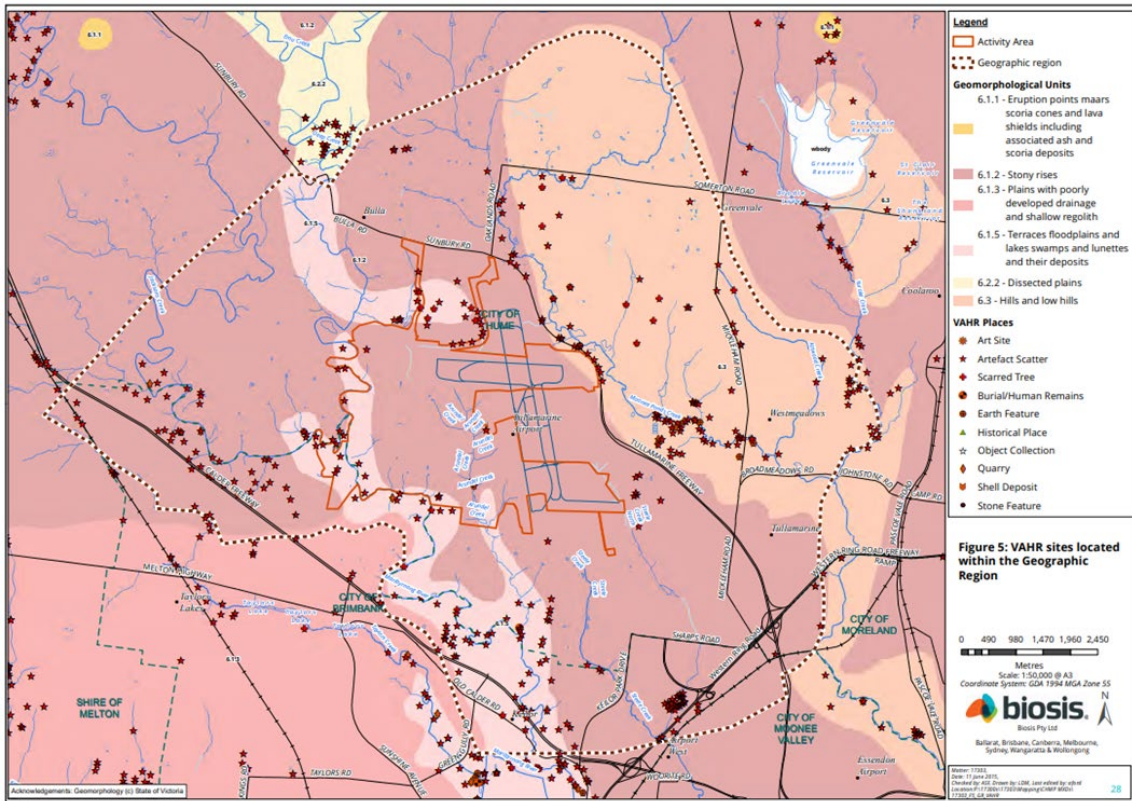


Figure 9 – Known VAHR sites at Melbourne Airport.

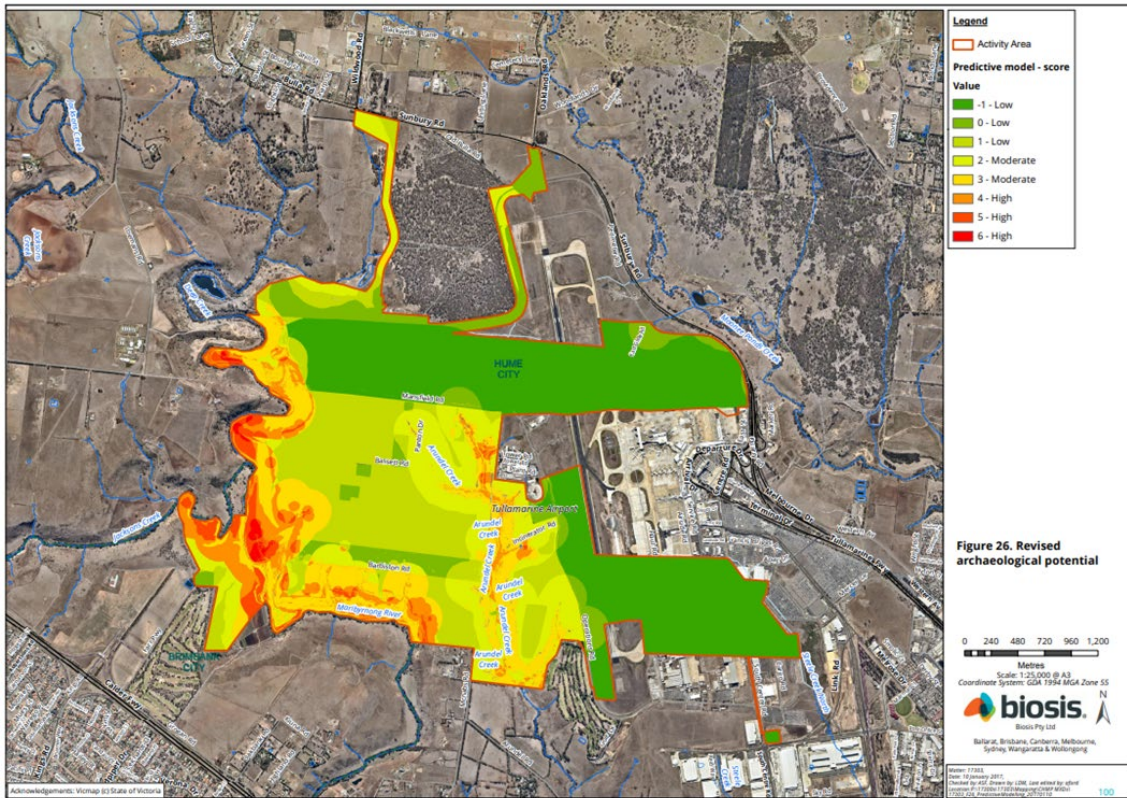


Figure 10 – Melbourne Airport archaeological potential.

Given the location scope of the works, there is unlikely to be any impact to areas of heritage sensitivity, however the following protocol will be implemented to mitigate potential risks to any unknown heritage sites:

- Aboriginal heritage induction – APAM conduct regular heritage inductions with the Registered Aboriginal Party (RAP). Site staff and subcontractors will attend these inductions as required to ensure an understanding of the CHMP.
- A Copy of the CHMP will be maintained and available on-site.
- Site induction - all site staff will complete a site induction that will include information on the CHMPs and potential artefacts that could be uncovered during AGL and other ground disturbing works.
- Site sheds to include posters showing common heritage artefacts. Refer to the [First People – State Relations](#) website for fact sheet posters on various heritage topics including scar trees, middens, stone tools, quarries and grinding stones.
- A response protocol to be implemented in the event of encountering suspected artefacts, refer to Section 5.8.1.

The national process [Manage Heritage - Process - Au](#) is available on theHub for further information and will also be used to ECP documents and to ensure unexpected finds are managed appropriately.

Some general principles of heritage management are detailed below:

- Common Aboriginal heritage items include middens, scar trees and rock tools and flakes. Some common stone artefacts are shown below in **Figure 11**.
- Where any unexpected artefacts of either Aboriginal or European origins are suspected, works shall be stopped in the vicinity of the find and APAM and a suitable heritage consultant notified.



Figure 11 - Common Aboriginal stone artefacts

### 5.8.1. Monitoring and contingencies

In the event that unexpected heritage items such as stone tools, middens etc. are discovered or suspected, work shall immediately cease in the vicinity of the site (within 25m) and the response procedure Incident and emergency response flowchart - [Encountering cultural heritage sites or human remains](#) must be applied, including notifying the Project Manager and APAM Environmental and

Sustainability Team. The response should include no-go zone establishment, fencing and sourcing required approvals prior to works progressing.

Monitoring for heritage will consist of assessment through the weekly environmental inspections and by all personnel during excavation works.

## 6. Concrete Batching Plant Setup and Operation

The mobile concrete batching plant will manufacture and supply the concrete required for slab construction and will be located at landside adjacent to Gate 3 and operated by Holcim. The proposed mobile concrete batching plant selected for the Project is shown in **Figure 12**. The environmental controls detailed in Section 5 will apply to all concrete batching works. In addition to these controls, Holcim has submitted a draft EMP for the operation of the concrete batching plant (refer **Appendix F**). a scope specific ECP for concrete batch plant operation will be submitted for APAM review and approval.

Concrete batching is a manufacturing process where cement, cementitious materials, fine aggregate (sand), coarse aggregate, admixtures, and water are proportioned and mixed to produce ready-mix concrete. The proportions and quantities used vary depending on the particular specifications and strength class.

Cement and cementitious materials are stored in steel silos, and aggregates are delivered by trucks to ground stockpiles, as needed. Aggregates are weighed and dispensed to the concrete truck agitator. Additives are dispensed from small tanks on-site. Proportioned quantities of cementitious materials and additives are also added to the concrete truck agitator. Water is added to the materials and the truck agitator mixes the materials and the water enroute to the destination. Operations are computer controlled and managed via the batchers control room.

At the end of the day's production or if returning with unused concrete, the concrete agitator trucks will report to the truck wash-out area/bins for emptying/cleaning. All waste products from the agitators will be emptied into the wash-out pits where waste aggregate will be held waiting for removal. When the wash-out bins reach capacity the waste aggregate is removed and recycled for use as solid fill, concrete barriers, road base and retaining wall components.

The site is hydraulically graded to separate a defined 'work area' from the 'general area'. The 'work area' includes the area for agitator truck loading, slump point areas, truck wash out areas and cementitious unloading areas which may be contaminated with cementitious materials.

Consideration has been given to the local environment in the design and layout of the operations. Efficient and effective safeguards have been incorporated to control potential effluents and pollutants. Management is also committed to carrying out regular maintenance of structures and facilities and to ensuring the operations are conducted to a high standard.

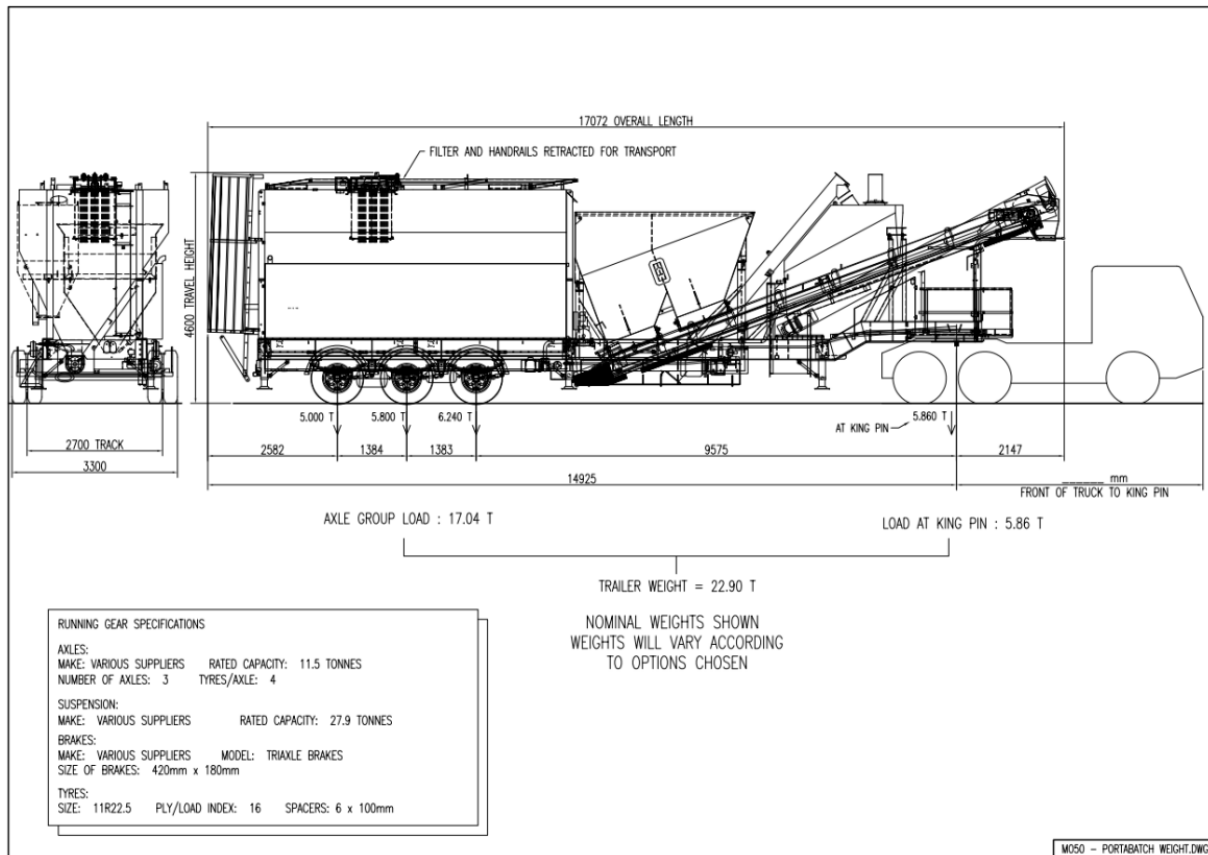


Figure 12 – Typical mobile concrete batching plant setup

Plant and equipment that will be used for the mobile concrete batching plant includes the following:

- All components of the portable plant including:
  - Compartment storage bins.
  - Conveyor system.
  - Hoppers.
  - Surge bins
  - Cement silos.
  - Batching control room / general office space.
- Site facilities- crib room and toilet.
- Generators and associated fuel storage
- Front end loader
- Delivery trucks
- Concrete agitator trucks

## 6.1. Location

The mobile concrete batching plant will be setup on a hardstand area to be constructed adjacent to Gate 3, the proposed layout is shown in **Figure 13**. The concrete batching setup includes ancillary buildings, feed bins for aggregates/sand and storage of cement. The storage location of bulk quarried materials (aggregates) and sand will be at an offsite location, in a quarry. The exact location of the plant and environmental details including location of spill kits, waste bins and sediment/erosion controls will be detailed in the ECP to be developed for the operation of the plant and will be displayed on the site sheds of the facility. This ECP must be reviewed and approved by APAM Environment and Sustainability team prior to

operation of the plant. Fulton Hogan note that APAM water quality testing detected significant levels of contamination in the water system outlet located near Gate 3. Therefore, specific controls to insure water quality is not impacted from the establishment and operation of the mobile concrete batching plant will be detailed in scope specific ECPs.

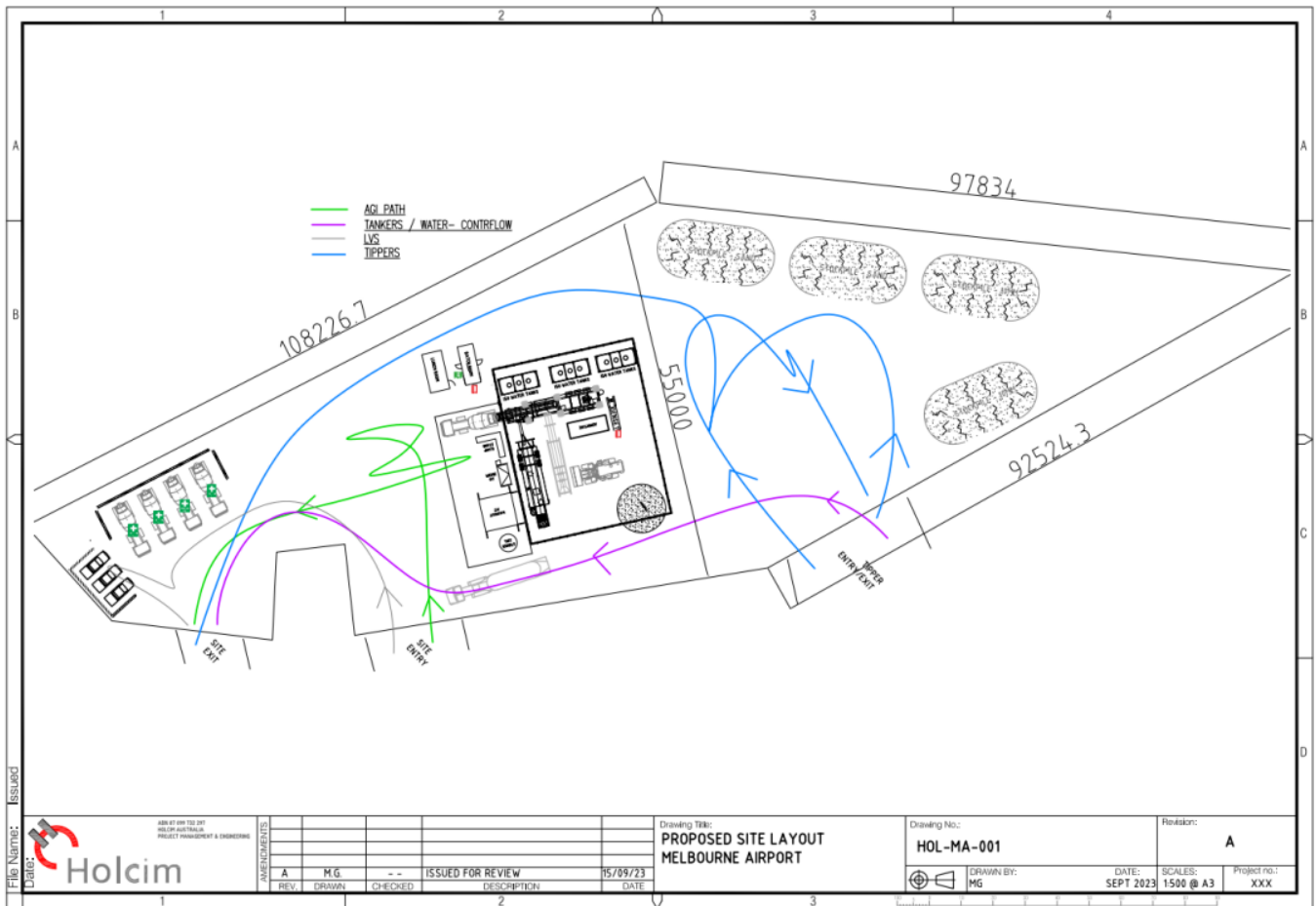


Figure 13 – Proposed concrete batching plant site layout

## 7. Ongoing Environmental Management

This section of the CEMP includes processes and actions that apply to the Project.

### 7.1. Maintenance and removal of environmental protection measures

All environmental protection measures are to be maintained to ensure they are performing as originally intended when installed. For specific details of the maintenance requirements for an environmental protection measure, refer to the project specific ECPs.

If protection measures are no longer required they shall be removed and disposed in accordance with [Manage Waste - Process - AU](#) and the waste management hierarchy.

#### 7.1.1. Awareness, training, competence and communication

The requirements stipulated in this CEMP and all subordinate environmental documents must be conveyed to all persons involved in the works carried out by the Project. Commitment shall be sought from these individuals that these requirements will be adhered to.



## 7.2. REALity culture

A culture of providing sound environmental performance is an integral part of the overall Fulton Hogan culture program. Fulton Hogan's REALity program highlights the integral values of the company.

Respect;  
Energy and Effort;  
Attitude; and  
Leadership.

Each of these directly impact on the manner in which Fulton Hogan's operations interact with the environment.

## 7.3. Induction

All personnel entering the site (Delivery, Service Personnel, Site Wide, Visitors) must attend an induction that includes Environmental information specific to the Project. This information relates to the environmental values of the site and broader local area and the actions required to avoid, minimise, and manage the impacts on these values. This includes a PowerPoint presentation and online induction materials.

### 7.3.1. Company induction

All new salaried employees must undergo the Company Induction Process. The Company Induction must be completed in accordance with the Fulton Hogan [Onboarding and Induction Procedure](#). This process includes the assignment of training modules, which address environmental risk and hazard identification and management.

### 7.3.2. Site / facility induction

The Project is to undertake inductions accordance with [Conducting Site Induction - Process - Au](#). The induction, given on the first day on site, shall give detail to the key environmental risks and requirements of the site for example, all personnel will be informed of the requirements regarding the Jacob's PFAS Management Plan (Revision 4, dated 1 April 2019) and EPBC Permit. Every person on site shall have some form of approved induction, including site visitors, who must be escorted around the sit. This process is enforced by the site HSEQ team to ensure all visitors and staff have received / conducted the induction. Records of inductions will be maintained in the Inductions Register and in Salesforce.

## 7.4. Communication

Communication shall be undertaken in accordance with [Fulton Hogan's Communications processes](#). This Process details how Fulton Hogan communicates with its staff, stakeholders, customers and the community. It sets the standard of how communications are managed internally and how all employees are expected to communicate and engage with stakeholders in terms of planning, executing, measuring, reporting and researching.

### 7.4.1. Toolbox

Toolbox meetings shall be the main form of communication to address changes to the environmental requirements, as well as a platform for staff to raise suggestions and innovative ideas to their direct management. Toolbox meetings shall be undertaken monthly and must be undertaken and documented in accordance with [Conduct Toolbox Meetings - Process - Au](#).

### 7.4.2. Southern Construction environment meeting

This meeting is conducted bi-annually and is represented by Environmental and Sustainability staff from the Southern Construction business. It is the platform for each operation to raise ideas, concerns and innovative ideas and share learning's from their experiences.

At least one representative from the Project shall attend each meeting.

### 7.4.3. Environmental (green) alerts

Environmental (Green) Alerts shall be used to communicate significant environmental incidents, innovations or changes in requirements. These allow the learning's and any required changes to be shared across all operations across Australia.

The Project shall ensure that learning's from Green Alerts are communicated to all relevant personnel.

## 7.5. Training

Training shall be undertaken and records shall be maintained in accordance with the Fulton Hogan's [Environment Training - Process – AU](#).

### 7.5.1. EnviroWise

All Fulton Hogan Personnel are required to undertake Fulton Hogan's internal Environmental Training Program - EnviroWise. Key subcontractors may also be invited to attend this training.

This 2–3 hour training package details the environmental requirements, risk and controls to personnel to ensure they have a good baseline environmental awareness and knowledge for the undertaking of their works.

### 7.5.2. Green Card training

As per the regional target, all supervisors, foreman, leading hands and superintendents shall undergo Green Card training, a third party accredited environmental awareness course.

### 7.5.3. Project specific environmental training

Project specific training will be conducted on an as required basis to ensure all staff and subcontractors are aware of project risks and mitigation requirements. This will include training on native grasses, PFAS management, spill management, dewatering and plant hygiene.

### 7.5.4. Continued training

Continued training will be carried out as necessary to ensure staff are adequately competent and understand their role in ensuring sustainable outcomes.

## 8. Monitoring, inspection and audits

Regular monitoring, inspections and audits shall be conducted to verify compliance with the requirements of this CEMP and any regulatory requirements, permit or approval conditions.

Section 4 of the EPBC Act approval (2016/7837) specifically requires the following to be conducted during construction;

- e) Routine management procedures to prevent local air and water quality impacts, such as daily inspections, dust suppression and storage and handling of chemicals.
- f) Monitoring and relevant remediation measures in the event of adverse monitoring results.

The monitoring, inspections and audit requirements are detailed below.

### 8.1. Monitoring and inspection schedule

Fulton Hogan will conduct formal weekly environmental inspections, which will address all environmental aspects outlined for the Project, including the specific EPBC Act approval requirements. If any inconsistencies or non-conformances are found during these weekly inspections, the Environmental Representative will develop specific Environmental "To Do Lists" for the areas of concern. These To Do Lists will be developed from aerial Nearmap photographs, with the project design information overlaid over the top. Relevant environmental controls specified in the CEMP will be included on the To Do Lists so that all

site personnel can easily see from the Aerial plan what is required and where within the project boundary. The To Do Lists are then sent to the Project team. The foreman and labourers will work together to close out any environmental actions in a timely manner.

As detailed previously in this CEMP, environmental monitoring will be conducted as required and will be managed in accordance with [Site Inspections - Process - Au](#).

## 8.2. On-going visual monitoring

Ongoing visual monitoring will be undertaken daily during construction works by the Foreman / Site Manager and weekly via environmental site inspections (refer to Section 8.3 below).

Environmental monitoring, including monitoring of subcontractors' activities, must be conducted as an on-going activity during the normal (continuous) course of supervision of works.

Records of such surveillance should be kept if any environmental issues are observed. These should be documented as an environmental incident/ non-conformance in [CAMs](#) or a diary note as appropriate.

A Non-Conformance Report (NCR) is raised on CAMs when either an environmental incident occurs and/or there is a non-conformance out on site with either the works or monitoring results. All NCR's will be raised within the client monthly report and communicated in the toolbox meeting if relevant to the team.

## 8.3. Site inspections

Inspections of the Project site shall be undertaken at least once a week by the project team, including an Environmental Representative.

In addition to the periodic inspections, additional inspections must be undertaken prior to significant weather events (i.e. rain, wind etc.) to ensure the site is safe and the weather will not create an environmental incident.

A significant weather event can be categorised by a 50% AEP rain event, continual rainfall exceeding 10mm or winds averaging over 30 knots.

Following significant weather events, existing controls will be inspected and reviewed to ensure their continued efficacy and the site will be assessed to ensure that no further controls are required.

Any defects and/or deficiencies in control measures identified by monitoring undertaken shall be rectified immediately and these control measures shall be cleaned, repaired and augmented as required to ensure effective control thereafter.

Areas for inspection must include:

- The site - to identify if any areas require any additional environmental protection measures.
- The environmental protection measures - to identify if they are working effectively (i.e. are they appropriate for the location, installed correctly or require maintenance?).
- The processes of work – to identify if people are undertaking correct work practices.
- The receiving environment - to identify if any impact is occurring.

The Airport Environmental Inspection is available on the Inspections application within Salesforce and will be used for documenting all environmental inspections. In the event that specific elements that are not covered by the inspection, the Inspection tool should be reviewed in Salesforce to adequately addresses the risks.

Any resulting outcomes which are found to be non-conforming or resulting from an environmental incident, will be raised as Hazards or Incidents. Any required close out actions will be assigned to foremen and subcontractors to implement the required environmental controls/actions. Any Hazards raised will be followed up by the Fulton Hogan Environmental and Sustainability Team.

## 8.4. Physical / chemical and resource monitoring

Monitoring should be undertaken as part of risk management (under GED) to determine how effective control measures are and to identify any changes that may need to be made.

Specific monitoring requirements for environmental aspects and work areas are detailed in previous sections of this CEMP.

## 8.5. Audits

### 8.5.1. Internal audits

Audits of the application of the CEMP and ECP's shall be undertaken by the Southern Region Construction Environmental Manager. Southern Region Construction shall maintain an Audit Schedule in the Salesforce Self-Assessment Tool application, with audits to be scheduled on a risk-based approach.

The audit will be conducted using an appropriate template relevant for the scope of the audit on the [Self-Assessment Tool application in Salesforce](#).

Internal audits of subcontractor performance will also be undertaken, to establish their compliance with the CEMP for their task. This will be undertaken on an as needed basis, during times of works where there is potential to impact on significant environmental aspects. Audits of subcontractors will be undertaken on annual basis as a minimum.

These internal audits will be utilised to ensure that activities are complying with planned arrangements and that controls have been properly implemented and maintained.

Audits are conducted utilising Fulton Hogan's ISO14001 accredited systems through Salesforce.

### 8.5.2. ISO14001 certification audits

As part of Fulton Hogan's ISO 14001 certification, the operation may be required to participate in certification audits. This will occur if the Project is randomly sampled for audit.

### 8.5.3. External audits and inspections

The APAM Environmental and Sustainability Team will conduct a formal environmental inspection on a monthly basis (at a minimum) to ensure compliance with this CEMP; with more frequent audits during key stages of construction. The Airport Environmental Officer (AEO) will also undertake compliance inspections as required. A tracking register will be maintained to ensure all compliance actions are able to be tracked.

An erosion and sediment control audit will be conducted by an IECA accredited consultant (TOPO), to review compliance against the Erosion and Sediment Control Plan (ESCP) and ensure best practice. APAM will be invited to attend this audit.

## 9. Incident and emergency preparedness and response

Incident and emergency planning and response shall be managed in accordance with Fulton Hogan's [Conduct Incident & Emergency Response Planning - Process - Au](#) and [Manage Incident Response, Notification & Investigation - Process - Au](#). These processes detail how to:

- Plan for incidents and emergencies by preparing a site-specific Emergency Response Plan. This contains site specific procedures to follow in the event of emergency scenarios;
- Notify required persons;
- Report incidents; and
- Undertake incident investigation.

In accordance with the requirements of these processes, an Incident and Emergency Response Plan has been developed for this operation and should be referred to for further information.

It is noted that the project takes place on Commonwealth land, as such EPA Victoria are not the environmental regulator and should not be contacted in relation to any pollution event that occurs on site. If Project activities do result in a notifiable incident, APAM will consult with EPA Victoria.

## **9.1. Hazards, Non-Conformances and Incident reporting**

### **9.1.1. Non-Conformances**

An environmental 'non-conformance' for this project is defined as not complying with the requirements of this CEMP.

Non-conformances such as not complying with the CEMP will be captured in CAMs as a Non-Conformance Report (NCR). All NCRs will be reviewed to determine the root cause and action required.

### **9.1.2. Incidents**

The APAM EMP defines an environmental incident as an event that may cause harm or potential harm to an environmental receptor e.g. spills, erosion and sediment-laden water entering drains/waterways; non-compliance with environmental management plans or approvals.

All environmental incidents must be immediately reported to the APAM Environment and Sustainability team as soon as possible.

All spills exceeding a volume of 5 litres or that enter a stormwater drain must be immediately reported to the IOC. APAM are then responsible to report any significant incidents to the AEO, DCCEE and/or the EPA depending on the location and nature of the incident.

Following an incident, Fulton Hogan will prepare a CAMs incident report and SIMS incident notification for submission to the APAM Environment and Sustainability Team within 48 hours of the incident occurring.

All environmental incidents will be investigated in detail, with corrective actions implemented and closed out as appropriate.

A CAMs incident report captures the following information:

- Detail - a detailed description of what happened
- Immediate Action - what immediate action was taken
- Source - how was the incident discovered; Inspection, Observation, Audit, Management Review, Regulatory/Authority, Reported Occurrence or Test.
- Type - Hazard/Potential Non-conformity, Improvement, Incident, Nonconformity
- Environment - defines the environmental category (air emissions, contaminated soil/land, flora and fauna, waste and resources, chemical/material, heritage/archaeology, erosion/sediment and water, noise and vibration)
- When - when did this incident occur, time and when it was reported
- Where – defines the specific location of the incident
- Impact – defines the environmental impact (air pollution, amenity/nuisance, ecological loss/damage, groundwater pollution, land pollution, surface water pollution, other impact)
- Risk Assessment – defines the risk assessment based off the potential likelihood and potential incident or hazard consequence.

Note, cases with a High or Extreme risk levels will also require a Root Cause Investigation to be completed internally.

All environmental incidents will be investigated in detail, with corrective actions implemented and closed out as appropriate. The findings from the environmental investigation will be reported to the wider Project team. This will include information on where new management measures are required and/or corrective actions needed to close out the incident. Feedback will be provided to the Project team and subcontractors on the findings of incident investigations and any incident trends relative to their area.

Any significant hazards, incidents or non-conformances will be reported in the monthly report and communicated in toolbox meetings to share lessons learnt. As works progress on site, environmental documentation will be updated to reflect any change in site conditions, or any new risks identified. Through this adaptive approach, Fulton Hogan will update the CEMP and ECP documents, based on any new risks, Non-conformances or hazards identified, to constantly re-assess the adequacy of the site controls specified and procedures used to address these risks.

### 9.1.3. Hazards

An environmental 'Hazard' is defined as a substance, a state or an event which has the potential to threaten the surrounding natural environment / or adversely affect people's health, including pollution.

If an implemented control fails to appropriately manage an environmental aspect (without causing an incident), then a Hazard will be raised using the Inspection tool in Salesforce. This Hazard is then tracked through the Hazard Register. A timeframe will be allocated to ensure the Hazard is closed out promptly, if not immediately.

## 10. Reporting

### 10.1. Monthly environmental reporting

Environmental statistics shall be compiled, and trend analysis undertaken, as part of Fulton Hogan's monthly internal Environmental and Sustainability reporting. As part of this process, an assessment is made on the performance of the Objectives and Targets. Reporting shall be undertaken and managed in accordance with [Monthly Environmental & Sustainability Reports - Process – Au](#).

### 10.2. Client reports / representation

Fulton Hogan will provide a monthly report to the Contract Administrator and APAM detailing our progress over the previous month. The environmental information will include;

- any environmental incidents or non-conformances;
- results from any water monitoring, soil or material testing or asbestos confirmation;
- updates to any environmental documentation;
- environmental initiatives;
- waste management records;
- audit results; and
- planned activities for the following month.

## 11. CEMP review and continuous improvement

The project management will review the environment and sustainability management system as outlined in this plan, annually as a minimum, to ensure its continuing suitability, adequacy and effectiveness via [Management Review - Process - Au](#).

Other triggers for update may include legislative change, approval change, client change, operational change, and incident or innovation improvement.

This plan will be revised as necessary to reflect any amendment to the Fulton Hogan Quality System or to capture identified areas of improvement.

As part of the EPBC Act Approval (2016/7837) conditions, the approval holder (APAM) may choose to revise a management plan (including this CEMP) which has been approved by the Minister under Condition 4

without submitted it for approval under section 143A of the EPBC Act, if the taking of the action in accordance with the revised plan would not be likely to have a new or increased impact.

If APAM makes this choice, they must;

- a) notify the Department in writing that the approved plan has been revised and provide the Department with an electronic copy of the revised plans.
- b) implement the revised plan from the date that the plan is submitted to the Department; and
- c) for the life of this approval, maintain a record of the reasons the approval holder considers that taking the action in accordance with the revised plan would not be likely to have a new or increased impact.

## 12. Document control – documents, data and records

All documentation specifically relating to the management of environment and sustainability, including this plan, are to be stored and maintained in accordance with [Control of Documents, Data and Records - Process - AU](#) and the project specific requirements detailed in the Quality Management Plan.

## 13. Appendix A – Proposed Works Schedule

To be included once finalised



## 14. Appendix B – Compliance Conditions

APPROVAL CONDITIONS				COMPLIANCE ASSESSMENT		KEY COMMITMENTS
EPBC APPROVAL SECTION	DETAIL	SUB-SECTION	DETAIL	COMPLIANT	CEMP SECTION	
4	<p>To mitigate impacts on the growling grass frog, the approval holder must submit a Construction Environment Management Plan (CEMP) for the Minister's approval prior to the commencement of the action.</p> <p>The approved plan must be implemented.</p> <p>The CEMP must include but not be limited to the following:</p>	a	Runoff controls to ensure that the quality of the adjacent waterways is maintained or improved.	✓	Section 5.3	
		b	Best practice sediment control to be implemented during construction.	✓	Section 5.3	
		c	Detailed measures to avoid spills of fuels and management of accidental spills to avoid the introduction of pollutants and biocides during construction.	✓	Section 5.5	
		d	Cleaning construction vehicles prior to entering the site to avoid the introduction and spread of weeds and pathogens. Cleaning of trucks leaving the site to prevent impacts from construction sediments to nearby growling grass frog populations.	✓	Section 5.6	
		e	Routine management procedures to prevent local air and water quality impacts, such as daily inspections, dust suppression and storage and handling of chemicals.	✓	Section 5.2 & Section 5.3	

		<b>f</b>	Monitoring and relevant remediation measures in the event of adverse monitoring results	✓	Section 5.3.1	
<b>6</b>	The PFAS Management Plan, along with the sections of the Construction Environment Management Plan (CEMP) and Operational Environment Management Plan (OEMP) for the proposed action relating to contamination and soils, must be prepared by a suitably qualified expert and must, in relation to management of PFAS:	<b>b</b>	Detail implementation and operational procedures that are appropriate to the risk posed by any contamination, noting the persistence, mobility and/or bioaccumulation potential of PFOS, PFHxS and PFOA, including: roles and responsibilities	✓	Section 2, Table 3	
			management of PFAS contamination within the project area, including strategies to reduce runoff and migration of contamination across and off the proposed site;	✓	Section 5.7	
			a contingency action plan for unexpected PFAS contaminant discoveries, including coordination, communication and engagement requirements	✓	Section 5.7.6	
		<b>c</b>	Detail soil and water monitoring requirements and testing and disposal procedures within the project area that are appropriate to the risk posed by any contamination, including references to relevant provisions	✓	Section 5.3 & Section 5.7	

		of airport environmental management plan/s including on-site and, where relevant, off-site, PFAS contamination monitoring arrangements			
	<b>d</b>	Detail review procedures that are appropriate to the risk posed by any PFAS contamination	N/A	Section 5.7 & Jacob's PFAS Management Plan Section 7.4	Key review procedures relating to PFAS Management include; Soil and Material Management, Water Management, Flora and Fauna and Sediment and Erosion Control Management. These are to be reviewed on an annual basis during the internal audit and CEMP review process. Additional reviews will be undertaken following incidents or non-conformances.
	<b>e</b>	<p>Impose the following performance measures for managing earthworks and storage of spoil to minimise the release of PFAS, due to disturbance of PFAS contaminated soils or sediments within the project area:</p> <ul style="list-style-type: none"> <li>i. Contaminated waste material (including excavated soil or sediment, and any leachate <i>from soil or sediment, or water</i> arising from <i>de-watering of sediment or soil</i>) to be <i>handled appropriately to the risk posed by the contamination and</i> disposed of in an <i>environmentally sound manner such that potential for the PFAS content to enter the environment is minimised;</i></li> </ul>	✓	Section 5.3	

			Contaminated waste material, including excavated soil or sediment, with a PFOS+ PFHxS or PFOA content above 50 milligrams per kilogram (mg / kg) to be stored or disposed of in an environmentally sound manner, to achieve nil environmental release of PFOS, PFHxS and PFOA content. The PFAS Management Plan will need to detail how materials at these concentrations, if encountered, would be handled to achieve nil environmental release;	N/A	Section 5.7 & Jacob's PFAS Management Plan, Section 6.15.4	
			All soil remaining at the site of the action to be suitable for purpose.	N/A	Section 5.7	Category 1 PFAS contaminated material will be re-used as fill where possible. Category 2 and 3 soil will be taken directly to the Gate 11 PFAS Storage Facility - Negri to manage long term storage of material

## 15. Appendix C – Environmental and Sustainability Policies



# Environmental Policy

Fulton Hogan Group Policy June 2022

## Protect our planet

We care for the planet, not only for ourselves, but also for future generations. We seek to reduce our impact on the environment and partner with others to lift the standards of our industry.

### We will:

- Reduce our carbon emissions
- Minimise our impact on the environmental footprint through innovation and being energy and resource efficient
- Always consider how to reduce, reuse and recycle
- Respect and care for our environment, encompassing diverse aspects including flora, fauna, water, community and cultural interests
- Work with our subcontractors and suppliers to help them meet our expectations
- Consider the environment when we design, plan and deliver our work
- Make proactive use of our environmental management systems
- Set measurable objectives and targets to ensure continual improvement
- Meet or exceed relevant standards and legal requirements

**C W Bruyn**  
**Managing Director**



# Sustainability Policy

Fulton Hogan Group Policy June 2022

## Doing the right thing now and for the long term

As we deliver good work for our customers, we must do our part to address climate change, loss of biodiversity within our environment, and to enhance social outcomes. Our approach to sustainability is consistent with our purpose of creating, connecting, and caring for communities, and our family values.

### We will:

#### People

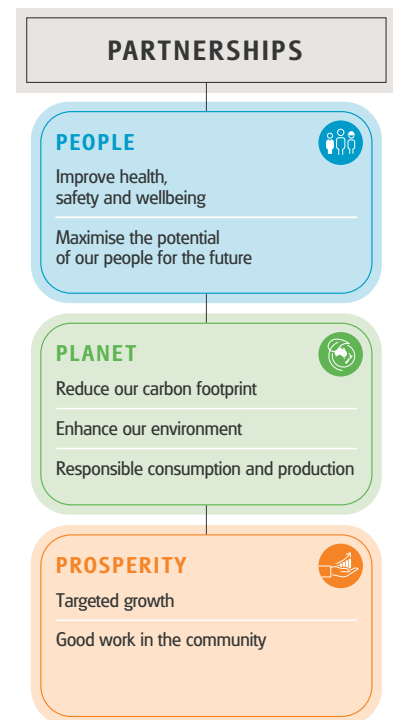
- Always put the health, safety and wellbeing of people first
- Value a performance culture, based on leadership, great people and personal development
- Live our REAL values (Respect, Energy & Effort, Attitude and Leadership) and behaviours to ensure we make sustainable decisions
- Harness and value diversity and inclusion

#### Planet

- Contribute towards and protect our natural environment
- Reduce our carbon emissions and impact on the environment in which we work and live, always actively seeking ways to minimise our environmental footprint
- Seek out and promote the use of products and services that use sustainable materials and reduce the carbon footprint
- Apply innovation, life-cycle thinking and effective planning to drive sustainable performance

#### Prosperity

- Provide long term value to our shareholders by building our reputation as a market leading business, whilst continuing to reinvest in the future growth of the company
- Share our sustainability journey with our partners, stakeholders and the broader community
- Through developing an understanding of their key priorities, build long term relationships with our communities and stakeholders
- Give back to the communities we live and work in



**C W Bruyn**  
Managing Director



## 16. Appendix D – Environmental Risk Assessment

[This document to be read in accordance with the risk assessment process.](#)

ACTIVITY BEING UNDERTAKEN <i>(What am I doing?)</i>	IMPACT ON ENVIRONMENT <i>(What can wrong?)</i>	PRE-CONTROL RISK			CONTROLS <i>(How can we protect the environment?)</i>	POST-CONTROL RISK		
		CONSEQUENCE	LIKELIHOOD	RISK RATING		CONSEQUENCE	LIKELIHOOD	RISK RATING
<b>Noise and Vibration</b>								
Site establishment	Noise from mobilisation and site establishment activities causes disturbance to terminal and nearby businesses	Sig.	Pos.	13 M	Notification of stakeholders of upcoming works, selection of plant/equipment to minimise noise. Ensure site compound is set up with consideration of noise receptors, including siting of generators etc.	Sig.	Rare	6 L
Operation of plant and equipment during project operations	Noise from operation of plant and machinery causing disturbance and disruption to the terminal and nearby businesses	Sig.	Pos.	13 M	Ensure all machinery is well maintained. Selection of machinery or works practices which produces less noise. Scheduling of noisy activities to the less sensitive periods of the day. Location of noisy activities away from neighbours and other sensitive areas. Raw materials to be delivered during daylight hours. Working to project working hours.	Sig.	Rare	6 L
	Vibration from operation of plant and machinery causing disturbance and disruption to the terminal or other stakeholders or causing damage to property or structures	Sig.	Pos.	13 M	Locate the vibration source as far as possible from the receiver locations, some sites may allow for the use of a trench between the source and receiver to cut the propagation path. A high vibration energy might be able to be substituted for an alternative, lower energy source or less intrusive method.	Sig.	Rare	6 L
<b>Air Quality</b>								
Stockpiling materials	Generation of dust from tipping off materials and windblown dust that leads to impacts on taxiways and apron areas.	Sig.	Pos.	13 M	Limit the height of stockpiles to minimise the exposure to wind as per the requirements of the Melbourne Airport EMP. Where stockpiles are to be left for a long period, consider other stabilisation techniques such as sterile rye grass, polymer sprays or other applied soil binder. The soil binder will be chosen that is suitable to be used near a waterway and does not cause harm to fauna including the Growling Grass Frog.	Sig.	Rare	6 L
Operation of plant and equipment during project operations	Generation of dust from earthworks and general construction activities leading to leading to impacts on taxiways and apron areas.	Maj.	Pos.	18 H	Water carts to spray down access tracks, work areas or stockpiles to minimise dust generation. Where applicable, consider polymers or other soil binders to stabilise soil and minimise dust generation if the area will be exposed for a longer period of time.	Maj.	U.Li.	14 M
Movement of trucks and vehicles, generating dust	Generation of dust from movement of vehicles and plant, use of unsealed access tracks leading to impacts on taxiways and apron areas.	Maj.	Pos.	18 H	Water carts to spray down access tracks. Road sweepers to be used to minimise material on asphalted roads that can lead to dust. Limit vehicle speed on access tracks to minimise dust generation. Where applicable, consider placing materials such as crushed rock on the access tracks to minimise soil disturbance	Maj.	U.Li.	14 M
Breaking out concrete, loading concrete into trucks	Generation of dust that leads to offsite impacts leading to impacts on taxiways and apron areas.	Sig.	Pos.	13 M	Monitor wind speed/direction to assess likelihood of offsite concrete dust impacts on properties or external stakeholders. Where possible, wet down concrete during breaking out and loading. Ensure stakeholders are informed of works and likely duration.	Sig.	U.Li.	9 M

[This document to be read in accordance with the risk assessment process.](#)

ACTIVITY BEING UNDERTAKEN <i>(What am I doing?)</i>	IMPACT ON ENVIRONMENT <i>(What can wrong?)</i>	PRE-CONTROL RISK			CONTROLS <i>(How can we protect the environment?)</i>	POST-CONTROL RISK		
		CONSEQUENCE	LIKELIHOOD	RISK RATING		CONSEQUENCE	LIKELIHOOD	RISK RATING
Temporary stockpiling of PFAS impacted material	Dust generated from material leading to impacts on taxiways and apron areas.	Sig.	Pos.	13 M	Monitor wind speed/direction to assess likelihood of offsite concrete dust impacts on properties or external stakeholders. Where possible, wet down concrete during breaking out and loading. Ensure stakeholders are informed of works and likely duration.	Sig.	U.Li.	9 M
Operation of plant and equipment during project operations	Generation of greenhouse gas emissions	Min.	Li.	12 M	Minimise unnecessary idling of plant and equipment, use of solar or alternative fuel lighting and stationary equipment where possible.	Min.	U.Li.	5 L
<b>Erosion, Sediment &amp; Water Management</b>								
Establishment of the laydown and stockpile areas	Erosion of exposed surfaces leading to pollution of the waterways (Moonee Ponds Creek or Arundel Creek)	Sig.	Pos.	13 M	<p>Areas susceptible to erosion and generating sediment-laden flows require identification prior to commencing works. Both existing and future sources should be identified. These areas should be targeted for erosion management and sediment control techniques.</p> <p>Principles of erosion prevention including diverting stormwater around works and progressive rehabilitation of works to minimise areas of disturbed soil left exposed. Use of principles of sediment management, including :</p> <ul style="list-style-type: none"> <li>- Use of cutoff drains, rock logs/sand bags/coir logs to divert stormwater around the works or to slow velocity of stormwater to minimise scouring.</li> <li>- Protection of drains, side entry pits, culverts, swales to prevent turbid water ingress. Several products are available including drain wardens, geofabrics and silt fencing.</li> <li>- Mud shall be kept off roads for both safety and environmental purposes. Mud that is tracked onto roads is washed into the drainage network, which flows into natural waterways</li> </ul>	Sig.	U.Li.	9 M

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ACTIVITY BEING UNDERTAKEN <i>(What am I doing?)</i>	IMPACT ON ENVIRONMENT <i>(What can wrong?)</i>	PRE-CONTROL RISK			CONTROLS <i>(How can we protect the environment?)</i>	POST-CONTROL RISK		
		CONSEQUENCE	LIKELIHOOD	RISK RATING		CONSEQUENCE	LIKELIHOOD	RISK RATING
Working beside live stormwater drains and swales	Sediment or contaminant laden water entering the stormwater system.	Sig.	Pos.	13 M	<p>TOPO to provide a sediment and erosion control management plan for the Zulu 2.0 project. FH to design temporary works for a 1 in 2 year rain event. Site to be inspected prior to any predicted large rain event and additional controls implemented if required. FH to have dewatering trucks on standby during large rain events.</p> <p>Principles of erosion prevention including diverting stormwater around works and progressive rehabilitation of works to minimise areas of disturbed soil left exposed. Use of principles of sediment management, including :</p> <ul style="list-style-type: none"> <li>- Use of cutoff drains, rock logs/sand bags/coir logs to divert stormwater around the works or to slow velocity of stormwater to minimise scouring.</li> <li>- Protection of drains, side entry pits, culverts, swales to prevent turbid water ingress. Several products are available including drain wardens, geofabrics and silt fencing.</li> <li>- Mud shall be kept off roads for both safety and environmental purposes. Mud that is tracked onto roads is washed into the drainage network, which flows into natural waterways</li> </ul> <p>Water testing to be conducted.</p>	Sig.	U.Li.	9 M
Maintenance of existing haul roads and access tracks	Sediment or contaminant laden water entering the stormwater system.	Sig.	Pos.	13 M	<p>Principles of erosion prevention including diverting stormwater around works and progressive rehabilitation of works to minimise areas of disturbed soil left exposed. Use of principles of sediment management, including :</p> <ul style="list-style-type: none"> <li>- Use of cutoff drains, rock logs/sand bags/coir logs to divert stormwater around the works or to slow velocity of stormwater to minimise scouring.</li> <li>- Protection of drains, side entry pits, culverts, swales to prevent turbid water ingress. Several products are available including drain wardens, geofabrics and silt fencing.</li> <li>- Mud shall be kept off roads for both safety and environmental purposes. Mud that is tracked onto roads is washed into the drainage network, which flows into natural waterways</li> </ul>	Sig.	U.Li.	9 M

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ACTIVITY BEING UNDERTAKEN <i>(What am I doing?)</i>	IMPACT ON ENVIRONMENT <i>(What can wrong?)</i>	PRE-CONTROL RISK			CONTROLS <i>(How can we protect the environment?)</i>	POST-CONTROL RISK		
		CONSEQUENCE	LIKELIHOOD	RISK RATING		CONSEQUENCE	LIKELIHOOD	RISK RATING
Earthworks during soil and crushed rock removal	Potential spread of PFAS contamination present in soils and pavements to be excavated.	Sig.	Li.	17 H	Assume soil being excavated is PFAS contaminated, with considerations of runoff to be contaminated. Soil and hardstand testing to be conducted as required to understand contamination status. Principles of erosion prevention including diverting stormwater around works and progressive rehabilitation of works to minimise areas of disturbed soil left exposed. Use of principles of sediment management, including : - Use of cutoff drains, rock logs/sand bags/coir logs to divert stormwater around the works or to slow velocity of stormwater to minimise scouring. - Protection of drains, side entry pits, culverts, swales to prevent turbid water ingress. Several products are available including drain wardens, geofabrics and silt fencing. - Mud shall be kept off roads for both safety and environmental purposes. Mud that is tracked onto roads is washed into the drainage network, which flows into natural waterways. Site specific ECP to detail areas of controls.	Sig.	U.Li.	9 M
Excavation and general earthworks activities	Erosion and scouring of exposed ground leading to turbid water generation and offsite discharge	Sig.	Li.	17 H	Assume soil being excavated is PFAS contaminated, with considerations of runoff to be contaminated. Testing/sampling may be required if existing results are not representative. Cannot rely on heat map for contamination level for disposal of hardstand material Principles of erosion prevention including diverting stormwater around works and progressive rehabilitation of works to minimise areas of disturbed soil left exposed. Use of principles of sediment management, including : - Use of cutoff drains, rock logs/sand bags/coir logs to divert stormwater around the works or to slow velocity of stormwater to minimise scouring. - Protection of drains, side entry pits, culverts, swales to prevent turbid water ingress. Several products are available including drain wardens, geofabrics and silt fencing. - Mud shall be kept off roads for both safety and environmental purposes. Mud that is tracked onto roads is washed into the drainage network, which flows into natural waterways. Site specific ECP to detail areas of controls.	Sig.	U.Li.	9 M

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ACTIVITY BEING UNDERTAKEN <i>(What am I doing?)</i>	IMPACT ON ENVIRONMENT <i>(What can wrong?)</i>	PRE-CONTROL RISK			CONTROLS <i>(How can we protect the environment?)</i>	POST-CONTROL RISK		
		CONSEQUENCE	LIKELIHOOD	RISK RATING		CONSEQUENCE	LIKELIHOOD	RISK RATING
Stockpiling of soil, gravel and other materials	Runoff of stockpiled materials leading to turbid or contaminated water runoff that causes offsite pollution.	Sig.	Li.	17 H	Stockpiling of material should be avoided along drainage lines, swales or areas where runoff can enter a drain or impact a sensitive receptor. Street sweepers to be used to clean up material as required to prevent contaminated water ingress into stormwater system. Drains should be protected as required with rock logs/sand bags and drain wardens. Specific requirements for stockpiling less than 48hrs as per CEMP and Melbourne Airport EMP specification. All surplus material to be stockpiled at Gate 11 PFAS Storage Facility.	Sig.	U.Li.	9 M
Cutting or grinding of concrete or pavement	Slurry runoff entering kerb/channel or draining pit causing offsite pollution	Sig.	Li.	17 H	Saw cutting of concrete should be conducted to prevent slurry entering kerb and channel or drainage system, including using wet/dry vac, containing slurry or use of street sweeper to clean up slurry.	Sig.	U.Li.	9 M
Dewatering	Dewatering discharge causing offsite pollution	Maj.	Li.	21 H	Water should be typically trucked to the Gate 11 Water Treatment Plant due to PFAS contamination. The pump suction hose should be set up so that it is not sucking up mud (can be placed in a bucket). Where water can be shown to have no PFAS or other contaminants (following laboratory testing), the water can be pumped to grass following completion of a dewatering permit and approval by Melbourne Airport. A project specific dewatering permit is to be developed and implemented, following appropriate training of relevant staff. The water will be monitored to ensure it is not contaminated (pollutants, pH, turbidity or salinity impacts) and that the discharge is not causing off site impacts	Maj.	U.Li.	14 M
All project works	Deposition of mud and other materials on the road, causing offsite pollution during rain event	Min.	Li.	12 M	Where mud and debris builds up on local roads and within the project site, this should be cleaned up using a street sweeper, to prevent this washing off and entering drainage network during rain events.	Min.	U.Li.	5 L
<b>Waste Management &amp; Resource Use</b>								
Ordering materials	Over-ordering of materials and use of non-sustainable alternatives	Min.	Pos.	8 M	Implement 'Just in Time' ordering methodology. Assess for more sustainable alternative such as recycled glass in lieu of sand in pipe back fill or alternate cement concretes.	Min.	U.Li.	5 L
Litter and Waste management	Bird attraction Airside from bins not being closed	Sig.	Pos.	13 M	Provide staff with an increased level of understanding and awareness of waste and resource use management issues. This includes posters, induction, signage on the bins and toolbox presentations. Consider weights (bollard bases) to weigh down lids of bins to prevent being opened by wind.	Sig.	U.Li.	9 M

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ACTIVITY BEING UNDERTAKEN <i>(What am I doing?)</i>	IMPACT ON ENVIRONMENT <i>(What can wrong?)</i>	PRE-CONTROL RISK			CONTROLS <i>(How can we protect the environment?)</i>	POST-CONTROL RISK		
		CONSEQUENCE	LIKELIHOOD	RISK RATING		CONSEQUENCE	LIKELIHOOD	RISK RATING
	Waste not being separated into recycled materials	Min.	Pos.	8 M	Provide staff with an increased level of understanding and awareness of waste and resource use management issues. This includes posters, induction, signage on the bins and toolbox presentations. Have appropriate waste receptacles to encourage waste segregation, including metal and concrete skips for construction wastes and comingled, paper/cardboard and general waste bins for office wastes. Ensure there are enough bins and skips for the scope and needs of the project.	Min.	U.Li.	5 L
Demolition and disposal of concrete and asphalt	Mixing PFAS contaminated material with material not contaminated	Sig.	Pos.	13 M	Profiling, concrete, soil and other surplus materials are being taken and stockpiled at Gate 9, given the likely Level 1 PFAS contamination. Materials that are not contaminated are likely to be imported materials.	Sig.	U.Li.	9 M
	Not understanding which materials (concrete, crushed rock or asphalt) are contaminated	Sig.	Pos.	13 M	Where the contamination status of a material is unknown, assume PFAS contamination and dispose of to Gate 11. Laboratory testing of materials should be undertaken to gain a better understanding of contamination levels.	Sig.	U.Li.	9 M
	Concrete and asphalt not being separated into recycled materials if not contaminated	Sig.	Pos.	13 M	Storage of wastes will be conducted in a manner to prevent pollution, including using a location away from sensitive receptors, appropriate bunds/waste receptacles specific for the waste where required and appropriate segregation of wastes to prevent contaminated material going to landfill. Materials to be stored at Gate 11.	Sig.	U.Li.	9 M
Demolition Waste	Waste not being separated into recycled materials	Sig.	Pos.	13 M	Provide staff with an increased level of understanding and awareness of waste and resource use management issues. This includes posters, induction, signage on the bins and toolbox presentations. Have appropriate waste receptacles and stockpile areas (Gate 11) to encourage waste segregation, including separation of concrete, asphalt, steel, aggregates and soil. To be assessed during weekly Environmental Inspections.	Sig.	U.Li.	9 M
Concrete trucks discharging concrete wastewater	Concrete trucks not discharging into the concrete washout bins causing surface water and soil contamination	Sig.	Pos.	13 M	Dedicated concrete washout areas to be constructed for concrete washout, to be constructed with black plastic and crushed rock. These areas to be sighted away from drainage lines.	Sig.	U.Li.	9 M
FOD Management during construction	FOD blowing onto nearby taxiways or runways	Sig.	Pos.	13 M	All personnel to ensure wastes are placed in appropriate bins and keep a look out for FOD.	Sig.	U.Li.	9 M

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ACTIVITY BEING UNDERTAKEN <i>(What am I doing?)</i>	IMPACT ON ENVIRONMENT <i>(What can wrong?)</i>	PRE-CONTROL RISK			CONTROLS <i>(How can we protect the environment?)</i>	POST-CONTROL RISK		
		CONSEQUENCE	LIKELIHOOD	RISK RATING		CONSEQUENCE	LIKELIHOOD	RISK RATING
Importing materials on to site	Not meeting waste duties, potential for importing contaminated material.	Maj.	Pos.	18 H	Where materials are brought on to site (including soil, crushed rock) the Project must ensure that the material confirms with NEPM requirements, with contaminant levels below adopted criteria. This may involve lab testing of materials or gaining certificates from the supplier. All material imported on to site requires APAM approval.	Maj.	U.Li.	14 M
All earthworks and demolition	Encountering and management of unexpected asbestos	Sig.	Pos.	13 M	Where asbestos is suspected, stop works in the area and seek specialist advice for management and disposal options. All asbestos to be managed as per EPA guidelines, with licenced cartage contractor to take material to a licenced facility for disposal. All EPA records to be maintained.	Sig.	Rare	6 L
Disposal of spill absorbent and small amounts of contaminated soil	Illegal disposal of Reportable Priority waste material from spills	Min.	Pos.	8 M	Ensure used spill absorbents and small amounts of impacted soil/material are appropriately bagged up (using bags in spill kits) or contained and taken to appropriate licenced facility as prescribed waste	Min.	U.Li.	5 L
Storage of wastes	Contamination of soil/water from inappropriate storage of wastes	Min.	Pos.	8 M	Ensure all wastes are stored in a manner that prevents contamination of the land, including using appropriate bins/skips and appropriate disposal of liquid wastes.	Min.	U.Li.	5 L
<b>Hazardous Materials Management</b>								
Operation and refuelling the generator and petrol/diesel driven equipment	Spills, leaks and drips leading to pollution of the soil, water and creating contaminated runoff	Sig.	Pos.	13 M	Chemical storage on site will be in accordance with EPA guideline 1698 – Liquid storage and Handling Guidelines with adequate bunding used that is fit for purpose for the volume and type of chemicals being stored. In order to prevent spills, all chemicals will be stored in a manner that any leaks, drips and spills will be contained to prevent harm to the environment, including appropriate chemical storage bunds, trays or specialist chemical storage devices. Subcontractors are to store their hazardous and flammable materials either in Fulton Hogan bunded containers (for small quantities) or within their bunded trailers or Utes.	Sig.	U.Li.	9 M
On site storage of fuels and chemicals	Spills, leaks and drips leading to pollution of the soil, water and contaminated runoff	Sig.	Pos.	13 M	Where refuelling or decanting of chemicals is required, this will be conducted in manner to prevent spills and drips, with appropriate spill equipment on hand. All plant and machinery will be refuelled at least 20m from waterways or stormwater drain entry pits as per the Melbourne Airport EMP. A register for dangerous goods stored and handled on site will be maintained. It will record the volume and type of hazardous materials stored, and the current version of the Safety Data Sheets (SDS).	Sig.	U.Li.	9 M



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		CONSEQUENCE	LIKELIHOOD	RISK RATING		CONSEQUENCE	LIKELIHOOD	RISK RATING
Use of hydraulic plant and equipment	Blown hydraulic hoses and other failures leading to spilling of oil, diesel or petrol causing pollution of soil, water and creating contaminated runoff.	Min.	Li.	12 M	Plant and machinery shall be serviced and inspected regularly for oil and fuel leaks. Any leaks detected shall be rectified immediately. Ensure spill kits are present in areas where plant and equipment are operating, along with adequate training to ensure a potential spill is controlled, contained and cleaned up.	Min.	Pos.	8 M
Use of chemicals on site	Spills, leaks and drips leading to pollution of soil, water and creating contaminated runoff.	Sig.	Pos.	13 M	Spill kits will be fit for purpose and capable of responding to the types of chemicals being used on site (i.e. hydrocarbon specific spill kits). Weekly environmental inspections will look at chemical use, spill kits and evidence of leaks/drips.	Sig.	U.Li.	9 M
<b>Flora &amp; Fauna</b>								
Excavation	Encroachment into Vegetation Protection Zones leading to damage to grasses.	Maj.	Li.	21 H	All site workers will be briefed within the site induction, pre-starts and specific toolbox meetings in regard to the management and protection of significant Flora and Fauna. Prior to works, a surveyor will be engaged to mark out the construction boundary and the areas of vegetation encroaching on the work boundary. Vegetation protection fencing/barriers are to be set up along the work boundary, this will be clearly signed with "Vegetation Protection Zone - No Unauthorised personnel, Materials or Equipment beyond this point". A specific toolbox meeting will provide details about NTGVVP indigenous grasses, what they look like, the importance of Vegetation Protection Zones (VPZs) and the requirements to avoid impacts. Fact sheets (NTGVVP) will be displayed in the site sheds and lunchrooms after the toolbox meetings. All works will be confined to these limits. Where any ground disturbance outside this area is required, approval will be sought.	Maj.	U.Li.	14 M
Setting up the installation of Vegetation Protection No Go Zones and signage	Protection zones and signage not correctly installed	Sig.	Pos.	13 M	Survey to mark out location of EPBC grasses prior to works starting. All no go zones to be inspected by APAM or an external Project Manager prior to works starting.	Sig.	Rare	6 L
Storage of plant and equipment	Non permitted access within the No Go Zones causing damage to the EPBC listed Natural Temperate Grassland of the Victorian Volcanic Plain Community (NTGVVP)	Maj.	Pos.	18 H	No materials (soil, aggregates etc.) or plant and equipment will be stockpiled or parked outside of the access roads or site compounds. All works will be confined to these limits. Where any ground disturbance outside this area is required, approval will be sought. Any vehicle access onto grassed areas require a driving on grass permit	Maj.	Rare	10 M

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ACTIVITY BEING UNDERTAKEN <i>(What am I doing?)</i>	IMPACT ON ENVIRONMENT <i>(What can wrong?)</i>	PRE-CONTROL RISK			CONTROLS <i>(How can we protect the environment?)</i>	POST-CONTROL RISK		
		CONSEQUENCE	LIKELIHOOD	RISK RATING		CONSEQUENCE	LIKELIHOOD	RISK RATING
Establishment of site office and compound	Damage to the habitat that is likely to support listed Fauna species.	Maj.	Pos.	18 H	All works to be confined to the work area and not within vegetation protection zones that may have fauna present. If suspected Growling Grass Frog (GGF) or other fauna are found during construction, work in that area will immediately cease and the APAM Environment Team should be notified immediately who can advise on the next steps. A specific toolbox meeting will be presented on the GGF, so that all site workers are aware of their significance and the importance of water quality management and the maintenance of erosion and sediment controls across the site.	Maj.	Rare	10 M
Excavation	Damage to the habitat that is likely to support listed Fauna species.	Maj.	Pos.	18 H	All works to be confined to the work area and not within vegetation protection zones that may have fauna present. If suspected Growling Grass Frog (GGF) or other fauna are found during construction, work in that area will immediately cease and the APAM Environment Team should be notified immediately who can advise on the next steps. A specific toolbox meeting will be presented on the GGF, so that all site workers are aware of their significance and the importance of water quality management and the maintenance of erosion and sediment controls across the site.	Maj.	Rare	10 M
	Not protecting stormwater drains with sediment controls leading to turbid stormwater entering Moonee Ponds creek or Arundel Creek where the EPBC listed Growling Grass Frog ( <i>Litoria raniformis</i> ) is known to breed	Sig.	Pos.	13 M	Sediment and erosion controls to be established for all ground disturbance activities. No refuelling in close proximity to drainage lines, stormwater pits, swales or outside works areas.	Maj.	Rare	10 M
Waste Management & Resource Use	Attraction of wildlife (including birds) to site	Sig.	Pos.	13 M	All waste management procedures to be followed, including housekeeping and waste segregation. Lids to be available for all bins with putrescible waste (general waste 240L bins).	Sig.	Rare	6 L
Movement of plant and equipment	Non-permitted access within the No Go Zones causing damage to the EPBC listed Natural Temperate Grassland of the Victorian Volcanic Plain Community (NTGVVP)	Maj.	Pos.	18 H	No Go Zones to be clearly delineated and restrict plant movement.	Maj.	U.Li.	14 M

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ACTIVITY BEING UNDERTAKEN <i>(What am I doing?)</i>	IMPACT ON ENVIRONMENT <i>(What can wrong?)</i>	PRE-CONTROL RISK			CONTROLS <i>(How can we protect the environment?)</i>	POST-CONTROL RISK		
		CONSEQUENCE	LIKELIHOOD	RISK RATING		CONSEQUENCE	LIKELIHOOD	RISK RATING
	Importing weeds and pathogens onto site, movement of existing weeds across work areas	Sig.	Li.	17 H	To prevent the spread of weeds and pathogens, all plant and equipment that is brought onto site will be decontaminated or free from mud, debris and vegetation prior to arrival. Subcontractors and suppliers will be advised of this hygiene requirement within their subcontractor agreement and during the site induction. All trucks operators and site personnel will be responsible to ensure their trucks and site vehicles are clean and free of plant reproductive material (weeds) prior to entering and leaving the airside Project area. Where there are existing weeds present on site, plant and equipment will be decontaminated as required to prevent spread of weeds on site and to other areas off site. Weed spraying within the construction boundary is the responsibility of Fulton Hogan. Specialist contractors will be used to spray the weeds with herbicide at the correct time of the year when the weeds are growing strongly but before seed set. The use of frog-sensitive herbicides such as Roundup Bioactive or Fusillade will be conducted. The intended herbicide Safety Data Sheet (SDS) will be submitted to APAMs Environmental Team for review prior to using the product airside. A formal assessment of weeds will be conducted on a weekly basis during the weekly environmental inspection.	Sig.	U.Li.	9 M
<b>Soils &amp; Materials Management</b>								
Excavation and management of known PFAS contaminated soil, concrete, subsoil and other material	Material not managed as per IWRGs, including disposed of to licensed facility or use of licenced cartage contractor.	Maj.	Pos.	18 H	PFAS soils that will be excavated range from Level 1-3. Additional soil sampling will be undertaken to verify the PFAS heat map provided by APAM. boundaries of PFAS Levels will be delineated to ensure different Level soils are stockpiled separately.  All surplus soil and concrete is to be taken to the gate 11 facility or Vic Civil for stockpiling or crushing respectively.  Where there is uncertainty on the contamination status of materials, testing should be conducted by a suitable specialist consultant to determine the PFAS and other contaminant status of the material and determine the appropriate management option. No material is expected to be taken offsite, however where this is proposed, the material will have to be classified as per EPA Regulations.	Maj.	U.Li.	14 M

[This document to be read in accordance with the risk assessment process.](#)

ACTIVITY BEING UNDERTAKEN <i>(What am I doing?)</i>	IMPACT ON ENVIRONMENT <i>(What can wrong?)</i>	PRE-CONTROL RISK			CONTROLS <i>(How can we protect the environment?)</i>	POST-CONTROL RISK		
		CONSEQUENCE	LIKELIHOOD	RISK RATING		CONSEQUENCE	LIKELIHOOD	RISK RATING
	Contaminated water runoff generated from stockpiles	Maj.	Pos.	18 H	Where works are being conducted in an area of contaminated soil, the management of water runoff will be managed as per the Melbourne Airport EMP, PFAS Management Framework and the EPA Publication 1834, Section 6.4 – Managing potentially contaminated stormwater. This will include diversion of surface water around the project site, adequate covering/bunding and management of stockpiled contaminated soil to prevent contaminated water runoff and the use of adequate erosion control measures around the excavation to minimise contaminated runoff from disturbed contaminated soils. Material to be stored at Gate 11.	Maj.	U.Li.	14 M
NDD Slurry management	Incorrectly managed, leading to pollution or taken to incorrect location	Sig.	Pos.	13 M	All slurry is to be taken to the Gate 11 WTP in the first instance. If not available, slurry will be taken to the drying ponds at Gate 9. This detail will be added onto the ECP and shown on the ECP map. The ponds are to be constructed to appropriate size to contain slurry generated from the works and be bunded and plastic lined. If dried slurry is to be taken offsite for disposal, this should be appropriately tested as per EPA guidelines and taken to a facility that is licenced to accept the material. All volumes of dried NDD slurry taken to the Gate 11 WTP or disposed of off site are to be captured in a register.	Sig.	U.Li.	9 M

[This document to be read in accordance with the risk assessment process](#)

ACTIVITY BEING UNDERTAKEN <i>(What am I doing?)</i>	IMPACT ON ENVIRONMENT <i>(What can wrong?)</i>	PRE-CONTROL RISK			CONTROLS <i>(How can we protect the environment?)</i>	POST-CONTROL RISK		
		CONSEQUENCE	LIKELIHOOD	RISK RATING		CONSEQUENCE	LIKELIHOOD	RISK RATING
Stockpiling of PFAS contaminated material	PFAS impacted material incorrectly stockpiled as per APAM requirements	Maj.	Pos.	18 H	<p>PFAS impacted material should be stockpiled on solid hardstand to minimise potential for leaching of contaminants into underlying soils. A minimum 0.25 mm linear low-density polyethylene (LLDPE) sheet with a minimum 300 mm overlap between sheets must be placed between the hardstand and stockpile to prevent PFAS contamination of underlying hardstand.</p> <ul style="list-style-type: none"> <li>Where hardstand areas are not available or practical for stockpiling for Level 1 to 2 PFAS impacted material, it must be stockpiled within the project boundary where surface soils have a similar or higher PFAS Management Level. If this is not possible, a base liner will be required as per the point below.</li> <li>Where hardstand areas are not available or practical for stockpiling for Level 3 and 4 PFAS impacted material, it must be stockpiled on a minimum 0.25 mm LLDPE sheet with a minimum 300 mm overlap between sheets for stockpiles less than 48 hours. For stockpiling between 48 hours and 12 months, an engineered base liner will be required in the stockpiling area, including: stripping of the topsoil (as required) and compaction of surface materials with a smooth drum roller; placement of clay or single composite lined base layer; appropriate stormwater controls, including bund/leachate collection zone, banks, diversion drains etc.</li> <li>The following requirements apply for the covering of temporary stockpiles: for stockpiling of PFAS impacted material less than 48 hours with forecast rain or high winds, cover stockpiles with geotextile covering and appropriate anchoring; for stockpiling Level 1 PFAS impacted material for greater than 48 hours the above cover option can be maintained, alternatively a stabiliser can be used; for stockpiling Level 2, 3 and 4 PFAS impacted material greater than 48 hours to 12 months, more stringent levels are required.</li> </ul> <p>Refer to the APAM PFAS Management Framework for additional detail if level 2 or above materials are to be stockpiled.</p>	Maj.	U.Li.	9 M

[This document to be read in accordance with the risk assessment process.](#)

ACTIVITY BEING UNDERTAKEN <i>(What am I doing?)</i>	IMPACT ON ENVIRONMENT <i>(What can wrong?)</i>	PRE-CONTROL RISK			CONTROLS <i>(How can we protect the environment?)</i>	POST-CONTROL RISK		
		CONSEQUENCE	LIKELIHOOD	RISK RATING		CONSEQUENCE	LIKELIHOOD	RISK RATING
Importing fill material	Unintentionally importing contaminated soil on to site	Sig.	Pos.	13 M	Where soil is being imported onto site, ensure adequate assessment of the soil has been conducted including being assessed as per Fill Material Determination (Gazette No. S301) which allows Fill Material to be deposited and received without the need for a written declaration to show that it is fill, or a laboratory/consultant report that shows the soil has been validated as fill material suitable for fill. Check if the Fill Material Determination (Gazette No. S301) is applicable. APAM approval will be required prior to importing any material onto site.	Sig.	U.Li.	9 M
Excavation and general earthworks	Encountering unexpected contaminated soil (other than known PFAS)	Sig.	Pos.	13 M	If there is evidence of unexpected contaminated soil encountered during earthworks, including odorous soil and changes in colour or texture of the soil – works should be stopped and the regional environmental manager informed. Where required, a specialist environmental consultant will be engaged to provide specialist advice.	Sig.	Rare	6 L
<b>Heritage</b>								
Excavation and earthworks	Causing damage to any items of known Archaeological/ Heritage value.	Sig.	U.Li.	9 M	The induction to cover common Aboriginal heritage items that may be uncovered during excavation, with posters in site sheds. In the event that unexpected heritage items such as stone tools, middens etc. are discovered or suspected, work shall immediately cease in the vicinity of the site (within 25m). APAM will be notified.	Sig.	Rare	6 L
<b>FBB Plant Setup &amp; Operation</b>								
Concrete batching plant operation	Operation of the plant and vehicle movements leading to dust and emissions causing nuisance to airport stakeholders	Sig.	Li.	17 H	Conveyors to be covered to minimise dust becoming airborne. All dust is to be kept within a contained system.  The fixed plant is subject to a number of inspections and periodic preventative maintenance. Observations are to be conducted ongoing to identify potential sources of dust from the fixed plant. Dust suppression sprinklers are used to minimise dust from the aggregate bins and feed bins if there are likely to be dust issues (for example dry and windy days). Wetting agents will be considered as required.  All stockpiled materials are to be located within nominated storage bins and storage area are to be shown on the ECP. Limit the height of stockpiles, especially ones that are not stored in dedicated bays or in undercover areas, to minimise the exposure to wind.	Sig.	U.Li.	9 M

[This document to be read in accordance with the risk assessment process.](#)

ACTIVITY BEING UNDERTAKEN <i>(What am I doing?)</i>	IMPACT ON ENVIRONMENT <i>(What can wrong?)</i>	PRE-CONTROL RISK			CONTROLS <i>(How can we protect the environment?)</i>	POST-CONTROL RISK		
		CONSEQUENCE	LIKELIHOOD	RISK RATING		CONSEQUENCE	LIKELIHOOD	RISK RATING
	Erosion and sedimentation from plant site and stockpiling locations	<b>Sig.</b>	<b>Pos.</b>	<b>13 M</b>	<p>The site shall be set up and profiled in a way that prevents stormwater flooding affected working areas. Where appropriate, bunds and diversion channels shall be installed to redirect any known surface flows away from areas that will cause high levels of sedimentation. Where possible, the flow will be diverted around work areas and into swales. Stockpiling of material should be avoided along any drainage flows, with street sweepers used to clean up material as required to prevent contaminated water ingress into stormwater system.</p> <p>Sediment controls including rock logs and geofabrics are to be used on any existing stormwater pits where sedimentation is present. These are to be regularly inspected and replaced as required.</p> <p>A sweeper truck will be used onsite on a regular basis to clean-up loose aggregate and dust from around the site.</p> <p>If traffic entering and leaving the plant is seen to be tracking material onto public roads, a sweeper truck should be used to clean the road.</p> <p>Any spillage of wastes, contaminants or other materials must be cleaned up as quickly as practicable. Such spillages must not be cleaned up by hosing, sweeping or otherwise releasing such wastes, contaminants or material to any stormwater drainage system, roadside gutter or waters.</p>	<b>Sig.</b>	<b>U.Li.</b>	<b>9 M</b>
	Improper waste management practices leading to contamination of soils and waterways and non compliance with CEMP requirements	<b>Min.</b>	<b>Pos.</b>	<b>8 M</b>	<p>Fulton Hogan shall ensure that all rubbish and waste materials are suitably contained on site until disposal and do not escape into bushland, the adjacent reserves and/or storm water drains. Laboratory wastes will be segregated into a containment vessel (i.e. IBC) for offsite disposal through a licenced contractor. Chemicals including oily rags, waste oil and air filters will be segregated into a bin present on site specifically for reportable priority wastes for offsite disposal by a licenced contractor.</p>	<b>Min.</b>	<b>U.Li.</b>	<b>5 L</b>

[This document to be read in accordance with the risk assessment process.](#)

ACTIVITY BEING UNDERTAKEN <i>(What am I doing?)</i>	IMPACT ON ENVIRONMENT <i>(What can wrong?)</i>	PRE-CONTROL RISK			CONTROLS <i>(How can we protect the environment?)</i>	POST-CONTROL RISK		
		CONSEQUENCE	LIKELIHOOD	RISK RATING		CONSEQUENCE	LIKELIHOOD	RISK RATING
	Use of chemicals leading to pollution of soil and groundwater Set	Sig.	Pos.	13 M	<p>Chemical storage at the plant will be in accordance with EPA guideline 1698 – Liquid storage and Handling Guidelines with adequate bunding used that is fit for purpose for the volume and type of chemicals being stored.</p> <p>Site shall have procedures in place to manage rainwater that is captured in chemical bunds. All bund valves are to be closed at all times and locked to prevent unauthorised access. All bund discharges shall be observed and confirmed to be free of pollutants (visible oils) by the Supervisor prior to pumping to the legal point of discharge.</p> <p>In order to prevent spills, all chemicals will be stored in a manner that any leaks, drips and spills will be contained to prevent harm to the environment, including appropriate chemical storage bunds, trays or specialist chemical storage devices.</p> <p>The front end loader is refuelled via the diesel tank, on a small pad with a lip to contain small drips and spills. Where refuelling or decanting of chemicals is required, this will be conducted in manner to prevent spills and drips, with appropriate spill equipment on hand.</p> <p>Spill kits are located as per the ECPs, and will be fit for purpose and capable of responding to the types of chemicals being used on site (i.e. hydrocarbon specific spill kits).</p>	Sig.	U.Li.	9 M



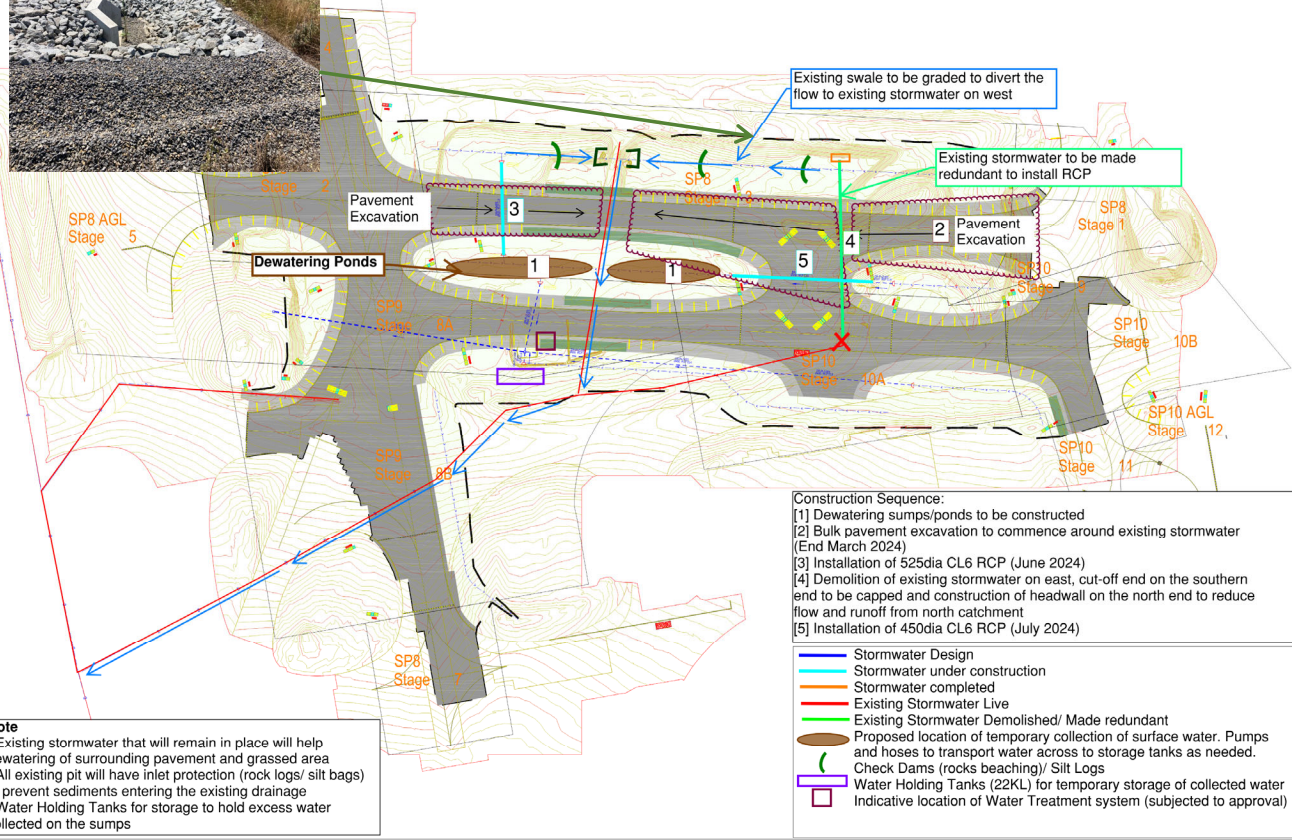
## 17. Appendix E – Drainage Staging Plans

# Drainage Staging Plans – SP8

Current sediment control around existing stormwater



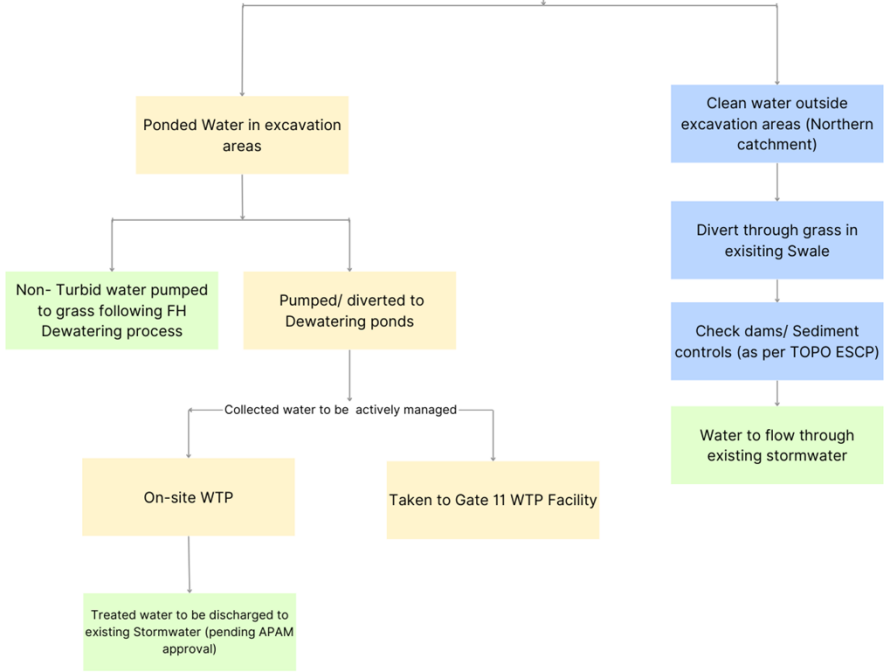
Zulu 2.0 SP8  
March - July 2024



**Note**

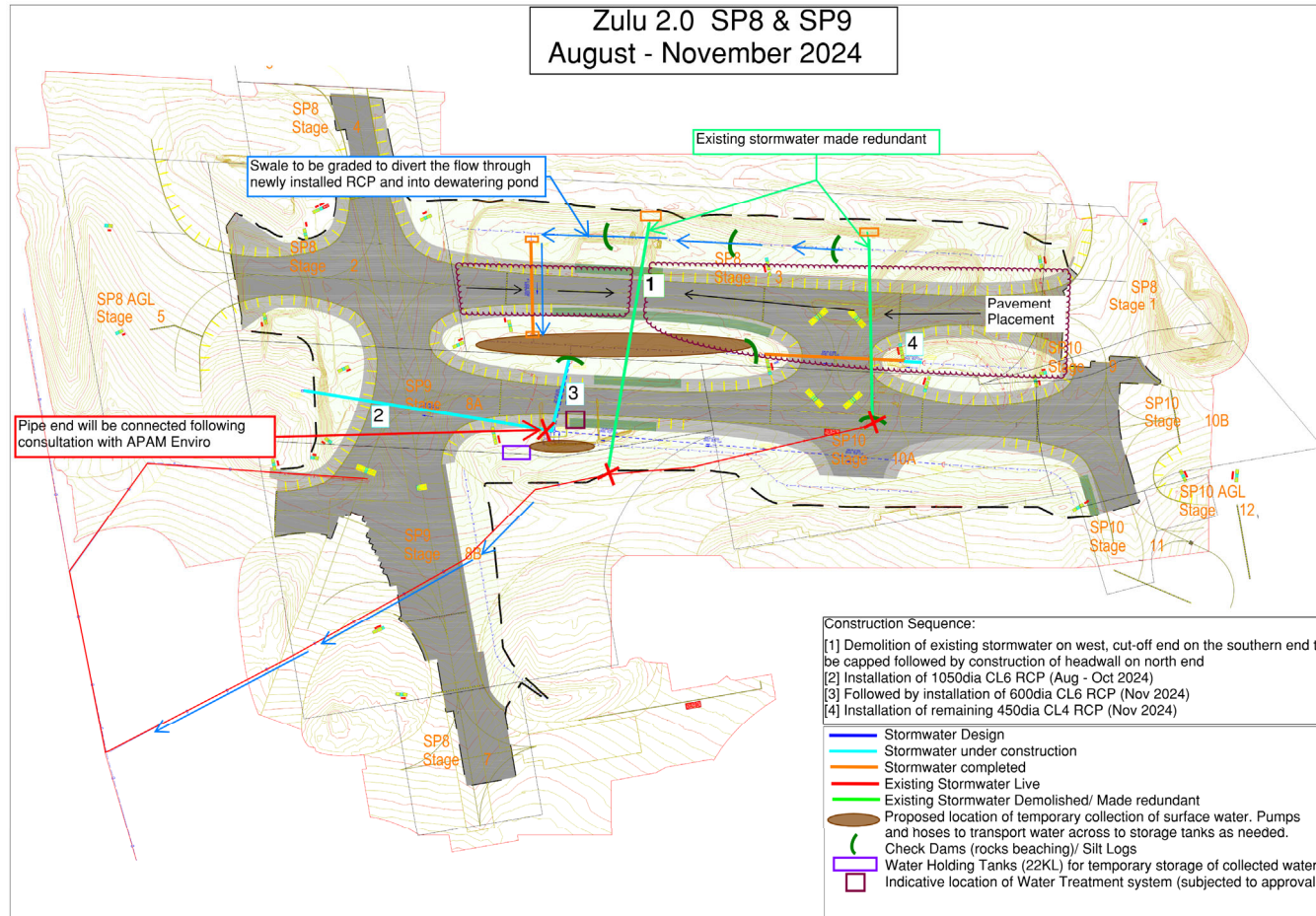
- Existing stormwater that will remain in place will help dewatering of surrounding pavement and grassed area
- All existing pit will have inlet protection (rock logs/ silt bags) to prevent sediments entering the existing drainage
- Water Holding Tanks for storage to hold excess water collected on the sumps

Separable Portion SP8  
March - July 2024

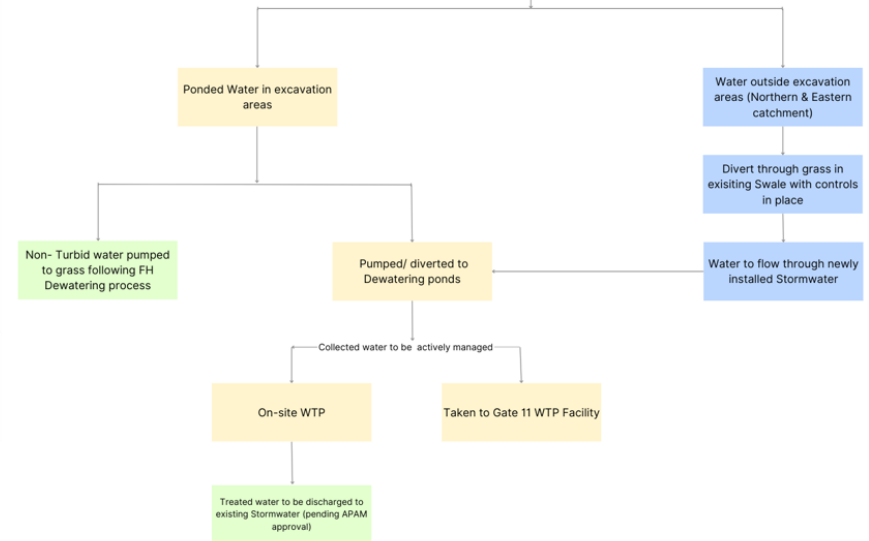


# Drainage Staging Plans – SP8 & SP9

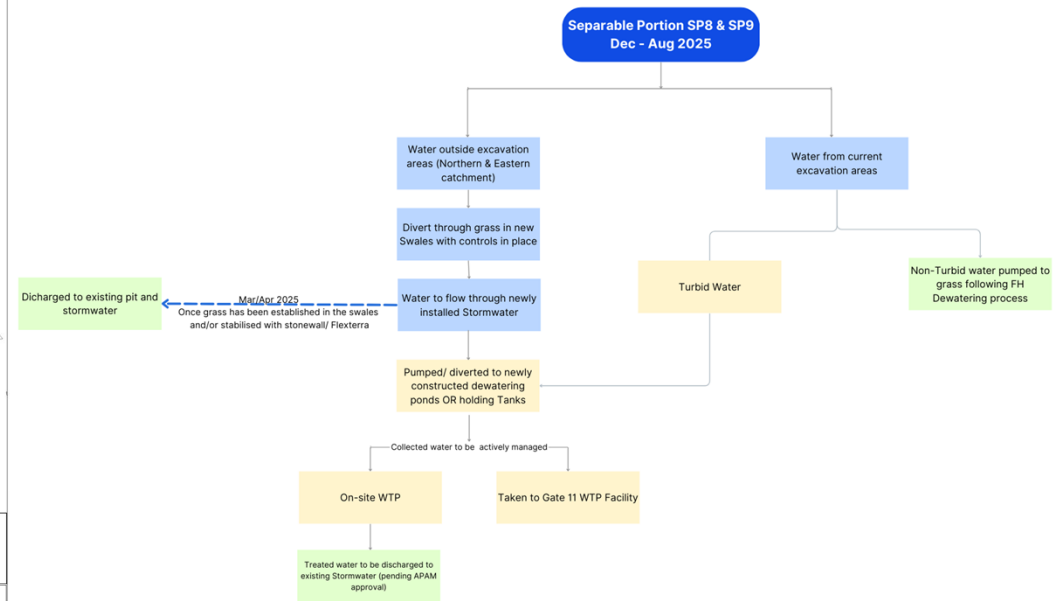
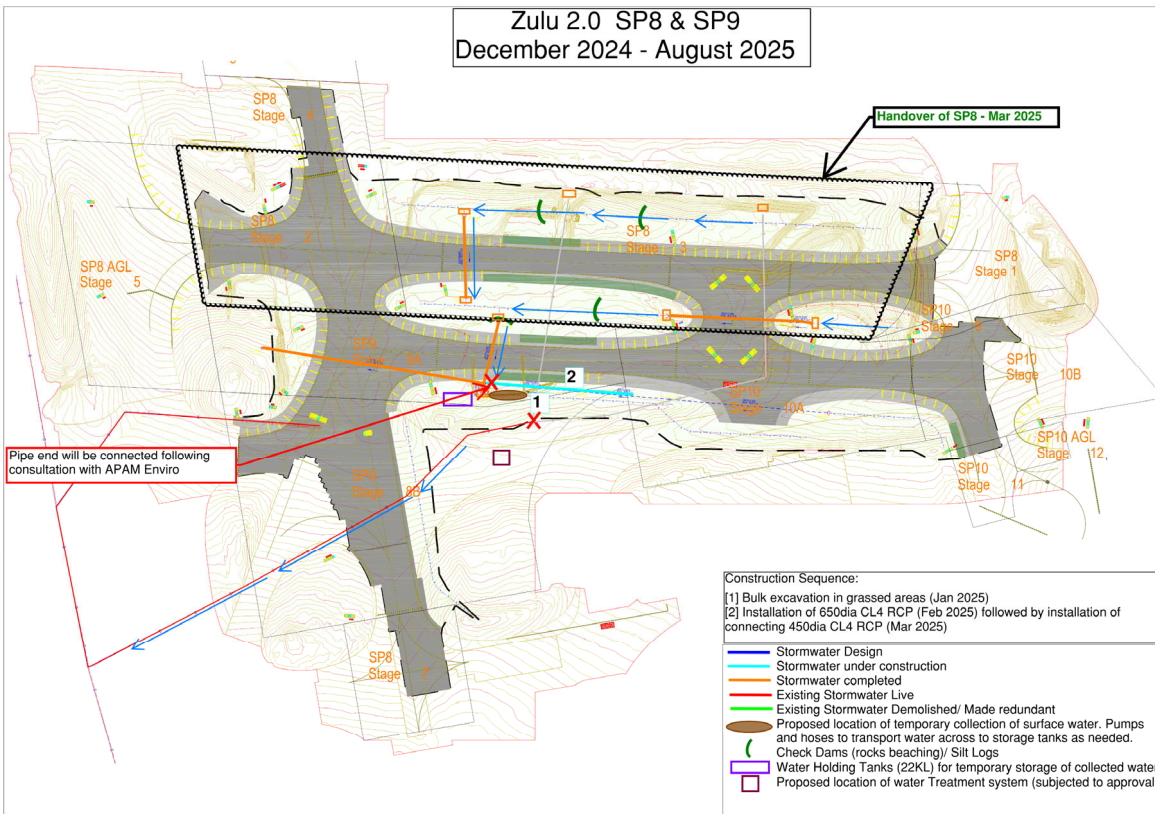
Zulu 2.0 SP8 & SP9  
August - November 2024



Separable Portion SP8 & SP9  
Aug - Nov 2024

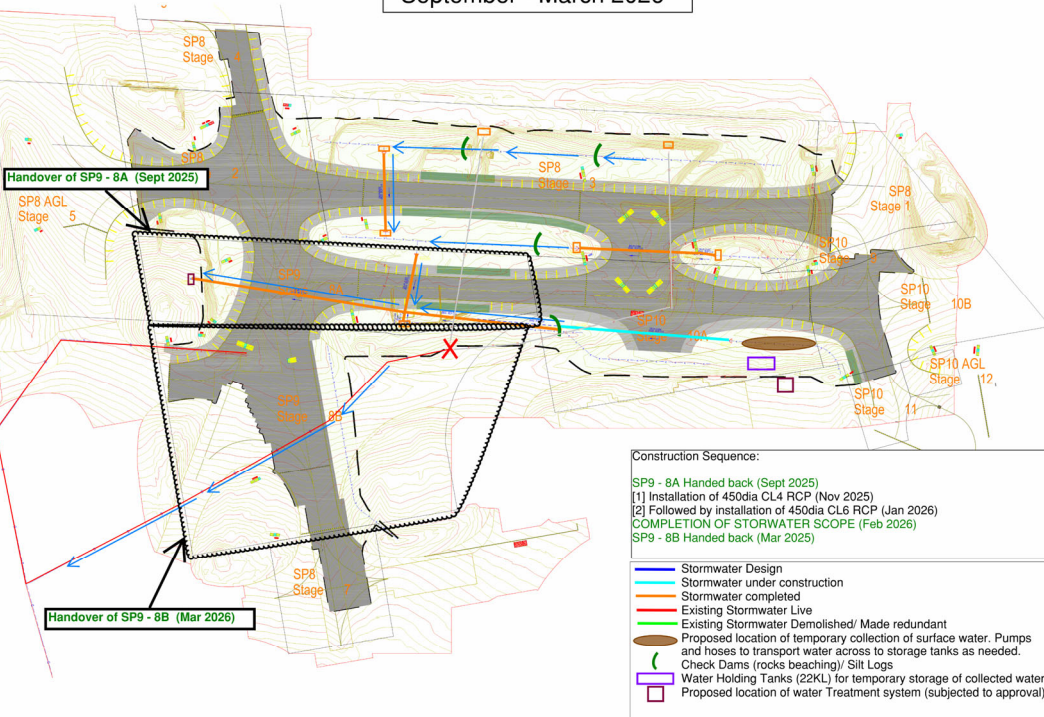


# Drainage Staging Plans – SP8 & SP9 (contd.)

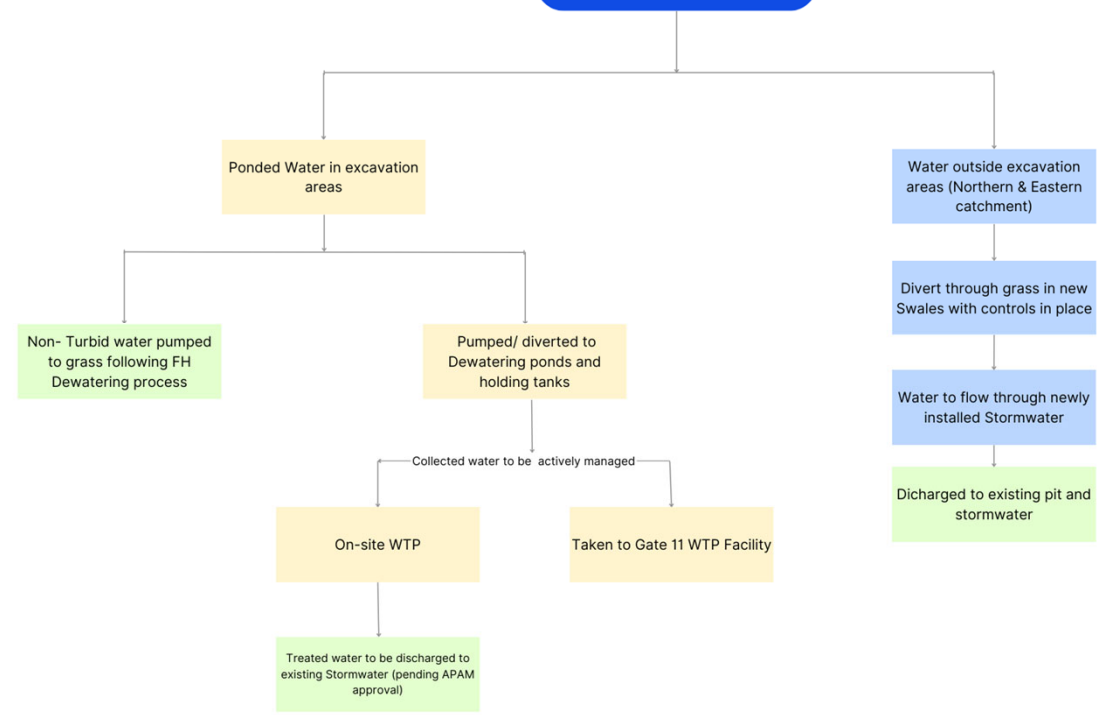


# Drainage Staging Plans – SP10A

Zulu 2.0 SP10A  
September - March 2026



Separable Portion SP10A  
Sept - Mar 2026



## 18. Appendix F – ECP Holcim Batching Plant

Holcim (Australia) Pty Ltd

# ENVIRONMENTAL MANAGEMENT PLAN

**Project Title:** Melbourne Airport Taxiway

**Client:** Fulton Hogan



Revision:	0	1	2	3
<b>Prepared by:</b>	Faisal Ayub	Faisal Ayub		
<b>Reviewed by:</b>	Ammad Hassan	Ammad Hassan		
<b>Approved by:</b>	David Hill	David Hill		
<b>Revision Date:</b>	13/02/2023	22/03/2023		

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## GLOSSARY OF TERMS AND SELECTED DEFINITIONS

Holcim SHE MS	Holcim Australia - Safety, Health and Environment Management System.
CRAW	Construction Risk Assessment Workshop
EAP	Employee Assistance Program
FFW	Fitness For Work
JHA	Job Hazard Analysis
JSC	Job Start Card (Same intent as “Take 5” – Personal Risk Assessment)
TNA	Training Needs Analysis
SHE	Safety Health Environment
KPI	Key Performance Indicator
PPE	Personal Protective Equipment
SMP	Safety Management Plan
SWMS	Safe Work Method Statement
VOC	Verification of Competence
TMP	Traffic Management Plan

## 1. INTRODUCTION

Holcim (Australia) Pty Ltd is a leading supplier of aggregates, concrete (ready-mix) and concrete pipe and products. Holcim operates right across the Australian continent supplying concrete from a network of more than 200 concrete plants, 900 mixer trucks and mobile and on-site facilities.

Holcim proposes to operate two mobile concrete batching plants for the Melbourne Airport Zulu Taxiway Project for Fulton Hogan Pty Ltd.

This Environmental Management Plan (EMP) has been prepared to assist in the management and protection of environmental values associated with the activity of batching, mixing and transporting ready-mixed concrete from this plant.

## 2. HOLCIM ENVIRONMENTAL POLICY & PLANNING

### 2.1 Holcim Environmental Policy

Holcim is committed to conducting all its operations and activities in an environmentally responsible manner and is committed to continual improvement in environmental practice. The company's environmental policy is shown below.

# Policy

## Environment Policy

June 2019

## 1. Framework

The Holcim Australia & New Zealand (HANZ) Environment policy is an integral part of the HANZ policy landscape. This policy should be read in close conjunction with the policies and directives listed in Annex 2.

The environment policy comprises:

- Scope
- Policy Principles
- Annex 1: Responsibilities
- Annex 2: LafargeHolcim policies and directives related to the HANZ Environment Policy
- Annex 3: Recommendations related to the policies
- Annex 4: Definitions and Abbreviations

## 2. Scope

### 2.0 Applicability

The scope of the Environment Policy covers the management of all Holcim operations (active and inactive) throughout Australia and New Zealand including its subsidiaries and agents.

In associated companies or joint ventures where Holcim does not exercise equity or management control, the responsible Executive Committee Member will establish that the associated company or joint venture is aware of the HANZ Environment Policy and will encourage its adoption or at least essentially equivalent standards by such associated company or joint venture.

### 2.1 Content in scope

This Policy addresses the impacts associated with the interaction between our operations and the environment in terms of their nature, their source and their consequences. The management of specific environmental aspects are defined in more detail in the policies and directives listed in Annex 2.

### 3. Policy Principles

HANZ is committed to providing positive contributions to the community, the environment and our business by continuously improving environmental performance and focusing on sustainable development.

Our Environmental Policy contains four main pillars, under which we have assigned principles to guide our business, so that our day to day activities are carried out in a manner which minimises and improves our impact on the environment.

#### 3.0 Management Systems

- All operations shall use an effective Environmental Management System (EMS) that aligns with the requirements of ISO14001 to manage overall environmental responsibilities and performance.
- All operations shall comply with all applicable environmental laws, regulations, standards and voluntary agreements applicable to our products and operations.
- We promote our commitment through training and integrate the consideration of environmental issues into business decision-making.
- We engage with customers to develop sound environmental practices and expect our contractors and suppliers to respect and comply with our environmental policies and procedures.
- We set corporate objectives and targets and undertake regular audits of environmental performance to monitor our progress.

#### 3.1 Environmental Impacts

- **Process Improvement:** We assess and measure our environmental impacts, continuously improve processes, tools and capabilities and promote best practices in our industry. We encourage analysis of impacts through the life cycle of our products and solutions.
- **Release of pollutants:** We identify, develop and implement effective controls to monitor, minimize or prevent the release of pollutants to the environment (air, water, and soil) from our operations.
- **Climate Change:** We strive to reduce our impact on climate change through the development, manufacture or promotion of innovative and sustainable products and solutions, optimizing the use of energy, and where appropriate the use of renewable energy sources.
- **Water:** We minimise our impact on water resources by limiting water withdrawal through the use of recycling, the promotion of water efficient practices and a responsible management of water discharges.
- **Quarry Rehabilitation:** We develop a rehabilitation plan for all quarry sites that takes into account the needs and expectations of our stakeholders and, where feasible and relevant, fosters wildlife habitat creation and contribution to the conservation of species.

- **Biodiversity:** We implement biodiversity management plans for all relevant extraction sites and work to protect important areas or habitats and facilitate the conservation of heritage artifacts discovered during site development and quarry operations.
- **Local impacts:** We assess, and appropriately mitigate, our impacts on surrounding communities in regards to fugitive dust, noise, vibrations, and traffic.

### 3.2 Resource Utilisation

- We promote eco-efficiency, conservation of non-renewable resources and recycling of secondary materials.
- We pursue the optimal utilisation of resources and the reduction of waste.

### 3.3 Stakeholder Relations, Monitoring & Reporting

- We are open, honest, and accountable to our stakeholders.
- We effectively engage and communicate with stakeholders in relation to environmental matters.



**George Agriogiannis**  
 Chief Executive Officer

Original dated: May 2016	Revision Dates: June 2019
Version dated: June 2019	
Responsible Group Executive Committee Member – George Agriogiannis / CEO HANZ Responsible Person – Garry Pirie / Environmental Lead – Holcim Australia	

## Annex 1: Responsibilities

### 1.1 Australia & New Zealand CEO

- The CEO is ultimately responsible for the company's compliance with this Policy.
- The CEO delegates responsibilities for specific tasks to the different organisational units.

### 1.2 Environmental Function

- Proposes amendments to this Policy where and when necessary.
- Assists Holcim Australia and New Zealand Business Units in understanding and applying the Environmental Policy and Directives.
- Supports training on the Environmental Policy and Directives in the Holcim Australia and New Zealand Business Units.
- Share good practices within their region and promote environmental success stories at Group level.
- Assists in solving serious environmental compliance issues and other significant environmental issues.
- Collects feedback from Holcim Australian and New Zealand business units with regard to amendments of the Environmental Policy and Directives.

### 1.3 Other Central Functions

- Implementing the Environmental Policy requires cooperation with the following central functions in particular: Legal/Compliance, Procurement, Strategy, Finance, Project Management and Engineering, Communications.

## Annex 2a: LafargeHolcim Policies related to HANZ Environmental Policy

Link with Policy	Definition / Description	Responsibility
Environment Policy	LafargeHolcim is committed to continuously improve its environmental performance and to make a positive contribution to nature and society.	Planning & Environment

## Annex 2b: LafargeHolcim Directives related to HANZ Environment policy

Link to HR Policy	Directive	Definition / Description	Responsibility	Reference
Biodiversity Directive	Management of Biodiversity in our Aggregate operations.	The Biodiversity Directive provides an integrated approach to maintaining and safeguarding biodiversity and the resulting ecosystems and ecosystem services in all the company's operations.	Planning & Environment	Section 2.2

Link to HR Policy	Directive	Definition / Description	Responsibility	Reference
Water Directive	Management of Water Resources.	The Water Directive provides the rules to manage water in a responsible manner, ensuring we are aware of water related risks and that we manage our water usage optimally. The Water Directive also sets the framework for appropriate actions to minimize our impacts on water resources.	Planning & Environment	Section 2.2
Rehabilitation Directive	Management of Quarry Rehabilitation.	The objective of this Rehabilitation Directive is to provide mandatory rules for the preparation and closure of quarries (or any part thereof) in a safe, environmentally and socially responsible manner.	Planning & Environment	Section 2.2

### Annex 3: LafargeHolcim recommendations related to the policy

Recommendation	Definition / Description	Reference
Nil		

### Annex 4: Definitions and Abbreviations

CEO	Chief Executive Officer
EMS	Environmental Management System
HANZ	Holcim Australia & New Zealand



## 3. ENVIRONMENTAL MANAGEMENT OBJECTIVES

### 3.1 Principal Objectives

The objectives of this EMP include:

- To protect surface and ground water quality
- To reduce air pollutants to the maximum practicable extent
- To reduce noise emissions to the maximum practicable extent
- To ensure that appropriate land care practices are carried out to protect soils, landscapes, vegetation and habitats
- To ensure the amenity of surrounding landholders is protected
- To ensure energy is used efficiently
- To ensure that minimal waste is generated
- To ensure that community concerns are considered in day to day operational decisions
- To ensure environmental concerns are reviewed and researched
- To ensure that operations are conducted in accordance with permit, licences and approval conditions and in accordance with statutory requirements
- To ensure that employees and contractors are aware of the environmental management obligations
- To ensure that non-conformance is recorded and rectified

### 3.2 Employee Environmental Duty

Environmental management is an integral part of normal duties and will be recognised by all employees at every level of activity.

The company aims to provide a culture which protects its assets and actively encourages environmentally sustainable safe working practices which produce quality products. This will be achieved by the application of environmental management techniques by all employees when planning, reviewing and conducting activities under their control.

### 3.3 Environmental Awareness

#### **General environmental duty**

A person in the performance of their duties shall not do so in a manner which will cause, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to prevent or minimise that harm.

#### **Duty to notify environmental harm**

When a person in the performance of their duties becomes aware that serious or material environmental harm is caused or may be caused by their activity or by someone else's activity, that person must as soon as practicable report the nature and circumstances of the event to their immediate supervisor.

#### **Compliance with Permits, Licences and Approvals**

All personnel shall conduct the performance of their duties in a manner which ensures that the provisions of any relevant development approval, licence, any other statutory permission or approval are complied with. Should the plant hit triggered limits, Fulton Hogan will be required to apply for the appropriate licence from the EPA.

## 4. DESCRIPTION OF ACTIVITIES

Concrete batching is a manufacturing process where cement, cementitious materials, fine aggregate (sand), coarse aggregate, admixtures, and water are proportioned and mixed to produce ready-mix concrete. The proportions and quantities used vary depending on the particular specifications and strength class.

Cement and cementitious materials are stored in steel silos, and aggregates are delivered by trucks to ground stockpiles, as needed. Aggregates are weighed and dispensed to the concrete truck agitator. Additives are dispensed from small tanks on-site. Proportioned quantities of cementitious materials and additives are also added to the concrete truck agitator. Water is added to the materials and the truck agitator mixes the materials and the water en route to the destination. Operations are computer controlled and managed via the batchers control room.

At the end of the day's production or if returning with unused concrete, the concrete agitator trucks will report to the truck wash-out area/bins for emptying/cleaning. All waste products from the agitators will be emptied into the wash-out pits where waste aggregate will be held waiting for removal. When the wash-out bins reach capacity the waste aggregate is removed and recycled for use as solid fill, concrete barriers, road base and retaining wall components.

The site is hydraulically graded to separate a defined 'work area' from the 'general area'. The 'work area' includes the area for agitator truck loading, slump point areas, truck wash out areas and cementitious unloading areas which may be contaminated with cementitious materials.

Consideration has been given to the local environment in the design and layout of the operations. Efficient and effective safeguards have been incorporated to control potential effluents and pollutants. Management is also committed to carrying out regular maintenance of structures and facilities and to ensuring the operations are conducted to a high standard.

## 5. ENVIRONMENTAL ISSUES, CONTROL MEASURES & IMPACT ASSESSMENT

### 5.1 Air Quality

The site manager will monitor all potential dust emission sources. Monitoring will primarily be by visual inspection of all potential dust emission sources. Visual inspection should be a continuous activity and all employees, including contractors, need to be involved.

Measurement of dust emissions will occur if:

- Dust monitoring is a condition of the environmental authority
- The site manager considers there is potential to cause environmental nuisance
- The site manager considers there is potential to exceed statutory limits
- The administering authority has directed measurement to occur as a result of a complaint

### 5.1.1. Potential Sources of Pollution

- Trucks transporting raw material to the batching plant (dust)
- Raw material stockpiles (dust)
- Escape of cementitious material during unloading, transfer and loading operations (blended cement powder)
- Unloading raw materials into the receiving hopper (dust)
- Transfer of raw material from receiving hopper to concrete agitator (dust and cement powder)
- Vehicle movement (dust)
- Exhaust emissions from diesel engines

### 5.1.2. Air Quality Control Strategies

The identification of potential sources of dust emission from the site has facilitated the nomination and design of measures for the control of dust. Control measures that should be implemented include, but are not necessarily limited to:

#### **Raw Materials Transport**

- Maintain the access road and paved areas in good condition (by others)
- Maintain and clean concreted areas by regular sweeping or washing
- Deliver and offload aggregates in a damp condition
- Ensure delivered loads are covered

#### **Raw Material Storage**

- Provide an air filter system, incorporating a multi-bag reverse pulse, for air discharged during filling of silos
- Inspect regularly (at least once per week) the filter system and maintain an inventory of spare parts on the site
- Aggregates to be stored in a conditioned fashion

#### **Raw Material Transfers**

- Fit and maintain a fail-safe silo fill system to prevent cementitious dust emissions resulting from overflow and over pressure issues
- Installation and maintenance of an air filter on each silo to remove cementitious dust from air that exhausts from the silo during filling

#### **Loading and Mixing**

- Enclose material transfer points
- Provide a flexible seal between the cement weigh hopper to the cement dust filtration system

#### **Agitator Trucks**

- Divert exhaust of trucks and other mobile machinery away from dusty surfaces
- Regularly inspect delivery trucks and wash down if required prior to leaving the subject site
- Maintain delivery truck in accordance with service manuals

**Maintenance**

- Inspect the integrity of enclosures and function of spray nozzles/bars, and replace/repair when required
- Close any doors and windows, in any enclosure, during operations
- An inventory of spare parts (flexible pipe connectors and filter fabric bags) to be kept to ensure worn or faulty materials can be readily replaced
- All diesel motors will be maintained and tuned to minimise energy use and emissions

If air quality concerns remain after the implementation of the above measures, consideration should be given to providing additional enclosures and/or the installation of a dry dust extraction system.

**5.1.3. Assessment**

Provided the operator undertakes the activities with due care and attention, minimal impact on air quality should result.

**5.2 Water Quality**

The project manager will monitor all potential wastewater emission points. Monitoring will include routine visual inspection of all potential wastewater emission points. Visual inspection will occur during normal operating conditions. Particular notice must be taken of runoff during significant rainfall events, which is >20mm in a 24 hour period.

Measurement of waste water discharge will occur if:

- Wastewater monitoring is a condition of the environmental authority
- The Project manager considers there is potential to cause environmental harm or nuisance
- The Project manager considers there is potential to exceed statutory limits
- The administering authority has directed measurement to occur as a result of a complaint

**5.2.1. Catchments**

The Concrete Plant site is divided into 2 catchment areas, namely:

**‘Non-concreted’** Those areas where sediments may collect but are unlikely to contain cementitious material or any other contaminants; ground bin and aggregate weigh bin loading area is a good example.

**‘Concreted’** Those areas which may be affected by the presence of cementitious material or other contaminants.

**5.2.2. Off-site Stormwater**

The Concrete Plant is located on a purpose built pad. As a consequence, the off site stormwater currently flows around the concrete plant area from the road and surrounding area. Holcim requires that Fulton Hogan provide adequate drainage around the batch plant site to minimise erosion and excess water. This is to be confirmed prior to site handover.

### 5.2.3. On Site Stormwater

All storm water falling within the area of the batch plant is directed towards some form of control. All contaminated water is recycled, primarily in the batching process.

#### **'Concreted Area'**

Waste water flows by gravity to the Water Catchment Pit. This pit is regularly cleaned by the site FEL. It is also fitted with a pump to empty it into the adjacent 20,000L water storage tank.

#### **'Non Concreted Area'**

The site is essentially level with a slight grade to one side. Due to the nature of the topography, the water is contained within the premise and is eliminated either by evaporation or infiltration into the ground. The hardstand is graded by Fulton Hogan such that excess storm water flows through channels and environmental controls before reaching a vegetated area.

### 5.2.4. Potential Sources of Pollution

- Spillage of high pH (alkaline) waste water causing contaminated water to enter the site.
- Seepage of high pH water into water table
- Spillage of fluids during plant and vehicle maintenance (including refuelling)

### 5.2.5. Water Quality Control Strategies

The identification of potential water pollution sources from the site has facilitated the nomination and design of measures for the management of water and wastewater. Control measures that should be implemented include, but not necessarily limited to:

#### **Water & Wastewater Systems**

- There are no dry weather discharges to the off-site stormwater system
- The area of the site that generates contaminated stormwater is minimised
- Wastewater is reused in the batching process
- Any excess wastewater (with high pH and/or with high solids content) is disposed of via an appropriately licensed waste contractor

#### **Recycled Water Management**

- Wedge pit to be clean and tidy daily
- Tank level monitored and logged
- Visual damage monitored and logged

#### **Plant Set-up & Infrastructure**

- Slumping is carried out within concreted area of the plant
- Sites are fully sealed, or additional sediment controls are in place for unsealed areas of the site
- Non-return valves are installed where potential exists for process water backflow
- Stormwater run-off from raw material storage areas have appropriately sized sediment controls in place e.g. grit traps

#### **Plant & Vehicle Maintenance, Refuelling and Washing**

- Fluids released during machinery maintenance operations are collected and removed to an approved disposal site or are recycled
- Good housekeeping ensures that any spillages of fluids that are released during maintenance are cleaned up immediately.

- Fluids used in plant and equipment maintenance are suitably stored to prevent leaks or spillages from entering water systems (bunding etc.). If any spillages occur SHEMS 6.12 Spills Response and Reporting is to be referred to.
- All refuelling and routine maintenance on vehicles is undertaken within designated service areas
- Trucks are washed on site, in designated vehicle wash stations with wastewater capture, treatment and reuse

### **5.2.6. Assessment**

Provided the relevant measures described above are implemented, no pollution to off-site stormwater systems should result.

### **5.2.7. Noise**

The site project manager will monitor noise emissions if and when required. Such monitoring will include audio inspections of all potential noise sources and should occur at the nearest noise sensitive residence. The batch plant will operate in only approved time periods advised by Fulton Hogan. However, the site can operate outside of these hours to facilitate pre-start, safety inductions, tool box talks etc. without operating any plant or equipment.

Measurement of noise emissions will occur if:

- Measurement is a condition of Fulton Hogan's Environmental Management Plan.
- The manager considers there is potential to cause environmental nuisance
- The manager considers there is potential to exceed statutory limits
- The administering authority has directed measurement to occur as a result of a complaint

### **5.2.8. Potential Noise Sources**

- Noise from diesel motors (front end loader, raw material delivery trucks and concrete trucks)
- Noise due to raw material handling (unloading trucks, loading receiving bin, dispensing materials to the concrete trucks)

### **5.2.9. Noise Control Strategies**

The most effective measure for noise control is to provide adequate separation of noise sensitive areas and concrete batching activities. The following management practices should, where practical, be adopted at the Mobile Concrete Batching Plant:

#### **Trafficable Areas**

- Keep in good condition to minimise vehicle noise

#### **Receiving hoppers and ramps**

- Line receiving hoppers internally with wear-resistant impact resilient material

#### **Agitator Trucks and other road trucks**

- Limit mobile equipment speed on the site
- Enforce regulated speed limits
- Operate modern, well-maintained roadworthy concrete and aggregate delivery trucks and fit high efficiency mufflers
- Ensure agitator trucks comply with the national vehicles standard design rules

- Ensure delivery or agitator trucks do not use exhaust air brakes in built up areas
- Truck drivers to conduct operations with minimum noise impact
- Control of high speed mixing operations to the maximum practical extent

#### **Vibrators**

- Maintain equipment in good condition to prevent additional noise from metal-to-metal impact
- Ensure vibrators are correctly selected (vibration force against overall mass to be vibrated)
- Implement the regular inspection and maintenance schedule of all plant and equipment

#### **Miscellaneous**

- Prohibit the use of horns on the site (except in an emergency)
- Use portable telephones or UHF radios rather than bells or hooters where possible
- Enclose any drop chute areas
- Fit warning lights on mobile equipment and limit the use of audible sirens or beepers where possible
- Implement and enforce a site code outlining requirements for operators and drivers

### **5.2.10. Assessment**

The background noise level is relatively low due to the surrounding farming type activities.

### **5.3. Land Contamination**

The Project manager will use a Monthly Safety/Housekeeping Audit process to ensure that all substances having the potential to cause environmental harm through land contamination are correctly stored, transported and dispensed.

The production supervisor will ensure that a register of all wastes leaving the site is maintained. A copy can be provided to Fulton Hogan upon request.

The Project manager will ensure that all contractors removing regulated waste from the site are licensed waste cartage contractors.

## **5.4 Waste Management**

### **5.4.1. Objectives**

The objectives of waste management at the mobile Concrete Plant are to:

- minimise waste
- recycle wastes wherever possible, or
- Dispose of wastes wherever possible so environmental harm is minimised.

### **5.4.2. Wastes Generated**

The wastes generated at this site are classified as either **regulated** or **non-regulated**.

The **regulated wastes** at this site are waste concrete in a slurry form, water with a high pH and containing a high concentration of solids, and waste oils. The concrete slurry is the product of washing out concrete truck agitator bowls. Wherever possible concrete slurries are allowed to dry to a solid form but the fine cementitious material that gathers in the settlement pits is reused by

pumping back through the concrete production process. Waste oil is generated only at the

servicing of the front end loader and removed by the service contractor. The main **non-regulated waste** at this site is solid concrete waste. This waste is generated either by the drying of concrete agitator washout or from the drying out of reject or excess concrete. Included in the **non-regulated waste** stream is **general waste**. A **Waste Register** is kept at site. Details of all wastes (except general waste) that leave the site are recorded. The details kept accord with those required by Environmental License. A copy can be provided to Fulton Hogan upon request.

### 5.4.3 Waste Sources

Potential wastes could include:

- Office wastes (mostly paper and food packaging)
- Concrete returns and washout slurry
- Worn parts
- Maintenance residues
- Spilled raw material and packaging.
- High pH Water
- Municipal & General Waste

### 5.4.4 Waste Minimisation

Waste generation should be minimised to the maximum possible extent. Wastes generated by activities on the site are managed in the following manner:

#### **Reduction, Reuse & Recycling**

- Purchasing procedures consider ability to reuse or recycle packaging and product at end of life
- Separate recyclable materials from general waste and store in appropriate containers prior to disposal off site at designated landfill, transfer station or recycling depot in accordance with Local Authority requirements
- Remove sediment from sediment traps prior to it comprising 20% of the total trap capacity. Removed silt should be returned to a quarry for processing into quarry products
- Used dirty water should be collected and reused for general equipment or site wash downs, dust control or manufacture of concrete
- Contaminated water should be collected reused for concrete agitator bowl wash out or manufacture of concrete
- Work processes including purchasing, production and maintenance constantly reviewed to identify opportunities to reduce non-recyclable wastes produced
- Providing containers or storage areas to encourage and assist storage and separation of recyclable wastes

#### **Waste Minimisation**

- Storing goods supplied in bulk in permanent onsite containers or in a recyclable containers to reduce packaging
- Implementing scheduled maintenance for machinery and plant to maximise life and minimise replacement and rebuild
- Minimise waste through efficient resource utilisation



- Limit the time that materials are required to be stored on site
- Encourage all staff and subcontractors to be waste aware through education and work procedures

#### **Waste Disposal**

- Office wastes, worn parts, municipal and general waste including non-recyclable packaging should be disposed of in accordance with the requirements of the local authority
- Concrete returns / rejected loads should be returned to the batch plant hardstand to a designated area, placed on the hard stand ground in lines, and then pushed up into a pile when the concrete has hardened. This hardened concrete waste should be sent to a designated facility for disposal. Care is to be taken to ensure that no leachate or slurry leaves the hardstand in this process.
- Concrete washout waste should be managed in the washout-pit area on the concreted wet area. When this washout waste is dried it should be sent to a designated facility for disposal.
- Mobile equipment and engine repairs and major maintenance should generally not be carried out on site and should be undertaken by contractors or commercial workshops. Minor maintenance may generate air/oil filters and also grease cartridges which should be recycled or disposed of by the maintenance contractor in accordance with requirements of the local authority

#### **5.4.5. Waste Volume Estimates**

The table below outlines the expected volumes of waste materials that are expected to be produced by operations during the Melbourne Airport Zulu Taxiway project.

<b>Waste Type</b>	<b>Volume</b>
<b>Concrete Solid Wastes</b>	~20 tonnes/month per location. All concrete wastes are disposed of at an appropriate facility (including sediment from onsite traps).
<b>Waste Oils</b>	~10 litres/month per location. All waste oils are generated by the routine servicing of the front-end-loader. Waste oils are removed from the site by the service contractor
<b>Waste Water</b>	Waste water includes wastes from the batching process, yard and truck wash down water, water from the concrete wash down bins, and some stormwater. All waste water is retained on site and recycled in the batching of concrete.

#### **5.4.6. General Wastes**

General wastes are deposited in a waste bin supplied by a waste contractor. The waste bin is stored in a designated space.

### **5.5 Storage and Handling of Hazardous Materials**

#### **5.5.1. Identification Hazardous Materials**

The site has several potentially hazardous materials, these include:

- Fuels, oils and coolant from trucks and mobile equipment
- Cementitious materials
- Concrete additives and chemicals
- Acid based truck wash chemicals
- Domestic/office cleaning agent

### **5.5.2. Hazardous Materials Management**

To ensure that all potentially hazardous materials are controlled and managed effectively, the following actions will be undertaken:

- Appropriate procedures should be implemented to ensure that hazardous materials are properly identified, stored and handled
- Fuels and oils should be generally supplied on an as needed basis by commercial suppliers/contractors who are made responsible to remove excess on completion of the task
- Where it is necessary to store fuels and oils at the plant the containers should be stored on containment pallets in a storage shed
- Risk assessments for all hazardous materials will be forwarded to Fulton Hogan.
- Safety Data Sheets shall be kept at the batch office. The storage and handling of material should be in accordance with the manufacturer's instructions and in accordance with any relevant regulation
- Appropriate containment and clean up facilities should be provided to contain, clean up and properly dispose of any spills, leaks or escape of hazardous material.
- Any hazardous material storage container should be identified and labelled. Appropriate warning signs should be posted

## **5.6. General**

Specific emergency procedures need to clearly detail responsibilities for each action, emergency telephone numbers and other information deemed necessary. This information is located on the batch offices, which includes relevant contact numbers of local authorities, in the event of emergency situations.

Specific emergency procedures should also include events that may happen off site but involve company activities.

## **5.7 Fauna & Flora**

### **5.7.1 Fauna**

In the case of an event on site that involves local fauna, Holcim will stop work immediately and notify relevant Fulton Hogan personnel to remove Fauna from site.

### **5.7.2 Flora**

Holcim will not enter exclusion areas or no go zones and will remain within already constructed embankment/elements and hard stand areas.

## 6. IMPLEMENTATION & OPERATION

### 6.1. Management Structure, Responsibility and Communication

Holcim is committed to efficient, effective and forward looking environmental management.

Management structures are reviewed from time to time to gain efficiencies and respond to changing needs of a competitive commercial environment. On occasion senior management may call upon Technical management and/or environmental consultants to provide advice and direction.

The concrete batching plant supervisor is directly responsible for ensuring environmental management objectives and standards are achieved for the operation. A system of regular reporting informs the project management team that compliance with the environmental policy is being achieved.

Internal environmental self-assessments are carried out annually against all aspects of the Holcim Environmental Management System including relevant permits, licenses and approvals that apply to the site's activities. Outcomes from these assessments are reported internally and discussed as standard agenda items at business unit management meetings.

The organisational structure for the mobile concrete batch plant is shown below:

### 6.2. Specific Responsibilities

To ensure these responsibilities are being met; a review at set intervals (2 months, 6 months, 12 months) into each project will be undertaken.

Position	Responsibility
<b>Project Manager</b>	<ul style="list-style-type: none"> <li>• Policy implementation</li> <li>• Training of site personnel and contract concrete carriers</li> <li>• Significant incident reporting</li> <li>• Six monthly review of Site EMP</li> <li>• Responsibility for maintaining e-copy of SEMP</li> <li>• Stormwater management</li> <li>• Waste management and disposal</li> <li>• Waste management plan</li> <li>• Truck wash down</li> <li>• Overfill protection on silos – fitted and operating</li> <li>• Noise monitoring and management</li> <li>• Air quality management</li> <li>• Incident reporting</li> <li>• Control of contractors, including Induction and checking that appropriate licences are held</li> <li>• Review of SEMP</li> </ul>

<b>Plant Production Supervisors And Production Officers</b>	<ul style="list-style-type: none"> <li>● Correct operation of plant, including routine inspections for housekeeping and for plant and machinery operation</li> <li>● Visual monitoring of dust emissions and water quality</li> <li>● Truck wash down</li> <li>● Overfill protection on silos – fitted and operating</li> </ul>
	<ul style="list-style-type: none"> <li>● Plant maintenance</li> <li>● Incident reporting</li> <li>● Control of contractors, including Induction and checking that appropriate licences are held</li> <li>● Incident reporting</li> </ul>
<b>Concrete Contract Carriers</b>	<ul style="list-style-type: none"> <li>● Avoidance of accidental discharge of concrete.</li> <li>● Wash out only in designated locations.</li> <li>● Wash down only in designated locations.</li> <li>● Vehicle maintenance and presentation.</li> </ul>

### 6.3. Records & Documentation

Holcim maintains a series of electronic databases for the collection, recording and internal reporting of environmental management information. This includes incident notification, investigation, analysis and corrective action (icare), personnel training records (CHRIS21) and self-assessment outcomes (SHE Reporting Database).

### 6.4. Allocation of Resources

Company policy requires capital expenditure proposals for plant and equipment replacement to include provisions for appropriate and necessary environmental controls. Annual operating budgets provide for environmental management expenses.

### 6.5. Staff Training

Management will be directly responsible for ensuring training and education programs are provided to inform and develop people. All staff will be properly inducted on environmental and safety issues and individual responsibilities. All employees will be made aware by a training seminar at the beginning of the project of the obligations for environmental management and the means by which the obligations can be met.

The concrete production supervisor is responsible for implementing and reviewing specific on site management procedures and the Project supervisor is responsible for inducting employees on responsibilities and duties. Personnel receiving on-the-job training will be assessed on their level of understanding and competency prior to completion of the training. Training will continue until the person reaches an acceptable level of competence.

### 6.6. Operational Controls

A review of operations, activities and processes which are undertaken on the site is presented in section 4 of this document (Description of activities). Environmental management strategies and

plans have been developed for a range of issues pertinent to site activities. These strategies will require revision and should respond to changing technologies, best management practices and site specific operational experience. This Environmental Management Plan will be reviewed and amended as and when deemed necessary by company management.

## **6.7. Contingency Plans**

Emergency response procedures have been prepared to minimise potential injury to persons and harm to the environment during an emergency situation. All site personnel will be informed of the emergency (section 7 Emergency Response Procedures). A mobile spill response station, up to date and fully maintained fire fighting equipment shall be kept on site and maintained.

Copies of emergency response procedures (refer to section 7) shall be displayed on notice boards at the batch office.

Procedures have been developed for reporting environmental harm/or environmental nuisance caused, threatened, or suspected to be caused by the release (refer APPENDIX 1).

Emergency incidents will be investigated and measures implemented to reduce possible recurrence.

## **6.8. Monitoring and Measurement**

Monitoring programs have been proposed and emphasis will be on general surveillance procedures and documentation. Monitoring methods and a draft program for implementation are shown in **TABLE 1 - SUMMARY MONITORING METHODS AND PROGRAM.**

All data, analysis, observations and assessment reports will be held on site. From time to time special monitoring may be carried out if deemed appropriate by management. Additional monitoring will also be carried out in response to reasonable complaint as determined by the EPA or the local Council and may involve measuring dust, noise and water quality parameters on and about the site

A formal review of environmental management performance will be carried out by Holcim at least once every three years.

A maintenance schedule will be prepared to ensure that the site, plant equipment, facilities and environmental controls are maintained and remain fit for the designed purpose.

## **6.9. Non Conformance, Corrective and Preventive Action**

All non-conformance detected by the monitoring programs will be recorded and acted upon as soon as practicable. The results and actions taken will be reported to the Project Manager.

The Project Manager will be responsible for ensuring that corrective and preventative actions are implemented. Regular view will also be provided for in management procedures to ensure continuous improvement of environmental management.

## 6.10. Recording and Reporting

Complaints will be advised to the Project Manager and followed up with information on action taken and an assessment of outcomes. Complaints shall be recorded in icare.

Record sheets, codes and protocols will be filed in an Environmental Management Log Book which will be kept on site. The Environmental Management Log Book may be in the form of hard copy manual records filed in a loose leaf folder or may be an electronic database.

## 6.11. Performance Review and Reporting

A Triannual Review of environmental management and the effectiveness of the EMP shall be carried out by the Project Manager.

The EMP review will address:

- The results of monitoring and performance standard achieved
- Environmental objectives, performance criteria and management procedures and plans
- The need for changes to reflect changing legislation, introduction of Environmental Protection Policies, new technology and scientific advances, lessons learned from environmental incidents and increased knowledge and experience of site specific issues
- Energy usage to identify and recommend energy minimisation initiatives for implementation

The review will identify the effectiveness of the EMP and its continuing suitability. The results of the EMP review will include a plan of action for changes to and/or development of the EMP. This review may encompass other projects depending on the time the review is undertaken.

Management will also ensure that any revisions to the EMP are related to site personnel as part of the environmental training and education program.

## 6.12. Monitoring Method – Potential Program

Item	Aim	Method	Responsible Person	Normal Schedule	Record
Storm-water Runoff	Confirm operation of water diversion structures and containment of contaminated runoff	Surveillance	Batch Plant Supervisor	Monthly and event	Monthly checklist
Sediment Traps	Maintain design first flush free storage. Schedule sediment removal.	Surveillance Measurement	Batch Plant Supervisor	Monthly and event	Monthly checklist
Sediment Disposal	Confirm adequacy of disposal areas/method	Surveillance	Batch Plant Supervisor	Monthly	Monthly checklist
Water Supply/Storage	Maintain adequate water supply for dust controls	Surveillance Measurement	Batch Plant Supervisor	Monthly	Monthly checklist
Water Quality	Confirm water quality in site boundary watercourses and sediment traps	Surveillance Measurement	Batch Plant Supervisor	Monthly or event measurement.	Monthly checklist
Regulated Waste Disposal	To dispose of regulated waste in accordance with legislation	Measurement	Batch Plant Supervisor	Event measurement	Waste register
Dust Control	Confirm adequacy of control measures	Surveillance Measurement	Batch Plant Supervisor	Regular surveillance.	Monthly checklist
Noise Control	Confirm adequacy of control measures	Surveillance Measurement	Batch Plant Supervisor	Regular surveillance.	Monthly checklist

**TABLE 1 - SUMMARY MONITORING METHODS AND PROGRAM**

Additional monitoring or investigations will be carried out in response to a complaint.

## 7. EMERGENCY RESPONSE PROCEDURES

### 7.1. Fire

The following procedures must be carried out in the event of a fire:

- Raise the alarm and evacuate the premises
- Notify Emergency Services and Fulton Hogan' site supervisor
- Start fire-fighting operations with on-site equipment provided it is safe to do so
- Keep people not involved in fighting the fire away
- Evacuate persons from downwind areas
- Check that fire-fighting water (runoff) is being contained/controlled
- Withdraw if there is risk of accident or injury

### 7.2. Liquid Spill

If a spill should occur the following procedures should be carried out:

- Contain the spilt liquid to prevent further contamination
- Contact Holcim Supervisor, Fulton Hogan's Site Supervisor and regulatory authority (if required)
- Isolate the affected area
- Remove liquid with suitable absorbent material and spill handling equipment
- All spilled material and absorbent used should be removed to a container and disposed of by the appropriate means
- Place details of the spill in Environmental Management Log Book for corrective action

### 7.3. Solids Spill

For a spill of solids, the following procedures should be carried out:

- Contact the Holcim Supervisor, Fulton Hogan's Site Supervisor or the regulatory authority if applicable
- Contain the spilled material and isolate the area
- Clean and reload material if possible
- Dispose of remaining material as appropriate
- Log details of the spill in Environmental Management Log Book for corrective action

### 7.4. Clean-up

Clean-up and salvage operations should not be attempted until it is declared safe to do so. The advice of suppliers should always be sought regarding handling of fire damaged products.

### 7.5. SDS

Safety Data Sheets of all products used on site must be kept on site.



## APPENDIX 1 – NOTIFICATION OF EMERGENCIES & INCIDENTS TO ADMINISTERING AUTHORITY

Location of Incident	
Holder of Environmental Authority:	
Environmental Authority Number:	
Contact Person: Name:	
Position:	
Phone:	
Time Incident Occurred:	(am/pm)
	(date)
Time Holder became aware of Incident:	(am/pm)
	(date)

Suspected cause of Incident: .....

.....

.....

The environmental harm/or environmental nuisance caused, threatened, or suspected to be caused by the release: .....

.....

.....

The actions taken to prevent further any release and mitigate any environmental harm or environmental nuisance caused by the release:

.....

.....

.....

Batching Plant Supervisor:

.....

. Date: / /

Incident Entered in icare

Date: / /

## APPENDIX 2 - COMPLAINT RECORD SHEET

<b>1. Logging Complaint</b>		<b>Sheet No.:</b>	
(information to be recorded when receiving complaint)			
<b>Date:</b>			
<b>Time:</b>			
<b>Name of persons making Complaint:</b>			
<b>Contact details of person making complaint</b> <small>(address, phone, fax, email etc.):</small>			
<b>Nature of Complaint:</b>			
<b>Complaint logged by:</b>		<b>Urgency:</b>	
<b>2. Investigating Complaint</b> <small>(record details of the investigation)</small>			
<b>Complaint investigated by:</b>			
<b>3. Resolving Complaint</b> <small>(actions taken to resolve complaint)</small>			
<b>Date of follow up of complaint:</b>		<b>Signed:</b>	

Complaint Entered in

icare Date: / /

## APPENDIX 3 - PROTOCOL FOR SETTLING COMPLAINTS

### Objective

To ensure that there is response to all complaints and that reasonable complaints are investigated and appropriate action is taken.

### Complaint Recording

All complaints relating to the operation of the Holcim Concrete Batching Plant must be recorded on the Complaint Record Sheet in the Environmental Management Log Book. The following is required:

- time, date and nature of complaint including urgency and significance
- type of communication (telephone, letter, personal etc.)
- name, contact address and contact telephone number of complainant (note: if the complainant does not wish to be identified then 'not identified' is to be recorded)
- response and investigation undertaken as a result of the complaint
- names of persons responsible for receiving and/or investigating complaint
- action taken as a result of the complaint investigation and signature of responsible person

### Complaint Log Book

A complaint logbook can be accessed in the project QMS folder.

### Management Responsibility

The Project Manager will be responsible for ensuring that all employees at the batching plant site are familiar with the procedure for complaint recording. The Site Supervisor will liaise personally with the complainant to discuss the nature of the complaint, identify possible causes and explain actions to prevent further complaint.

### Employee Responsibility

Employees receiving a complaint are required to record the complaint and notify the Project Manager that the complaint has been received. Employees are to show respect and understanding to complainants.

### Performance Targets

Complaints are to be investigated within two working days of complaint being received. Confirmation should be provided by the complainant within one month of completion of investigations of the complaint, that the issue has been satisfactorily resolved. No repeated complaints

## 19. Appendix G – Curriculum Vitae – Author

AUTHOR	QUALIFICATIONS	EXPERIENCE
<p><b>Tirrell Slaney</b></p>	<p>Bachelor of Arts (Human Geography) Monash University</p> <p>Bachelor of Science (Geoscience) Monash University</p>	<p>Tirrell has over 4 years of experience in planning, environmental management systems, site management, compliance auditing, soil and water contamination, sediment and erosion control.</p> <p>He has previous experience working for the Victorian Government in a compliance/regulatory role on the Westgate Tunnel Project. He has also worked at Melbourne Airport for the past 1.5 years on Fulton Hogan projects including MAPMP 1.0 - 2.0 and the Runway Overlay Project.</p> <p>Tirrell is familiar with the management requirements of environmental aspects at Melbourne Airport including nationally significant flora and fauna; and PFAS contaminated soil and water management. He is sensitive to stakeholder concerns and works to build strong relationships between all project parties and drive long-term environmental and sustainability outcomes on projects.</p>